

Consumer involvement in live streaming commerce through the S-O-R lens: The influence of product and emotional stimuli on purchase intentions

Abstract

Purpose

This study investigates the mechanisms by which product-related and experiential factors influence consumer behaviour in live streaming commerce. Drawing on the Stimulus–Organism–Response (S-O-R) framework, the research explores how purchase frequency, usage frequency, entertainment content, and emotional resonance act as external stimuli shaping consumer involvement, which in turn drives purchase intention. The research addresses gaps in prior literature by clarifying the mediating role of involvement in live commerce.

Methodology

Data were collected via an online survey questionnaire of 206 Chinese consumers. Responses were analysed using SPSS and AMOS, with confirmatory factor analysis for validity and regression models for hypothesis testing. Mediation was examined to assess both direct and indirect effects of product characteristics and experiential factors.

Findings

Results indicate that purchase frequency, usage frequency, and entertainment content significantly and directly affect purchase intention, while emotional resonance influences purchase intention only indirectly through consumer involvement. Consumer involvement was confirmed as a key mediator, partially mediating the effects of product-related and entertainment stimuli, and completely mediating the influence of emotional resonance. These findings extend S-O-R theory by highlighting the differential mediation pathways of experiential versus product stimuli in digital commerce environments.

Originality

The study reveals the psychological processes underlying live commerce, demonstrating how consumer involvement shapes the influence of both rational and emotional cues. It provides theoretical contributions to S-O-R applications and practical guidance for platforms, brands, and influencers aiming to optimise engagement and conversion.

Key words: Live streaming commerce, Consumer involvement, Stimulus–Organism–Response (S-O-R) framework

1 Introduction

2 The rapid advancement of digital technologies has transformed live streaming into a prominent
3 channel for commercial exchange, reshaping how consumers experience information,
4 entertainment, and shopping. Initially centred on leisure and social interaction, live streaming
5 has evolved into a key digital commerce format that integrates real-time product
6 demonstrations, interactive communication, and embedded purchasing functions. Stream hosts
7 engage viewers through a combination of entertainment, information provision, and social
8 interaction, making live streaming commerce a highly immersive and engagement-driven retail
9 environment (Gu, Zhang, & Kannan, 2023). China represents the most developed live
10 streaming commerce market globally, with over one billion internet users and approximately
11 75% of them consuming live streamed content in 2023 (Statista, 2023). The scale and speed of
12 growth are reflected in the sector's gross merchandise value, which increased from less than
13 20 billion yuan in 2017 to 4.9 trillion yuan in 2023 (Statista, 2023). Despite this rapid expansion,
14 the mechanisms through which live streaming commerce shapes consumer behaviour remain
15 underexplored, particularly in comparison with traditional e-commerce and social media
16 marketing.

17 A central construct in understanding consumer behaviour in live streaming commerce is
18 consumer involvement, defined as the perceived personal relevance and interest attached to a
19 product or shopping experience (Zaichkowsky, 1985). Higher levels of involvement are
20 associated with greater attention, deeper information processing, and stronger purchase
21 intention in interactive retail contexts (Zhang, Chen, & Zamil, 2023). However, limited
22 research has examined how consumer involvement is jointly shaped by product-related cues
23 and experiential stimuli in real-time live streaming environments. Existing studies suggest that
24 product characteristics, such as purchase frequency and usage frequency, influence decision
25 complexity and cognitive effort. Frequently purchased products tend to encourage habitual
26 decision-making and lower involvement, whereas infrequently purchased or highly used
27 products often require greater deliberation and psychological investment (Hoyer, 1984; Mittal,
28 1989). At the same time, experiential factors play a critical role in live streaming commerce.
29 Entertainment content enhances immersion and attentiveness, while emotional resonance
30 fostered through authentic storytelling and affective connection deepens emotional
31 engagement (Lin et al., 2021). Although prior research has examined these factors
32 independently, their combined effects and underlying mechanisms remain insufficiently
33 theorised.

34 To address these gaps, this study adopts the Stimulus–Organism–Response (S-O-R) framework
35 (Mehrabian & Russell, 1974) to examine how product characteristics (purchase frequency and
36 usage frequency) and experiential factors (entertainment content and emotional resonance)
37 function as stimuli that activate consumer involvement, which in turn shapes purchase intention.
38 By integrating cognitive and affective dimensions within a unified theoretical model, this
39 research advances understanding of consumer decision-making in live streaming commerce

and offers insights relevant to marketers operating in fast-evolving Asia–Pacific digital retail environments.

Literature Review

The Stimulus–Organism–Response (S-O-R) model, first introduced by Mehrabian and Russell (1974), provides a robust theoretical lens for examining how environmental cues shape psychological states and behavioural outcomes. In consumer research, S-O-R has been widely used to conceptualise how marketing stimuli—such as store atmospherics, product attributes, interface design, or social interactions—affect internal cognitive and affective processes, which subsequently drive responses including approach–avoidance behaviour, brand loyalty, impulse buying, or purchase intention. Within this framework, stimuli (S) represent external cues in the environment, organism (O) reflects internal psychological states, and response (R) captures observable behavioural outcomes. This tripartite structure allows scholars to account simultaneously for contextual influences and the experiential, interpretive processes that mediate consumer reactions.

Building on this foundation, subsequent work in consumer behaviour has emphasised the experiential nature of consumption. Holbrook and Hirschman (1982) argue that consumption should not be viewed solely as an information-processing activity driven by rational evaluation, but also as an experiential process characterised by “fantasies, feelings, and fun,” in which symbolic meanings and hedonic responses play a central role. This experiential view is highly pertinent to live streaming commerce, where shopping is intertwined with entertainment value and emotional resonance. More recently, Hoffman and Novak (2016) conceptualise consumer experience in complex, interactive environments such as the Internet of Things (IoT) as emergent from dynamic interactions between consumers and connected objects, highlighting the importance of ongoing, multi-sensory, and relational experiences rather than isolated transactions. Their assemblage-based view highlights that digital environments create new forms of consumer–object experience that extend beyond traditional notions of passive message reception. Complementing these perspectives, Belk (2013) updates the notion of the extended self for the digital age, demonstrating how digital technologies, platforms, and virtual possessions enable consumers to project, share, and co-construct their identities across networked environments. Live streaming commerce can thus be situated at the intersection of S-O-R logic, experiential consumption, and digital self-extension: viewers do not simply evaluate products; they also experience symbolic, affective, and identity-related meanings through their interactions with streamers, platforms, and digital artefacts.

Recent research in live streaming commerce has increasingly relied on the S-O-R framework to explain consumer behaviour. For example, Lin et al. (2021) demonstrate that emotional and experiential cues in live streaming environments function as powerful stimuli that elicit positive affective states, such as happiness and enjoyment, which in turn translate into increased monetary outcomes for sellers. Their findings reveal the importance of affective mechanisms in live commerce and support the view that emotional experience is a central

driver of behavioural responses rather than a peripheral factor. Similarly, Lee and Wan (2023) apply an S-O-R perspective to mukbang live streaming commerce and show that immersive content and social interaction intensify consumers' internal states, leading to heightened involvement and overconsumption behaviours. These studies collectively demonstrate the explanatory power of S-O-R in capturing the emotional and psychological dynamics underlying live streaming commerce.

Gu et al. (2024), in their study of influencer mix strategies in live streaming commerce, demonstrate that product-related cues interact with streamer characteristics to influence sales performance, suggesting that consumers' responses depend not only on who presents the product but also on the nature of the product itself. Within the S-O-R framework, purchase frequency and usage frequency are conceptualised as central product characteristics that function as cognitive, product-related stimuli. Purchase frequency refers to how often consumers buy a particular type of product. High-frequency products (e.g. everyday necessities) are often associated with routinised decision-making and low cognitive effort, which may reduce perceived risk but also lower consumer involvement (Bawa & Shoemaker, 1987; Hoyer, 1984). In contrast, low-frequency purchases such as durable goods or luxury items tend to involve more extensive information search, deliberation, and evaluative processing, thereby eliciting higher levels of cognitive engagement and perceived importance (Jain & Sharma, 2000; Mou, Zhu, & Benyoucef, 2020). Usage frequency, by comparison, concerns how often a product is used after purchase. Products that are frequently used become woven into consumers' daily routines and may contribute to their sense of competence, identity, or lifestyle. This is consistent with Belk's (2013) argument that possessions—physical or digital—can function as extensions of the self, particularly when they are repeatedly integrated into everyday practices. High usage frequency is therefore likely to enhance both functional evaluation and emotional attachment, leading to stronger involvement with the purchase decision (Mittal, 1989). Conversely, products with low usage frequency may be perceived as peripheral or discretionary, eliciting lower involvement except in cases where symbolic value or identity signalling is high.

Beyond product characteristics, live streaming commerce is distinguished by its experiential stimuli, especially entertainment value and emotional resonance. Drawing on Holbrook and Hirschman's (1982) experiential perspective, entertainment value can be understood as the hedonic and aesthetic aspects of the live stream, including humour, music, games, visual design, and performative elements, that generate pleasure, arousal, and sensory enjoyment. Empirical studies in live streaming show that entertaining content increases viewer engagement, attention, and satisfaction, and positively influences purchase intentions when seamlessly integrated with product presentation (Tong et al., 2022). Entertainment value thus operates as an affect-laden stimulus that shapes both the emotional and cognitive dimensions of the consumption experience. In line with Hoffman and Novak's (2016) emphasis on interactive, emergent experience in digitally networked environments, the entertainment features of live streams can be seen as part of a broader experiential assemblage in which consumers, streamers, platforms, and digital artefacts co-create value through ongoing interaction.

The organism in the S-O-R framework, consumer involvement, is conceptualised in this study as a psychological state of personal relevance and investment that arises when individuals process stimuli from the live stream. Qu and Liang (2025) emphasise that experiential value and emotional engagement are central to consumers' interpretation of interactive digital environments, reinforcing the idea that affective stimuli substantially shape internal psychological states. Involvement can manifest cognitively, through deliberate information processing, or affectively, through emotional engagement with the content or the streamer. Studies have consistently demonstrated that higher levels of consumer involvement are linked to stronger behavioural intentions, including the intention to purchase. This relationship is particularly salient in live streaming commerce, where real-time interaction and emotional engagement are essential features of the shopping environment. The speed and intensity of the format demand that consumers make swift yet meaningful judgments, often under the influence of emotionally charged or persuasive content.

The response in this study is purchase intention, defined as the likelihood that a consumer will buy a product showcased in a live stream. This construct has long served as a reliable predictor of actual purchase behaviour in both offline and online contexts. In live streaming commerce, purchase intention is influenced not only by rational evaluation of the product but also by the emotional atmosphere of the stream and the perceived relationship between the viewer and the streamer. As such, understanding how involvement mediates the relationship between different types of stimuli and purchase intention offers critical insights into the behavioural mechanics of this fast-evolving retail channel. The summary of the S-O-R framework application is shown in table 1.

S-O-R Element	Construct	Description
Stimuli (S)	Product Characteristics	Purchase frequency, Usage frequency
	Experiential Factors	Entertainment content, Emotional resonance
Organism (O)	Consumer Involvement	Internal state reflecting interest and relevance
Response (R)	Purchase Intention	Behavioural intention to buy products featured in live streams

Table 1: summary of the S-O-R framework application

Through the integration of the S-O-R framework, this study provides a comprehensive and theoretically grounded examination of how both product attributes and experiential elements in live streaming commerce influence consumer behaviour. By highlighting the mediating role of consumer involvement, it offers a nuanced understanding of how external stimuli are internalized and translated into actionable consumer responses.

Product characteristics and consumer behaviour

Product characteristics represent intrinsic attributes that influence consumers' cognitive and emotional engagement with purchase decisions. Among these, purchase frequency and usage frequency are two primary dimensions that impact consumer involvement in both offline and online retail contexts (Mittal, 1989; Hoonsopon & Puriwat, 2016). In the context of live streaming commerce, where decisions are often made rapidly under conditions of social influence and information overload, these product characteristics become even more critical.

Purchase frequency

Purchase frequency refers to how often consumers buy a particular category of product. Items with high purchase frequency, such as everyday essentials and food products, are typically classified as low-involvement goods. As noted by Bawa and Shoemaker (1987), consumers tend to rely on habitual or convenience-driven decisions when purchasing such items, often foregoing extensive information search or deliberation. Prior research suggests that purchase frequency systematically shapes the depth of consumer information processing and involvement. Infrequent purchasers tend to consider a broader range of product attributes and desired consequences, as they lack established reference points and must engage in more extensive evaluative processing (Min et al. 2012). In contrast, frequent purchasers are more likely to rely on a narrower set of salient cues and learned heuristics derived from prior experience. For instance, Ou et al. (2006) demonstrate that frequent purchasers expend less cognitive effort by drawing on memory and recall from previous purchases, such as prior pricing information.

Hence, it can be posited that high purchase frequency simplifies consumer decision-making, leading to reduced cognitive and emotional investment, while low-frequency purchases bring greater consumer involvement.

H1a: Product purchase frequency is negatively associated with consumer involvement.

H1b: Product purchase frequency has a positive effect on purchase intention.

Usage Frequency

Usage frequency refers to how often consumers use a product post-purchase. It demonstrates a statistically meaningful effect on both emotional attachment and evaluative engagement. According to Mittal (1989), frequently used products are often associated with functional utility and long-term value, prompting consumers to invest more time and effort in the purchase process. In contrast, products used infrequently are perceived as discretionary or occasional, leading to lower consumer involvement and faster, preference-driven decision-making. Empirical evidence supports this claim. Huang and Gao (2023) found that greater frequency of use enhances brand involvement, as consumers seek durable and reliable performance from regularly used products. While Becerril-Castrillejo et al. (2022) note that habitual purchases

may streamline decision-making, they also highlight that high-usage items demand sustained attention to quality and function, particularly in competitive product categories.

Moreover, usage frequency also affects emotional resonance. Wang, Sun and Hou (2021) observed that frequently used products, especially those with personal or symbolic meaning, tend to generate deeper emotional involvement, thereby elevating purchase intention.

H2a: Product usage frequency is positively associated with consumer involvement.

H2b: Product usage frequency has a positive effect on purchase intention.

Experiential factors in live streaming commerce

Beyond tangible product attributes, experiential components of live streaming, such as entertainment and emotional resonance, play a significant role in shaping consumer engagement and influencing behavioural outcomes.

Entertainment content

In live streaming commerce, entertainment content plays a central role in attracting and sustaining viewer attention by transforming shopping into an immersive and interactive experience. Elements such as humorous performances, game-based interactions, and visually engaging presentations enhance stimulation and enjoyment during product displays (Yin et al., 2024). Empirical evidence suggests that entertaining content enhances emotional arousal and positively shapes consumer affect, which in turn increases perceived value and purchase intention (Tong et al., 2022). Beyond immediate affective responses, entertainment content facilitates more effective information processing. A relaxed and enjoyable broadcast atmosphere enables viewers to absorb product information more efficiently, improving memory, trust, and product recall (Zhang, Zhang, & Daim, 2023). Entertainment also fosters social interaction and a sense of community, which supports sustained engagement and viewer retention.

Importantly, entertainment content influences consumer involvement on both emotional and cognitive levels. A dynamic broadcast environment heightens emotional immersion while simultaneously increasing attention and comprehension, thereby strengthening cognitive engagement (Bartsch & Hartmann, 2017; Xin et al., 2025). From an S-O-R perspective, entertainment content thus functions as a dual-pathway stimulus that enhances affective experience and deepens consumer involvement in live streaming commerce.

H3a: Entertainment content in live streaming is positively associated with purchase intention.

H3b: Entertainment content in live streaming is positively associated with consumer involvement.

Emotional resonance

Emotional resonance refers to the affective connection consumers develop in response to a live streamer's emotional expressions, conveyed through storytelling, tone, facial cues, and personal narratives. Unlike entertainment value, which primarily elicits enjoyment or excitement, emotional resonance evokes deeper responses such as empathy, compassion, or moral alignment. These emotions often arise when streamers share personal hardships, charitable activities, or moments of vulnerability that humanise the interaction and foster a sense of shared experience (Ma & Wang, 2021; Kang et al., 2022).

Such emotional appeals enhance perceived authenticity, a critical antecedent of consumer trust in live streaming commerce. When streamers are perceived as sincere and relatable, their product recommendations are more likely to be interpreted as genuine rather than purely commercial, strengthening parasocial bonds between viewers and broadcasters (Lou & Yuan, 2019). This emotional connection increases viewers' receptivity to promotional messages and positively influences purchase intention. In addition to its affective effects, emotional resonance also heightens psychological relevance and attentiveness, thereby strengthening consumer involvement. Emotionally engaged viewers are more likely to cognitively process product information and respond to persuasive cues embedded in the live stream. From an S-O-R perspective, emotional resonance thus functions both as an affective stimulus and as a mechanism that deepens cognitive-affective involvement, indirectly shaping behavioural responses. Accordingly, this study proposes the following hypotheses:

H4a: Emotional resonance in live streaming is positively associated with purchase intention.

H4b: Emotional resonance in live streaming is positively associated with consumer involvement.

Consumer involvement and Purchase intention

Consumer involvement reflects a state of psychological engagement in which the individual perceives the content or product as personally relevant and worthy of attention. Extensive literature across marketing and consumer psychology suggests that high involvement enhances product evaluation, reduces decision uncertainty, and increases the likelihood of purchasing (Celsi & Olson, 1988). In live streaming commerce, high involvement is particularly salient due to the real-time, ephemeral nature of product availability and promotions. Recent studies further highlight the importance of relational and social mechanisms in shaping consumer behaviour in live streaming commerce. In particular, parasocial interaction has been identified as a key mechanism through which viewers develop perceived relationships with streamers, fostering emotional attachment and engagement. Emerging evidence suggests that such parasocial relationships play a critical role in building consumer trust and enhancing purchase intention in live streaming environments (Jia et al., 2024). In addition, social presence and immersive experiences have been shown to strengthen consumers' sense of connection and co-presence, thereby increasing behavioural responses such as impulsive purchasing (Lin et al.,

2022). Trust, in turn, has been recognised as a central mechanism linking streamer characteristics and consumer decision-making, particularly within S–O–R frameworks applied to live streaming commerce (Zhang et al., 2022). These findings suggest that beyond product and experiential cues, relational dynamics serve as important complementary pathways influencing consumer involvement and purchase intention.

Therefore, Customers with high product involvement may expend more cognitive effort in processing live stream content and may therefore be more immersed in the experience (Joo and Yang, 2023). Viewers who are more involved are more likely to attend to product details, trust the streamer, and form stronger purchase intentions.

H5: *Consumer involvement is positively associated with purchase intention in live streaming commerce.*

Mediating role of consumer involvement

Building upon the above relationships, this study further posits that consumer involvement serves as a mediator between external stimuli (i.e., product characteristics and experiential factors) and the behavioural response (i.e., purchase intention). That is, stimuli such as usage frequency or entertainment content influence purchase intention not directly, but through their impact on the consumer's psychological state. This mediating role is consistent with the S-O-R framework, which emphasizes the organism's interpretive function between environmental stimuli and behavioural outcomes.

H6a: *Consumer involvement mediates the relationship between purchase frequency and purchase intention.*

H6b: *Consumer involvement mediates the relationship between usage frequency and purchase intention.*

H6c: *Consumer involvement mediates the relationship between entertainment content and purchase intention.*

H6d: *Consumer involvement mediates the relationship between emotional resonance and purchase intention.*

This conceptual model positions consumer involvement as a key psychological mechanism through which both rational (product-related) and affective (experience-related) cues in live streaming commerce shape consumer behaviour. Figure 1 presents the proposed research model that summarizes these hypothesized relationships.

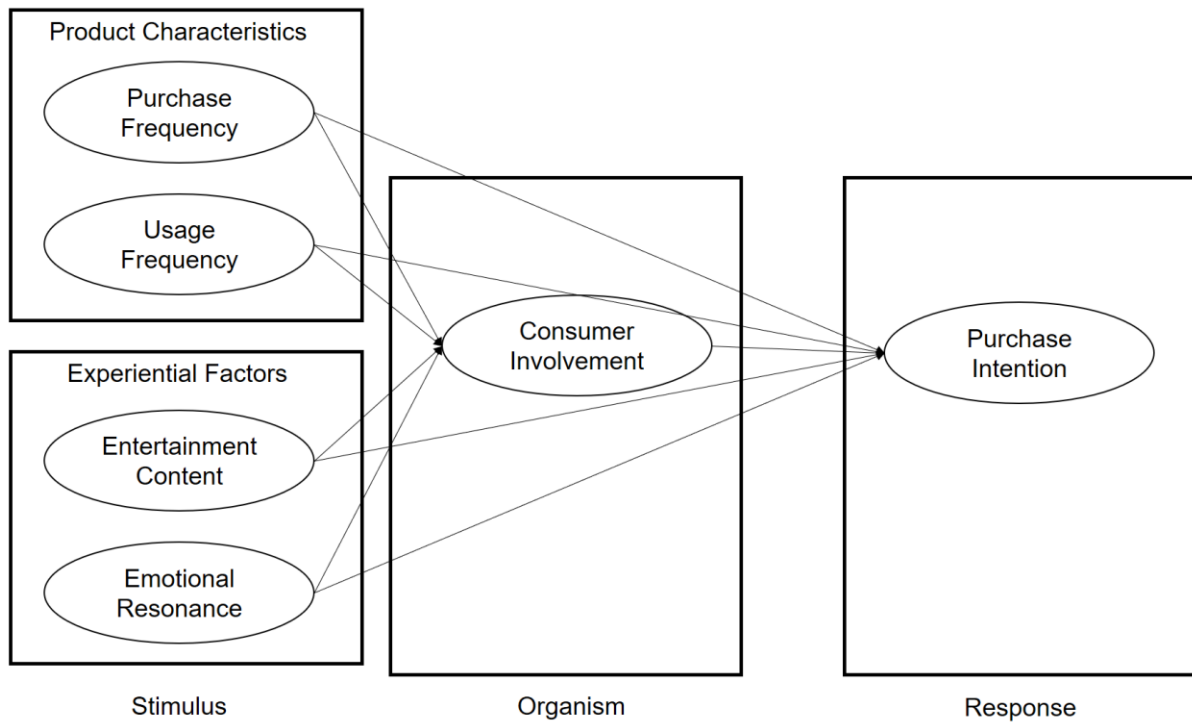


Figure 1: Research model

Research method

Data were collected using a self-administered online questionnaire measured on a five-point Likert scale. The survey was developed using Qualtrics and distributed via Chinese social media platforms, including Douyin (TikTok). A convenience sampling approach was employed to recruit Chinese consumers with experience in live streaming commerce. All participants were provided with an information sheet and gave informed consent prior to participation. Responses were anonymous, and participants were informed of their right to withdraw at any time. The questionnaire was originally developed in English and translated into Chinese using a back-translation procedure to ensure semantic and conceptual equivalence. A pilot test with 40 respondents was conducted to assess clarity and reliability, leading to minor revisions. In total, 245 responses were collected; after excluding incomplete questionnaires, 206 valid responses were retained for analysis. Data analysis was conducted using SPSS 25.0 and AMOS 22.0. Measurement reliability and validity were assessed through confirmatory factor analysis and reliability tests. Descriptive statistics were used to summarise sample characteristics and key variables, and Pearson correlations examined relationships among the main constructs. Mediation effects were tested using Baron and Kenny's (1986) three-step regression approach, followed by Sobel tests to confirm the significance of indirect effects. Mediation was classified as partial or complete according to the significance of direct and indirect paths.

Reliability and Validity

The reliability and validity of the measurement instruments used in this study were assessed through confirmatory factor analysis (CFA) and reliability analysis. As shown in Table 2, the reliability of each measurement scale was assessed using Cronbach's alpha coefficient. The Cronbach's alpha values for all variables ranged from .634 to .720, which are considered acceptable as they exceed the minimum threshold of .60 (Nunnally & Bernstein, 1994; Hair et al., 2010). Entertainment content (.720), consumer involvement (.717), and emotional resonance (.712) showed relatively high internal consistency, exceeding the recommended threshold of .70, while Purchase frequency (.658), Purchase intention (.652), and Usage frequency (.634) demonstrated acceptable reliability levels, exceeding the minimum threshold of .60 (Hair et al., 2010).

The model fit indices indicated that the measurement model in this study demonstrated a good fit (CMIN/DF = 1.738, RMR = .029, IFI = .921, CFI = .918, RMSEA = .060). These values meet all the fit criteria (CMIN/DF $\leq$ 3.0, RMR $\leq$.08, IFI $\geq$.90, CFI $\geq$.90, RMSEA $\leq$.08) suggested by Hair et al. (2010) and Kline (2016). Convergent validity was evaluated by examining the standardized factor loadings of the measurement items. The standardized factor loadings ranged from .422 to .839, with most items exceeding the recommended threshold of .50 (Hair et al., 2010). According to Kline (2016), standardized factor loadings should ideally be .70 or higher, but values in the range of .40 to .50 are also considered acceptable in confirmatory factor analysis. This threshold is further supported by Hair et al. (1998) and Stevens (2009), who suggest that factor loadings above .40 are acceptable for confirmatory purposes. Although a few items had factor loadings between .40 and .50, they were retained for theoretical completeness and content validity considerations. Overall, the measurement scales showed satisfactory convergent validity, supporting their appropriateness for testing the research model.

To assess common method bias (CMB), Harman's single-factor test was conducted following the procedure recommended by Podsakoff et al. (2003). All measurement items were entered into an exploratory factor analysis, and the unrotated factor solution was examined. The results indicated that the first factor accounted for 35.347% of the total variance, which is below the 50% threshold. Based on this criterion, common method bias was not considered problematic in the current study.

Table 2: Results of Confirmatory Factor Analysis and Reliability Analysis

Constructs and Items	Standardized Factor Loadings	Cronbach's α
Purchase Frequency		0.658
In live streaming shopping, I like to buy products with high purchase frequency (such as daily necessities, food and cosmetics).	0.589	
I buy this product relatively frequently.	0.505	

I consider buying this product every time I go shopping.	0.646	
Usage Frequency		0.634
In live streaming shopping, I like to buy products with high frequency of use (such as daily necessities, food, clothing and electronic equipment).	0.704	
I use the product almost every day.	0.510	
I use the product regularly (e.g., weekly/monthly).	0.573	
Entertainment content		0.72
I feel very happy while watching the live promotion.	0.761	
The live promotion program captured my attention.	0.602	
Due to the entertainment value of the live promotion, I am more willing to purchase the recommended products.	0.573	
Emotional resonance		0.712
I feel a strong sense of compassion for the disadvantaged groups mentioned in the live streaming promotion.	0.839	
This live promotion created a strong emotional connection for me.	0.551	
Due to my compassion for the situation presented, I am more willing to purchase the recommended products.	0.614	
Consumer Involvement		0.717
I will carefully think about the goods purchased in the live broadcast and carefully understand the product information. (Cognitive involvement)	0.619	
I felt very excited and happy while watching live shopping. (Emotional involvement)	0.488	
Watching live shopping makes me feel happy, and I think watching live shopping is a kind of entertainment. (Entertainment involvement)	0.630	
I like to get a lot of useful product information in live shopping. (Information involvement)	0.699	
I am willing to buy the products recommended by the anchor. (Purchase involvement)	0.552	
Purchase Intention		0.652
I plan to buy products that interest me in future livestreaming promotion.	0.697	
After watching the live broadcast, I am more inclined to buy the product.	0.571	
If the products recommended by the anchor meet my preferences and needs, I will buy them.	0.422	
Due to my emotional resonance for the situation presented, I am more willing to purchase the recommended products.	0.451	

Results

General characteristics

As shown in Table 3, the sample consisted of 206 participants, with females representing a larger proportion (61.7%) than males (38.3%). Most respondents were aged between 22 and 23 years (59.2%), followed by those aged 24 and above (36.9%). In terms of academic status, senior undergraduate students formed the largest group (50.0%), followed by postgraduate students (32.5%), with fewer participants from junior, sophomore, and freshman years. Business-related majors were predominant (56.8%), followed by science and engineering (27.7%), while other disciplines accounted for a smaller share. Regarding monthly expenditure, the majority of participants reported spending between 3,002 and 4,000 yuan (65.5%), with fewer respondents reporting higher or lower spending levels. Regarding preferred product categories in live streaming promotions (multiple responses allowed), food and beverage was the most frequently selected category (80.1%), followed by beauty and skincare (62.6%), clothing and accessories (58.3%), and household daily necessities (49.0%). Other categories, including cultural and entertainment products, electronics, outdoor equipment, maternal and childcare products, luxury goods, and automotive accessories, were selected by relatively few respondents. The most common combination of preferred products comprised food and beverage, beauty and skincare, clothing and accessories, and household daily necessities (32.0%).

Table 3: General Characteristics of Respondents (N=206)

Variable	Category	Frequency	Percentage(%)
Gender	Female	127	61.7
	Male	79	38.3
Age	18-21 years old	8	3.9
	22-23 years old	122	59.2
	Aged 24 and above	76	36.9
Grade	Freshman year	3	1.5
	Sophomore year	3	1.5
	Junior year	30	14.6
	Senior year	103	50.0
	Graduate students	67	32.5
Major	Arts	19	9.2
	Business	117	56.8
	Literature and history	7	3.4
	Science and Engineering	57	27.7
	Other	6	2.9
Average monthly expenditure	Less than 2000 yuan	2	1.0
	2001-3000 Yuan	29	14.1
	3001-4000 Yuan	135	65.5
	Above 4001 Yuan	40	19.4

Preferred products in live streaming promotion (multiple choice)	Food and beverage	165	80.1
	Beauty and skin care products	129	62.6
	Clothing and accessories	120	58.3
	Household and daily necessities	101	49.0
	Cultural and entertainment products	27	13.1
	Electronic products	27	13.1
	Outdoor equipment for sports	11	5.3
	Maternal and childcare products	5	2.4
	Luxury goods	3	1.5
	Automobiles and accessories	3	1.5

Descriptive statistics and Correlation analysis results

The descriptive statistics and correlation analysis results of the main variables are shown in Table 4. All variables showed high mean values above 4.0 on a 5-point scale, with statistically significant positive correlations ($p < .001$). Consumer involvement demonstrated the strongest correlations with purchase frequency ($r=.662$), emotional resonance ($r=.639$), and entertainment content ($r=.637$). Purchase intention correlated most strongly with consumer involvement ($r=.639$) and usage frequency ($r=.596$).

Table 4: Descriptive Statistics and Correlation of Main Variables (N=206)

Variable	M	SD	1	2	3	4	5	6
1. Purchase frequency	4.19	0.57	1					
2. Usage frequency	4.24	0.54	.589***	1				
3. Entertainment content	4.26	0.58	.416***	.429***	1			
4. Emotional resonance	4.23	0.58	.401***	.406***	.704***	1		
5. Consumer involvement	4.26	0.51	.662***	.601***	.637***	.639***	1	
6. Purchase intention	4.26	0.47	.559***	.596***	.567***	.514***	.639***	1

*** $p < .001$

Hypothesis testing results

Baron and Kenny's (1986) three-step approach was used to test the hypotheses and examine the mediating role of consumer involvement. The analysis results are presented in two parts: direct effects analysis and mediation effects analysis.

1 Direct effects analysis

2 The effects of independent variables in Table 5 (purchase frequency, usage frequency,
3 entertainment content, emotional resonance) on the mediator variable (consumer involvement)
4 were examined. The results showed that purchase frequency ($\beta=.350$, $p < .001$), usage
5 frequency ($\beta=.192$, $p < .001$), entertainment content ($\beta=.222$, $p < .001$), and emotional
6 resonance ($\beta=.265$, $p < .001$) all had significant positive effects on consumer involvement.

Table 5: Effect of Independent Variables on Consumer Involvement (Step 1)

Independent Variable	B	SE	β	t	p
(Constant)	.408	.199		2.045	.042
Purchase frequency	.308	.046	.350	6.644	.000
Usage frequency	.179	.050	.192	3.615	.000
Entertainment content	.193	.052	.222	3.702	.000
Emotional resonance	.232	.052	.265	4.466	.000
Adjusted $R^2 = .651$, $F = 96.449$, $p < .001$					

7 The effects of independent variables in Table 6 (purchase frequency, usage frequency,
8 entertainment content, emotional resonance) on the dependent variable (purchase intention)
9 were examined. Purchase frequency ($\beta=.224$, $p < .001$), usage frequency ($\beta=.305$, $p < .001$),
10 and entertainment content ($\beta=.261$, $p < .001$) had significant positive effects on the dependent
11 variable, purchase intention. However, emotional resonance ($\beta=.116$, $p > .05$) did not show a
12 statistically significant effect.

Table 6: Effect of Independent Variables on Purchase Intention

Independent Variable	B	SE	β	t	p
(Constant)	1.089	.220		4.954	.000
Purchase frequency	.182	.051	.224	3.566	.000
Usage frequency	.264	.055	.305	4.836	.000
Entertainment content	.210	.058	.261	3.655	.000
Emotional resonance	.094	.057	.116	1.645	.102
Adjusted $R^2 = .505$, $F = 53.261$, $p < .001$					

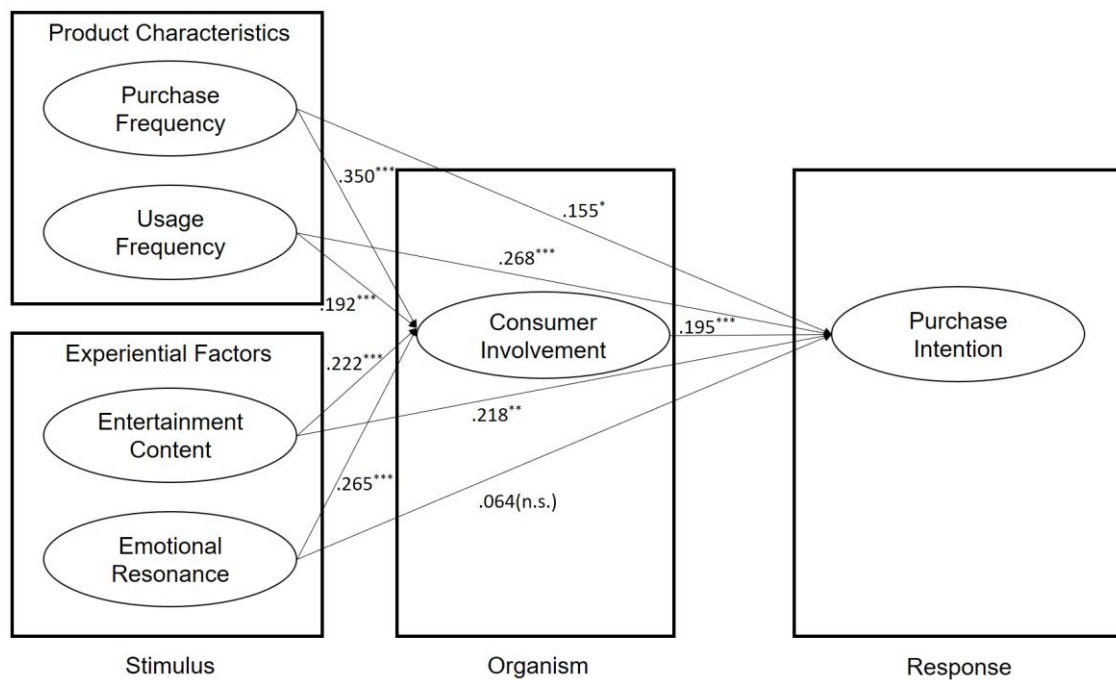
Mediation effects analysis

When both independent variables and the mediator variable were input simultaneously, the mediator variable, consumer involvement ($\beta=.195$, $p < .05$), had a significant positive effect

on the dependent variable, purchase intention. Shown in Table 7, among the independent variables, purchase frequency ($\beta=.155$, $p < .05$), usage frequency ($\beta=.268$, $p < .001$), and entertainment content ($\beta=.218$, $p=.003$) still had significant effects on purchase intention, though their standardized coefficients (β) decreased compared to the direct effects model. On the other hand, emotional resonance ($\beta=.064$, $p > .05$) did not have a significant effect on purchase intention. Figure 2 presents the path diagram illustrating the standardized coefficients for all hypothesized relationships, summarizing both direct and indirect pathways.

Table 7: Effect of Independent Variables and Consumer Involvement on Purchase Intention

Independent Variable	B	SE	β	t	p
(Constant)	1.016	.220		4.623	.000
Purchase frequency	.127	.056	.155	2.268	.024
Usage frequency	.232	.056	.268	4.158	.000
Entertainment content	.175	.059	.218	2.983	.003
Emotional resonance	.052	.059	.064	.881	.380
Consumer involvement	.181	.077	.195	2.349	.020
Adjusted $R^2 = .516$, $F = 44.670$, $p < .001$					



1 Note: * $p < .05$, ** $p < .01$, *** $p < .001$, n.s. = not significant

Figure 2: Path diagram with standardized coefficients

The Sobel test (Table 8) was conducted to verify the statistical significance of the mediation effects. The results showed that the mediating effects through consumer involvement were statistically significant for purchase frequency ($Z=2.218$, $p=.0266$), usage frequency ($Z=1.965$, $p=.0494$), entertainment content ($Z=1.987$, $p=.0470$), and Emotional resonance ($Z=2.082$, $p=.0374$).

Table 8: Sobel Test Results

Path	Z	p	Mediation Type
Purchase frequency → Consumer involvement → Purchase intention	2.218	.0266	Partial Mediation
Usage frequency → Consumer involvement → Purchase intention	1.965	.0494	Partial Mediation
Entertainment content → Consumer involvement → Purchase intention	1.987	.0470	Partial Mediation
Emotional resonance → Consumer involvement → Purchase intention	2.082	.0374	Complete Mediation

Note: Partial mediation occurs when both direct and indirect effects are significant. Complete mediation occurs when only the indirect effect is significant while the direct effect is not significant ($p > .05$).

Consumer involvement was found to partially mediate the relationships between purchase frequency, usage frequency, entertainment content, and purchase intention. This indicates that these variables affect purchase intention both directly and indirectly through consumer involvement. In contrast, emotional resonance did not have a statistically significant direct effect on purchase intention, but its indirect effect through consumer involvement was significant, showing a complete mediation effect. This suggests that the effect of emotional resonance on purchase intention is realised only through consumer involvement.

Table 9 summarizes the results of the hypothesis testing, showing that eleven out of thirteen hypotheses were supported. Although H1a and H4a were not supported, the finding of complete mediation for the relationship between emotional resonance and purchase intention provides valuable insights into the mechanism through which emotional resonance influences consumer behavior in live streaming shopping contexts.

Table 9: Results of Hypotheses testing

Hypothesis		Result
H1a	Product purchase frequency is negatively associated with consumer involvement.	Not Supported
H1b	Product purchase frequency has a positive effect on purchase intention.	Supported
H2a	Product usage frequency is positively associated with consumer involvement.	Supported
H2b	Product usage frequency has a positive effect on purchase intention.	Supported
H3a	Entertainment content in live streaming is positively associated with purchase intention.	Supported
H3b	Entertainment content in live streaming is positively associated with consumer involvement.	Supported
H4a	Emotional resonance in live streaming is positively associated with purchase intention.	Not Supported
H4b	Emotional resonance in live streaming is positively associated with consumer involvement.	Supported
H5	Consumer involvement is positively associated with purchase intention in live streaming commerce.	Supported
H6a	Consumer involvement mediates the relationship between purchase frequency and purchase intention.	Supported (Partial Mediation)
H6b	Consumer involvement mediates the relationship between usage frequency and purchase intention.	Supported (Partial Mediation)
H6c	Consumer involvement mediates the relationship between entertainment content and purchase intention.	Supported (Partial Mediation)
H6d	Consumer involvement mediates the relationship between emotional resonance and purchase intention.	Supported (Complete Mediation)

2 Discussions

3 This study analyzed the relationships between product characteristics (purchase frequency and
4 usage frequency), experiential factors (entertainment content and emotional resonance),
5 consumer involvement, and purchase intention in the context of live streaming shopping,
6 utilizing the Stimulus-Organism-Response (S-O-R) model as its theoretical framework.
7 Through Baron and Kenny's three-step mediation analysis and Sobel tests, several key
8 empirical insights emerged that provided significant implications for both theory and practice.

9 First, the findings confirm that both product characteristics and experiential factors, as stimulus
10 (S) elements, exert a strong influence on purchase intention in live streaming environments.
11 Purchase frequency and usage frequency both show direct positive effects on purchase

intention, indicating that consumers are more inclined to purchase frequently bought and regularly used products via live streams. This extends S-O-R theory by demonstrating that product-specific characteristics play a meaningful role in shaping behavioural responses in interactive digital commerce contexts. Contrary to conventional involvement theory, purchase frequency also exhibits a positive relationship with consumer involvement, rather than the hypothesised negative effect. These findings challenge established assumptions that frequent purchases are inherently low-involvement decisions (Hoyer, 1984; Mittal, 1989). In live streaming commerce, real-time interaction, entertainment content, and social presence appear to transform routine purchases into engaging experiences, maintaining consumers' attention and emotional investment even for everyday products. This highlights the importance of contextualising involvement theory within digitally mediated socially interactive shopping environments.

Second, entertainment content emerges as a direct predictor of purchase intention, underscoring the importance of enjoyable and engaging live shopping experiences. In contrast, emotional resonance does not directly influence purchase intention but operates indirectly through consumer involvement, indicating a full mediation effect. This distinction refines S-O-R theory by showing that different experiential stimuli influence behaviour through different pathways. While entertainment content can translate directly into behavioural responses, emotional resonance must first activate consumers' internal psychological state before shaping purchase intention.

Third, the mediating role of consumer involvement as the organism (O) component of the S-O-R framework is strongly supported. Consumer involvement partially mediates the effects of product characteristics and entertainment content on purchase intention, while fully mediating the effect of emotional resonance. These differential mediation patterns suggest that the S-O-R model is stimulus-dependent in live streaming commerce contexts. Certain stimuli influence behaviour both directly and indirectly, whereas others function exclusively through changes in internal psychological states.

Theoretical Implications

This study makes distinctive contributions that differentiate it from existing research in digital commerce. Unlike previous studies focused on traditional e-commerce environments, our research specifically examines the real-time, interactive nature of live streaming commerce, where temporal urgency and social presence create unique consumer dynamics. The unexpected finding that purchase frequency positively influences consumer involvement reveals important contextual differences in how product characteristics operate in live streaming versus traditional online shopping. Furthermore, our identification of differential mediation pathways with entertainment value showing partial mediation while emotional resonance demonstrates complete mediation provides new insights into how different experiential stimuli function within the S-O-R framework, extending the theory's application to digitally mediated, time-sensitive shopping environments.

1 **Practical Implications**

2 For live streaming platform operators, our findings provide specific guidance for algorithm
3 development and user experience optimization. For example, recommendation algorithms
4 should prioritize streams featuring products with high purchase and usage frequency, as these
5 demonstrate stronger direct effects on purchase intention (H1b, H2b). Platforms should also
6 consider implementing features that enhance consumer involvement across multiple
7 dimensions (cognitive, emotional, entertainment, informational, and purchase), as this has been
8 identified as a key mediating mechanism. Specific features should include interactive polls,
9 live Q&A sections, and real-time engagement tools. Platforms should also implement streamer
10 matching algorithms based on product characteristics. High-frequency products benefit from
11 entertainment-focused hosts, while low-frequency products require hosts with strong
12 storytelling abilities. These engagement features can be evaluated through metrics such as
13 average viewing duration, comment frequency, and click-through rates, which serve as
14 behavioral indicators of consumer involvement levels.

15 For brands and merchants utilizing live streaming channels, our results suggest a multi-faceted
16 approach to content strategy. Entertainment value should be prioritized in live stream design,
17 as it directly influences purchase intention while also working through consumer involvement.
18 Brands should incorporate engaging visual elements, interactive games, and humorous content
19 that maintains viewer attention throughout the stream. However, emotional resonance-based
20 marketing approaches (such as cause-related marketing or highlighting social impact) should
21 be carefully integrated with strategies to boost consumer involvement, rather than relied upon
22 to directly drive purchases. This requires authentic storytelling, personal narratives from hosts,
23 and meaningful connections to social causes that first build emotional engagement before
24 presenting product benefits. Practically, brands may consider allocating the initial portion of
25 live streaming sessions to involvement-building activities before transitioning to direct product
26 promotion.

27 For live streaming hosts and influencers, our findings highlight the importance of balancing
28 product information with entertainment content. The complete mediation effect for emotional
29 resonance suggests that when discussing socially conscious products or causes, anchors should
30 actively work to boost viewer involvement through interactive elements and personal
31 connection rather than simply presenting emotional content. This can be achieved through
32 personal storytelling about the cause, encouraging viewer comments and sharing experiences,
33 and creating interactive moments such as polls about social issues before introducing the
34 product.

35 Beyond its theoretical and managerial contributions, this study also has implications for
36 teaching and broader society. In educational settings, the findings provide a useful example of
37 how the S–O–R framework can be applied to contemporary digital commerce contexts,
38 particularly in teaching consumer behaviour, digital marketing, and social commerce. At the
39 societal level, the results suggest that live streaming commerce can shape consumer attitudes

and behaviour through emotional and experiential mechanisms as well as functional product cues. While these features may enhance engagement, they may also encourage more impulsive and less deliberate consumption, raising concerns about consumer well-being and the broader social effects of emotionally driven digital marketing.

Conclusion

This study advances understanding of consumer behaviour in live streaming commerce by integrating product characteristics and experiential stimuli within a Stimulus–Organism–Response (S-O-R) framework. The findings indicate that both cognitive product cues (purchase frequency and usage frequency) and affective experiential cues (entertainment value and emotional resonance) function as key stimuli shaping consumer involvement, which in turn drives purchase intention. By positioning involvement as a central psychological mechanism, the study highlights live streaming commerce as an immersive and emotionally embedded, rather than purely information-driven, retail format. The results extend existing live commerce research by showing that product characteristics and experiential factors exert differentiated yet complementary effects on consumer involvement. Product-related cues shape involvement through familiarity, utility, and decision complexity, whereas experiential cues deepen emotional and cognitive engagement by enhancing enjoyment, perceived authenticity, and affective alignment. This dual-pathway mechanism highlights the importance of considering both functional and experiential dimensions when theorising consumer responses in interactive digital retail environments. More broadly, this research contributes to the digital consumption literature by situating live streaming commerce within experiential consumption and S-O-R traditions.

Limitations and Future research directions

This study has several limitations. First, the sample consisted primarily of young adults in China, which may limit generalizability to other demographic groups or cultural contexts. However, young and educated consumers represent the core user base of live-streaming commerce in China (Statista, 2023), making the sample appropriate for the research context. Future studies should examine whether the findings extend to other age groups, educational backgrounds, and national settings. Although China represents one of the world's largest and most advanced live-streaming commerce markets, making it a theoretically meaningful context, future research should validate the proposed model across broader consumer segments and different cultural settings. Second, this study does not incorporate moderating variables that may influence the relationships within the S–O–R framework. Future research could extend the model by examining factors such as consumer trust in streamers, platform familiarity, and prior live-streaming experience, which may shape how product and emotional stimuli translate into consumer involvement and purchase intention. Third, the cross-sectional design limits the ability to capture dynamic changes in consumer behaviour over time. Future studies may adopt longitudinal or experimental approaches to further enhance causal inference and theoretical robustness. Finally, although mediation was tested using Baron and Kenny's approach with

Sobel tests, future research could apply structural equation modeling and multi-group analyses to enhance robustness and explore heterogeneity across platforms or product categories.

Note: This study received ethical approval from the University of Southampton. All research procedures were conducted in accordance with the institution's ethical guidelines. Informed consent was obtained from all participants prior to data collection.

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