

Analysing the Influence of Celebrities on Impulsive Buying Intention through Livestreaming: The Moderating Role of Financial Promotion in Online Commerce



De Dinh Huu 

Faculty of Business Administration, Industrial University of Ho Chi Minh City, Vietnam

dinhhuude.52@juh.edu.vn

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Abstract: This study explores the impact of environmental factors in e-commerce livestreaming, including perceived expertise, trustworthiness, attractiveness, and parasocial interaction, on emotional arousal, trust, and consumers' impulsive buying intention. Data collected from 433 consumers and analyzed using SPSS and SmartPLS reveal a key finding of the research, the strong moderating role of financial promotion, which significantly enhances the influence of emotional arousal and trust on impulsive buying intention in celebrity-hosted livestream settings. Moreover, a novel theoretical contribution is provided by testing the moderating role of financial promotion within the SOR framework, thereby extending the traditional SOR approach that has paid limited attention to the moderating effects of financial contextual factors in live shopping environments. These findings not only broaden the theoretical framework of online consumer behavior but also challenge the conventional assumption that emotions predominantly drive impulsive buying behavior.

Keywords: Impulsive buying; financial promotion; parasocial interaction; emotional arousal; trust.

JEL Classification: M31; M37; L81; D91.

Introduction

In the context of the rapid growth of e-commerce, livestreaming sales have emerged as one of the primary marketing tools, particularly popular on social media platforms such as Facebook, TikTok, and Shopee Live. A notable trend is the use of celebrities to host livestream sessions in order to enhance reach, build trust, and stimulate consumer behavior, especially viewers' impulsive buying.

According to several studies, livestream e-commerce is not merely a product presentation tool but also an interactive social commerce model driven by user-generated content, allowing consumers to directly interact with the streamer to ask questions, exchange product information, and make purchase decisions in real time (Chen *et al.* 2022; Hilvert-Bruce *et al.* 2018; Rosely *et al.* 2024). The distinctive feature of livestream marketing lies in its ability to trigger immediate emotional arousal through dynamic interactive experiences. Viewers can easily be drawn into the shopping process through direct connection with the streamer, thereby increasing the likelihood of impulsive buying, a type of affective behavior that occurs within a short time frame with limited rational deliberation (Chen *et al.* 2022; Chung *et al.* 2017; Ma *et al.* 2024; Rosely *et al.* 2024).

In addition, many studies indicate that during livestream sessions, consumers often lose track of time and self-awareness, entering a state of "flow" characterized by deep concentration and enjoyment, which further increases the likelihood of spontaneous purchasing behavior (Li *et al.* 2024; Zhang & Liu, 2024). Notably, when the livestream host is a celebrity, he or she plays a central role in shaping consumer intentions and purchase behavior. The studies of Lee and Chen (2021), Lu and Chen (2021), and Cai *et al.* (2018) confirmed that livestream hosts are a critical factor influencing consumption decisions, alongside other elements such as product quality, consumer motivation, and marketing strategies.

Since the nineteenth century, celebrities have been widely employed as opinion leaders in marketing (Gauns *et al.* 2018). Celebrity endorsement is a communication strategy that associates the positive attributes of celebrities with a brand, thereby generating favorable effects for products or services (Silva *et al.* 2020; Temperley & Tangen, 2006). The objective of this strategy is to convey qualities admired by consumers in celebrities, such as physical appearance, health, and lifestyle, to link them with products and foster purchase intention (Pramjeeth & Majaye-Khupe, 2016).

At the same time, e-commerce livestreaming has opened a new era in the digital retail industry, where the combination of social media, real-time interaction, and emotional engagement plays a decisive role in triggering impulsive buying behavior and fostering the sustainable growth of e-commerce (Lee & Chen, 2021; Xue *et al.* 2020). When consumers watch product advertising videos on social media platforms, they not only receive information but also tend to immerse themselves in the story being told and develop parasocial interactions with the characters or streamers featured in the video. Parasocial interaction refers to a one-sided imagined relationship or interaction between viewers and the characters they follow on digital devices (Shen *et al.* 2022; Vazquez *et al.* 2020). Numerous studies have demonstrated that this sense of connection is a crucial factor that drives impulsive buying behavior while directly shaping consumers' purchase intentions and decisions (Rungruangjit, 2022; Sokolova & Kefi, 2020; Vazquez *et al.* 2020).

Another key factor in e-commerce livestreaming is the role of celebrities or social media influencers. With widespread recognition and certain social credibility, influencers are often employed by brands to represent products, thereby generating a celebrity effect that helps build trust, convey product information, and increase purchase intention (Ooi *et al.* 2023). When celebrities demonstrate products visually, explain their benefits, and interact directly with viewers, they not only enhance consumers' understanding of the products but also create a sense of urgency and exert strong emotional influence, which can easily lead to unplanned purchasing behavior.

Live commerce is considered a modern form of e-commerce that integrates real-time interaction, authenticity, and product visualization to enhance the online shopping experience (Hu & Chaudhry, 2020). This format allows viewers to watch live product demonstrations while asking questions, posting comments, or participating in surveys during the broadcast (Wongkitrungrueng & Assarut, 2020). Such interactive engagement provides businesses with opportunities to build loyal customer communities and increase brand attachment.

Although impulsive buying behavior has received considerable attention from scholars, very few studies have examined the financial link in online livestreaming, an important characteristic that enables sellers to better understand customer needs, build sustainable relationships, and potentially trigger impulsive buying behavior (Guo *et al.* 2021). Impulsive buying behavior is defined as unplanned purchasing that occurs immediately after consumers experience an urge, typically taking place quickly and without careful deliberation (Beatty & Ferrell, 1998). It is a strong response to external stimuli and a significant driver of sales performance, which marketers cannot overlook (Ahmadova & Nabiyeva, 2024).

However, in the context of live commerce, consumers often develop multiple concerns when engaging in transactions, making the influence of celebrities inconsistent. Consumers frequently perceive celebrities as less trustworthy, less competent, and less attractive compared to influencers, which negatively affects attitudes, trust, and purchase behavior (Schouten *et al.* 2021). Trust is a key factor influencing consumer value, particularly in e-commerce environments where livestreamers may manipulate information such as view counts, likes, or order volumes to create a bandwagon effect. In addition, consumers often face problems such as counterfeit products, poor product quality, and inadequate after-sales services, which further erode confidence in livestream shopping.

If celebrities lack engaging communication skills or fail to interact effectively during livestream sessions, they are unlikely to capture consumers' interest or elicit positive emotions (Leong *et al.* 2022). In contrast, active participation and high interactivity with professional livestreamers can stimulate emotions and impulsive buying behavior, especially in environments where information is shared transparently and instantly. Nevertheless, despite the long-standing attention to impulsive buying behavior, in-depth research in the livestreaming context remains limited (Redine *et al.* 2023).

Maximizing the potential of live commerce continues to pose a significant challenge for marketers and streamers. With an overwhelming amount of competing content on digital platforms, capturing and retaining viewers' attention has become increasingly difficult, requiring a deep understanding of consumer behavior as well as the ability to create compelling content that aligns with the fast-paced and dynamic nature of livestreaming (Hawks, 2021; Yu, 2020). Therefore, clearly identifying impulsive buying behavior is essential to optimizing marketing effectiveness in the rapidly expanding live commerce environment.

Although impulsive buying behavior has been extensively studied, there is still a lack of research clarifying the direct relationship between trust and impulsive buying behavior, particularly in the livestream commerce context.

At the same time, the moderating role of financial promotion, representing consumers' spending capacity or the financial connection between buyers and sellers, has not been sufficiently explored. Previous studies have mainly examined the personal attributes of celebrities in isolation without integrating them to assess their overall impact. Hence, it is necessary to develop a comprehensive model that investigates how celebrity characteristics influence impulsive buying behavior through the mediating roles of trust and emotions, while evaluating the moderating effect of financial promotion to provide a deeper understanding of consumer behavior in the rapidly evolving era of e-commerce.

Therefore, this study was conducted to address the following research questions:

RQ1: How do the characteristics of celebrities influence consumers' emotional arousal, trust, and impulsive buying intention in livestreaming environments?

RQ2: To what extent does financial promotion moderate the relationships between emotional arousal/trust and impulsive buying intention when consumers watch celebrity-hosted livestreams?

Although impulsive buying behavior has been examined in prior studies, a significant research gap remains concerning the connection between celebrity characteristics and consumer behavior within livestreaming contexts. This gap is particularly evident given the limited attention paid to the moderating role of financial factors within the S-O-R framework. Accordingly, this study provides a novel contribution by extending the S-O-R framework through the integration of Transaction Utility Theory to incorporate financial promotion as a moderating factor an essential but previously underexplored element in celebrity-driven livestream commerce.

1. Literature Review

1.1 Theoretical Framework

The foundational theory of this study is the SOR model, a framework in environmental psychology commonly used to analyze consumer behavior in shopping contexts, particularly when environmental or technological factors are involved (Parboteeah *et al.* 2009). The model consists of three main components: Stimulus, which refers to external environmental factors affecting individuals; Organism, which reflects the internal state of individuals including cognition and emotions; and Response, which represents the behavior displayed after processing the stimuli. Recent developments in live commerce research have applied the S-O-R model to systematically examine the factors that influence impulsive buying behavior. For example, Li *et al.* (2025) conducted a systematic literature review that synthesized multiple antecedents and demonstrated the widespread use of the S-O-R framework in online livestream environments. In particular, the recent study by Wang *et al.* (2025) highlights the central role of livestreamers in generating emotional and cognitive connections, which in turn increase impulsive buying behavior in live commerce settings. These elements have the ability to stimulate positive emotions and strengthen behavioral motivation, especially within real time interactions.

In the context of live commerce, stimulus is understood as external factors influencing consumers' perceptions and senses. Recent studies have confirmed that the characteristics of livestreamers, such as expertise, trustworthiness, attractiveness, popularity, and interactivity, serve as key stimuli that strongly influence consumers' purchase intentions and behaviors (Chang *et al.* 2023; Lee & Chen, 2021; Meng & Lin, 2023; Xin *et al.* 2025; Yang *et al.* 2024). These factors can evoke positive emotions, enhance trust, and create behavioral motivation for consumers, especially in livestreaming environments characterized by high interactivity and instant engagement.

The Organism represents the intermediary stage that reflects individuals' internal reactions when receiving stimuli from the environment. According to Hsin Chang and Wen Chen (2008) and Lee and Gan (2020), this dimension manifests in two primary forms: emotional responses (such as arousal, strong purchase desire, and positive or negative moods) and cognitive responses (such as trust in celebrities or brands). These internal reactions serve as mediators that adjust the relationship between external stimuli (livestreamer characteristics) and purchasing behavior (Li *et al.* 2025). Positive emotions can intensify impulsive buying, whereas trust is a critical factor that reduces perceived risks and strengthens behavioral decisions.

The Response refers to the final consumer behavior that results from internal evaluations and psychological processing of external stimuli (Ming *et al.* 2021; Tang *et al.* 2019; Widjaja *et al.* 2025). In this study, impulsive buying behavior is considered the main response, manifested when consumers feel a strong urge to make unplanned purchases under the influence of the livestreamer with whom they interact or follow (Chung *et al.* 2025).

Furthermore, Transaction Utility Theory Thaler (1985) posits that when consumers perceive the promotional price as lower than their reference price, they experience a sense of a "good deal," which increases their motivation to make immediate purchase decisions. In the context of livestream commerce, financial promotions such as discounts, vouchers, or flash sales can significantly enhance transaction utility, thereby amplifying the influence of emotional arousal and trust on impulsive buying intention.

The SOR model is applied in this study to explain how the characteristics of celebrities in livestreaming (stimuli) affect consumers' psychological states (organism), expressed through emotions and trust, which in turn lead to impulsive buying behavior (response). In addition, the integration of Transaction Utility Theory (Thaler, 1985) clarifies the moderating role of financial promotion. Specifically, when consumers perceive greater transaction utility through promotional programs, the perceived value of a "good deal" strengthens the effects of emotional arousal and trust on impulsive buying intention. Employing this theoretical framework not only elucidates the psychological mechanisms underlying live commerce but also sheds light on the mediating and moderating roles of psychological and financial factors in the modern shopping environment.

1.2 Hypothesis Development

1.2.1 Perceived Expertise

Perceived expertise of celebrities is defined as the extent to which consumers believe that a celebrity possesses knowledge, skills, and experience related to the product or brand they endorse (Ohanian, 1990; Sertoglu *et al.* 2014). This is one of the critical factors that determine the persuasiveness of a celebrity in marketing activities. According to Hovland *et al.* (1953) and Ohanian (1991), what matters is not whether the celebrity is truly an expert but rather the public's perception of the level of expertise that the celebrity demonstrates.

It is essential that the endorser's expertise aligns with the promoted product, as this enhances credibility and positively influences consumer attitudes and purchase intentions (Mat *et al.* 2019; Teo & Liu, 2007). Celebrities with extensive experience and high competence in a relevant field are often regarded as "product masters," thereby conveying trust and exerting stronger persuasive effects on consumers.

Moreover, expertise influences followers' attitudes and levels of engagement, as consumers tend to place greater trust in content or recommendations from individuals perceived as genuine experts in the field (Li *et al.* 2025; Smith *et al.* 2005). Professional celebrities are considered capable of analyzing and evaluating products accurately, which contributes to greater credibility and impacts consumer purchase intentions. Within the context of livestream commerce, audiences are more likely to interact with streamers perceived as experts in the product domain (Leong *et al.* 2022; Xin *et al.* 2025). In particular, the higher the expertise and persuasiveness of the livestream host, the greater the likelihood of stimulating emotional responses that lead to impulsive purchasing behavior among viewers. Accordingly, the following hypotheses are proposed:

H1: The perceived expertise of celebrities has a positive effect on customer emotions arousal during livestream shopping.

H2: The perceived expertise of celebrities has a positive effect on customer trust during livestream shopping.

1.2.2 Perceived Trustworthiness

Trustworthiness is one of the critical factors determining the effectiveness of celebrity endorsement. According to Ohanian (1990), trustworthiness reflects the extent to which the audience believes in and accepts the communicator, that is, the degree to which consumers perceive the celebrity as honest, sincere, and reliable.

Perceived trustworthiness of celebrities is defined as the level of confidence that consumers place in statements, messages, or recommendations conveyed by celebrities, based on the perception that they are truthful, ethical, and dependable (Mansour & Diab, 2016). Trustworthiness serves as a fundamental element in generating an effective endorsement effect, as consumers tend to believe only in information delivered by sources they trust. Celebrities who are evaluated as highly trustworthy often foster favorable attitudes toward products and, in turn, enhance consumers' purchase intentions (Li *et al.* 2025; Mat *et al.* 2019). This indicates that trust derived from the credible image of celebrities can stimulate positive emotions, encouraging consumers to believe in product recommendations and subsequently driving impulsive purchasing behavior.

In the context of online commerce, where interaction and emotions play a vital role, the trustworthiness of endorsers becomes even more crucial. Consumers are influenced not only by the information itself but also by the manner in which celebrities deliver it, particularly when it conveys sincerity, relatability, and reliability. Lee and Chen (2021) emphasize that in live streaming environments, hosts with high levels of trustworthiness not only enhance brand credibility but also increase audience engagement, thereby generating stronger emotional responses throughout the shopping experience. Furthermore, when consumers perceive the livestream host as trustworthy, they are more likely to develop feelings of reassurance, safety, and satisfaction with the communicated message. These positive emotions function as a catalyst that strengthens trust while reducing psychological barriers such as skepticism, hesitation, or anxiety in purchasing behavior (Lee & Chen, 2021; Meng & Lin, 2023), ultimately leading to impulsive shopping. Based on this reasoning, the following hypotheses are proposed:

H3: The perceived trustworthiness of celebrities has a positive effect on customer emotional arousal during livestream shopping.

H4: The perceived trustworthiness of celebrities has a positive effect on customer trust during livestream shopping.

1.2.3 Perceived Attractiveness

According to Ohanian (1990) and Mansour and Diab (2016), perceived attractiveness refers to the physical features and personality traits of celebrities that have the ability to capture the attention of the target audience. Factors such as similarity, familiarity, and likability are considered the core components of attractiveness, as consumers often feel more connected and closer to celebrities whom they perceive as sharing similarities with themselves. Patzer (1985) argues that physical attractiveness functions as a powerful informational cue, capable of spreading and generating subtle yet unavoidable effects on perception. The public tends to respond more positively to individuals with appealing appearances and often seeks to approach or emulate those figures. This perspective is reinforced by Erdogan (1999), who suggests that audiences react more favorably to attractive endorsers, particularly when they perceive those individuals as being similar to themselves.

A considerable number of studies also demonstrate that celebrities with attractive appearances and appealing personalities can positively influence purchase intentions (Subbiah & Sathish, 2020; Tanjung & Hudrasyah, 2016). In addition, attractiveness helps create a favorable impression of the product (Bergkvist & Zhou, 2016), alters consumer attitudes and beliefs (Baker & Churchill Jr, 1977; Li *et al.* 2025), and enhances the perceived value of the product (Chi *et al.* 2011). Collectively, these factors facilitate consumer decision-making.

In the context of livestream social commerce, the attractiveness of livestream hosts not only captures attention but also functions as a stimulus that evokes emotional responses. The study of Sjöblom and Hamari (2017) indicates that an attractive streamer can increase viewers' retention time and viewing frequency, thereby reinforcing the process of cognitive assimilation as the brand becomes strongly associated with the image of the attractive endorser. Moreover, several studies have confirmed that attractiveness can elicit emotional arousal, such as excitement, joy, or surprise (Haidt, 2000; Singer, 1983). When consumers are captivated by a celebrity with appealing physical features and personality traits, they are more likely to experience positive emotional states, which in turn foster trust in the conveyed information.

H5: The perceived attractiveness of celebrities has a positive effect on customer emotional arousal during livestream shopping.

H6: The perceived attractiveness of celebrities has a positive effect on customer trust during livestream shopping.

1.2.4 Parasocial Interaction

When engaging in livestream sessions, viewers often perceive a profound personal connection with the host, even though this relationship is only imagined and lacks actual reciprocity. This sense of closeness and intimacy has been shown to evoke positive emotions, strengthen trust, and become a powerful driver that stimulates impulsive buying behavior (Chen *et al.* 2021; Rungruangjit, 2022; Sokolova & Kefi, 2020).

Consumers interact with celebrities through simulated forms such as commenting, livestreaming, or responding to messages, thereby creating emotional bonds and social attachment (Shen *et al.* 2022; Zafar *et al.* 2020). These viewers often regard celebrities as close friends, which fosters a strong personal connection and makes them more susceptible to purchase suggestions from these figures (Zafar *et al.* 2020). Moreover, livestream commerce, as a modern form of e-commerce, enhances authenticity and real-time interaction, offering a shopping experience that is more vivid, immersive, and emotionally engaging compared to traditional formats (Haider *et al.* 2022; Hu & Chaudhry, 2020; Wang *et al.* 2025). Beyond being a platform for product promotion, livestreaming establishes a community of emotion and trust, where consumers feel accompanied and deeply connected. This reinforces trust and elicits emotion-driven purchasing behavior (Li *et al.* 2025; Wongkitrungrueng & Assarut, 2020).

In livestream sessions, particularly those with a large audience, the relationship between the host and viewers is often one-sided. However, by responding to comments, using informal language, or sharing personal stories, the host creates a simulated dialogue, a type of interaction that adjusts content to align with audience expectations (Xiang *et al.* 2016; Zafar *et al.* 2020; Zhang & Liu, 2024). Despite the absence of direct reciprocity, the sense of being heard and cared for increases consumer trust and positive emotions toward the host, which in turn promotes quick and less hesitant impulsive purchasing decisions (Wang *et al.* 2025).

H7: Parasocial Interaction with celebrities positively influence customer emotions during online livestream shopping.

H8: Parasocial Interaction with celebrities positively influence customer trust during online livestream shopping.

1.2.5 Emotional Arousal

Consumer behavior studies have demonstrated that emotions play a critical role in driving impulsive buying behavior, particularly in online contexts such as livestreaming (Verhagen & Van Dolen, 2011). Specifically, positive emotions such as joy, excitement, and happiness that are evoked through interactions with celebrities during livestream sessions can strongly stimulate the desire for impulsive purchases (Adelaar *et al.* 2003; Wang *et al.* 2025). These emotions are often generated when livestream hosts, through their attractiveness and diverse forms of interaction, build deep emotional connections with viewers, thereby reducing psychological distance and fostering a sense of closeness (Li *et al.* 2021).

Emotional arousal, defined as the state of excitement, stimulation, and alertness experienced by consumers in response to celebrity-driven cues, also plays a significant role in impulsive buying behavior (Li *et al.* 2025; Weinberg & Gottwald, 1982; Youn & Faber, 2000). In the livestreaming context, interactions with celebrities not only create satisfaction and enjoyment but also evoke feelings of happiness and carefreeness, making consumers more prone to making impulsive purchase decisions (Adelaar *et al.* 2003; Wang *et al.* 2025). Emotional distance, an important measure of psychological connectedness, is further reduced through these positive emotional experiences, which in turn encourage impulsive buying behavior.

H9: Customer emotional arousal has a positive effect on impulsive buying intention when watching online livestreams.

1.2.6 Trust

In the context of online marketing, trust in an influencer increases the likelihood that customers will accept their recommendations, thereby shaping attitudes toward products as well as purchasing behavior (Hsu *et al.* 2013; Morgan & Hunt, 1994; Wang *et al.* 2025). Moreover, influencers who are perceived as trustworthy by demonstrating integrity, competence, and consistency can significantly influence followers' attitudes and purchase intentions (Morgan & Hunt, 1994; Zhou & Whittle, 2013). Research has also shown that trust in a brand or online platform fosters impulsive buying behavior, particularly when combined with attractive pricing or prominent products (Li *et al.* 2025; Ming *et al.* 2021; Shang *et al.* 2023).

High quality livestreams, positive consumer interactions, and trust in e-commerce platforms, which are reinforced through engaging content and direct interaction with sellers, positively affect impulsive buying behavior. During livestream sessions, celebrities employ persuasive language, combining logical reasoning with ethical attributes such as integrity and professional expertise, to enhance their professional image and credibility (Chang *et al.* 2018; Gao *et al.* 2021; Zhou & Whittle, 2013). This persuasion shapes consumers' cognitive trust, while the emotional elements embedded in the influencers' communication resonate with viewers' feelings, fulfilling emotional needs and building affective trust (Srivastava *et al.* 2016; Wang *et al.* 2025; Widjaja *et al.* 2025). Therefore, the combination of trust in celebrities, both cognitive and affective trust, together with emotional alignment with customers, plays a crucial role in amplifying impulsive buying behavior in livestreaming, highlighting the importance of fostering an emotional connection between celebrities and viewers.

H10: Customer trust has a positive effect on impulsive buying intention when watching online livestreams.

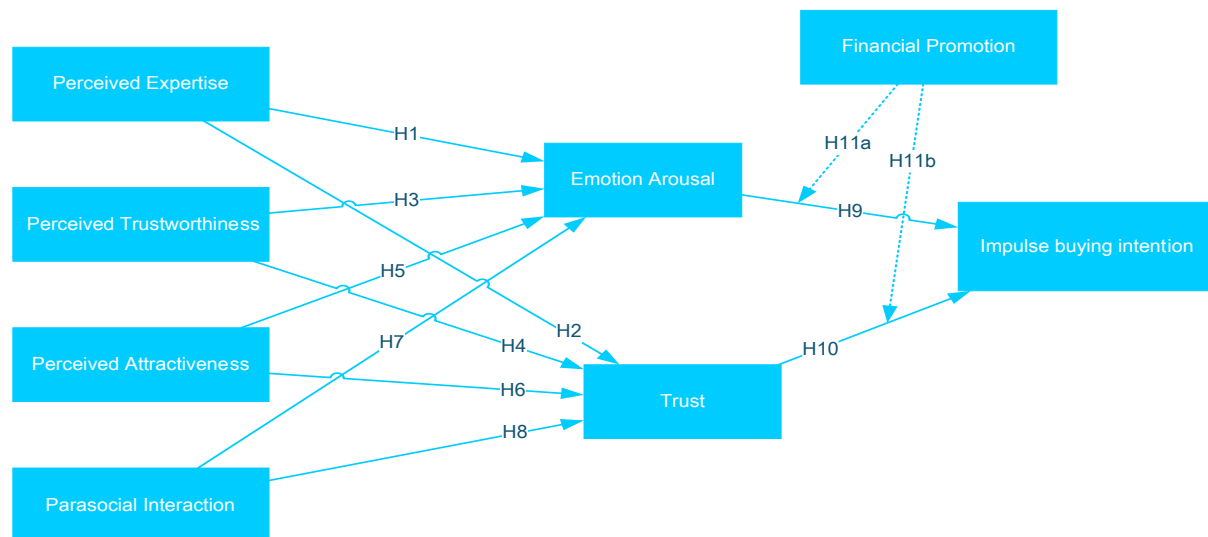
1.2.7 Moderating Role of Financial Promotion

Financial elements in livestreaming sessions, including discounts, vouchers, gifts, and loyalty programs, serve as strong catalysts influencing impulsive consumer behavior, particularly among younger customers who are highly sensitive to promotions (Berry, 1995; Chiu *et al.* 2005). Customers may obtain better prices through direct negotiation during livestreams or by participating in interactive activities to receive gifts and discount vouchers (Tan *et al.* 2024). These incentives not only enhance price attractiveness but also stimulate excitement and strengthen trust in both the livestream session and the brand, thereby positively influencing purchase decisions (Luo *et al.* 2024; Rohm *et al.* 2013). Consequently, financial promotions introduced by celebrities create an immediate urge among consumers to own products, intensifying emotional engagement during livestreams. Coupled with credibility and trustworthiness, celebrities presenting attractive financial incentives consistently capture customer trust and drive instant purchase behavior. Understanding this characteristic enables managers to design more effective livestream messages and strategies, thereby optimizing marketing performance and enhancing the likelihood of conversion in consumer purchasing behavior.

H11a: Financial promotion moderates the relationship between emotional arousal and impulsive buying intention of customers when watching livestreams.

H11b: Financial promotion moderates the relationship between trust and impulsive buying intention of customers when watching livestreams.

Figure 1. Proposed research model



Source: Proposed Author

2. Research Methodology

This study employs both qualitative and quantitative approaches, with the questionnaire developed based on measurement scales adopted from previous studies and further refined to suit the current research context. A preliminary survey involving six experts with professional knowledge in e-commerce and consumer behavior was conducted to adjust the questionnaire for the official survey. The measurement items for each construct in this study were inherited and modified to align with the research context and timeframe.

The observations from Ohanian (1990) and Gupta *et al.* (2017) were adapted to measure perceived attractiveness (PA) with five items, perceived trustworthiness (PT) with five items, and perceived expertise (PE) with five items. Six items for parasocial interaction (PI) were adopted and refined from Xiang *et al.* (2016). Financial promotion was measured with five items adopted from Hu and Chaudhry (2020). Five items for trust were adopted and adjusted from McAllister (1995) and Chen *et al.* (2024). Emotion arousal was measured with four items adapted from Li *et al.* (2022) and Ning Shen and Khalifa (2012). Impulse buying intention was measured with four items adopted and refined from Wang *et al.* (2025) and Beatty and Ferrell (1998).

A pilot survey was conducted using an online questionnaire distributed through social media platforms such as Facebook, Instagram, and Zalo, with 113 participants who had previous experience with impulse purchases on livestream platforms. This ensured that the survey questions were comprehensible and aligned with Vietnamese shopping behaviors. The key requirement for respondents was that they had purchased products through celebrity-led livestreams on social commerce platforms such as Facebook, TikTok, or YouTube. The research sample was selected based on gender, age, educational level, occupation, income.

Subsequently, the official survey was administered through an online method. To identify respondents who engaged in impulse purchases on livestream platforms, filtering questions were included: (1) Do you know any celebrities on social media? (2) Have you ever watched celebrities on social media promoting and selling products through livestreams? (3) Have you ever purchased products from celebrities on social media via livestreams? Out of 654 questionnaires collected, responses from 173 participants who had never watched celebrities promoting and selling products via livestreams and who had never purchased through livestreams were excluded, along with 48 responses containing incomplete data. Consequently, data from 433 valid respondents were retained for analysis.

3. Research Results

This study surveyed consumers who had experienced impulse purchases on livestream-based e-commerce platforms. Regarding gender, 53.81 percent of respondents were female ($n=233$), while 46.19 percent were male ($n=200$). In terms of age and education, respondents under 20 years old accounted for 18.01 percent ($n=78$), while

66.74 percent were between 20 and 29 years old (n=289), 12.93 percent were between 30 and 50 years old (n=56), and 2.31 percent were above 50 years old (n=10). Concerning educational attainment, undergraduate students represented the largest proportion (n=279, 64.43 percent), followed by respondents with a college degree (n=63, 14.55 percent). Postgraduate, vocational, and high school education levels accounted for 12.01 percent, 5.31 percent, and 3.7 percent, respectively.

With respect to occupation, office employees accounted for the highest proportion (n=223, 51.50 percent), followed by students (n=116, 26.79 percent), freelancers (n=34, 7.85 percent), teachers (n=26, 6.00 percent), housewives (n=24, 5.54 percent), and factory workers (n=10, 2.31 percent). Regarding income, 27.48 percent earned less than 10 million VND (n=119), 35.57 percent earned between 10 and 15 million VND (n=154), 18.01 percent earned between 15 and 20 million VND (n=78), and 18.94 percent earned more than 20 million VND (n=82).

Based on Table 1, the results of Cronbach's alpha analysis indicate that all constructs achieved reliability, with Cronbach's alpha coefficients ranging from 0.820 to 0.900, exceeding the recommended threshold of 0.7 proposed by Hair *et al.* (2019). Therefore, the measurement scales in this study demonstrate adequate reliability for further evaluation. The assessment of convergent validity revealed that the measurement scales met the required criteria, as the average variance extracted (AVE) values were all greater than 0.5. The outer loadings of the observed variables were all higher than 0.708, and the variance inflation factor (VIF) values were all below 3. Hence, the measurement scales satisfied the requirements of indicator reliability (Hair *et al.* 2019).

Table 1. Results of reliability and validity tests (CA, CR, AVE, Outer Loadings, VIF)

	CA	rho_A	CR	AVE	Outer loadings	VIF
EA	0.885	0.886	0.920	0.743	0.834 – 0.884	2.076 – 2.644
FP	0.820	0.822	0.874	0.580	0.727 – 0.785	1.430 – 1.854
IPI	0.874	0.875	0.913	0.725	0.835 – 0.869	2.036 – 2.429
PA	0.853	0.856	0.895	0.631	0.711 – 0.826	1.453 – 2.040
PE	0.855	0.857	0.896	0.633	0.782 – 0.829	1.667 – 2.051
PI	0.900	0.901	0.924	0.668	0.763 – 0.856	1.779 – 2.614
PT	0.892	0.893	0.921	0.700	0.807 – 0.868	1.984 – 2.660
TR	0.864	0.866	0.902	0.648	0.789 – 0.840	1.839 – 2.178

Source: Data from SMART-PLS

Regarding discriminant validity, this study employed the HTMT (Heterotrait Monotrait ratio of correlations) to assess the discriminant validity among the latent constructs, as recommended by Henseler *et al.* (2015). As presented in Table 2, the HTMT values of all constructs in the model were below 0.85. Therefore, the measurement scales satisfy the requirement for discriminant validity.

Table 2. HTMT Assessment Results

	EA	FP	IPI	PA	PE	PI	PT	TR
EA								
FP	0.064							
IPI	0.611	0.146						
PA	0.787	0.431	0.629					
PE	0.641	0.088	0.476	0.644				
PI	0.823	0.054	0.620	0.752	0.642			
PT	0.746	0.156	0.641	0.770	0.650	0.706		
TR	0.573	0.070	0.642	0.692	0.700	0.790	0.670	

Source: Data from SMART-PLS

Table 3. Assessment of R² and Q²

	R Square Adjusted	Q2
EA	0.635	0.467
IPI	0.499	0.353
TR	0.565	0.359

Source: Data from SMART-PLS

According to the results presented in Table 3, the adjusted R² values of the variables EA, IPI, and TR are 0.635, 0.499, and 0.565. This indicates that PT, PA, PE, and PI explain 63.5 percent of the variance in EA, while 56.5 percent of the variance in TR is explained. In addition, EA and TR together explain 49.9 percent of the variance in IPI.

The results in Table 4 show that all hypotheses with p-values less than 0.05 are supported, with all Beta coefficients greater than 0. Therefore, the relationships among the constructs are positive.

Furthermore, when testing the moderating role of FP between EA and IPI as well as between TR and IPI, the analysis shows that the p-value of FP*EA → IPI equals 0.039 which is less than 0.05, and the p-value of FP*TR → IPI equals 0.000 which is also less than 0.05. Hence, both hypotheses H11a and H11b are supported. Specifically, with the moderating role of FP, the Beta coefficients for the relationships between EA and IPI and between TR and IPI are 0.109 and 0.236, respectively, which are both greater than 0. This indicates that FP plays a positive moderating role by strengthening the positive relationships between EA and IPI as well as between TR and IPI.

Table 4. Regression Results

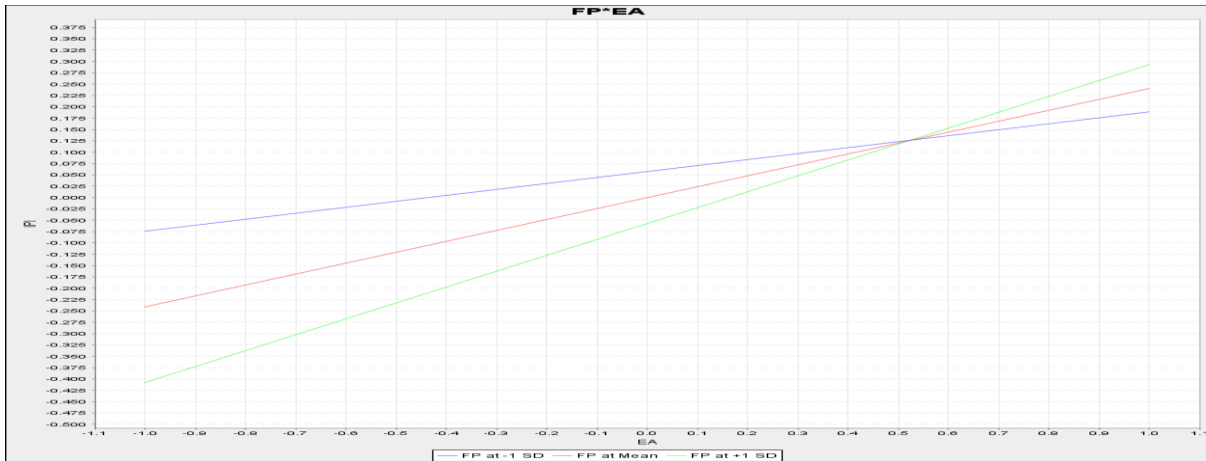
	beta	t-values	p-values	Result
H1: PE → EA	0.087	2.170	0.030	Supported
H2: PE → TR	0.238	4.193	0.000	Supported
H3: PT → EA	0.200	4.389	0.000	Supported
H4: PT → TR	0.114	2.411	0.016	Supported
H5: PA → EA	0.237	5.432	0.000	Supported
H6: PA → TR	0.112	2.310	0.021	Supported
H7: PI → EA	0.402	9.358	0.000	Supported
H8: PI → TR	0.418	7.221	0.000	Supported
H9: EA → IPI	0.241	4.914	0.000	Supported
H10: TR → IPI	0.259	4.325	0.000	Supported
H11a: FP*EA → IPI	0.109	2.064	0.039	Supported
H11b: FP*TR → IPI	0.236	5.071	0.000	Supported

Source: Data from SMART-PLS

The results of the regression analysis and the simple slope plot indicate that financial promotion (FP) serves as a positive moderator in the relationship between emotional arousal (EA), trust (TR), and impulsive purchase intention (IPI) of consumers in the context of celebrity-endorsed livestreaming.

Specifically, in Figure 2, regarding the relationship between EA and IPI, the regression results show that FP*EA has a coefficient $\beta = 0.109$ ($p = 0.039$), suggesting a statistically significant moderating effect. The simple slope plot further demonstrates that when the level of financial promotion is high (+1SD), the slope becomes steeper compared to when financial promotion is low (-1SD). This implies that within the livestreaming environment, emotional arousal inherently stimulates impulsive purchasing behavior, yet this effect is substantially amplified when consumers simultaneously perceive the attractiveness of financial incentives.

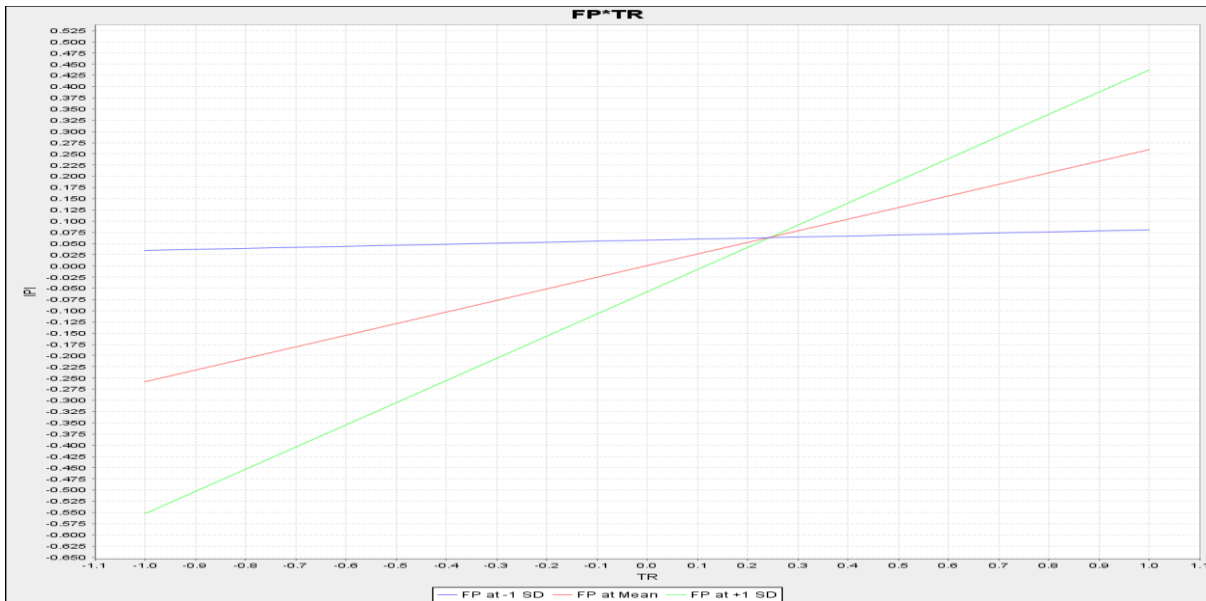
Figure 2. FP*EA



Source: Data from SMART-PLS

For the relationship between TR and IPI, in Figure 3, the regression results indicate that FP*TR has a coefficient $\beta = 0.236$ ($p = 0.000$), demonstrating a strong and highly significant moderating effect. The simple slope plot also clearly illustrates this distinction: at a high level of financial promotion (+1SD), the relationship between trust and impulsive purchase intention exhibits the steepest slope, whereas at a low level (-1SD), the relationship is almost negligible. This finding suggests that trust in the celebrity during livestreaming only translates into impulsive purchasing behavior when consumers simultaneously perceive tangible benefits from financial promotions.

Figure 3. FP*TR



Source: Data from SMART-PLS

Accordingly, both the regression results and the illustrative plots converge on the point that financial promotion serves as a catalyst, amplifying the influence of emotion and trust on impulsive purchase intention. From a theoretical perspective, this finding provides additional evidence that financial factors not only exert a direct impact on consumer decision-making but also enhance the strength of underlying psychological drivers (Thaler, 1985). From a practical standpoint, the results suggest that firms should design livestreaming strategies that integrate building trust through the presence of celebrities, stimulating emotions during interactions, and simultaneously implementing attractive financial promotion programs. Such a combination is expected to maximize effectiveness in encouraging consumers' impulsive purchasing behavior.

4. Discussion, Managerial Implications, Contributions, Limitations, Future Research Directions

4.1 Discussion

The findings of this study indicate that the characteristics of celebrities, including perceived expertise (PE), perceived trustworthiness (PT), and perceived attractiveness (PA), exert positive effects on consumers' emotion arousal (EA) and trust (TR) in the context of livestreaming (Li *et al.* 2025; Wang *et al.* 2025). At the same time, parasocial interaction (PI) is shown to strongly influence both EA and TR, underscoring the role of psychological attachment between audiences and celebrities in shaping emotional responses and trust (Wang *et al.* 2025).

In addition, both EA and TR are confirmed as critical predictors that drive impulse buying intention (IPI) (Wang *et al.* 2025). This reinforces the argument that emotions and trust constitute central drivers of impulsive purchasing behavior in livestream settings (Li *et al.* 2025).

Notably, the moderation analysis demonstrates that financial promotion (FP) positively moderates the relationship between EA and IPI (H11a), as well as between TR and IPI (H11b). Specifically, when the level of financial promotion is high, the effects of EA and TR on IPI become significantly stronger. This suggests that FP not only acts as a direct incentive for consumer behavior but also amplifies the influence of psychological factors (EA and TR) on impulsive buying.

Overall, this study confirms that in livestreaming contexts featuring celebrities, PE, PT, PA, and PI serve as initiators of trust and emotional arousal; EA and TR function as key mediators leading to IPI; and FP acts as a moderator that strengthens these relationships. The results contribute theoretically by clarifying the mechanisms through which celebrity attributes and consumer psychology shape impulsive purchasing behavior, while also offering managerial implications for firms in combining celebrity endorsement strategies with financial promotions to maximize business effectiveness through livestreaming.

4.2 Managerial Implications

The findings suggest that businesses and managers should strategically leverage livestreaming with the participation of celebrities to stimulate customers' impulse buying behavior.

The image-related attributes and characteristics of celebrities, including perceived expertise (PE), perceived trustworthiness (PT), and perceived attractiveness (PA), should be carefully considered when selecting KOLs or influencers. Firms are advised to prioritize collaboration with celebrities who not only demonstrate expertise but also build credibility and possess visual appeal, as these factors directly enhance consumers' emotion arousal (EA) and trust (TR).

Furthermore, the results indicate that parasocial interaction (PI) plays a particularly important role in reinforcing EA and TR. Therefore, firms should encourage celebrities to strengthen two-way engagement with audiences during livestream sessions, such as responding to comments, addressing viewers by name, or organizing mini games and interactive activities. These practices foster a sense of personal connection, thereby increasing trust and stimulating impulse buying intentions.

Moreover, since both EA and TR strongly influence impulse buying intention (IPI), firms should design livestream content that evokes positive emotions such as excitement, curiosity, and happiness, while simultaneously reinforcing trust through transparency, brand credibility, and quality assurance. This combination is crucial for encouraging quick purchase decisions.

Finally, the study confirms that financial promotion (FP) serves as a significant moderating factor that amplifies the effects of EA and TR on IPI. This implies that firms should implement attractive financial promotion strategies, such as direct discounts, time-limited vouchers, free shipping, or bundled gifts, during livestream events. Particularly, when FP is applied in conjunction with the presence of celebrities, the impact on impulse buying intention is substantially strengthened.

In addition, this study offers important implications for the fields of education, culture, and public policy.

In the educational domain, the research findings provide a practical foundation for updating curricula in marketing, communication, and e-commerce programs. These updates may include content related to livestream commerce, impulsive consumer behavior, and the strategic use of celebrities in digital marketing. Students will have the opportunity to access new knowledge about consumer psychology and learn how to design effective livestream campaigns that align with current technological contexts.

From a cultural perspective, the frequent appearance of celebrities in livestream sessions contributes to the rise of emotionally driven consumption, where consumers are easily influenced by visual and affective cues. This trend reflects a shift from rational consumption models to those based on emotional responses and symbolic

attachment. Cultural researchers may further explore the phenomenon of idol culture and the formation of parasocial relationships between celebrities and audiences in digital environments.

With regard to public policy, the rapid development of e-commerce presents an urgent need for regulatory authorities to establish clearer and more transparent guidelines concerning livestream activities, the involvement of celebrities, and the application of promotional programs. These efforts are essential to protect consumers from emotional manipulation and herd behavior during the online shopping process.

4.3 Theoretical Contributions

This research extends and reinforces the SOR model in the context of celebrity-driven livestream commerce. The attributes of celebrities, including perceived expertise (PE), perceived trustworthiness (PT), perceived attractiveness (PA), and parasocial interaction (PI), are confirmed as key stimuli capable of eliciting emotion arousal (EA) and building consumer trust (TR). This finding provides empirical evidence for the hypothesis that the characteristics of livestream hosts not only influence cognition but also shape emotional responses and trust, which represent two core elements of the “Organism” in the S–O–R framework.

Furthermore, the demonstration of the dual mediating roles of EA and TR offers a novel theoretical contribution by showing that both affective and cognitive processes operate simultaneously and reinforce one another in driving impulse buying behavior. This clarification sheds light on earlier debates concerning whether emotional or cognitive factors play the decisive role in online purchasing behavior.

Finally, the results confirm the moderating role of financial promotion (FP) in the relationship between EA, TR, and impulse buying intention (IPI). This represents an important theoretical contribution by positioning FP as a moderator within the S–O–R framework, showing that financial incentives in the environment can amplify the influence of internal psychological states on behavior. The inclusion of FP in the model expands the traditional S–O–R perspective, which has paid limited attention to the moderating role of financial contextual factors in livestream shopping environments.

4.4 Practical Contributions

This study provides valuable empirical evidence for businesses in developing effective livestream commerce strategies. Specifically, the findings highlight that the selection of celebrities should emphasize expertise, credibility, attractiveness, and the ability to foster social interaction, in order to maximize consumer trust and positive emotions. At the same time, businesses can leverage financial promotion as a strategic tool not only to stimulate purchasing behavior but also to enhance the psychological effects that drive impulse buying intention, thereby optimizing consumer responses in livestream commerce.

4.5 Limitations and Directions for Future Research

This study is subject to several limitations. First, the data were collected through an online survey and focused exclusively on consumers who had previously engaged in impulsive purchases during celebrity livestreams. Therefore, the representativeness of the sample remains limited and may not fully capture the characteristics of the broader consumer base on social commerce platforms. Second, the quantitative research method relied on self-reported questionnaires, which may lead to potential biases arising from subjective responses. Third, the study primarily concentrated on specific variables such as celebrity attributes that evoke emotions and trust as well as impulsive purchase intention, while other factors including product characteristics, cultural influences, or the role of platform algorithms were not considered.

Future research could expand the scope of investigation to include more diverse consumer groups in order to enhance generalizability, while employing mixed methods or experimental approaches to validate causal relationships. Additionally, incorporating new elements such as product attributes, social influence, or technological features of the platforms would provide a more comprehensive understanding of impulsive purchasing behavior in livestream commerce.

Declarations

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Declaration of use of generative AI and AI-assisted technologies: The author declares that no artificial intelligence tools or AI-assisted technologies were employed in the preparation or execution of this research.

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