International Journal of Applied Economics, Finance and Accounting
ISSN 2577-767X
Vol. 18, No. 1, pp. 168-179
2024
DOI: 10.33094/ijaefa.v18i1.1338

Beyond the screen: How affection drives impulsive purchases in livestreaming e-commerce

Yuanyuan Dong[1]
Arun Kumar Tarofder[2*]

[1,2]*Graduate School of Management, Management and Science University, Selangor Malaysia.*
[1]*Email: yyuandong2023@163.com*
[2]*Email: arun_kumar@msu.edu.my*

Keywords:
Affective experiences
Customer behavior
Impulsive buying behavior
Live streaming platforms
Marketing strategies.

JEL Classification:
D12; L86; M00.

Received: *5 September 2023*
Revised: *16 October 2023*
Accepted: *3 January 2024*
Published: *12 January 2024*
(Corresponding Author)*

Abstract

The present study aims to examine the processes by which various qualities of live-streaming platforms impact customers impulsive buying behavior. The study primarily focuses on the influence of product, shopping environment, and audience involvement on customer behavior. In order to accomplish this objective, a structural equation model was utilized, and a total of 318 survey responses were analyzed to support our theoretical framework and assumptions. The results of our study indicate that individuals who feel increased levels of pleasure and arousal when engaging in live streaming are more prone to engaging in impulsive purchasing behavior. Furthermore, our research reveals that several external elements, like the level of promotional intensity, features of streamers, and the level of activity in live rooms, significantly influence customers' emotional responses. These affective experiences play a vital role as internal processes through which external cues influence consumers' inclinations towards engaging in impulsive buying behavior. The findings of this study have great importance for businesses and live streamers seeking to improve their marketing techniques and cultivate more immersive live shopping experiences. By comprehending the underlying factors that drive consumer impulse purchasing within the live streaming context, enterprises may customize their product offers, enhance the shopping experience, and augment audience interaction in order to optimize their sales potential. The present study offers valuable insights that may guide marketing decisions and tactics within the ever-changing realm of live streaming, therefore facilitating the success of enterprises in this expanding sector.

Funding: This study received no specific financial support.
Institutional Review Board Statement: The Ethical Committee of the Graduate School of Management/Management and Science University, Malaysia has granted approval for this study on 11 March 2023 (Ref. No. EA-L1-01-GSM-2023-05-0001).
Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.
Data Availability Statement: The corresponding author may provide study data upon reasonable request.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: Finished data collecting and modified the article, created a questionnaire, collected data, and analysed and discussed it, Y.D. and A.K.T. Both authors have read and agreed to the published version of the manuscript.

1. Introduction

Live streaming, a dynamic force that has surged to prominence in recent years, is reshaping the way we shop and engage online. Imagine a world where you can explore products, chat with the creators in real time, and make purchases—all within the same digital space. This isn't just the future; it's the present reality of live streamings' impact on consumer behavior (Jahng, Jain, & Ramamurthy, 2007; Khoi, Le, & Dong, 2023). But how does this live interaction influence our decisions and attitudes? Su (2019) dives deep into the psychology of live streaming, uncovering the factors that drive our engagement. It's a journey through perceived ease of use, perceived usefulness, and the thrill of the experience, social connection, and immersive adventures. Cai

and Wohn (2019) reveal the fusion of e-commence and live social interaction, while Sun, Shao, Li, Guo, and Nie (2019) illuminate the power of Information Technology in shaping our social commerce experiences. Yet, in this rapidly evolving landscape, there's a story that's often overlooked—the rise of "nüzhubo" (Chinese for 'female casters') on platforms like Douyu, as explored by Zhang and Hjorth (2019). Johnson (2019) takes us on a global tour of economic and inclusion opportunities brought forth by live streaming, offering a fresh perspective. How do internet celebrities impact our choices when we're watching live streamers? Wang, Zhao, and Ji (2022) unpack this phenomenon, revealing the subtle psychology behind the scenes. Deng, Deng, Chen, Liang, and Deng (2021) venture into the realm of TikTok, where live streaming meets e-commerce, potentially transforming rural communities. Meanwhile, Luo, Cheng, Zhou, Yu, and Lin (2021) decode the persuasive power of the host's language styles, linked directly to product sales. Fast forward to Lee (2021), and his insightful analysis of user satisfaction in the world of live commerce, based on real experiences from individuals in their 20s and 30s. Lin, Yao, and Chen (2021) explore the emotional roller-coaster of live streaming and uncover the hidden influence of emotions in interactive world commerce.

While the existing literature offers numerous studies on live streaming and purchase intention, few have explored the concept of impulsive purchasing within live streaming contexts. According to earlier research (Lim, Lee, & Kim, 2017; Rook, 1987), impulsive purchasing involves unplanned and sudden purchases influenced by environmental stimuli. Past studies have primarily focused on how website design can induce impulsive buying through emotional responses (Gong, Ye, Liu, & Wu, 2020; Zheng, Men, Yang, & Gong, 2019). However, stimuli can also originate from products, shopping environments, and companionship. Additionally, research has identified website design, promotional tactics, streamer characteristics, and the influence of other consumers in live streaming as significant factors in stimulating impulsive buying (Todd & Melancon, 2018; Wang, Lee, & Lee, 2018; Zhou, Zhou, Ding, & Wang, 2019). Nevertheless, comprehensive empirical research is lacking that examines how these factors collectively impact consumers' impulsive purchasing during live streaming sessions.

This study fills in a gap in the research by looking at stimulus-organism-response (SOR) paradigm, the idea of emotion-driven impulsive purchasing, and how situational factors during live streaming affect people's impulsive purchasing behavior. This study examines product attributes, retail settings, and audience involvement to explain impulsive purchases. Surveys collect data, whereas structural equation modelling analyses and validates ideas. The goal is to help customers and marketers understand live streaming e-commerce and impulse buying. This study's succeeding parts follow this format: To support Part 2's arguments, we shall study the relevant scholarly literature in this part. Also, in Section 3, we will explore and suggest additional hypotheses related to the research issue. Section 4 will explain the technique and present the outcomes. In Section 5, the research will discuss its theoretical contributions, consequences, and limits.

2. Literature Review

2.1. Live Streaming

Consumers previously received information in traditional retail settings primarily through static media like text and images, but live streaming has revolutionized this process (Sun et al., 2019). This transformation is characterized by enhanced streamer-viewer interaction, real-time media recording, and broadcasting capabilities (Chen, 2021). The primary actors in this ecosystem now comprise viewers, streamers, and platforms. Real-time interactivity and scrolling danmu let viewers actively participate and reward streamers for their valuable content (Kang, Lu, Guo, & Li, 2021).

According to Zhang, Wang, and Zhang (2021), the use of live streaming platforms that enable real-time interactions has been found to cultivate a heightened sense of presence among users. Streamers employ a range of tactics, including but not limited to reactivity, humour, and inspiration, to engage and capture their viewers (Kang, 2024; Liu, Sun, & Lee, 2021). As a result, viewers get to know the streamer better and develop closer bonds with them. Furthermore, streamers fulfill viewers' psychological needs for self-expression by expressing themselves vicariously and synchronously, particularly in electronic gaming and live sports streaming contexts (Li & Guo, 2021; Liu & Shrum, 2002). Platforms and products can capitalize on the affinity and intimacy developed by live streaming users (Wang, 2020).

Cai and Wohn (2019) propose live streaming commerce, which combines e-commerce with real-time social engagement via live feeds. In their study, Guo, Hu, Lu, and Ma (2021) conducted a survey involving 422 customers who engaged in live streaming commerce on Taobao Live. The objective of the study was to examine the various factors that influence the success of live streaming commerce. The researchers specifically looked into the connections between consumer trust in broadcasters, community members, and products, consumer engagement, and the moderating role of mindfulness, as put forth by Gao, Xu, Tayyab, and Li (2021). According to a study by Liao, Chen, Qi, Li, and Yu (2023), the competence of steamers is a key factor in moderating the effects of their interaction style on viewers' immersion and parasocial interactions. Ultimately, these factors have an influence on viewers' buying intentions in the context of live streaming commerce. Several noteworthy contributions in this particular subject have been made by Zhu and Liu (2021);Zhang, Liu, Wang, and Zhao (2022);Wang, Luo, Hua, and Benitez (2022); and Ho, Liu, and Chen (2022).

2.2. Impulse Purchasing

Impulse purchase represents an unplanned shopping behavior triggered by specific stimuli during the shopping process (Zhou et al., 2019). Typically, there are four categories of impulse purchases: Pure Impulse Purchase, characterized by deviating from the usual buying pattern; Reminder Purchase, when consumers realize a need upon seeing a product; Suggestive Purchase, where consumers envision a need upon encountering a product; and Planned Impulse Purchase, when consumers spontaneously buy due to promotions like discounts (Stern, 1962). The common thread among these categories is their spontaneous nature, where consumers don't intend to purchase a product until they receive a relevant stimulus (Parboteeah, Valacich, & Wells, 2009). The stimulus received during shopping serves as the catalyst for impulsive buying.

Scholars have mostly used environmental psychology's stimulus-organism-response (SOR) model to study impulsive purchase (Liu, Li, & Hu, 2013). Here, "Organisation" refers to psychological changes following stimulation, while "response" alludes to impulsive purchases (Khalifa & Shen, 2012). Prior research has underscored the significance of emotional shifts as catalysts for impulsive consumer purchases (Chan, Cheung, & Lee, 2017). Impulse buying typically requires minimal cognitive effort (Khalifa & Shen, 2012). Weinberg and Gottwald (1982) suggested that impulse buying arises from the activation of consumer emotions, often circumventing cognitive decision processes. In shopping situations, consumer emotions primarily encompass pleasure and arousal (Khalifa & Shen, 2012). Pleasure denotes the extent of positive emotions, like happiness, experienced during shopping (Parboteeah et al., 2009), while arousal spans sensory states ranging from excitement and stimulation to fatigue and boredom, all encompassed within it. High pleasure and arousal lead to impulsive purchases (Iyer, Blut, Xiao, & Grewal, 2020).

Emotion-driven consumer impulse purchase theory has received extensive attention in prior studies. For instance, Khalifa and Shen (2012) used this idea to examine how the design of online shopping systems affects impulsive buying. In e-commerce contexts, Parboteeah et al. (2009) found that environmental cues indirectly influence impulse purchases via their effects on consumers' emotional states. Building upon this discourse, this study utilizes the emotion-driven theory of consumer impulse buying to construct the theoretical framework, considering consumers' emotional state as a factor that influences their intention to engage in impulse purchases (Figure 1).

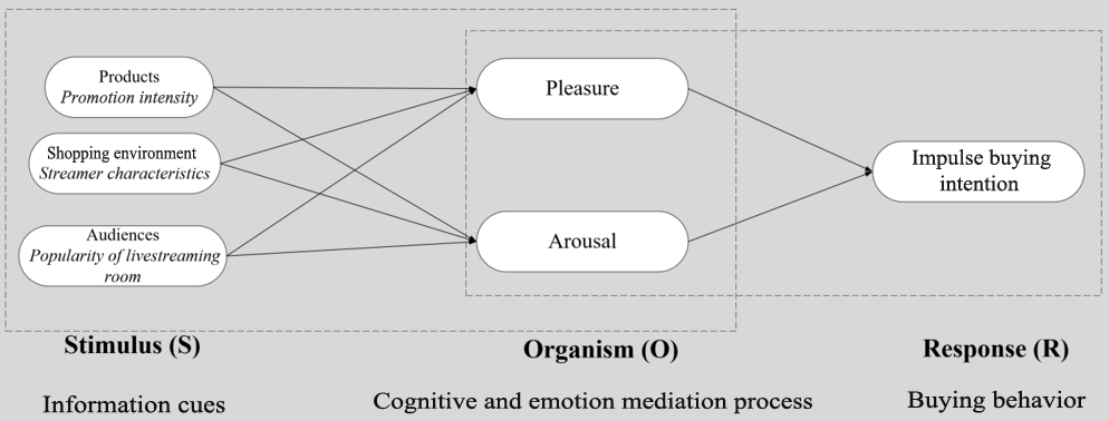

Figure 1. Theoretical framework.

2.3. External Stimuli

The SOR model posits that external stimuli play a pivotal role in shaping consumer decisions. Past research on impulsive buying, spanning various purchase contexts like online (e.g., mobile shopping) and offline (e.g., in-store shopping), has identified stimuli tied to products, encompassing factors such as product presentation, pricing, and promotions. Additionally, stimuli linked to the shopping environment involve considerations like website and app design, including factors like user-friendliness, visual appeal, and portability (Parsad, Prashar, Vijay, & Sahay, 2019). Furthermore, stimuli related to companionship during shopping, such as the influence of family or friends, have also been examined in previous studies (Lin & Lo, 2016; Xu & Huang, 2014).

Live e-commerce stimuli are similar to online and offline buying (Gong et al., 2020). Various promotions, including time-limited discounts, coupons, and "buy one, get one free" offers, effectively capture consumers' attention during live streams. The attributes of the streamers themselves impact consumer psychology (Xu, Wu, & Li, 2020). Live streaming platforms uniquely foster impulsive purchases, with heightened levels of activity driving audience engagement. As consumers observe their peers, this can influence their own decisions and trigger herd behavior (Kuan, Zhong, & Chau, 2014). Live e-commerce blurs the distinction between online and offline shopping, facilitating collective consumer behavior.

In the context of live-streaming e-commerce scenarios, previous research has mainly focused on the perspective of human-computer interaction (Lim et al., 2017; Rook, 1987). It has been discussed how the

design of live-streaming websites can lead to impulsive buying behavior by eliciting emotional responses from consumers (Gong et al., 2020). Piron, in his research, pointed out that stimuli can come from the products themselves, the shopping environment, and the people shopping together (Lv, Yao, Wang, Wang, & Yu, 2022; Piron, 1991). Additionally, research has found that, apart from website design, promotional strategies, characteristics of the host, and the influence of other consumers in the live stream room can also be significant stimuli for impulsive buying behavior (Huo, Wang, Sadiq, & Pang, 2023; Zhaoxing, Lee, & Lee, 2018). What sets this study apart from previous research is that it comprehensively examines how all these factors collectively influence impulsive buying behavior among consumers in live-streaming rooms.

This study, guided by the SOR model and grounded in impulse purchase theory with emotion as the primary factor, utilizes Piron's definition to examine three dimensions: goods, shopping environment, and audience (Piron, 1991). The study posits that the promotional intensity (goods), characteristics of the streamer (shopping environment), and level of activity in the live-streaming room (audience) within the context of live streaming will impact consumers' emotional responses (pleasure and arousal), which in turn lead to impulsive shopping.

3. Research Hypotheses

3.1. Impact of Emotional Experience

Consumers make purchasing decisions primarily through two channels, according to Iyer et al. (2020): rational thinking and emotional experience (Consoli, 2009; Park & Park, 2015; Vihari, Sinha, Tyagi, & Mittal, 2022). Consumers may experience an increase in their sense of arousal and pleasure when stimulus factors are at play (Park & Forney, 2011). This heightened state prompts them to seek self-reward, and when this desire surpasses the threshold of rational thought, it leads to the formation of impulsive purchase intentions (Zafar et al., 2021). Iyer et al. (2020) study provided empirical evidence in support of the idea that possible affect has a positive influence on impulsive purchase intention. Moreover, the researchers discovered that customers are more likely to make impulsive purchases when they feel high levels of positive emotion. According to Li, Wang, Lv, and Li (2021), when consumers experience heightened arousal and a dominant sense of pleasure, they tend to exhibit a positive attitude, overestimate their demands and economic capabilities, and diminish the intensity of rational thinking. Consequently, consumers are more susceptible to engaging in impulsive buying behavior. Hence, the favorable emotional reactions of consumers, specifically their heightened sense of pleasure and arousal, have a positive impact on their inclination towards impulsive buying. Therefore, the subsequent hypothesis is posited:

H_1: Consumer-perceived pleasure positively influences impulsive purchase intention.

H_2: Consumer-perceived arousal positively influences impulsive purchase intention.

3.2. Impact of Live Streamers

According to Deng et al. (2021), consumer trust theory posits that trust plays a crucial role in mitigating customers' apprehensions pertaining to risk and uncertainty. When there is a lack of trust in the streamer, consumers may experience skepticism and ambiguity regarding the products endorsed and information disseminated by the streamer (Tian, Chen, Zhang, Wang, & Zhang, 2023). According to the intimacy theory proposed by Fietkiewicz, Hamari, Törhönen, and Zimmer (2021), it is posited that the perceived intimacy established by live streamers enhances online interaction with viewers. This study aims to use the stimulus-organism-response model, which is based on attachment and flow theories (Li & Peng, 2021), to look at how trustworthiness, expertise, and attractiveness of the live streamer and the live scene (telepresence, instant feedback, interactivity, entertainment) affects users' desire to give gifts. The study also considers the mediating effects of emotional attachment and flow experience (Chua, Ingram, & Morris, 2008; Xiang, Cao, Qiao, & Li, 2023). Thus, the following hypothesis is also proposed:

H_{3a}: Trustworthiness positively affects consumers' perceived pleasure.

H_{3b}: Trustworthiness positively affects consumers' perceived arousal.

Streamers' expertise has a favorable moderating influence on the relationship between their interaction orientation and viewers' immersion and parasocial interactions (Liao et al., 2023). Streamer usually provides a lot of professionalism about the goods he or she recommends. Professional streamers are more efficient and successful at transmitting information, and customers assume they can acquire more product information from them. According to the technology acceptance model, if the streamer is helpful, consumers are more likely to like him or her (Hu & Chaudhry, 2020) and more likely to participate in the live broadcast (Sun et al., 2019). If the streamer's knowledge is weak, customers will consider the live broadcast a waste of time and react negatively, leaving the broadcast (Hu & Chaudhry, 2020). Therefore, the following hypothesis is also proposed:

H_{4a}: Streamer expertise in live streaming positively affects consumers' perceived pleasure.

H_{4b}: Streamer expertise in live streaming positively affects consumers' perceived arousal.

Attractiveness pertains to a streamer's ability to capture the attention of consumers. Key elements like their appearance, physique, voice, and skills play pivotal roles in determining a streamer's allure (Pei, Wang, Wang, & Wang, 2023). As per the attention theory, the more captivating an information source is, the greater

the likelihood that consumers will invest more attention in it, probing its intrinsic attributes (Jodén & Strandell, 2022). Strengthening a streamer's appeal as an information source heightens consumers' curiosity and their desire to learn about the promoted product, thereby enhancing the emotional experience (Johnson & Woodcock, 2019). Thus, the increased attractiveness of a streamer increases the audience's application of their charm, beauty and humour (Heo, Kim, & Yan, 2020). A study by Liao et al. (2023) found that the more attractive a streamer is, the more viewers relish their live broadcasts. Therefore, the following hypothesis is posited:

H_{5a}: Attractiveness positively affects consumers' perceived pleasure.

H_{5b}: Attractiveness positively affects consumers' perceived arousal.

Interactivity allows users to discuss and share information with the streamer, creating an emotional connection (Foster, McLelland, & Wallace, 2022; Mutum & Ghazali, 2011). In live streaming, consumers can actively interact with streamers by posting pop-ups and messages, and streamers can also actively interact with consumers by throwing topics and holding activities. According to social interaction theory, high interactivity can increase consumers' engagement (Li & Peng, 2021), bring the emotion between the two interacting parties closer, and enhance consumers' emotional experience (Li, Li, & Cai, 2021). Thus, customers are more likely to be engaged and have a favorable emotional experience with highly interactive live streaming. Therefore, the following hypothesis is also proposed:

H6a: Interactivity positively affects consumers' perceived pleasure.

H6b: Interactivity positively affects consumer perceptions of arousal.

3.3. Impact of Promotion

Large promotions may impact customers' buying choices and lead to impulsive buys (Andani & Wahyono, 2018). In live e-commerce, streamers provide users with discounts for promotions while suggesting or selling items. The larger the marketing campaign, the greater the benefits for consumers. Higher potential benefits may boost consumer happiness (Bhatti, 2018). Peng, Zhang, Wang, and Liang (2019) found that the higher the price discount, the stronger the perceived pleasure and perceived arousal of consumers in their study of online group purchases. Therefore, the following hypothesis is proposed:

H_{7a}: Promotion positively affects consumers' perceived pleasure.

H_{7b}: Promotion positively affects consumers' perceived arousal.

3.4. Impact of Live Room Activity

Live room activity pertains to the degree of engagement among viewers participating in a live broadcast, encompassing both those observing the broadcast and those making purchases during it (Pornpitakpan, 2004). A higher level of activity in a live stream signifies greater viewer and consumer involvement. Increased co-viewing in a live room enhances the likelihood of consumers forming a favorable impression of the live room (Rahma & Ridanasti, 2023). Furthermore, Wen, Tan, and Chang (2009) posit that consumers, when part of a group sharing similar psychological traits, tend to be influenced by group behavior and characteristics. When attempting to achieve their hedonic goals, they have a tendency to imitate the behaviors of other customers in the studio. Conversely, when live room activity is low, consumers may rely more on their rational judgment to make decisions, questioning the streamer's competence and credibility, leading to negative emotional experiences like skepticism and unease (Li, Wang, & Liu, 2020). Therefore, the following hypothesis is proposed:

H_{8a}: The activity level around live room during the live streaming positively affects consumer perceived pleasure.

H_{8b}: The activity level around live room during the live streaming positively affects consumers' perceived arousal.

4. Data and Methodology

4.1. Questionnaire and Data Collection

This study involved the recruitment of 20 students hailing from various provinces and cities, primarily focusing on Liaoning Province, Jilin Province, and Heilongjiang Province. They were tasked with locally distributing and collecting questionnaires between June 2 and June 15, 2023. In total, 365 questionnaires were handed out, but only 318 were deemed valid, resulting in an efficiency rate of 87.18% after excluding incomplete or improperly filled forms and those lacking live shopping experience. To ensure data integrity, participants were required to possess live e-commerce shopping experience during the questionnaire distribution. As seen in Table 1, all respondents had experience with live streaming shopping, with 69.9% shopping occasionally and 30.1% shopping frequently. Additionally, over 50% of participants were regular viewers, and the majority had over three years of Internet use experience, demonstrating familiarity with live streaming and online activities. The sample encompassed diverse demographics in terms of gender, income, age, and education, providing a comprehensive representation of Internet users and enhancing the quality of questionnaire responses.

Table 1. Descriptive statistics.

Type	Classification	Frequency	Percent
Gender	Male	123	38.7%
	Female	195	61.3%
Age	Age 18-25	92	28.9%
	Age 26-30	82	26.7%
	Age 31-40	110	34.6%
	Age 41-50	22	7.0%
	Age 51-60	7	2.2%
	Over 60	2	0.5%
Income (Monthly)	Student (Without income)	28	8.9%
	3000 RMB and below	27	8.4%
	3000-6000 RMB	79	24.8%
	6000-9000 RMB	106	33.3%
	9000 RMB or more	78	24.6%
Education	High school and below	26	8.2%
	Undergraduate	260	81.9%
	Master	25	8.0%
	Ph.D.	6	1.9%
Internet age	Less than 3 years	8	2.4%
	3-5 years	56	17.6%
	6-8 years	85	26.7%
	More than 8 years	169	53.3%
Watching frequency (Per week)	Less than 1 day	52	16.3%
	1-3 days	107	33.6%
	4-6 days	150	47.2%
	Every day	9	2.9%
Shopping during live streaming	Sometimes	222	69.9%
	Often	96	30.1%

4.2. Measurement

The formal measurement component was segmented into several dimensions, namely "emotional experience," "trustworthiness," "streamer expertise," "attractiveness," "interactivity," "promotion," and "live room activity." These dimensions were assessed using a seven-point Likert scale, with scores ranging from 1 to 7. A score of 1 indicated a strong disagreement, while a score of 7 indicated a strong agreement. In order to assess the construct items in this study, the survey utilized items that were modified from existing literature to align with the specific context of live streaming. Three items related to emotional experience were adopted from the scale developed by Koo and Ju (2010), while the measurement of impulsive purchase intention was derived from the studies conducted by Drossos, Kokkinaki, Giaglis, and Fouskas (2014) and Trivedi, Kasilingam, Arora, and Soni (2022). Furthermore, the measurement of streamer attractiveness and streamer competence was conducted using a set of three items as outlined in the study by Zhou and Lou (2023), while interactivity was assessed using a set of three items as described by Chen and Lin (2018). The three items for promotion came from measures found in a previous study by Andani and Wahyono (2018). Additionally, the assessment of live room activity was evaluated using three items as outlined in the studies conducted by Wen et al. (2009) and Munasinghe et al. (2019). The contents of the scale are displayed in Table 2.

4.3. Common Method Bias

The presence of common technique biases is a significant and unavoidable concern. Consequently, the present study implemented various strategies to mitigate the potential influence of common technique bias (Malhotra, Kim, & Patil, 2006). Initial anonymization of participants' responses took place. Moreover, the questionnaire was designed in a manner that did not position the independent variable as the first item. The Harman one-factor test was employed to examine the potential presence of common method bias. A one-factor structural equation model was created, wherein all the measures of the construct notion were loaded onto a single factor. The model's goodness of fit was afterwards assessed. The findings indicate that the model exhibited a poor fit, as evidenced by X^2= 2712.954, *df* = 424, *RMSEA (Root Mean Square Error of Approximation)* = 0.125, *NFI (Normed Fit Index)* = 0.615, *CFI (Comparative Fit Index)* = 0.633, and *IFI (Incremental Fit Index)* = 0.634. These results suggest that there was a limited presence of common method bias in the study.

Table 2. Content of the scale.

Factors	Items
Trustworthiness	1. The content of the live streaming is trustworthy.
	2. The streamer recommends trustworthy items.
	3. I have confidence in the live streaming streamers I watch.
Expertise	1. The streamer I'm watching possesses professional skills.
	2. The streamer I'm watching has unique and specialized skills.
	3. The streamer I'm watching possesses professional knowledge.
Attractiveness	1. The appearance of the streamer I'm watching attracts me.
	2. The streamer I'm watching is very charming.
	3. The streamer I'm watching is humorous and interesting.
Interactivity	1. The streamers I watch and I have a good interactive relationship.
	2. The streamers I watch make me feel actively engaged.
	3. The content of the live streams by the streamers I watch captivates my interest.
Promotion intensity	1. The promotional intensity for the products is quite strong.
	2. The product prices are relatively low.
	3. Purchasing products often comes with complimentary small gifts.
Activity of live streaming room	1. There are many audiences in the live streaming room.
	2. There are numerous consumers purchasing products in the live streaming room.
	3. Consumers engage in enthusiastic and frequent communication within the live streaming room.
Perceived pleasure	1. Watching the live stream of this streamer makes me feel joyful.
	2. Watching the live stream of this streamer makes me feel happy.
	3. Watching the live stream of this streamer makes me feel content.
Perceived arousal	1. Watching the live stream of this streamer makes me feel drowsy.
	2. Watching the live stream of this streamer makes me feel excited.
	3. Watching the live stream of this streamer makes me feel lethargic.
Impulsive purchasing intention	1. The streamer's recommendation makes me want the product right away.
	2. When streamers recommend products, I feel compelled to buy them.
	3. As soon as I see the streamer live-streaming and recommending a product, I feel like it's exactly what I want.
	4. I didn't have a plan to buy before watching the live stream, but after seeing the streamer's product recommendation during the live stream, I really want to make the purchase.

4.4. Reliability and Validity Testing

Structural Equation Modelling (SEM) is a sophisticated statistical method for analysing and validating complicated interactions between observable and latent variables. SEM may estimate numerous connected equations at once, making it useful for studying complicated causal interactions. It combines component analysis with multiple regression and is beneficial for inferring latent entities from measurable data. Due to its capacity to test theoretical models and analyse complex variable connections, SEM is widely used in social sciences, economics, psychology, and management.

The process of constructing and subsequently running SEM was performed using the AMOS (Analysis of Moment Structures) software. Prior to conducting hypothesis testing on the study model, an assessment was conducted to examine the reliability and validity of the items within the scale. Three test criteria were employed to assess the reliability and validity of the study: firstly, in terms of reliability, it was required that the Composite Reliability (C.R.) and Cronbach's α coefficients for each variable exceed 0.7. Moreover, it is recommended that the AVE of a construct should exceed a threshold of the 0.5. Furthermore, the assessment of discriminant validity was conducted in order to ascertain the distinctiveness of the conceptions.

Table 3. Reliability and validity test.

Factors	Items	Cronbach's α	C.R.	AVE
Trustworthiness	3	0.866	0.889	0.634
Expertise	3	0.781	0.877	0.695
Attractiveness	3	0.828	0.895	0.735
Interactivity	3	0.764	0.877	0.691
Promotion intensity	3	0.775	0.868	0.688
Activity of live streaming room	3	0.827	0.898	0.741
Perceived pleasure	3	0.831	0.895	0.739
Perceived arousal	3	0.835	0.891	0.744
Impulsive purchasing intention	4	0.873	0.921	0.719

Table 3 displays that Cronbach's α scores and CR values for each scale exceeded the 0.7 standard requirement, while AVE values exceeded the minimum 0.5 requirement. This indicates strong convergent validity among the constructs. In addition, Table 4 shows that the square root of the AVE values for each construct was higher than the correlation coefficient with other constructs. This shows that the discriminant validity was strong. Overall, the findings in Tables 3 and 4 demonstrate the reliability and validity of the constructs, supporting their suitability for empirical analysis of their relationships.

Table 4. AVE values and correlation coefficients.

Factors	1	2	3	4	5	6	7	8	9
1	0.801								
2	0.711	0.841							
3	0.372	0.273	0.871						
4	0.685	0.622	0.420	0.841					
5	0.401	0.361	0.242	0.392	0.842				
6	0.474	0.439	0.344	0.487	0.419	0.862			
7	0.612	0.516	0.490	0.573	0.398	0.446	0.861		
8	0.536	0.464	0.429	0.553	0.419	0.449	0.628	0.868	
9	0.462	0.376	0.381	0.487	0.316	0.3336	0.472	0.537	0.851

Note: 1= Trustworthiness; 2= Expertise; 3= Attractiveness; 4= Interactivity; 5= Promotion intensity; 6= Activity of live streaming room; 7= Perceived pleasure; 8= Perceived arousal; 9= Impulsive purchasing intention.

4.5. Hypothesis Testing

We employed the structural model to evaluate the hypotheses. Figure 2 displays the path coefficients and their respective levels of significance. Based on the outcomes of hypothesis testing, the path coefficients between perceived pleasure, perceived arousal, and impulsive purchase intention were 0.405 and 0.301. The results are significant, so H1 and H2 are supported. The path coefficients between trustworthiness, expertise, attractiveness, and interactivity of streamer characteristics and perceived pleasure are 0.286, 0.113, 0.201, and 0.217, and between perceived arousal are 0.193, 0.102, 0.153, and 0.268, indicating streamer characteristics positively impact perceived pleasure and perceived arousal. Therefore, H3~H6 are supported. Following the results, the standardized path coefficients between promotion and perceived pleasure and perceived arousal are 0.144 and 0.209, indicating promotion to positively affect perceived pleasure and perceived arousal. Thus, H7 is also supported. The path coefficients between live room activity and perceived pleasure and perceived arousal in the live streaming are 0.167 and 0.134. The results are significant, so H8 is supported.

5. Conclusions

This study examines impulsive buying in e-commerce live streams. We used questionnaires and structural equation modelling to identify consumer impulsive purchase drivers using an emotion-driven model. The study's main findings are:

First, previous studies have shown that promotion could increase emotional value's influence on purchase decisions and effectively boost consumer trust and value, encouraging cosmetics purchases (Aydinli & Bertini, 2014; Bhatti, 2018; Peng et al., 2019). Therefore, promotions play a pivotal role in stimulating impulsive purchases during live streaming. According to our findings, a streamers' compelling discount induces strong purchase impulses, making the strength of the promotion a crucial factor in impulsive purchasing decisions. Limited-time promotions, in particular, are integral to live streaming and exert significant influence on consumer impulsive purchases.

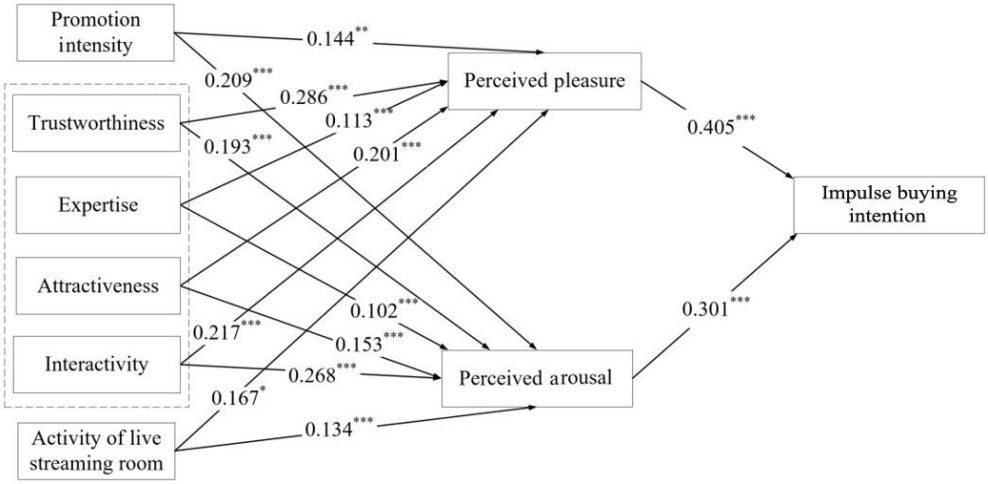

Figure 2. Path coefficients of the structural model.

Note: *shows significance at the 0.05 level, **shows significance at the 0.01 level, ***shows significance at the 0.001 level.

Secondly, streamer characteristics have a substantial impact on motivating unplanned purchases. In the virtual realm of live streaming, streamers serve as vital sources of information that profoundly affect consumer emotions, specifically perceived pleasure and arousal (Zhang, Shi, Li, Guan, & Cui, 2023). Many studies have shown that streamer interactivity (Chen & Liao, 2022; Yi Li & Peng, 2021; Ma, 2021), attractiveness (He & Jin, 2022), and expertise (Guo, Zhang, & Wang, 2022) significantly shape users' intentions and behaviors. According to our findings, credibility, professionalism, attractiveness, and high interactivity in streamers lead to heightened pleasure, focus, arousal, and, subsequently, stronger impulsive buying tendencies.

Thirdly, increased activity in live streaming rooms correlates with impulsive spending. Previous studies have shown that individual emotions (Du, Fan, & Feng, 2011; Fan, Xu, & Zhao, 2018; Sun et al., 2019) and the purchase intention of consumers (Yusof, Singh, & Razak, 2013) are influenced by others and their environment. As the viewer count in a live stream rises, the bandwagon effect becomes more pronounced, prompting consumers to make purchases (Lim, Bouchacourt, & Brown-Devlin, 2021). The lively atmosphere in live streaming rooms distinguishes live commerce from traditional e-commerce, fostering social influence among consumers. High activity levels also function as indicators of host abilities and trustworthiness, further encouraging impulsive spending. Lastly, consumers' pleasure and arousal within e-commerce live streaming rooms serve as intrinsic mechanisms driving impulsive purchases. Previous studies have shown that emotion could stimulate emotional trust and perceived emotion value, thus stimulating consumers' purchase intentions (Shang, Ma, Wang, & Gao, 2023; Wang, Zhang, Zhou, & Lai, 2019). According to our findings, strong urges to make impulsive purchases are often rooted in internal experiences of pleasure and arousal, which can also be influenced by external stimuli. Attractive promotions, exceptional hosts, and vibrant live streaming atmospheres significantly impact consumers' perceptions of pleasure, arousal, and other emotional aspects.

5.1. Implications

In practical terms, this study explores the impact of various stimulating factors in live-streaming e-commerce on consumer impulsive buying intentions. It provides insights and recommendations for both e-commerce operators and consumers, emphasizing the practical application of these findings. These insights can help live streaming platforms and streamers enhance the interactive experience, ultimately encouraging impulse purchases within a positive emotional context. From a consumer perspective, individuals should exercise rationality during live shopping experiences, especially in rooms with trustworthy, expert, attractive, and interactive streamers, where impulsive intentions are more likely.

5.2. Limitations and Future Research

However, there are limitations to this study. Firstly, consumer impulsive buying behavior is complex, and emotions may not be the sole contributing factors. Future research could investigate intermediary mechanisms related to streamer characteristics and live streaming context. Secondly, the study used cross-sectional data, which may not capture changes in impulsive buying behavior as consumers gain more shopping experience. Longitudinal data collection could provide insights into dynamic changes. Lastly, potential recall bias might impact questionnaire accuracy. Future studies could use experimental methods to validate these findings and thoroughly analyse the influence of various stimulating factors.

References

Andani, K., & Wahyono, W. (2018). Influence of sales promotion, hedonic shopping motivation and fashion involvement toward impulse buying through a positive emotion. *Management Analysis Journal*, 7(4), 448-457.

Aydinli, A., & Bertini, M. (2014). Price promotion for emotional impact. *Journal of Marketing*, 78(4), 80-96.

Bhatti, A. (2018). Sales promotion and price discount effect on consumer purchase intention with the moderating role of social media in Pakistan. *International Journal of Business Management, 3*(4), 50-58.
Cai, J., & Wohn, D. Y. (2019). *Live streaming commerce: Uses and gratifications approach to understanding Consumers' motivations*. In 52nd Annual Hawaii International Conference on System Sciences, HICSS 2019, IEEE Computer Society.
Chan, T. K., Cheung, C. M., & Lee, Z. W. (2017). The state of online impulse-buying research: A literature analysis. *Information & Management, 54*(2), 204-217.
Chen, C.-P. (2021). Digital gifting in personal brand communities of live-streaming: Fostering viewer–streamer–viewer parasocial relationships. *Journal of Marketing Communications, 27*(8), 865-880. https://doi.org/10.1080/13527266.2021.1910327
Chen, C., & Lin, Y. (2018). What drives live-stream usage intention? The perspectives of flow, entertainment, social interaction, and endorsement. *Telematics and Informatics, 35*(1), 293-303.
Chen, J., & Liao, J. (2022). Antecedents of viewers' live streaming watching: A perspective of social presence theory. *Frontiers in Psychology, 13*, 839629.
Chua, R. Y. J., Ingram, P., & Morris, M. W. (2008). From the head and the heart: Locating cognition-and affect-based trust in managers' professional networks. *Academy of Management journal, 51*(3), 436-452.
Consoli, D. (2009). Emotions that influence purchase decisions and their electronic processing. *Annales Universitatis Apulensis Series Oeconomica, 11*(2), 996-1008. https://doi.org/10.29302/oeconomica.2009.11.2.45
Deng, M., Deng, P., Chen, B., Liang, Q., & Deng, G. (2021). Research on Tik Tok platform live streaming e-commerce to help rural revitalization based on SOR model. *Academic Journal of Business & Management, 3*(6), 91-94.
Drossos, D. A., Kokkinaki, F., Giaglis, G. M., & Fouskas, K. G. (2014). The effects of product involvement and impulse buying on purchase intentions in mobile text advertising. *Electronic Commerce Research and Applications, 13*(6), 423-430.
Du, J., Fan, X., & Feng, T. (2011). Multiple emotional contagions in service encounters. *Journal of the Academy of Marketing Science, 39*, 449-466.
Fan, R., Xu, K., & Zhao, J. (2018). An agent-based model for emotion contagion and competition in online social media. *Physica A: Statistical Mechanics and its Applications, 495*, 245-259.
Fietkiewicz, K. J., Hamari, J., Törhönen, M., & Zimmer, F. (2021). *Introduction to the minitrack on streaming media in entertainment*. Paper presented at the Proceedings of the 54th Hawaii International Conference on System Sciences.
Foster, J. K., McLelland, M. A., & Wallace, L. K. (2022). Brand avatars: Impact of social interaction on consumer–brand relationships. *Journal of Research in Interactive Marketing, 16*(2), 237-258.
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.
Gong, X., Ye, Z., Liu, K., & Wu, N. (2020). The effects of live platform exterior design on sustainable impulse buying: Exploring the mechanisms of self-efficacy and psychological ownership. *Sustainability, 12*(6), 2406.
Guo, L., Hu, X., Lu, J., & Ma, L. (2021). Effects of customer trust on engagement in live streaming commerce: Mediating role of swift guanxi. *Internet Research, 31*(5), 1718-1744.
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.
He, W., & Jin, C. (2022). A study on the influence of the characteristics of key opinion leaders on consumers' purchase intention in live streaming commerce: Based on dual-systems theory. *Electronic Commerce Research*, 1-31. https://doi.org/10.1007/s10660-022-09651-8
Heo, J., Kim, Y., & Yan, J. (2020). Sustainability of live video streamer's strategies: Live streaming video platform and audience's social capital in South Korea. *Sustainability, 12*(5), 1969. https://doi.org/10.3390/su12051969
Ho, C.-I., Liu, Y., & Chen, M.-C. (2022). Factors influencing watching and purchase intentions on live streaming platforms: From a 7Ps marketing mix perspective. *Information, 13*(5), 239. https://doi.org/10.3390/info13050239
Hu, M., & Chaudhry, S. S. (2020). Enhancing consumer engagement in e-commerce live streaming via relational bonds. *Internet Research, 30*(3), 1019-1041.
Huo, C., Wang, X., Sadiq, M. W., & Pang, M. (2023). Exploring factors affecting consumer's impulse buying behavior in live-streaming shopping: An interactive research based upon SOR model. *SAGE Open, 13*(2), 21582440231172678. https://doi.org/10.1177/21582440231172678
Iyer, G. R., Blut, M., Xiao, S. H., & Grewal, D. (2020). Impulse buying: A meta-analytic review. *Journal of the Academy of Marketing Science, 48*, 384-404.
Jahng, J., Jain, H., & Ramamurthy, K. (2007). Effects of interaction richness on consumer attitudes and behavioral intentions in e-commerce: Some experimental results. *European Journal of Information Systems, 16*(3), 254-269.
Jodén, H., & Strandell, J. (2022). Building viewer engagement through interaction rituals on Twitch. tv. *Information, Communication & Society, 25*(13), 1969-1986.
Johnson, M. R. (2019). Inclusion and exclusion in the digital economy: Disability and mental health as a live streamer on Twitch. tv. *Information, Communication & Society, 22*(4), 506-520.
Johnson, M. R., & Woodcock, J. (2019). "And today's top donator is": How live streamers on Twitch. tv monetize and gamify their broadcasts. *Social Media+ Society, 5*(4), 2056305119881694.
Kang, J. M. (2024). Not just Netflix: Interventions of Korea's domestic streamers. *International Journal of Cultural Studies*, 13678779231197695. https://doi.org/10.1177/13678779231197695
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.
Khalifa, M., & Shen, N. K. (2012). System design effects on online impulse buying. *Internet Research, 22*(4), 396-425.

Khoi, N. H., Le, A. N.-H., & Dong, P. N. (2023). A moderating–mediating model of the urge to buy impulsively in social commerce live-streaming. *Electronic Commerce Research and Applications*, *60*, 101286. https://doi.org/10.1016/j.elerap.2023.101286
Koo, D.-M., & Ju, S.-H. (2010). The interactional effects of atmospherics and perceptual curiosity on emotions and online shopping intention. *Computers in Human Behavior*, *26*(3), 377-388.
Kuan, K. K., Zhong, Y., & Chau, P. Y. (2014). Informational and normative social influence in group-buying: Evidence from self-reported and EEG data. *Journal of Management Information Systems*, *30*(4), 151-178.
Lee, S. (2021). An analysis of determinants affecting satisfaction of usage of live commerce from the perspective of user, information source and platform. *The Journal of the Korea Contents Association*, *21*(3), 576-589.
Li, C., Wang, Y., Lv, X., & Li, H. (2021). To buy or not to buy? The effect of time scarcity and travel experience on tourists' impulse buying. *Annals of Tourism Research*, *86*, 103083.
Li, Y., & Guo, Y. (2021). Virtual gifting and Danmaku: What motivates people to interact in game live streaming? *Telematics and Informatics*, *62*, 101624.
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.
Li, Y., & Peng, Y. (2021). What drives gift-giving intention in live streaming? The perspectives of emotional attachment and flow experience. *International Journal of Human–Computer Interaction*, *37*(14), 1317-1329.
Li, Y., Wang, C., & Liu, J. (2020). A systematic review of literature on user behavior in video game live streaming. *International Journal of Environmental Research and Public Health*, *17*(9), 3328.
Liao, J., Chen, K., Qi, J., Li, J., & Yu, I. Y. (2023). Creating immersive and parasocial live shopping experience for viewers: The role of streamers' interactional communication style. *Journal of Research in Interactive Marketing*, *17*(1), 140-155.
Lim, H. S., Bouchacourt, L., & Brown-Devlin, N. (2021). Nonprofit organization advertising on social media: The role of personality, advertising appeals, and bandwagon effects. *Journal of Consumer Behaviour*, *20*(4), 849-861. https://doi.org/10.1002/cb.1898
Lim, S. H., Lee, S., & Kim, D. J. (2017). Is online consumers' impulsive buying beneficial for e-commerce companies? An empirical investigation of online consumers' past impulsive buying behaviors. *Information Systems Management*, *34*(1), 85-100.
Lin, S.-W., & Lo, L. Y.-S. (2016). Evoking online consumer impulse buying through virtual layout schemes. *Behaviour & Information Technology*, *35*(1), 38-56.
Lin, Y., Yao, D., & Chen, X. (2021). Happiness begets money: Emotion and engagement in live streaming. *Journal of Marketing Research*, *58*(3), 417-438.
Liu, G. H., Sun, M., & Lee, N. C. A. (2021). *How can live streamers enhance viewer engagement in eCommerce streaming?* McCarthy Mall Honolulu: University of Hawai'i at Mānoa Hamilton Library 2550.
Liu, Y., Li, H., & Hu, F. (2013). Website attributes in urging online impulse purchase: An empirical investigation on consumer perceptions. *Decision Support Systems*, *55*(3), 829-837.
Liu, Y., & Shrum, L. J. (2002). What is interactivity and is it always such a good thing? Implications of definition, person, and situation for the influence of interactivity on advertising effectiveness. *Journal of Advertising*, *31*(4), 53-64.
Luo, H., Cheng, S., Zhou, W., Yu, S., & Lin, X. (2021). A study on the impact of linguistic persuasive styles on the sales volume of live streaming products in social e-commerce environment. *Mathematics*, *9*(13), 1576.
Lv, J., Yao, W., Wang, Y., Wang, Z., & Yu, J. (2022). A game model for information dissemination in live streaming e-commerce environment. *International Journal of Communication Systems*, *35*(1), e5010. https://doi.org/10.1002/dac.5010
Ma, Y. (2021). To shop or not: Understanding Chinese consumers' live-stream shopping intentions from the perspectives of uses and gratifications, perceived network size, perceptions of digital celebrities, and shopping orientations. *Telematics and Informatics*, *59*, 101562.
Malhotra, N. K., Kim, S. S., & Patil, A. (2006). Common method variance in IS research: A comparison of alternative approaches and a reanalysis of past research. *Management Science*, *52*(12), 1865-1883.
Munasinghe, A., Bernard, D., Samarasinghe, H., Gamhewa, S., Sugathadasa, S., & Muthukumara, T. (2019). The impact of celebrity's field of expertise on consumer perception. *International Review of Management and Marketing*, *9*(2), 31-34.
Mutum, D., & Ghazali, E. (2011). Perceived online interactivity of blogs. *ACR European Advances*, *9*, 151-157.
Parboteeah, D. V., Valacich, J. S., & Wells, J. D. (2009). The influence of website characteristics on a consumer's urge to buy impulsively. *Information Systems Research*, *20*(1), 60-78.
Park, E. J., & Forney, J. C. (2011). Assessing and predicting apparel impulse buying. *Journal of Global Fashion Marketing*, *2*(1), 28-35.
Park, J.-H., & Park, J.-W. (2015). The effects of experience in the A380 duty free showcase on customer behaviors. *Journal of Air Transport Management*, *47*, 135-141.
Parsad, C., Prashar, S., Vijay, T. S., & Sahay, V. (2019). Role of in-store atmospherics and impulse buying tendency on post-purchase regret. *Journal of Business and Management*, *25*(1), 1-24.
Pei, Y., Wang, S., Wang, S., & Wang, F. (2023). Why male streamers sell. A study on the attractiveness and emotional responses in live streaming.
Peng, L., Zhang, W., Wang, X., & Liang, S. (2019). Moderating effects of time pressure on the relationship between perceived value and purchase intention in social E-commerce sales promotion: Considering the impact of product involvement. *Information & Management*, *56*(2), 317-328.
Piron, F. (1991). Defining impulse purchasing. *Advances in Consumer Research*, *18*, 509-514.
Pornpitakpan, C. (2004). The effect of celebrity endorsers' perceived credibility on product purchase intention: The case of Singaporeans. *Journal of International Consumer Marketing*, *16*(2), 55-74.

Rahma, S. A., & Ridanasti, E. (2023). he impact of marketing strategy on consumer's impulsive buying behavior on Tiktok live. *International Journal of Science, Technology & Management, 4*(2), 439-455.
Rook, D. W. (1987). The buying impulse. *Journal of Consumer Research, 14*(2), 189-199.
Shang, Q., Ma, H., Wang, C., & Gao, L. (2023). Effects of background fitting of e-commerce live streaming on consumers' purchase intentions: A cognitive-affective perspective. *Psychology Research and Behavior Management, 16*, 149-168. https://doi.org/10.2147/prbm.s393492
Stern, H. (1962). The significance of impulse buying today. *Journal of Marketing, 26*(2), 59-62.
Su, X. (2019). *An empirical study on the influencing factors of e-commerce live streaming*. 2019 International Conference on Economic Management and Model Engineering, IEEE.
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.
Tian, B., Chen, J., Zhang, J., Wang, W., & Zhang, L. (2023). Antecedents and consequences of streamer trust in livestreaming commerce. *Behavioral Sciences, 13*(4), 308. https://doi.org/10.3390/bs13040308
Todd, P. R., & Melancon, J. (2018). Gender and live-streaming: Source credibility and motivation. *Journal of Research in Interactive Marketing, 12*(1), 79-93.
Trivedi, J., Kasilingam, D., Arora, P., & Soni, S. (2022). The effect of augmented reality in mobile applications on consumers' online impulse purchase intention: The mediating role of perceived value. *Journal of Consumer Behaviour, 21*(4), 896-908. https://doi.org/10.1002/cb.2047
Vihari, N. S., Sinha, N. K., Tyagi, A., & Mittal, S. (2022). Effect of mindfulness on online impulse buying: Moderated mediation model of problematic internet use and emotional intelligence. *Frontiers in Psychology, 13*, 1012331.
Wang, D., Luo, X. R., Hua, Y., & Benitez, J. (2022). Big arena, small potatoes: A mixed-methods investigation of atmospheric cues in live-streaming e-commerce. *Decision Support Systems, 158*, 113801.
Wang, M.-Y., Zhang, P.-Z., Zhou, C.-Y., & Lai, N.-Y. (2019). Effect of emotion, expectation, and privacy on purchase intention in WeChat health product consumption: The mediating role of trust. *International Journal of Environmental Research and Public Health, 16*(20), 3861. https://doi.org/10.3390/ijerph16203861
Wang, Q., Zhao, N., & Ji, X. (2022). Reselling or agency selling? The strategic role of live streaming commerce in distribution contract selection. *Electronic Commerce Research*, 1-34. https://doi.org/10.1007/s10660-022-09581-5
Wang, S. (2020). Chinese affective platform economies: Dating, live streaming, and performative labor on Blued. *Media, Culture & Society, 42*(4), 502-520. https://doi.org/10.1177/0163443719867283
Wang, Z., Lee, S.-J., & Lee, K.-R. (2018). Factors influencing product purchase intention in Taobao live streaming shopping. *Journal of Digital Contents Society, 19*(4), 649-659.
Weinberg, P., & Gottwald, W. (1982). Impulsive consumer buying as a result of emotions. *Journal of Business Research, 10*(1), 43-57. https://doi.org/10.1016/0148-2963(82)90016-9
Wen, C., Tan, B. C., & Chang, K. T. T. (2009). *Advertising effectiveness on social network sites: An investigation of tie strength, endorser expertise and product type on consumer purchase intention*. Paper presented at the ICIS 2009 Proceedings.
Xiang, K., Cao, Y., Qiao, G., & Li, W. (2023). Glamping: An exploration of emotional energy and flow experiences in interaction rituals. *Tourism Management Perspectives, 48*, 101149. https://doi.org/10.1016/j.tmp.2023.101149
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.
Xu, Y., & Huang, J.-S. (2014). Effects of price discounts and bonus packs on online impulse buying. *Social Behavior and Personality: An International Journal, 42*(8), 1293-1302.
Yusof, J. M., Singh, G. K. B., & Razak, R. A. (2013). Purchase intention of environment-friendly automobile. *Procedia-Social and Behavioral Sciences, 85*, 400-410. https://doi.org/10.1016/j.sbspro.2013.08.369
Zafar, A. U., Qiu, J., Shahzad, M., Shen, J., Bhutto, T. A., & Irfan, M. (2021). Impulse buying in social commerce: Bundle offer, top reviews, and emotional intelligence. *Asia Pacific Journal of Marketing and Logistics, 33*(4), 945-973.
Zhang, G., & Hjorth, L. (2019). Live-streaming, games and politics of gender performance: The case of Nüzhubo in China. *Convergence, 25*(5-6), 807-825.
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.
Zhang, W., Wang, Y., & Zhang, T. (2021). Can "live streaming" really drive visitors to the destination? From the aspect of "social presence". *Sage Open, 11*(1), 21582440211006691. https://doi.org/10.1177/21582440211006691
Zhang, X., Shi, Y., Li, T. T., Guan, Y., & Cui, X. (2023). How Do Virtual AI streamers influence viewers' livestream shopping behavior? The effects of persuasive factors and the mediating role of arousal. *Information Systems Frontiers*, 1-32. https://doi.org/10.1007/s10796-023-10425-2
Zhaoxing, W., Lee, S.-J., & Lee, K.-R. (2018). Factors influencing product purchase intention in Taobao live streaming shopping. *Journal of Digital Content Society, 19*(4), 649-659.
Zheng, X., Men, J., Yang, F., & Gong, X. (2019). Understanding impulse buying in mobile commerce: An investigation into hedonic and utilitarian browsing. *International Journal of Information Management, 48*, 151-160.
Zhou, J., Zhou, J., Ding, Y., & Wang, H. (2019). The magic of danmaku: A social interaction perspective of gift sending on live streaming platforms. *Electronic Commerce Research and Applications, 34*, 100815.
Zhou, X., & Lou, C. (2023). Modeling the effects of streamer characteristics and platform affordances in livestreaming E-commerce: A mixed-methods approach. *Journal of Current Issues & Research in Advertising*, 1-28. https://doi.org/10.1080/10641734.2023.2252036
Zhu, L., & Liu, N. (2021). Game theoretic analysis of logistics service coordination in a live-streaming e-commerce system. *Electronic Commerce Research*, 1-39.