

Print ISSN: 1738-3110 / Online ISSN 2093-7717 JDS website: http://accesson.kr/jds http://doi.org/10.15722/jds.22.11.202411.121

Why Do We Continue to Impulse Buy When Watching Live Stream **Commerce?**

Junghwa SON¹, Hye Jung YOON²

Received: October 31, 2024. Revised: November 21, 2024. Accepted: November 05, 2024.

Abstract

Purpose: Live-streaming commerce emerges as a new e-commerce powerhouse. Based on the Stimulus-Organism-Response model and the latest literature on live commerce, this study presents an integrated theoretical model with factors influencing potential consumers' intention to watch live broadcasts. This study expects that four factors (product fit, parasocial interaction, perceived serendipity, and deal proneness) would be positively related to one's intention to watch live streams. In addition, the intention to watch live commerce is expected to play a role in linking these factors to impulse purchases. Research design, data and methodology: A survey was conducted with 280 consumers in Korea who recently watched live commerce. Results: Statistical analyses were performed using structural equation modeling in which all four factors were found to show positive and statistically significant relationships with the intention to view the program live. As expected, the intention to watch live commerce simultaneously demonstrated the indirect effect. Conclusions: This study found significant antecedents of continuous watching intention and impulse buying, including product fit, parasocial interaction, perceived serendipity, and deal proneness. Furthermore, this study confirmed both the direct and indirect effect of continuous watching intention on impulse buying, which was found to be a meaningful and impactful indicator in live commerce.

Keywords: Live Streaming Commerce, Impulse Buying, Continuous Watching Intention, Parasocial Interaction, Perceived Serendipity

JEL Classification Code: D23, D30, M3

1. Introduction

With the advancement of digital technology and the emergence of new business models, live streaming commerce has continued to expand in global markets, particularly in the United States, China, and Korea. According to Statista, the U.S. live streaming commerce market size is projected to reach \$68 billion by 2026 (Statista, n.d.a). In China, approximately 597 million people, or about 54.7 percent of the country's Internet users, engaged in live streaming commerce in 2023 (Statista, n.d.b). In Korea, live streaming commerce sales surpassed \$11 billion in 2023 (Statista, n.d.c).

Live streaming commerce serves as a distribution channel that leverages the increasing emphasis on online services, which has grown due to the expansion of at-home and virtual environments. It extends beyond traditional online shopping, featuring enhanced real-time experiences, high interactivity, intensive engagement, rich information, and a full entertainment experience. Unique characteristics of live streaming commerce include two-way synchronous interactions not only between streamers and consumers but also consumers themselves (Kang et al., 2021).

¹ First Author, Independent Researcher, South Korea. Email: hoiday79@gmail.com

² Second Author. Assistant Professor, Department of Business Administration, Sejong University, Korea. Email: hjyoon@sejong.ac.kr

[©] Copyright: The Author(s)

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (http://Creativecommons.org/licenses/by-nc/4.0/) which permits unrestricted noncommercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Despite its rapid growth, research on live streaming commerce remains limited. Prior studies have primarily focused on the impact of streamers on purchase intentions (Gao et al., 2023; Guo et al., 2022; Hu et al., 2017; Li et al., 2021), technological features (Park & Lin, 2020; Sun et al., 2019), and the relationship between platform factors and purchase behavior (Chong et al., 2023; Zhang et al., 2021). In contrast, few studies addressed antecedents of continuous viewing of live streaming (Hu et al., 2017; Liu et al., 2023; Lv et al., 2022) and the relationship between continuous viewing of live streaming and impulse purchases (Lv et al., 2022; Xia et al., 2024).

Although significant factors that stimulate consumer purchase intention have been identified in existing studies on live commerce, most studies have focused on fragmented relationships rather than capturing the entire process of consumers' impulse buying behavior in live streams. Therefore, this study works to enhance the understanding of a more integrated and comprehensive approach that examines consumers' continuous viewing intention and purchase behavior on live stream platforms. To address this gap, the present study investigates multiple predictors of consumers' intention to continue watching live streams, factors influencing impulse purchases in live streaming commerce, and the mediating effect of continuous viewing on impulse buying. Therefore, this study offers a more integrative model of the processes that lead consumers to impulse purchases while watching live streaming commerce.

This study specifically investigates the complex dimensions of impulse buying within live streaming commerce, based on the comprehensive review of previous literature on the continuous viewing intention in live streaming contexts, integrating the Stimulus-Organism-Response (SOR) model into its research framework. Consequently, the research aims are threefold: (1) to examine the antecedents influencing continuous watching intention in live streaming, (2) to identify factors affecting impulse purchases in the live streaming commerce setting, and (3) to assess how impulse buying antecedents are mediated by continuous viewing intention in a more cohesive theoretical model within live streaming commerce. Findings of this study will provide deeper insight into the significant role of sustained viewing intention in the live commerce domain in an integrative approach linking various external stimuli (including from product features to interactive relationships) to impulse buying.

2. Literature Review and Hypotheses Development

2.1. The Stimulus-Organism-Response (SOR) Model

The Stimulus-Organism-Response (SOR) model provides a valuable theoretical framework for analyzing

how external environmental stimuli influence individual behavioral responses through their effects on psychological states (Guo et al., 2021). Under this framework, the stimulus (S) denotes external factors beyond one's control, such as marketing nudges or pleasant scents near a retail location. The Organism (O) represents the individuals' internal affective and cognitive states, such as feelings or emotions they experience, while the Response (R) stands for the behavioral outcomes resulting from these psychological reactions, as purchase decisions. The SOR model has been widely employed to investigate how external stimuli shape specific behavioral responses (Guo et al., 2021; Mehrabian, 1974; Peng & Kim, 2014; Vieira, 2013) and is applied across various retail settings, including physical stores, ecommerce, and live-streaming commerce.

The SOR model is also frequently applied to examine consumer behaviors linked to impulse buying (Huang & Suo, 2021; Lo et al., 2022; Ming et al., 2021). In line with previous research, this study adopts the SOR model to investigate how external factors (i.e., antecedents of impulse buying) lead to specific behavioral responses (i.e., impulse buying), mediated by internal psychological states (i.e., continuous watching intention).

2.2. Live Streaming Commerce

Live streaming commerce, a novel e-commerce platform, has garnered significant scholarly and industry attention due to its distinctive attributes of immersiveness, immediacy, engagement, and interactivity (Wongkitrungrueng & Assarut, 2020). This platform facilitates real-time interactions between streamers and viewers, where hosts actively provide information and showcase products to viewers while interacting with them as potential customers (Liu et al., 2023; Xu et al., 2020). Through live presentations, viewers gain a deeper understanding of product features, which helps reduce uncertainty and supports purchase decisions (Lu & Chen, 2021). Unlike traditional physical or standard online shopping, live streaming commerce emphasizes the role of streamers due to the high levels of consumer involvement, engagement, and interactivity required in this format (Gao et al., 2021; Ma et al., 2022).

A large body of previous literature have discussed the influence of streamers in live streaming commerce. The characteristics of streamers, including attractiveness, trustworthiness, knowledge, responsiveness, etc. have influenced consumers' purchase behavior in live streaming commerce (Chen et al., 2022; Guo et al., 2022; Park & Lin, 2020; Xu et al., 2020; Zhang et al., 2022). Additionally, the characteristics of technology have been studied in live streaming commerce. For example, the IT affordance, media richness, platform accessibility, and interface design have enhanced consumers' purchase intention and engagement

(Chong et al., 2-23; Kim et al., 2020; Li et al., 2021; Ma, 2021; Sun et al., 2019; Zhang et al., 2021).

A substantial body of literature has explored the role of streamers in live-streaming commerce. Factors related to streamer characteristics—such as attractiveness. trustworthiness, expertise, and responsiveness-have been shown to significantly influence consumer purchasing behavior in this context (Chen et al., 2022; Guo et al., 2022; Park & Lin, 2020; Xu et al., 2020; Zhang et al., 2022). Additionally, studies have examined technological characteristics within live-streaming commerce, including IT affordance, media richness, platform accessibility, and interface design, which collectively enhance consumer engagement and purchase intentions (Chong et al., 2023; Kim et al., 2020; Li et al., 2021; Ma, 2021; Sun et al., 2019; Zhang et al., 2021).

2.3. Factors Influencing Impulse Buying

Impulse buying, defined as the spontaneous urge to make a purchase without prior intention, has been extensively studied within consumer behavior literature, spanning both offline and online retail environments (Abdelsalam et al., 2020; Beatty & Ferrell, 1998; Block & Morwitz, 1999; Rook, 1987; Verhagen & Van Dolen, 2011; Zhang et al., 2023). While traditionally considered an impulsive behavior associated with compulsiveness and reduced self-control (Vohs et al., 2018), impulse buying in live-streaming commerce is frequently promoted as a strategic marketing approach. In live streaming commerce, consumers are often encouraged to make purchases during the brief duration of the broadcast, making strategies that elicit impulse intentions directly impacting sales outcomes.

Figure 1 illustrates our proposed research framework, including five hypotheses. The framework examines four antecedents of continuous watching intention—product fit, parasocial interaction, perceived serendipity, and deal proneness—across Hypotheses H1 to H4, while H5 evaluates the relationship between continuous watching intention and impulse buying.

This study adopts SOR theory to investigate a comprehensive and integrative research framework of impulse purchases that incorporates (1) external factors – product fit, parasocial interaction, perceived serendipity and deal proneness (S), (2) internal psychological states – continuous watching intention (O), and (3) behavioral response – impulsive buying (R). In sum, according to the SOR model, external stimuli (S) (i.e., product fit, parasocial interaction, perceived serendipity, and deal proneness) lead to specific behaviors (R) (i.e., impulse buying), mediated by affective and cognitive states (O) (i.e., continuous watching intention) in our integrative research framework.

2.3.1. Product Fit

Product fit refers to the degree to which a product presented by streamers aligns with the consumers' personal needs and preferences (Zhang et al., 2014). When consumers perceive that a product meets their personal requirements or tastes, they are more likely to consider purchasing it. In live streaming commerce, high product fit enhances consumer engagement by attracting attention and meeting individualized needs. During live streaming sessions, consumers acquire information that matches their tastes through the streamer's demonstration of product use and benefits, which encourages continued viewing. For instance, those who plan to purchase a new laptop are more likely to continuously watch a live streaming session if it presents laptops and electronic devices. In line with the SOR theory, product fit is considered as an external stimulus, which influences the individual's internal affective and cognitive states (i.e., continuous viewer intention in live streams). This study thus hypothesizes that perceived product fit positively influences continuous watching intention.

H1: Product fit will be positively associated with the continuous watching intention in live streaming commerce.

2.3.2. Parasocial Interaction

Parasocial interaction describes the perceived connection or quasi-social relationship that media users experience with media personalities. It is defined as the extent to which users perceive their relationship with media figures as close and interactive (Horton & Richard Wohl, 1956). Originating in mass communication, this concept has gained application in live streaming commerce and online shopping settings (Cohen, & Tyler, 2016; Hu et al., 2017; Labrecque, 2014; Lee & Oh, 2012; Powell et al., 2011). In live streaming commerce, a sense of parasocial interaction is fostered when streamers establish friendly and positive relationships with viewers. As consumers perceive a "friendship-like" bond with streamers, their personal attachment, loyalty, and commitment to the streamer may strengthen (Labrecque, 2014). Consumers who experience parasocial interactions are more likely to engage actively and remain involved in the live streaming sessions, resulting in sustained viewing. According to the SOR model, parasocial interaction as an external stimulus affects an individual's psychological state which influences one's inclination to watch live streams in a sustained way. Consequently, this study posits parasocial interaction has a positive influence on continuous viewer intention in live streams.

H2: Parasocial interaction will be positively associated with continuous watching intention in live streaming commerce.

2.3.3. Perceived Serendipity

In this study, we define perceived serendipity as that extent to which potential consumers believe that watching live commerce helps them discover unexpected or better suited products beyond their expectations. Traditional perspectives of consumer purchasing behavior research assumes that consumers always prefer products that exactly fit their needs while searching for additional product information (McCay-Peet & Toms, 2015; Wang & Wu, 2019). However, recent research reveals empirical evidence that serendipity has a positive effect on consumer purchases. For example, when consumers encounter a surprise during the purchasing process, they become more attracted to the product and experience a "a-ha" moment of sorts alongside feelings of satisfaction. (Niu et al., 2021).

During a live session, live commerce platforms often provide unexpected gifts in a package with a target product to attract potential customers. Live platforms also encourage consumer participation by providing surprise prizes to a few consumers who frequently interact with streamers. While watching a live broadcast and discovering unexpected products or surprise gifts, potential customers tend to continue watching the broadcast until they find their consumption to be relevant and useful to their needs. Built on the SOR theory, perceived serendipity (S) is considered as an external stimulus, which will lead to continuous watching intention in lives streams (O) (i.e., psychological states) in this research.

This study, thus, expects that consumers are likely to continue watching live commerce to further satisfy unexpected pleasures and serendipitous happiness. Based on this logical argument, the study presented the following hypothesis:

H3: Perceived serendipity will be positively associated with continuous watching intention in live streaming commerce.

2.3.4. Deal Proneness

Deal proneness refers to a consumer's tendency to pursue special offers or other financial benefits. It is one of the important factors driving consumers to engage in impulse purchases and live commerce (Huang & Suo, 2021; Palazon & Delgado-Ballester, 2011). Due to the limited time that these offerings are available, as well as rapid price changes during the live commerce broadcasts, consumers can easily be prompted to watch the live sessions on an ongoing basis. Moreover, deal-prone customers tend to invest their time and effort to find better deals and special promotions (Luo et al., 2024). Based on the SOR framework, deal proneness (S) is expected to function as an external factor, which will influence an internal state accordingly to increase continuous viewer intention (O) in this research framework. Therefore, this study predicts that deal process will have a positive effect on consumers' intention to continue watching live commerce.

H4: Deal proneness will be positively associated with continuous watching intention of live streaming commerce.

2.3.5. Continuous Watching Intention

Continuous watching intention is defined as a viewer's enduring and sustained preference to continue viewing live commerce (Hou et al., 2020; Hu et al., 2017). In a live commerce platform, it is crucial for potential consumers to access the live broadcast and remain engaged without leaving. Previous studies found that when consumers become interested in live streaming content, they are likely to continue watching the sessions and consequently increase product purchasing behavior (Hou et al., 2020; Liu et al., 2023; Sun et al., 2019). Attracting customers' attention through live broadcasts can eventually stimulate them to engage in impulse buying behavior due to the special offers, promotions, and overall financial benefits associated with the product in the session. This study incorporates consumers' individual cognitive and affective states, continuous viewing intention (O) and the behavioral responses of impulse purchases (R) within the SOR model. As a result, this study postulates that continuous watching intention will be positively correlated with impulse buying.

H5: Continuous watching intention will be positively associated with impulse buying in live streaming commerce.

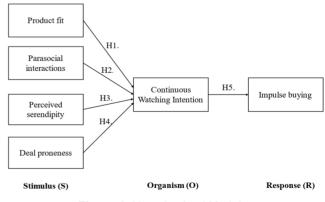


Figure 1: Hypothesized Model

3. Research Methods

3.1. Survey Sample Desing and Data Collection Process

The research question studied in this paper focuses on comprehensively identifying the factors that promote potential consumers to continue watching live commerce, as well as the resulting impact on the product purchase process during the sessions. To test our hypotheses, Korean consumers who watched live commerce were targeted by an online survey. Survey questions were originally written in English and then translated into Korean.

The survey subjects were limited to adults who had experience watching live commerce broadcasts within the past three months. Ultimately, a sample size of 280 individuals was developed for the analysis. The gender of the study subjects was 55.7% female and 44.3% male. The age groups of the survey respondents were very diverse, with 16.8% 19-29 years, 33.2% 30-39 years old, 33.2% 40-49 years, 11.4% 50-59 years, 11.4% 50-59 years, and 4.6% 60-69 years, and .7% over the age of 70. This shows that purchasing products through live commerce broadcasts occurs across all generations in Korea. The occupations of the sample were as follows. Standard office workers made up 63.2% of the results, professionals in advanced fields (such as doctors, lawyers, and accountants), made up 10.4%, and homemakers, students, as well as all other categories made up 10.0%, 6.4%, and 4.6% respectively.

The survey questions included questions related to (1) the four main factors that were expected to stimulate continuous watching, product fit, parasocial interaction, perceived serendipity, and deal proneness, (2) continuous watching intention as a mediating variable, and (3) impulse buying behavior, and (4) demographic characteristics. All main study variables were measured on a 7-point Likert scale (1 = 'not at all', 7 = 'strongly agree').

Product fit and perceived serendipity were measured with three and four items each adapted from Liu et al. (2023).

Parasocial interaction was measured with four items adopted from Rubin et al. (1985). Deal proneness was measured

based on four items developed Lu and Chen (2021). Continuous watching intention was measured with three items adapted from Hu et al. (2017). Lastly, impulse buying behavior was evaluated with four items from Beatty and Ferrell (1998). Table 1 exhibits means, standard deviations, correlations, and Cronbach's alpha of the main research variables (see Table 1).

4. Results

In order to verify the construct validity, confirmatory factor analysis was conducted. The results with our original

six-factor model showed a satisfactory level of fit, compared to alternative four- or five-factor models. $\chi^2 = 438.48$ (df = 194), p < .001, CFI = .94, IFI = .94, RMSEA=.067. The AVE values were higher than .50, and the CR values were higher than .80, which demonstrates convergent validity and discriminant validity of our main study variables. Table 2

exhibits more detailed information about reliability and validity of the variables.

Next, Structural Equation Modeling has been conducted to test our main hypotheses. As shown in Table 3, all suggested research hypotheses were supported. The results exhibit a reasonable fit to the data ($\chi^2 = 494.08$, df=198 (p < .001), CFI = .93, IFI = .93, RMSEA = .07). Table 2 summarizes the findings (see Table 2).

Hypothesis 1 hypothesized a positive relationship between product fit and continuous viewer intention. The path was found to be positive and statistically significant (β = .168, p = .03). Hypothesis 2 postulated that parasocial interaction would positively influence continuous viewer intention, and this path was found to be positive and significant ($\beta = .241, p < .001$). As for Hypothesis 3, which considered the positive relationship between perceived serendipity and continuous viewer intention, the result demonstrated that perceived serendipity had a positive impact on continuous viewer intention ($\beta = .214, p = .029$). Hypothesis 4 expected a positive relationship between deal proneness and continuous viewer intention, and the result showed the relationship existed in a statistically significant way ($\beta = .343$, p < .001). Lastly, Hypothesis 5, predicting a positive relationship between continuous viewer intention and impulse buying, was statistically significant ($\beta = .568$, p <.001).

Lastly, a bootstrapping procedure (5000 subsamples with a 95% confidence intervals) was conducted to check the expected indirect effect of continuous watching intention. The results showed that continuous watching intention significantly mediates the relationships between the four antecedents (product fit, parasocial interactions, perceived serendipity, and deal proneness) and impulse buying (b = .34, SE= .06, [.2344, .4631]; b= .16, SE= .03, [.0929, .2287]; b= .16, SE= .03, [.0929, .2287]; b= .18, SE= .06, [.0619, .3039]; b= .24, SE = .05, [.1413, .3361], respectively).

5. Conclusions

This study was developed to explore the comprehensive process through which impulse buying is provoked by live streaming commerce. By including antecedents and a mediator by applying the SOR framework, this study provides an expansive understanding of the factors that drive continuous watching intention as well as the matching impulse purchase behavior. This study found significant antecedents of continuous watching intention and impulse buying, to include product fit, parasocial interaction, perceived serendipity, and deal proneness. Furthermore, this study confirmed both direct and indirect links between antecedents of continuous watching intention and impulse buying. The major findings are as follows.

Variables	М	SD	1	2	3	4	5	6
1. Product Fit	4.77	.93	α = .79					
2. Parasocial Interaction	4.10	1.31	.38***	α = .90				
3. Perceived Serendipity	4.93	.84	.56***	.39***	α = .84			
4. Deal Proneness	5.30	.91	.53***	.30***	.62***	α = .87		
5. Continuous Watching Intention	4.90	.93	.57***	.49***	.60***	.61***	α = .83	
6. Impulsive Buying	4.74	1.11	.25***	.38***	.56***	.45***	.48***	α = .90

Table 1: Descriptives, Correlations, and Cronbach's Alphas

Note: N = 280. ***p < .001.

Table 2: Reliability and Validity of the Study Variables

Factors and Items	Factor loadings	AVE	CR
Factor 1: Product Fit			
Fit1	.874		005
Fit2	.879	.619	.825
Fit3	.567		
Factor 2: Parasocial Interaction			
Para1	.790		
Para2	.850	.688	.898
Para3	.873		
Para4	.803		
Factor 3: Perceived Serendipity			
Ser1	.709		
Ser2	.784	.574	.843
Ser3	.786		
Ser4	.749		
Factor 4: Deal Proneness			
Deal1	.723		
Deal2	.820	.625	.869
Deal3	.795		
Deal4	.821		
Factor 5: Continuous Watching			
Intention	.861		
Con1	.831	.659	.853
Con2	.739		
Con3	.100		
Factor 6: Impulsive Buying			
ImBu1	.873		
ImBu2	.803	.692	.899
ImBu3	.882		
	.763	aita ral	

Note: AVE = average variance extracted; CR = composite reliability.

In this study, the intention to continuously watch live commerce showed the strongest influence of impulse buying. In the similar realm, Liu et al. (2023)'s study found that as consumers spend more time watching the live sessions, the possibility of purchasing a product increases. Among the antecedents of continuous watching intention, it was found that deal proneness was the most impactful factor (in a positive light) on continuous watching intention during live streamed sessions. Since product prices may change dramatically throughout live commerce sessions (Huang & Suo, 2021), deal proneness is considered to be an important element in promoting consumers' impulsive buying (Palazon & Delgado-Ballester, 2011). As expected, financial benefits are the most impactful element for consumers, as those who watch live commerce realize how the streams provide strong price advantages over traditional retailers and e-commerce.

Similar to the findings suggested by previous research (McCay-Peet & Toms, 2011; Sun et al., 2013; Wang & Wu, 2019), this study confirmed that perceived serendipity had a considerable influence on continuously watching live streaming intention. To clarify, consumers are willing to watch broadcasts on live commerce platforms when they accidentally run into unexpected pleasure, joy, and surprises. The definition of serendipity states how consumers may expect to meet "happy accidents" (Golin, 1957, p. 2084) or "accidental discovery" (Andel, 1994, p. 631) while watching the live streaming session. This eventually leads to intentionally watching live broadcasts in a continuous pattern.

This study confirmed that parasocial interaction also positively affects one's intention to continue watching (i.e. the variable "continuous watching intention") a live stream. In line with previous studies (Liu et al., 2023), the finding of this study supported that the development of a positive relationship between streamers and consumers makes consumers more likely to watch live streaming and purchase impulsively. Specifically, once consumers develop the feeling of intimacy or a sense of mutual awareness during viewing, consumers are likely to watch the live session continuously.

Product fit led to a positive influence on continuous watching intention. Zhang et al. (2014)'s study supports this as consumers continuously watch live streaming commerce when the presented products fit their personal needs and interest.

T-1-1-0-		D
Table 3:	Path Analysis	Results

<u></u>				
Hypothesized Path	Direction	Estimates ^a		
H1: Product Fit → Continuous Watching Intention	+	.168*		
H2: Parasocial Interaction → Continuous Watching Intention	+	.241***		
H3: Perceived Serendipity → Continuous Watching Intention	+	.214*		
H4: Deal Proneness → Continuous Watching Intention	+	.343***		
H5: Continuous Watching Intention → Impulse Buying	+	.568***		

Note: ^a Standardized coefficients; * *p* < .05; *** *p* < .001

This study explored specific and various indicators (product fit, parasocial interaction, perceived serendipity, and deal proneness) of continuous watching intention and the related mediator role of it with regards to live commerce. Specifically, this study is one of the first to examine Korean consumers' impulse buying process in a comprehensive fashion related to live commerce. Most existing studies mainly identified Chinese consumers' impulse purchase behavior in live streams (Li et al., 2021; Luo et al., 2024; Xia et al., 2024). To our knowledge, this study is one of the earliest empirical studies that develops the integrative framework of Korean consumers' impulse buying by applying antecedents (i.e., product fit, parasocial interaction, perceived serendipity, and deal proneness) and a mediator (i.e., continuous viewer intention) in live streaming commerce.

Furthermore, the current study makes contributions to expand factors which are not particularly related to the characteristics and behaviors of streamers in the domain of live commerce. Prior research primarily investigated the influence of streamers on consumers' purchase intention (Chen et al., 2022; Guo et al., 2021; Guo et al., 2022; Xu et al., 2020; Zhang, 2022). In that regard, this study provides significant antecedents of continuous viewer intention of live streams (i.e., product fit, parasocial interaction, perceived serendipity, and deal proneness), which are not related to streamers' characteristics (e.g., physical attractiveness, knowledge, personalities, etc.). Conclusively, the most significant contribution of this study offers the mediating effect of continuous watching intention in the relationships between various indicators and impulse buying in live streams. This study caters to the important role of continuous viewer intention by incorporating this into the comprehensive research model examining consumers' purchasing behavior within impulse buying.

The findings of this study provide meaningful managerial implications. The findings of this study convey a clear message: increasing consumers' impulse buying is critically related to consumers' intention to watch live streams continuously. First, since continuous watching intention leads to impulse buying, resulting in an increase of sales and profits, marketers and retailers should focus on variables such as deal proneness and perceived serendipity, which are the significant antecedents of continuous watching intention of live streaming. In that regard, financial benefits, unexpected pleasure, and accidental discovery are effectively facilitated during the live streaming session. For instance, a lucky draw, a first-come, first-served lottery, or coupon giveaway, etc., may promote and encourage consumers' intentions to view and watch a live streaming session continuously.

Second, as parasocial interaction increases continuous watching intention, resulting in a growth of impulse buying, practitioners can build and develop an intimate relationship between streamers and consumers through a social networking, such as Instagram, X (i.e. previously Twitter), or TikTok fan pages. When consumers develop emotional connections to streamers, they are subsequently more willing to continue watching a particular live streaming session, as the finding of this study indicated. In other words, the potential for a close, strong bond between streamers and consumers is a recommendable point for enterprises to attempt to create and exploit on the market.

5.2. Limitations and Future Research

While this study provides theoretical and empirical findings for the antecedents of continuous watching intention and impulse buying, including the mediating effect of continuous watching intention on live streaming, there are some issues that remain unexplored. Other factors such as time scarcity and scarcity persuasion are also considerable when discussing live streaming commerce since live streaming commerce provides a limited time offer (i.e. 30minute or 60-minute offers). In further research, therefore, researchers might consider expanding the focus of their studies to address more diverse variables, which can be related to various characteristics of live streaming commerce. Second, all respondents were from one major city in Korea. Considering cultural differences embedded in buying and selling behaviors via live streams, further research is recommended to include more diverse contexts or countries, such as China, the U.S., or India where most prevalent live streaming commerce countries are considered to be.

References

- Abdelsalam, S., Salim, N., Alias, R. A., & Husain, O. (2020). Understanding online impulse buying behavior in social commerce: A systematic literature review. *Ieee Access*, 8, 89041-89058. 10.1109/ACCESS.2020.2993671
- Andel, P. V. (1994). Anatomy of the unsought finding. Serendipity: Origin, history, domains, traditions, appearances, patterns and programmability. *The British Journal for the Philosophy of Science*, 45(2), 631-648. https://doi.org/10.1093/bjps/45.2.631
- Beatty, S. E., & Ferrell, M. E. (1998). Impulse buying: Modeling its precursors. *Journal of Retailing*, 74(2), 169-191. https://doi.org/10.1016/S0022-4359(99)80092-X
- Block, L. G., & Morwitz, V. G. (1999). Shopping lists as an external memory aid for grocery shopping: Influences on list writing and list fulfillment. *Journal of Consumer Psychology*, 8(4), 343-375. https://doi.org/10.1207/s15327663jcp0804_01
- Chen, H., Wu, L., Chen, J., Lu, W., & Ding, J. (2022). A comparative study of automated legal text classification using

random forests and deep learning. *Information Processing & Management*, 59(2), 102798. https://doi.org/10.1016/j.ipm.2021.102798

- Chong, H. X., Hashim, A. H., Osman, S., Lau, J. L., & Aw, E. C. X. (2023). The future of e-commerce? Understanding livestreaming commerce continuance usage. *International Journal of Retail & Distribution Management*, 51(1), 1-20. https://doi.org/10.1108/IJRDM-01-2022-0007
- Cohen, E. L., & Tyler, W. J. (2016). Examining perceived distance and personal authenticity as mediators of the effects of ghosttweeting on parasocial interaction. *Cyberpsychology, Behavior*, and Social Networking, 19(5), 342-346. https://doi.org/10.1089/cyber.2015.065
- Gao, W., Jiang, N., & Guo, Q. (2023). How do virtual streamers affect purchase intention in the live streaming context? A presence perspective. *Journal of Retailing and Consumer Services*, 73, 103356. https://doi.org/10.1016/j.jretconser.2023.103356
- Gao, X., Xu, X. Y., Tayyab, S. M. U., & Li, Q. (2021). How the live streaming commerce viewers process the persuasive message: An ELM perspective and the moderating effect of mindfulness. *Electronic Commerce Research and Applications*, 49, 101087. https://doi.org/10.1016/j.elerap.2021.101087
- Golin, M. (1957). Serendipity big word in medical process: Does pure luck deserve all the credit? *Journal of the American Medical Association*, *165*(16), 2084-2087. https://doi:10.1001/iama.1957.72980340011013
- Guo, J., Li, Y., Xu, Y., & Zeng, K., (2021). How live streaming features impact consumers' purchase intention in the context of cross-border e-commerce? A research based on SOR theory. *Frontiers in Psychology*, 12, 767876. https://doi.org/10.3389/fpsyg.2021.767876
- Guo, Y., Zhang, K., & Wang, C. (2022). Way to success: Understanding top streamer's popularity and influence from the perspective of source characteristics. *Journal of Retailing* and Consumer Services, 64, 102786. https://doi.org/10.1016/j.jretconser.2021.102786Get rights and content
- Horton, D., & Richard Wohl, R. (1956). Mass communication and para-social interaction: *Observations on intimacy at a distance*. *Psychiatry*, 19(3), 215-229. https://doi.org/10.1080/00332747.1956.11023049
- Hou, F., Guan, Z., Li, B., & Chong, A. Y. L. (2020). Factors influencing people's continuous watching intention and consumption intention in live streaming: Evidence from China. *Internet Research*, 30(1), 141-163. https://doi.org/10.1108/INTR-04-2018-0177
- Hu, M., Zhang, M., & Wang, Y. (2017). Why do audiences choose to keep watching on live video streaming platforms? An explanation of dual identification framework. *Computers in Human Behavior*, 75, 594-606. https://doi.org/10.1016/j.chb.2017.06.006
- Huang, Y., & Suo, L. (2021). Factors affecting Chinese consumers' impulse buying decision of live streaming e-commerce. *Asian Social Science*, *17*(5), 16. https://doi.org/10.5539/ass.v17n5p16
- Kang, K., Lu, J., Guo, L., & Li., W. (2021). The dynamic effect of interactivity on customer engagement behavior through tie strength: Evidence from live streaming commerce platforms.

International Journal of Information Management, 56, 102251. https://doi.org/10.1016/j.ijinfomgt.2020.102251

- Kim, T., Sung, Y., & Moon, J. H. (2020). Effects of brand anthropomorphism on consumer-brand relationships on social networking site fan pages: The mediating role of social presence. *Telematics and Informatics*, 51, 101406. https://doi.org/10.1016/j.tele.2020.101406
- Labrecque, L. I. (2014). Fostering consumer-brand relationships in social media environments: The role of parasocial interaction. *Journal of Interactive Marketing*, 28(2), 134-148. https://doi.org/10.1016/j.intmar.2013.12.003
- Lee, E. J. & Oh, S. Y. (2012). To personalize or depersonalize? When and how politicians' personalized tweets affect the public's reactions. *Journal of Communication*, *62*(6), 932-949. https://doi.org/10.1111/j.1460-2466.2012.01681.x
- Li, B., Hu, M., Chen, X., & Lei, Y. (2021). The moderating role of anticipated regret and product involvement on online impulsive buying behavior. *Frontiers in Psychology*, 12, 732459. https://doi.org/10.3389/fpsyg.2021.732459
- Li, Y., Li, X., & Cai, J. (2021). How attachment affects user stickiness on live streaming platforms: A socio-technical approach perspective. *Journal of Retailing and Consumer Services*, 60. 102478. https://doi.org/10.1016/j.jretconser.2021.102478
- Liu, Z., Li, J., Wang, X., & Guo, Y. (2023). How search and evaluation cues influence consumers' continuous watching and purchase intentions: An investigation of live-stream shopping from an information foraging perspective. *Journal of Business Research*, 168, 114233. https://doi.org/10.1016/j.jbusres.2023.114233
- 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. https://doi.org/10.1016/j.jbusres.2022.04.013
- Lu, B., & Chen, Z. (2021). Live streaming commerce and consumers' purchase intention: An uncertainty reduction perspective. *Information & Management*, 58(7), 103509. https://doi.org/10.1016/j.im.2021.103509
- Luo, X., Cheah, J. H., Hollebeek, L. D., & Lim, X. J. (2024). Boosting customers' impulsive buying tendency in livestreaming commerce: The role of customer engagement and deal proneness. *Journal of Retailing and Consumer Services*, 77, 103644. https://doi.org/10.1016/j.jretconser.2023.103644
- Lv, X., Zhang, R., & Su, Y. (2022). Exploring how live streaming affects immediate buying behavior and continuous watching intention: A multigroup analysis. *Journal of Travel & Tourism Marketing*, 39(1), 109-135. https://doi.org/10.1080/10548408.2022.2052227
- Ma, X., Zou, X., & Lv, J. (2022). Why do consumers hesitate to purchase in live streaming? A perspective of interaction between participants. *Electronic Commerce Research and Applications*, 55, 101193. https://doi.org/10.1016/j.elerap.2022.101193
- Ma, Y. (2021). Elucidating determinants of customer satisfaction with live-stream shopping: An extension of the information systems success model. *Telematics and Informatics*, 65, 101707. https://doi.org/10.1016/j.tele.2021.101707
- McCay-Peet, L., & Toms, E. G. (2015). Investigating serendipity:

How it unfolds and what may influence it. *Journal of the Association for Information Science and Technology*, 66(7), 1463-1476. https://doi.org/10.1002/asi.23273

- Mehrabian, A. (1974). An approach to environmental psychology. Massachusetts Institute of Technology.
- 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. https://doi.org/10.1108/IJWIS-02-2021-0012
- Niu, W., Huang, L., & Chen, M. (2021). Spanning from diagnosticity to serendipity: An empirical investigation of consumer responses to product presentation. *International Journal of Information Management*, 60, 102362. https://doi.org/10.1016/j.ijinfomgt.2021.102362
- Palazon, M., & Delgado-Ballester, E. (2011). The expected benefit as determinant of deal prone consumers' response to sales promotions. *Journal of Retailing and Consumer Services*, 18(6), 542-547.

https://doi.org/10.1016/j.jretconser.2011.07.004

- Park, H. J., & Lin, L. M. (2020). The effects of match-ups on the consumer attitudes toward Internet celebrities and their live streaming contents in the context of product endorsement. *Journal of Retailing and Consumer Services*, 52, 101934. https://doi.org/10.1016/j.jretconser.2019.101934
- Peng, C., & Kim, Y. G. (2014). Application of the stimuliorganism-response (SOR) framework to online shopping behavior. *Journal of Internet Commerce*, 13(3-4), 159-176. https://doi.org/10.1080/15332861.2014.944437
- Powell, L., Richmond, V. P., & Williams, G. C. (2011). Social networking and political campaigns: Perceptions of candidates as interpersonal constructs. *North American Journal of Psychology*, 13(2), 331-342.
- Rook, D. W. (1987). The buying impulse. Journal of Consumer Research, 14(2), 189-199. https://doi.org/10.1086/209105
- Rubin, A. M., Perse, E. M., & Powell, R. A. (1985). Loneliness, parasocial interaction, and local television news viewing. *Human communication research*, 12(2), 155-180. https://doi.org/10.1111/j.1468-2958.1985.tb00071.x
- Statista. (n.d.a). Livestreaming commerce sales in the U.S. between 2022 and 2026. Statista. Retrieved October 3, 2024, from U.S. live e-commerce sales 2022-2026 | Statista
- Statista. (n.d.b). Number of live-commerce service users in China from 2020 to 2023. Statista. Retrieved October 3, 2024, from China: number of live-commerce users 2023 | Statista
- Statista. (n.d.c). Market size of live commerce in South Korea in 2020, with a forecast from 2021 to 2023. Statista. Retrieved October 3, 2024 from South Korea: live commerce market size 2020 | Statista
- Sun, T., Zhang, M., & Mei, Q. (2013). Unexpected relevance: An empirical study of serendipity in retweets. *In Proceedings of the International AAAI Conference on Web and Social Media* (Vol. 7, No. 1, pp. 592-601).
- Sun, Y., Shao, X., Li, X., Guo, Y., & Nie, K. (2019). How live streaming influences purchase intentions in social commerce:

An IT affordance perspective. *Electronic Commerce Research* and Applications, 37, 100886. https://doi.org/10.1016/j.elerap.2019.100886

- Verhagen, T., & Van Dolen, W. (2011). The influence of online store beliefs on consumer online impulse buying: A model and empirical application. *Information & Management*, 48(8), 320-327. https://doi.org/10.1016/j.im.2011.08.001
- Vieira, V. A. (2013). Stimuli-organism-response framework: A meta-analytic review in the store environment. *Journal of Business Research*, 66(9), 1420-1426. https://doi.org/10.1016/j.jbusres.2012.05.009
- Vohs, K. D., Baumeister, R. F., Schmeichel, B. J., Twenge, J. M., Nelson, N. M., & Tice, D. M. (2018). Making choices impairs subsequent self-control: A limited-resource account of decision making, self-regulation, and active initiative. In *Self-regulation* and self-control (pp. 45-77). Routledge.
- Wang, X., & Wu, D. (2019). Understanding user engagement mechanisms on a live streaming platform. In HCI in Business, Government and Organizations. *Information Systems and Analytics: 6th International Conference*. HCIBGO 2019, Held as Part of the 21st HCI International Conference, HCII 2019, Orlando, FL, USA, July 26-31, 2019, Proceedings, Part II 21 (pp. 266-275). Springer International Publishing.
- Wongkitrungrueng, A., & Assarut, N. (2020). The role of live streaming in building consumer trust and engagement with social commerce sellers. *Journal of Business Research*, 117, 543-556. https://doi.org/10.1016/j.jbusres.2018.08.032
- Xia, Y. X., Chae, S. W., & Xiang, Y. C. (2024). How social and media cues induce live streaming impulse buying? SOR model perspective. *Frontiers in Psychology*, 15, 1379992. https://doi.org/10.3389/fpsyg.2024.1379992
- Xu, X., Wu, J. H., & Li, Q. (2020). What drives consumer shopping behavior in live streaming commerce? *Journal of Electronic Commerce Research*, 21(3), 144-167.
- Zhang, H., Lu, Y., Gupta, S., & Zhao, L. (2014). What motivates customers to participate in social commerce? The impact of technological environments and virtual customer experiences. *Information & Management*, 51(8), 1017-1030. https://doi.org/10.1016/j.im.2014.07.005
- Zhang, M., Liu, Y., Wang, Y., & Zhao, L. (2022). How to retain customers: Understanding the role of trust in live streaming commerce with a socio-technical perspective. *Computers in Human Behavior*, 127, 107052. https://doi.org/10.1016/j.chb.2021.107052
- Zhang, M., Sun, L., Qin, F., & Wang, G. A. (2021). E-service quality on live streaming platforms: Swift quanxi perspective. *Journal of Services Marketing*, 35(3), 312-324. https://doi.org/10.1108/JSM-01-2020-0009
- 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. https://doi.org/10.1080/10447318.2022.2076773