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## Understanding the determinants of impulse buying behavior on TikTok shop livestream shopping among Generation Z in Hanoi

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### ABSTRACT

This study investigates the influence of TikTok Shop's live stream shopping on Generation Z consumers' impulse buying behavior, integrating the Stimulus-Organism-Response (S-O-R) and Uses and Gratifications (U&G) theories. Using an empirical approach, this study examines three dimensions—entertainment value, informativeness value, and parasocial interaction—and their impacts on trust and attitudes toward live streams. Additionally, this study explores the direct and indirect effects of perceived product scarcity on impulse buying. Findings reveal that entertainment value and parasocial interaction positively shape trust and attitudes, which in turn drive impulse buying. However, informativeness value has no significant effect on trust or attitudes. Perceived product scarcity directly influences impulse buying without mediating effects through trust or attitudes. This research highlights the critical role of entertainment and parasocial engagement in fostering trust and positive attitudes, while scarcity remains a strong direct driver of unplanned purchases. The study contributes to the growing literature on e-commerce, offering practical insights for optimizing live stream content to enhance consumer engagement and sales.

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## 1. Introduction

Livestreaming shopping transformed the global retail landscape (Ma, 2021). Live broadcast on social media enables streamers and online shop owners to share video and audio content in real-time (Kristi & Aruan, 2023). These broadcasts integrate text, images, and sound to create authentic interactions between organizers and audiences (Tong, 2017). TikTok's remarkable growth has made it a dominant force in social media. The platform experienced dramatic expansion, with its global monthly active user base surging from 689 million to over 1 billion between 2020 and 2021, representing a 45% increase (Wahid et al., 2023). TikTok has evolved from a social media platform into a burgeoning e-commerce hub in Vietnam (Nguyen & Nguyen, 2024), ranking third after Shopee and Lazada. Its fast-paced interface, diverse products, and innovative livestreaming shopping features enhance user convenience and global connectivity, reshaping consumer behavior and expectations in the digital market (Nguyen-Viet et al., 2024). The platform's emergence makes it a compelling subject for academic inquiry. Impulse buying is particularly prevalent in TikTok livestreaming, as readily available information encourages spontaneous purchases (Kristi & Aruan, 2023). Research has examined various factors influencing consumers' impulsive buying on TikTok, including platform characteristics (Kristi & Aruan, 2023), streamer characteristics (Sanjaya & Berlianto, 2024), and product characteristics (Kristi & Aruan, 2023). However, few research has explored the effect of consumers' perceived scarcity of products on their impulse buying behavior (Sari & Karsono, 2023).

Research shows that product scarcity attracts e-commerce consumers. During livestreaming, scarcity is conveyed through limited quantity and time-restricted availability (Rouibah et al., 2016). These scarcity messages trigger impulse buying by creating a fear of missing out. While studies have shown the effect of scarcity perception on unplanned purchases (Zhang et al., 2022), little is known about its impact on consumer behavior in the livestreaming context.

Young consumers exhibit distinct impulse buying pattern. Brici et al. (2013) found that young people are more likely than older adults to make impulsive purchases as a stress-coping mechanism or mood enhancer. Supporting this, Dey and Srivastava (2017) demonstrated a relationship between hedonic shopping values and impulsive buying among young consumers. While some studies examined young consumers (e.g., Nguyen-Viet et al. (2024); Qu et al. (2023)), few specifically target Generation Z. Given that TikTok's primary users are within 18 to 24 age range, falling within Generation Z, the second objective of this study is to examine the determinants of impulse buying behavior among Generation Z consumers.

This empirical study contributes to livestreaming and consumer behavior literature by exploring how TikTok Shop's livestreaming influences impulse buying. Drawing on an integrated model of the uses and gratification (U&G) theory and stimulus-organism-response (SOR) theory, we address three questions:

- (1) How do entertainment value, informativeness value, and parasocial interaction collectively affect trust and attitudes toward live streams?
- (2) How do trust and attitudes influence impulse buying?
- (3) Does perceived product scarcity affect impulse buying directly and indirectly through attitudes?

This research adds to the growing body of work on livestreaming's impact on consumer behavior (Sun & Bao, 2023). It proposes and validates a model to explain the impulse buying behavior of Generation Z consumers on TikTok Shop. Additionally, it enhances existing knowledge by exploring the mechanism linking perceived product scarcity to impulse buying behavior.

## 2. Theoretical Background and Hypotheses Development

### 2-1. Theoretical Background

The stimulus-organism-response (S-O-R) theory, developed by Mehrabian (1974), is a psychological framework that explains how individuals respond to external stimuli based on their internal processes. This theory posits that a stimulus (S) from the environment triggers an internal cognitive or emotional state within the organism (O), which then leads to a behavioral or emotional response (R). The S-O-R theory has been widely adopted to investigate consumer buying behavior in various online purchasing contexts (Nguyen et al., 2024; Song et al., 2023). External stimuli on social media, such as influencer posts, live-stream sales, and social interactions, can trigger emotional and cognitive responses that drive impulse purchases (Chan et al., 2017; Chen & Yao, 2018; Eroglu et al., 2001; Nguyen et al.,

2024; Zhang, Jiang et al., 2021). This validates the suitability of S-O-R theory as an overarching framework in explaining consumer behavior, particularly in livestreaming.

The uses and gratifications (U&G) theory explores media engagement as an active choice driven by individual needs and expected gratifications, guiding media preferences, selection, and use (Katz, 1974). Recent studies have extended U&G Theory to digital contexts, including user-generated content (UGC) and various social media platforms (Nguyen et al., 2024; Sokolova & Perez, 2021; Song et al., 2023).

By integrating U&G theory's focus on motivations such as information seeking, entertainment, and parasocial interaction (Katz, 1974) with S-O-R theory's sequential approach to consumer behavior, this study reveals how entertainment, informativeness, and parasocial interaction influence trust, attitudes, and impulse buying in livestreams.

## **2-2. Impulse Buying Behavior**

Impulse buying, as introduced by Applebaum (1951), refers to unplanned purchases triggered by external stimuli. It includes spontaneous decisions, such as "pure impulse buying," where the consumer has no prior intention to buy. Impulse buying is influenced by emotional or hedonic factors, such as pleasure and enjoyment driving impulsive behavior (Chen et al., 2023; Hashmi et al., 2020; Wu et al., 2021). Positive emotional responses, such as pleasure and enjoyment, mediate the impact of store environments and promotional messages on purchasing decisions (Verhagen & Van Dolen, 2011; Wu et al., 2021; Zhang, Shao et al., 2021). The shopping environment plays a crucial role in impulse buying, as enjoyable interactions increase the likelihood of such behavior (Lee & Chen, 2021; Parboteeah et al., 2009). In e-commerce and social commerce, impulse buying is driven by emotional appeals with minimal cognitive control, often disregarding financial considerations (Akram et al., 2018). Parboteeah et al. (2009) identify a positive relationship between consumer enjoyment in shopping context and the likelihood of impulse buying. The shift to social commerce intensifies impulse triggers through social media interactions and information (Xiang et al., 2016). Furthermore, Mittal et al. (2018) suggest that consumers who are more inclined to make impulse purchases are more likely to view impulse buying positively and act on it.

## **2-3. The Notion of Livestreaming**

Livestreaming or livestreaming e-commerce represents the integration of real-time video streaming and online shopping, creating a more interactive and immersive experience compared to traditional social commerce (Bai et al., 2024; Cai & Wohn, 2019; Ki et al., 2024). Direct interaction is a fundamental feature of the livestreaming commerce environment, providing a dynamic experience that drives consumer emotion and behavior (Alam et al., 2023; Kang et al., 2021; Li et al., 2024; Xu et al., 2020). In additions, livestreaming commerce offers various stimuli to encourage potential consumers to engage in their shopping activities (Sun et al., 2019; Xu et al., 2020). Factors such as interface design, accurate product information, and entertainment elements can encourage unplanned purchases, enhancing emotional engagement and trust (Alam et al., 2023; Khoi et al., 2023).

Therefore, live-streaming commerce drives impulse buying through real-time engagement, with enjoyment, informativeness, and social interactions as key factors. This study addresses the gap in e-commerce research by exploring TikTok Shop's impact on entertainment, informativeness, and streamer-consumer interactions.

## **2-4. The Link Between Entertainment Value, Informativeness Value, Trust, and Attitude**

### **– Informativeness**

Informativeness refers to how effectively livestreaming and advertisements provide valuable, timely, and relevant content to viewers, fulfilling their informational needs. This content can include product details, demonstrations, and tips, assisting viewers make informed decisions (Song et al., 2023). Empirical studies confirm that informativeness significantly shapes attitudes toward advertisements and purchase intentions, particularly in digital and social media contexts (Gupta & Kumar, 2022; Nasir et al., 2021). Song et al. (2023) further reinforce this by demonstrating that "information has a significant association with attitudes toward content" and that media consumption, enriched by informativeness, influences purchasing behavior.

In livestreaming, real-time, interactive content further enhances informativeness, as viewers can ask questions and receive immediate responses, deepening their trust in both the product and the live streamers (Shareef et al., 2019). Informativeness is linked to positive consumer attitudes and purchase intentions, as it aids decision-making and strengthens the viewer's connection with the content (Song et al., 2023).

#### – Entertainment Value

Entertainment value fulfills consumers' hedonic needs, providing emotional satisfaction, enjoyment, and escapism (Ducoffe, 1996; McQuail & Van Cuilenburg, 1983). In the digital era, entertainment is increasingly essential in driving advertising effectiveness, particularly on social media platforms where creative and attractive content captures customer attention and fosters engagement (Alalwan, 2018; Gaber et al., 2019; Lee et al., 2017). Empirical evidence suggests that entertainment positively impacts purchase intentions across various platforms, including social media (Rizomyliotis et al., 2024; Shareef et al., 2019), and streaming services (Barata & Coelho, 2021). Furthermore, entertainment has a positive and significant impact on attitude in both the context of social websites (Curras-Perez et al., 2014) and livestreaming (Chen & Lin, 2018).

On the other hand, in advertising, including livestreaming, entertainment is a crucial factor in attracting attention, fostering positive attitudes, and driving purchase intentions (Shareef et al., 2019). Lee and Chen (2021) indicated that perceived enjoyment positively influences the urge to buy impulsively in livestreaming commerce platforms.

#### – Attitude Toward Live Streams

Attitude is broadly understood as a lasting evaluation or judgment of people, objects, advertisements, or ideas, reflecting an individual's emotional and cognitive preferences toward a particular concept (Song et al., 2023). It is shaped by a blend of emotions, beliefs, and behavioral tendencies that influence how people interpret and respond to a specific topic or experience. Regarding live streams on social media platforms, Chen and Lin (2018) intricately detailed that the attitude toward a live-stream is influenced directly by endorsements and indirectly through social interactions. Factors such as informativeness, entertainment value, and trust in the live-streamers influence this attitude.

#### – Trust in Livestreamers

Trust in livestreamers refers to the confidence viewers place in the authenticity, credibility, and intentions of a live stream host. Livestreamers play a pivotal role in social commerce, acting as intermediaries between brands and consumers. Their perceived expertise, reliability, and ability to establish an emotional connection with their audience serve as critical components of trust (Hsu & Hu, 2024). This trust, alongside para-social relationships and belief in promoted products, boosts engagement and purchase intentions (Ko, 2024; Ming et al., 2021). Rouibah et al. (2016) found that trust and enjoyment also reduce risk perceptions, driving online payment adoption. Informativeness enhances decision-making and trust, while entertainment meets emotional needs, fostering loyalty and higher engagement (Ducoffe, 1996; Song et al., 2023). Together, trust, informativeness, and entertainment drive positive attitudes and consumer behavior in livestreaming.

As a result, these hypotheses are proposed:

**H1:** Entertainment value positively affects trust in live streamers

**H2:** Entertainment value positively affects attitude toward livestreaming

**H3:** Informativeness value positively affects trust in live streamers

**H4:** Informativeness value positively affects attitude toward livestreaming

### **2-5. The Link Between Parasocial Interaction, Trust, and Attitude**

Parasocial interaction (PSI), first introduced by Horton and Richard Wohl (1956), describes one-sided emotional engagement between audiences and media figures who remain unaware of the audience's reactions. In livestreaming, PSI is heightened by real-time interactions, where viewers feel personally connected to streamers through body language and direct communication, despite the asymmetry (Sokolova & Perez, 2021). PSI fosters trust and emotional bonds, influencing viewers' engagement and purchase decisions (Chung & Cho, 2017). It plays a crucial role in shaping viewers' attitudes and building loyalty to streamers (Song et al., 2023). PSI has been linked to higher trust in live streamers,

leading to stronger viewer loyalty and greater purchase intentions (Hwang & Zhang, 2018; Ko, 2024). Therefore, these hypotheses are developed:

- H5:** Parasocial interaction positively affects trust in live streamers
- H6:** Parasocial interaction positively affects attitude toward livestreaming

**2-6. The Link Between Perceived Scarcity of Products, Attitude, and Impulse Buying Behavior**

Product scarcity refers to the limited availability of a product due to high demand or low supply, often strategically created by marketers or arising from external factors (Hamilton et al., 2019). In livestreaming commerce, scarcity becomes more impactful due to the real-time nature of the platform. This urgency is heightened through live interactions, immediate feedback from the streamer and other viewers, making the experience more emotionally charged (Gong & Jiang, 2023). Research shows that perceived scarcity in livestreaming can drive impulse buying (Sari & Karsono, 2023). Strategies such as countdowns or stock updates further fuel this urgency, encouraging viewers to act quickly (Hamilton et al., 2019). Ultimately, the scarcity factor in livestreaming boosts consumer purchasing intentions by leveraging the fear of missing out (FOMO) and the perception of exclusivity, significantly influencing sales (Qu et al., 2023).

The following hypotheses are proposed:

- H7:** Perceived scarcity of products positively affects trust in live streamers
- H8:** Perceived scarcity of products positively affects attitude toward livestreaming

**2-7. The Link Between Trust, Attitude, and Impulse Buying Behavior**

Trust in live streamers and positive attitudes toward livestreaming significantly influences consumer behavior, particularly impulse buying. Trust, built through credibility and emotional connection, increases confidence in product promotions, encouraging impulsive purchases (Hsu & Hu, 2024; Ko, 2024). Similarly, enjoyment and trust in the livestreaming experience, driven by entertainment and informativeness, make consumers more likely to act on impulse, especially when offers are framed as limited or exclusive (Lee & Chen, 2021). Emotional engagement and real-time urgency further amplify this effect.

The proposed hypotheses are as follows:

- H9:** Trust in live streamers positively affects impulse buying behavior
- H10:** Attitude toward live streaming positively affects impulse buying behavior

The conceptual model is presented in Figure 1.

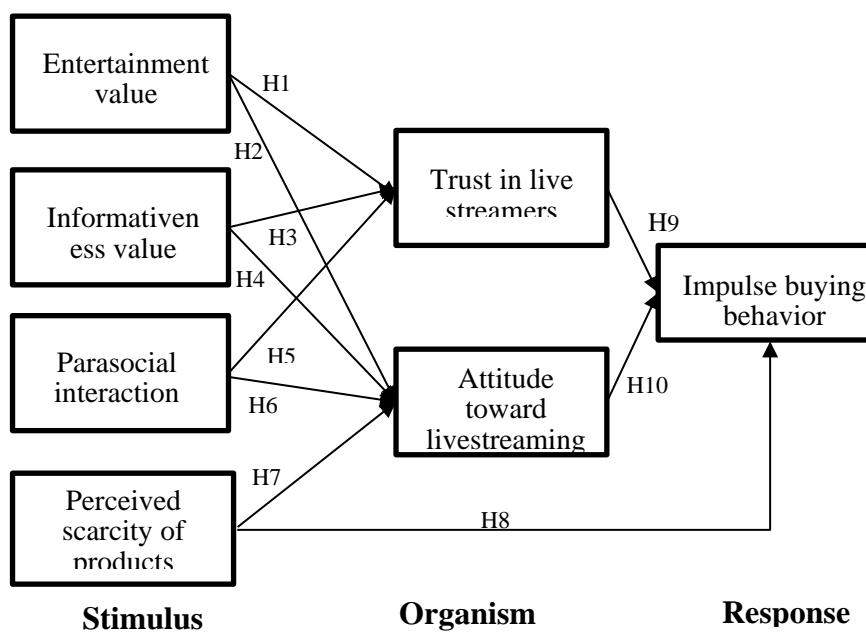


Fig. 1. The Conceptual Framework

### **3. Research Methodology**

#### **3-1. Research Context**

Vietnam, an emerging country with young demographics, and high Internet and mobile penetration, was chosen as the context for this study. According to a report by We Are Social and Meltwater (2025), the 78.8% of Vietnam's 101 million population uses the Internet. The country's mobile phone penetration rate has reached 125%, with 97.7% of individuals aged 16 and above accessing the internet via smartphones. Vietnamese users spend an average of 3.2 hours daily browsing the internet via smartphones. Social media engagement is strong, with 75.2% of the population (approximately 76.2 million users) active on various social platforms. Among social media platforms, TikTok dominates short-video consumption among Generation Z, with Statista (2024a) reporting 59% of Gen Z respondents using TikTok versus 21% preferring Facebook. TikTok also leads in mindless browsing, attracting 34% of Gen Z users (Statista, 2024a).

#### **3-2. Measurement Instrument and Questionnaire Design**

The measurement items for this study were adopted from prior studies. Informativeness value and entertainment value each was measured with three items adapted from Song et al. (2023). The perceived scarcity of products was measured by four items adapted from Gong and Jiang (2023). Trust in the TikTok live streamers was measured by three items adapted from Ming et al. (2021). Attitude towards live streams was measured by four items adapted from Song et al. (2023). Para-social interaction was measured by five items adapted from Lee and Watkins (2016). Finally, impulsive buying behavior was measured using four items adapted from Tsao (2013). All items are measured with a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Following the back-translation technique recommended by Behr (2017), the original English items were translated into Vietnamese and then back-translated into English by a team of three bilingual researchers. To verify the clarity and meaning of the measurement items, two rounds of pre-test were conducted (Lim, 2024). Initially, three marketing researchers and lecturers were invited to provide feedback on the conceptual model and the measurement items, followed by a focused group with five TikTok sellers. Subsequently, 30 Vietnamese individuals who had purchased products immediately after watching a live stream were voluntarily recruited for a pilot test to check for the questionnaires' contextual relevance.

#### **3-3. Sample and Data Collection**

As Vietnam's capital and a highly populated urban center, Hanoi offers a diverse demographic in terms of income, age, and education, making it an optimal location for market research and business expansion. According to Vietnam's General Statistics Office (2024), Hanoi's average income ranks among the top five highest in the country. The city has a high number of residents, social media users, and rapid technological advancements, positioning it as a key hub for digital marketing, e-commerce, and innovation. According to Vietnam's General Statistics Office (2023), Hanoi is the second most populous city, with 8.6 million residents, after Ho Chi Minh City (9.5 million). Additionally, Hanoi also is the political, administrative, cultural, economic, and international trade center, hosting government headquarters, diplomatic missions, and key national and global events.

Due to the absence of an appropriate sampling, this study employed a non-probability convenient snowball sampling technique. This sampling approach has been widely applied in related studies examining online consumer behavior (Hoang Yen & Hoang, 2023). The initial data collection involved distributing surveys to a diverse group of 20 Vietnamese individuals born between 1997 and 2012 within the research team's personal network, representing diverse age groups and occupations. Two screening questions were used to verify whether respondents belonged to Generation Z and had made unplanned purchase after watching livestreaming on TikTok Shop. To expand the sample, initial respondents were requested to recruit additional eligible participants from their acquaintance networks. Vietnamese participants could choose between online and paper surveys based on their preferences. An anonymous Google form was distributed via QR code or popular social networking sites for the online version. All participants were informed of the research purpose and assured of confidentiality. The survey design protected anonymity and did not require any personal information

disclosure. Since Google Forms lacks IP tracking, we limited submissions to one response per email to prevent duplicate responses. The survey ran from September 2024 to October 2024, yielding 317 valid responses. Table 1 presented the participants' demographic information.

**Table 1. Demographic Profile of Respondents (n = 317)**

	Demographic	Frequency	Percent
Age	14-17	33	10.4
	18-22	180	56.8
	23-27	104	32.8
Gender	Male	135	42.6
	Female	182	57.4
Highest education	High School	33	10.4
	University or college	260	82.0
	Postgraduate or above	24	7.6
Marital status	Single	162	51.10
	Married but NO child	116	36.59
	Married with child/children	31	9.78
	I don't want to share	8	2.52

### 3-4. Analytic Approach

There are two approaches to structural equation modeling: covariance-based (CB-SEM) and partial least squares (PLS-SEM). PLS-SEM offers several advantages over CB-SEM, making it particularly suitable for this study. Firstly, PLS-SEM excels in prediction-oriented research due to its causal-predictive nature ((Hair et al., 2019). Secondly, it effectively handles non-normal data distributions, which are common in social science research (Nguyen-Viet & Nguyen, 2024). Thirdly, PLS-SEM accommodates complex models with latent variables, provided the minimum sample size is met (Hair et al., 2019).

## 4. Result

### 4-1. Measurement Model

The reliability analyses revealed Cronbach's alpha values ranging from 0.749 to 0.879, and composite reliability (CR) values from 0.855 to 0.911, both exceeding the threshold of 0.70 for all latent constructs, indicating an internal consistency reliability of the instrument (Hair et al., 2019). The outer loadings of all items surpassed the cutoff value of 0.7, while the latent constructs' average variance extracted (AVE) values ranged from 0.659 to 0.737, above the threshold of 0.5. These results confirm satisfactory convergent validity of the scales (Hair et al., 2019) (Table 2).

Discriminant validity assesses how distinct each construction is from others in the model. We assessed this using two methods: the Fornell and Larcker (1981) criteria and the Heterotrait-Monotrait (HTMT) ratios. Table 3 presents a square matrix with the square root of the average variance extracted (AVE) for each construct on the diagonal (in bold), alongside construct correlations. For all latent constructs, the square root of AVE exceeds correlation with other constructs, demonstrating satisfactory discriminant validity. Table 4 further confirms good discriminant validity, with all HTMT ratios falling below 0.85 (Henseler et al., 2015).

### 4-2. Structural Model

This study employed the variance inflation factor (VIF) to check for multicollinearity. According to Hair Jr et al. (2021), VIF values below 3.0 indicate no multicollinearity issue. Our analysis showed VIF values between 1.093 and 1.258, well below this threshold. Based on Table 3, the Pearson correlation analysis revealed that all six predictor variables had significant correlation with impulse buying behavior ( $p < 0.01$ ). Additionally, since all correlations between variables were all below 0.60, we confirmed that multicollinearity was not a concern in this study.

To evaluate the structural model, bootstrapping was conducted with a re-sampling of 5000. The results of the path coefficients and hypotheses are presented in Figure 2 and Table 5. Entertainment value is positively related to trust in live streamers ( $\beta = 0.230$ ,  $p < 0.001$ ) and attitude towards live streams ( $\beta = 0.263$ ,  $p < 0.001$ ), supporting H1 and H2. However, the informativeness value is not significantly related to trust in live streamers ( $\beta = 0.066$ ,  $p > 0.05$ ) and attitudes towards live streams ( $\beta = -0.061$ ,  $p > 0.05$ ), rejecting H3 and H4. Furthermore, parasocial interaction has a positive

influence on trust in live streamers ( $\beta = 0.446$ ,  $p < 0.001$ ) and attitude towards live streams ( $\beta = 0.331$ ,  $p < 0.001$ ), accepting H5 and H6. Furthermore, the perceived scarcity of products is not significantly related to attitude towards live streams ( $\beta = 0.118$ ,  $p > 0.05$ ), rejecting H7. Perceived scarcity of products is positively related to impulsive buying behavior ( $\beta = 0.241$ ,  $p < 0.001$ ); therefore, H8 is accepted. Moreover, trust is positively related to impulsive buying behavior ( $\beta = 0.353$ ,  $p < 0.001$ ), supporting H9. In addition, attitude is positively related to impulsive buying behavior ( $\beta = 0.265$ ,  $p < 0.001$ ). Therefore, H10 is accepted.

**Table 2. Results for the Measurement Model**

Constructs and items	Outer loadings	Cronbach's alpha	CR	AVE
<b>Attitude toward live streams (ATT)</b>		0.828	0.885	0.659
ATT1. I feel good watching livestreaming on TikTok shop	0.798			
ATT2. I like watching livestreaming on TikTok Shop	0.825			
ATT3. It is wise to watch livestreaming on TikTok Shop	0.799			
ATT4. It is worthwhile watching livestreaming on TikTok Shop	0.825			
<b>Entertainment value (EV)</b>		0.801	0.883	0.716
EV1. I am concerned that the livestreaming video is fun	0.842			
EV2. I think that the livestreaming video is exciting	0.847			
EV3. I think that the livestreaming content is enjoyable	0.849			
<b>Informativeness value (IV)</b>		0.749	0.855	0.663
IV1. Livestreaming is good to retrieve information about product when I need it	0.776			
IV2. To keep up to date on the latest news about product, livestreaming is useful	0.811			
IV3. Livestreaming is useful for finding useful information about product	0.855			
<b>Parasocial interaction (PSI)</b>		0.879	0.911	0.673
PSI1. The live streamer makes me feel comfortable, as I am with a friend	0.825			
PSI2. I see the live streamer as a natural, down-to-earth person	0.823			
PSI3. I would like to see the live streamer in person	0.816			
PSI4. I feel sorry for the live streamer when she/he makes a mistake	0.808			
PSI5. The streamer seems to understand the kinds of things I want to know	0.830			
<b>Perceived scarcity of products (PSC)</b>		0.839	0.892	0.674
PSC1. The current supply of this product is small	0.839			
PSC2. The product is selling out soon	0.822			
PSC3. Many people will buy this product	0.808			
PSC4. I think the limited supplies will cause a lot of people to buy this product	0.814			
<b>Trust in live streamers (TRU)</b>		0.822	0.894	0.737
TRU1. I believe in the information that streamers provide through livestreaming	0.863			
TRU2. I believe live streamers in livestreaming are trustworthy	0.858			
TRU3. I do not think that streamers would take advantage of me	0.814			
<b>Impulse buying behavior (IB)</b>		0.854	0.901	0.695
IB1. When watching livestreaming, I find it difficult to pass up a bargain	0.840			
IB2. When watching livestreaming, I am a bit reckless in buying products	0.834			
IB3. When watching live streaming, I buy products displayed by live streamers spontaneously even though I don't need them	0.844			
IB4. When watching livestreaming, I sometimes can't suppress the feeling of desiring to buy products	0.815			

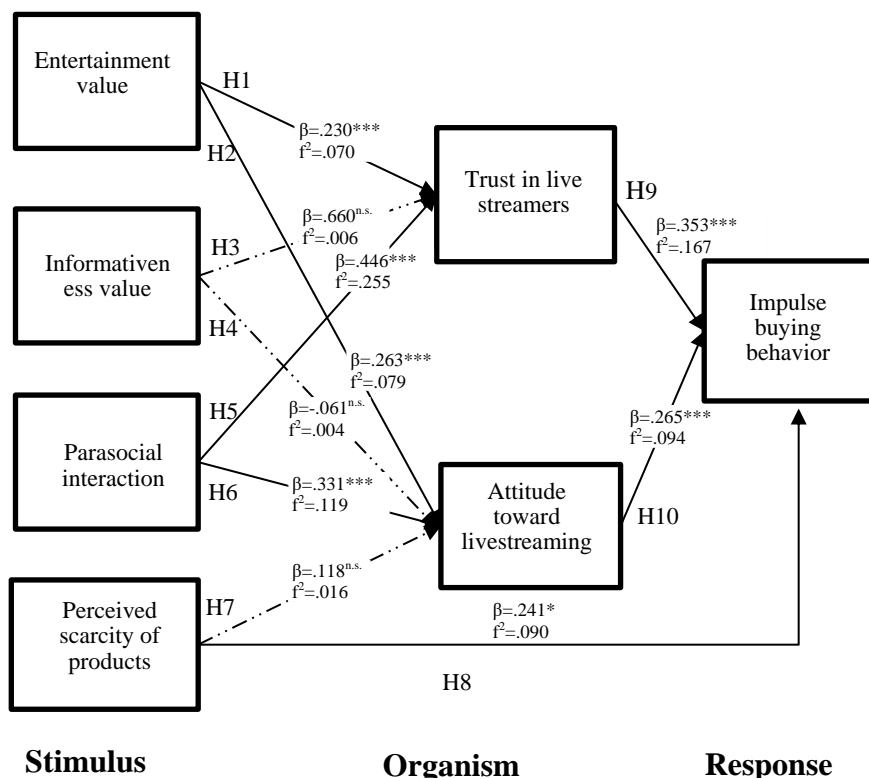
**Table 3. Fornell – Larcker Criterion**

	ATT	EV	IB	IV	PSI	PSC	TRU
<b>ATT</b>	<b>0.812</b>						
<b>EV</b>	0.388**	<b>0.846</b>					
<b>IB</b>	0.476**	0.408**	<b>0.833</b>				
<b>IV</b>	0.151**	0.269**	0.303**	<b>0.815</b>			
<b>PSI</b>	0.439**	0.357**	0.462**	0.309**	<b>0.820</b>		
<b>PSC</b>	0.243**	0.201**	0.394**	0.333**	0.280**	<b>0.821</b>	
<b>TRU</b>	0.430**	0.407**	0.528**	0.266**	0.549**	0.249**	<b>0.858</b>

Note: \*\*p < 0.01

**Table 4. Heterotrait-Monotrait Ratio**

	ATT	EV	IB	IV	PSI	PSC	TRU
ATT							
EV	<b>0.475</b>						
IB	0.564	<b>0.491</b>					
IV	0.186	0.359	<b>0.378</b>				
PSI	0.513	0.424	0.530	<b>0.385</b>			
PSC	0.291	0.244	0.466	0.424	<b>0.327</b>		
TRU	0.522	0.501	0.626	0.335	0.644	<b>0.301</b>	



Note: \*\*\*p < 0.001

**Fig. 2. Results of Structural Model Assessment**

**Table 5. Results for Hypothesis Testing**

Hypo-thesis	Structural path	Path coefficient	p-value	t-value	Decision
H1	EV → TRU	0.230	0.000	3.888	Supported
H2	EV → ATT	0.263	0.000	3.842	Supported
H3	IV → TRU	0.066	0.222	1.223	Not supported
H4	IV → ATT	-0.061	0.384	0.870	Not supported
H5	PSI → TRU	0.446	0.000	7.794	Supported
H6	PSI → ATT	0.331	0.000	4.788	Supported
H7	PSC → ATT	0.118	0.090	1.698	Not supported
H8	PSC → IB	0.241	0.000	3.803	Supported
H9	TRU → IB	0.353	0.000	6.229	Supported
H10	ATT → IB	0.265	0.000	3.947	Supported

The procedure for evaluating effect size (f square) is to check the impact values of exogenous construct (0.35: large, 0.15: medium, and 0.02: small). The values of less than 0.02 explained no effect (Cohen, 2013; Sarstedt et al., 2021). Our results revealed that entertainment had a small effect on trust (f² = 0.070). Para-social interaction had a medium effect on trust (f² = 0.255) and a small effect on attitude (f² = 0.119). Trust also had a medium effect on impulse buying behavior (f² = 0.167). Entertainment value had a small effect (f² = 0.079) on attitude towards live streams. Attitude towards live streams had a small effect (f² = 0.094) on impulse buying behavior. On the other hand, informativeness value had no effect on trust (f² = 0.006) and attitude (f² = 0.004). Similarly,

perceived scarcity of products had no effect ( $f^2 = 0.016$ ) on attitude. Lastly, perceived scarcity of products had a small effect on impulse buying behavior ( $f^2 = 0.090$ ).

#### 4-3. Mediation Analysis

The mediating effects of trust in live streamers and attitude toward live streams were examined by a bootstrap analysis with 5,000 samples at 95% confidence intervals (Hair Jr et al., 2021). Table 6 shows that entertainment value indirectly affects impulse buying behavior through trust in live streamers ( $\beta = 0.081$ ;  $p < 0.01$ ; 95% CI: [0.039; 0.138]) and through attitude toward live streams ( $\beta = 0.070$ ;  $p < 0.05$ ; 95% CI: [0.025; 0.132]). Furthermore, para-social interaction indirectly influences impulse buying behavior through trust ( $\beta = 0.158$ ;  $p < 0.001$ ; 95% CI: [0.098; 0.231]) and attitude ( $\beta = 0.088$ ;  $p < 0.01$ ; 95% CI: [0.039; 0.155]). In contrast, the indirect effects of trust ( $\beta = 0.023$ ;  $p > 0.05$ ; 95% CI: [-0.014; 0.063]) and attitude ( $\beta = -0.016$ ;  $p > 0.05$ ; 95% CI: [-0.060; 0.017]) on the relationship between informativeness value and impulse buying behavior were insignificant. The indirect effect of attitude on the relationship between perceived scarcity of products and impulse buying behavior was also insignificant ( $\beta = 0.031$ ;  $p > 0.05$ ; 95% CI: [-0.002; 0.076]). Therefore, the perceived scarcity of products has only direct effect on impulse buying behavior.

**Table 6. Results for Mediating Effect**

Indirect path	Path coefficient	p-value	Confidence interval (95%) bias-corrected
EV → TRU → IB	0.081	0.001	[0.039; 0.138]
EV → ATT → IB	0.070	0.012	[0.025; 0.132]
IV → TRU → IB	0.023	0.243	[-0.014; 0.063]
IV → ATT → IB	-0.016	0.395	[-0.060; 0.017]
PSI → TRU → IB	0.158	0.000	[0.098; 0.231]
PSI → ATT → IB	0.088	0.003	[0.039; 0.155]
PSC → ATT → IB	0.031	0.111	[-0.002; 0.076]

#### 4-4. Predictive Capability

Predictive power of the model can be assessed through predictive relevance and predictive accuracy. Predictive relevance of the model was assessed based on Q-squared values calculated through the blindfolding technique. All Q-squared values exceed 0, demonstrating the sufficient relevance of the proposed model.

The analysis revealed that the independent variables accounted for 35.6% of the total variance in trust in live streamers, 26.7% of the total variance in attitude towards live streams, 40.7% of the total variance in impulsive buying behavior, exceeding the 10% cut-off value in marketing research, as recommended by Hair et al. (2021). Therefore, the R-squared values observed in this study were significant.

**Table 7. Predictive Accuracy and Predictive Relevance**

Endogenous construct	R <sup>2</sup>	Adjusted R <sup>2</sup>	Q <sup>2</sup>
Trust in live streamers	0.356%	0.350	0.256
Attitude toward live streams	0.267	0.257	0.170
Impulse buying behavior	0.407	0.402	0.274

## 5. Discussions and Implications

### 5-1. Summary of the Main Findings

This study revealed that entertainment value and para-social interaction positively influenced both trust and attitude toward live streams, aligning with several prior studies (Hoffman & Novak, 1996; Saadeghvaziri et al., 2013). However, informativeness value showed no significant effect on either trust or attitude. This result supports Ariffin et al. (2018) but contradicts Shareef et al. (2019), who found informativeness to be important on Facebook. Two possibilities may account for this non-significant effect of informativeness value. First, platform-specific dynamics play a role. TikTok prioritizes entertainment and interactivity, encouraging impulse purchases through short-form videos, influencer engagement, and scarcity tactics, while Facebook is more information-centric, with users

relying on detailed product descriptions, reviews, and structured content. Second, individuals primarily use live streams and TikTok for entertainment, diminishing the impact of informative value. Vietnamese Generation Z shows a preference for real-time content that offers high value and two-way interactivity (Quỳnh & Hrong, 2022). Additionally, the widespread adoption of Internet and smartphones in Vietnam has significantly increased users' access to information and products (We Are Social & Meltwater, 2025).

Perceived scarcity of products indicated a positive effect on impulsive buying behavior (Cengiz & Şenel, 2024; Wu et al., 2021; Zhang et al., 2022) but no significant impact on attitude. Zhang et al. (2022) support this, noting that perceived scarcity can trigger fear of missing out, which directly stimulates impulse buying.

The mediation analysis revealed that trust and attitude mediated the relationships between entertainment value, para-social interaction, and impulsive buying behavior. Perceived scarcity demonstrated only a direct effect on impulse buying behavior, without any mediating role of trust or attitude.

### **5-2. Theoretical implications**

This research contributes to the existing online consumer behavior literature in several ways. First, this study incorporates the uses and gratifications theory into the stimulus-organism-response framework to understand Generation Z consumers' impulse buying behavior on TikTok Shop livestreaming. Generation Z represents a lucrative market for livestreaming commerce due to their openness to social and environmental issues, multiculturalism, and technological advances (Febriansyah et al., 2024), yet their impulse buying behavior remains understudied. Our results demonstrate that entertainment value and parasocial interaction influence Generation Z consumers' impulse buying behavior both directly and indirectly through trust and attitude, clarifying the underlying mechanisms of these relationships. Second, this research breaks new ground by examining how perceived product scarcity affects Generation Z consumers' impulse buying behavior on TikTok Shop livestreaming. Febriansyah et al. (2024) noted that Generation Z, having grown up during economic recovery, tends to be price-sensitive across most socioeconomic segments and often makes quick purchase decisions. TikTok Shop's features, such as exclusive deals and real-time offers, can trigger fear of missing out, and our study enhances understanding of how perceived scarcity accelerates impulse buying behavior. Third, by collecting data from Vietnam, a developing country, this research provides valuable insights for academics studying impulse buying behavior in emerging markets.

### **5-3. Practical Implications**

This study offers strategic insights for businesses using livestreaming as a sales tool, particularly for industries like fashion, beauty, home and lifestyle, food and beverages, personal care, health, electronics, and baby products, which currently drive the highest sales on TikTok Shop Vietnam (Statista, 2024b). First, entertainment value significantly impacts trust and positive viewer attitudes, emphasizing the need for engaging and interactive content, such as live polls, Q&A sessions, and giveaways, to enhance the audience experience. In Vietnam, to boost engagement and capture the attention of a larger audience, especially Generation Z, during TikTok live streams, many brands often organize mini games with giveaways or encourage viewers to participate in lucky draw contests. These real-time interactive activities create excitement, increase viewer participation, and enhance brand visibility. Second, fostering parasocial connections is crucial for building loyalty and encouraging repeat viewership. Live streamers can achieve this by authentically interacting with viewers, responding to comments, and sharing personal anecdotes about the products. For example, brands or sellers can engage with viewers' comments in real time during broadcast by reacting or answering their questions. This interaction helps strengthen the connection between host and audience, while features such as likes and virtual gifts enhance engagement and create a more interactive experience.

Post-hoc qualitative interviews with Vietnamese digital marketing researchers and practitioners revealed that product and brand-related information is widely accessible to consumers. Young Vietnamese consumers frequently engage with and consume online content. As a result, product information presented during live streams shopping events does not significantly drive impulsive purchases. While informativeness alone may not directly influence trust or attitudes, providing

relevant product details remains essential for credibility. Marketers can enhance engagement by incorporating product and brand information into creative content rather than relying solely on traditional production introductions. Effective strategies include using humor, viral trends, interactive challenges, and real-time Q&A sessions. Many Vietnamese brands and retailers now hire KOLs (key opinion leaders) and KOCs (key opinion consumers) as live streamers to boost sales and engage fans more effectively. This trendy, interactive, audience-driven approach strengthens brand connections.

Furthermore, perceived scarcity of products through limited-time offers and exclusive deals effectively drives impulse purchases, but authenticity must be maintained. Overusing scarcity tactics risks consumer skepticism, frustration, and brand damage. Instead, marketers should implement ethical scarcity strategies: genuine stock limits, time-bound promotions, influencer collaborations, exclusive livestreaming deals, and real-time purchase displays. These approaches boost sales while maintaining customer trust and brand credibility. Moreover, trust in live streamers remains critical and can be strengthened through customer testimonials, social proof, and transparency, enhancing purchase intent. A comprehensive approach combining entertainment, para-social interactions, informativeness, and trust-building creates a positive viewer experience that resonates with audiences and drives sales. Success in livestreaming shopping depends on continuously adapting to changing consumer preferences.

## **6. Limitations and Future Research Recommendations**

This research has a few limitations that should be resolved in future research. First, the use of non-probability convenient snowball sampling may limit the sample's representativeness. Future research should employ more probabilistic sampling techniques to enhance data representativeness.

Second, this study examined a limited set of variables influencing impulse buying behavior. Future research could incorporate additional variables like brand awareness that may significantly influence consumers' decision-making processes. Additionally, the focus on Gen Z in Hanoi may limit generalizability, as social media engagement and economic patterns in Hanoi may differ from other regions, particularly rural areas.

Third, since this study focused solely on TikTok Shop live streams in Vietnam, the findings may not generalize to other e-commerce and livestreaming platforms. This makes it challenging to compare impulse buying behaviors across platforms such as Shopee or Lazada. Future research should investigate how platform-specific features influence consumer behavior across various platforms, including social commerce platforms, such as Instagram and Facebook.

Fourth, while this study focused on individual motivations for media consumption, it did not consider the influence of demographic and cultural variables on online shopping behaviors, such as collectivism vs. individualism, uncertainty avoidance, social orientation, and harmony (Lim et al., 2004; Mosunmola et al., 2019; Pratesi et al., 2021; Yoon, 2009). Cross-cultural analyses would provide deeper insights into how cultural differences affect user engagement and purchasing behaviors in live streams shopping environment.

Fifth, this study did not examine the impact of technological advances, such as augmented reality (AR) or virtual reality (VR), on customer online buying behaviors (Billewar et al., 2022; Kim et al., 2023; Wang et al., 2022). Therefore, future research could explore how emerging technologies influence buying behavior in live streams settings.

Finally, the reliance on self-reported data may limit our ability to establish causal relationships among constructs. Future research should consider using longitudinal or observational data to address these limitations.

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