The Influence of Streamer Attributes on Purchase Intentions in Livestream Commerce: The Mediating Role of Flow Experience

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Abstract

Livestream commerce is experiencing rapid growth in China, with much of its success dependent on the performance of streamers. Grounded in the Stimulus-Organism-Response (SOR) framework, this study aims to (1) investigate the impact of three key streamer attributes—professionalism, interactivity, and attractiveness—on consumers' purchase intentions, and (2) explore the mediating role of flow experience in the relationship between these attributes and purchase intentions within the Chinese livestream commerce context. A structured online survey was conducted, collecting 440 valid responses from active livestream e-commerce users. Data analysis was carried out using SMART-PLS software to test the proposed hypotheses. The findings indicate that (1) professionalism, interactivity, and attractiveness of streamers each have a positive effect on purchase intentions, and (2) flow experience mediates the relationships between these streamer attributes and purchase intentions. This study highlights the critical role of streamer characteristics in shaping consumer behavior in China's livestream commerce and elucidates their influence through the SOR framework. The results offer valuable theoretical and practical insights for both scholars and marketing professionals.

Keywords: Livestream Commerce, Streamer Attributes, Flow Experience, SOR Theory, Purchase Intention

Introduction

In China, livestream e-commerce—a novel marketing model that integrates online livestreaming with e-commerce—has increasingly emerged as a dominant shopping method for the majority of mobile users. During the 2022 "618" shopping festival, total online sales amounted to 695.9 billion RMB, with livestream e-commerce contributing 144.5 billion RMB. This represents a year-on-year growth rate of 124%, accounting for 21% of the total online sales .

The success of a livestream largely relies on the streamer's performance, with their behavior playing a pivotal role in attracting a wide audience (Zhao et al., 2019). In the context of livestream e-commerce, consumers not only acquire product knowledge through the information and real-time interactions provided by streamers but also derive emotional satisfaction. Streamers' personal attributes, such as professionalism, interactivity, and attractiveness, are crucial factors that effectively stimulate consumers and shape their purchasing behavior (Xue et al., 2020; Meng & Lin, 2023; Li et al., 2024). Given that livestream e-commerce operates without the limitations of time or space, consumers are exposed to a variety of informational stimuli from streamers, potentially altering their emotional and cognitive states. This high degree of interaction, coupled with an engaging experience, plays a significant role in driving consumer purchasing behavior. Despite increasing scholarly attention on the role of streamers in livestream e-commerce, research remains limited on how streamer attributes influence consumers' psychological states and subsequently impact their purchase intentions. These attributes could be further harnessed to develop advanced predictive models for streamer sponsorship selection and targeted marketing strategies (Zhao et al., 2019). Consequently, this study aims to investigate how three key dimensions of streamer attributes—professionalism, interactivity, and attractiveness—influence consumers' purchase intentions within a livestream context, while also examining the mediating role of flow experience in this relationship.

Literature Review

Livestream Commerce in China

Online livestreaming in China emerged in March 2016 with the launch of the Taobao platform, which marked the beginning of the direct-purchase model in e-commerce. Following this, companies like JD.com introduced similar services, accelerating the growth of online shopping. E-commerce livestreaming, a commercial model that integrates livestreaming technology with traditional e-commerce platforms to connect users and sell products, has gradually become mainstream (Li, 2022). This model effectively combines the strengths of "livestreaming" and "e-commerce," offering notable advantages over traditional television shopping and standard e-commerce approaches. As a new shopping mode, e-commerce livestreaming draws a large consumer base with its intuitive interface, live product demonstrations, interactivity, and entertainment value, making it a vital strategy for businesses to boost sales. Recent research shows that e-commerce livestreaming outperforms traditional e-commerce's single multimedia messaging service (MMS) model in terms of product display, social interaction, user experience, and sales strategies (Xu & Dewi, 2023). Moreover, e-commerce livestreaming not only delivers a more authentic shopping experience and strengthens consumer engagement but also fosters a more immersive shopping environment, making it more attractive than traditional e-commerce methods (Shui et al., 2023).

Live Streamer Attributes

During a livestream, the streamer serves as both the sender and controller of information within the streaming environment. Essentially, streamers function as the central information sources in the marketing communication process. According to the theory of information source characteristics, the ability of these sources to persuade their audience is influenced by three key factors: credibility, professionalism, and attractiveness (Lu and Chen, 2021).

The professionalism of a livestreaming information source refers to the knowledge and expertise the streamer demonstrates, derived from staying updated on current trends and extensive personal experience (Wang et al., 2021). The attractiveness of the

livestreaming information source refers to the physical and personal qualities of the streamer, such as an appealing appearance, attractive physique, and charismatic personality. The interactivity of the livestreaming information source involves the ability for consumers to engage and exchange information with streamers via public screens and real-time feedback, facilitating emotional interactions (Kang et al., 2021).

Flow Experience

The theory of flow, first introduced by Csikszentmihalyi (1975), defines flow as a positive psychological state in which an individual is fully immersed, focused, and engaged in an activity at a given moment. In the context of live streaming, users' flow experience refers to a state of heightened focus where they concentrate fully on the live stream content, free from external distractions, and become completely immersed in it. This immersion leads to a sense of enjoyment and may even cause them to lose track of time and their original plans (Hyun et al., 2022; Dong et al., 2023). A review of the literature reveals that the theory of flow experience is predominantly applied in fields such as distance education, information technology, and gaming. Its application in the context of livestreaming e-commerce remains relatively limited (Dong et al., 2023).

Hypothesis Development

The effect of streamers' professionalism on consumers' flow experience

The professionalism and interactivity of live streamers have been shown to influence consumers' internal states, thereby increasing their purchase intentions (Liao et al., 2022). Research suggests that as consumers gain a deeper understanding of promoted products and expand their professional knowledge, they are more likely to develop positive attitudes and a sense of identification with the products (Gao, 2019). The professionalism exhibited by streamers during product recommendations can enhance consumers' excitement, perceived value, and identification with the information presented (Yang, 2023). Furthermore, streamers' expertise with products has a positive effect on consumers' purchase intentions by enhancing their perceptions of functional, emotional, and social value (Jiang et al., 2022). Surveys conducted among users of JD.com, Taobao, and Sina Weibo reveal that the professional knowledge offered by leading live streaming platforms

significantly improves the viewing experience, and detailed product information has a substantial impact on viewer engagement (Rungruangjit, 2022). The professionalism demonstrated by streamers not only provides viewers with comprehensive knowledge and information but also helps them concentrate more on the content, thereby fostering positive emotional responses and inducing a flow experience. Based on these insights, we propose the following hypothesis:

H1: The professionalism of streamers positively influences consumers' flow experience.

The effect of streamers' interactivity on consumers' flow experience

Interactivity in live streaming can significantly enhance users' perceived value and increase their willingness to engage. It also allows consumers to experience greater enjoyment (Shi, 2023). Numerous studies have demonstrated a close relationship between streamer interactivity and the audience's flow experience (Wulf et al., 2018). When streamers exhibit high levels of interactivity, consumers can receive abundant product information quickly, boosting their enjoyment and triggering a flow experience (Lin et al., 2021). During a live stream, timely responses and communication from the streamer, along with the immediate exchange of information, effectively focus viewers' attention, blur their sense of time, and provide psychological pleasure, thereby inducing a flow experience. Through active interaction and effective communication, streamers can help viewers become fully immersed in the live stream, creating an experience of losing track of time, which in turn fosters deep emotional satisfaction and triggers a flow experience. Therefore, we propose the following hypothesis:

H2: The interactivity of streamers positively influences consumers' flow experience.

The effect of streamers' attractiveness on consumers' flow experience

In traditional online shopping, visual appeal significantly enhances consumers' intrinsic enjoyment. Aesthetically pleasing website design can greatly improve users' flow experience (Marmat, 2022). Social psychology research indicates that individuals with attractive qualities, such as physical appearance and charisma, are more likely to be liked by others and evoke positive and pleasurable feelings (Chen & Liao, 2022). When

streamers possess strong attractiveness in terms of appearance, voice, charm, and personality, they can stimulate consumers' curiosity and positive emotional resonance, immersing the audience in a state of enjoyment where they lose track of time, thus generating a flow experience (Huo et al., 2023). Existing studies generally agree that a streamer's external appearance and internal charm directly influence viewers' psychological states, capture their attention, and induce a flow experience (Tang, 2024). Therefore, we propose the following hypothesis:

H3: The attractiveness of streamers positively influences consumers' flow experience.

The effect of flow experience on purchase intention

Purchase intention refers to the likelihood that consumers will buy a product based on their understanding of it within a specific context. It serves as a crucial precursor to actual purchasing behavior (Zuo et al., 2014). Flow experience reflects deep involvement that fosters strong psychological engagement, resulting in satisfaction and loyalty among virtual world users (Barker, 2016). In an online setting, flow draws users into a state of complete engagement with tasks, motivating them to continue these activities. In social commerce, consumers who experience flow are more inclined to participate in social commerce activities, which subsequently affect their purchase intentions (Zhang et al., 2014; Xu et al., 2022). Similarly, in live stream commerce, the flow experience has a significant positive influence on consumption intentions (Wang et al., 2021). Therefore, we suggest that consumers who experience a high level of flow are highly likely to develop purchase intentions. Accordingly, we propose the following hypothesis:

H4: Flow experience positively influences purchase intention.

The mediating effect of flow experience

Frequent interactions during e-commerce live streaming enable consumers to temporarily escape reality and become deeply immersed in the streaming environment, which helps them forget their worries and experience flow (Liu et al., 2020). This interactivity allows for two-way communication between consumers, streamers, and other viewers, enhancing immersion. Liu et al. (2022) discovered that in a tourism live stream commerce setting, flow experience mediates the link between interactivity and purchase

intention. Similarly, Wang et al. (2021) found that a streamer's charm and interactivity can affect consumers' flow experience. Dong et al. (2023) observed that flow experience mediates the influence of a live streamer's professionalism, interaction, and attractiveness on purchase intention. Based on these findings, we propose the following hypotheses:

H5: Flow experience mediates the relationship between a) professionalism b) interactivity, and c) infectiousness and purchase intention.
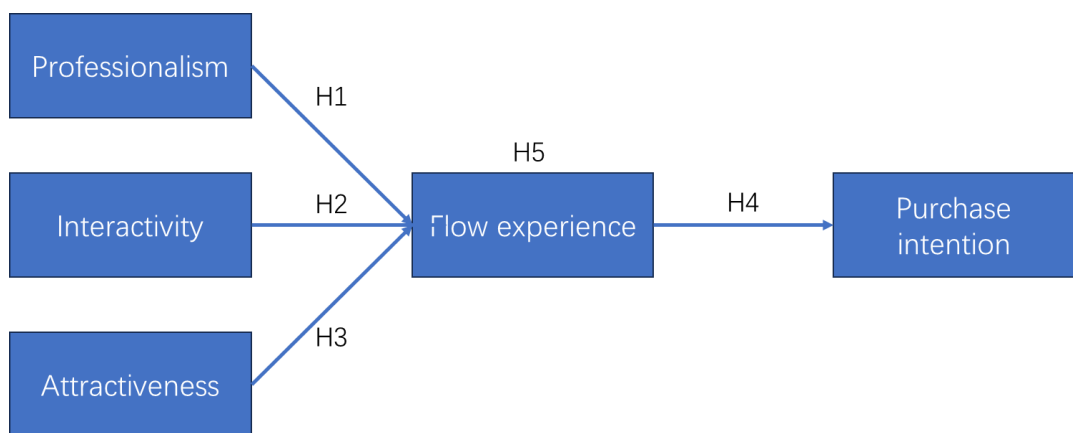
Conceptual Framework

Figure 1 Conceptual Framework

Research Methodology

Sample, Sampling, and Data Collection

In this study, our respondents were Chinese adults aged over 20 who had participated in live-streaming shopping within the past six months. Data was collected using a self-administered structured questionnaire, which was approved by STIU-HREC068/2024 in Thailand. A convenience sampling method was employed, utilizing an online survey for data collection. The questionnaires were collected via the online platform www.sojump.com. The sample size was determined using the Cochran formula, aiming for a 95% confidence level and a 5% margin of error, resulting in a required sample size of 385 (Cochran, 1977). However, 500 questionnaires were collected in total, as a higher

sample size can help offset potential non-responses. After data cleaning, 440 valid samples were retained for the final analysis.

Data Analysis Method

Aligning with recent research on live stream commerce (Shao, 2024), this study utilized SmartPLS 4.0 for data analysis. Before testing the hypotheses within the structural model, we evaluated the measurement model's convergent and discriminant validity using Anderson and Gerbing's (1988) two-stage approach. To determine statistical significance, we applied bootstrapping with 5,000 resamples (Hair et al., 2016).

Results

Descriptive Analysis

The statistical analysis of demographic characteristics reveals that, males (56.6%) slightly outnumber females (43.4%), with the majority of participants aged between 21 and 30 years (60.4%). Most are employed in public or private sectors (44.1%), with income primarily between 5000 and 10000 RMB (44.1%). A significant majority have over two years of online shopping experience (81.1%) and hold at least a bachelor's degree (80.2%). These data indicate that younger, middle-income, and highly educated users are more active in virtual communities, providing valuable insights for platform design and management. The live streaming channels that were most frequently visited by participants were Douyi, WeChat, and Xiaohongshu.

Reliability and Validity Evaluation

The results for factor loadings, Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) are presented in Table 1. The factor loadings exceed the recommended threshold of 0.50, following the guidelines of Hair et al. (2013), indicating that each item substantially contributes to its respective construct by capturing a significant portion of variability from the underlying variables. As per Hair et al. (2013), composite reliability and Cronbach's alpha values should surpass 0.7 to confirm internal consistency. The table shows that both CR and alpha values are above this threshold, thereby affirming the internal consistency of the data. Convergent validity is demonstrated

by a significant positive correlation among items measuring the same construct. To further validate convergent validity, the AVE should be greater than 0.5. The AVE values for each variable in the table exceed this benchmark, confirming strong convergent validity.

Table 1 Indicator reliability and convergent validity

Constructs	Indicators	Factor Loading	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Professionalism	P1	0.854	0.857	0.869	0.697
(Li et al., 2024)	P2	0.831			
	P3	0.821			
	P4	0.834			
Interactivity	Int1	0.864	0.854	0.855	0.633
(Liu et al., 2022)	Int2	0.779			
	Int3	0.777			
	Int4	0.779			
	Int5	0.775			
Attractiveness	Att1	0.861	0.828	0.828	0.660
(Li et al., 2024)	Att2	0.807			
	Att3	0.769			
	Att4	0.811			
Flow experience	F1	0.858	0.846	0.849	0.683
(Norsworthy et al., 2023)	F2	0.810			
	F3	0.839			
	F4	0.799			
Purchase intention	PI1	0.879	0.863	0.865	0.647
(Li et al., 2022)	PI2	0.776			
	PI3	0.787			
	PI4	0.807			
	PI5	0.769			

Discriminant Validity

Table 2 shows that the Average Variance Extracted (AVE) values for the variables are greater than the squared correlations between them (Fornell and Larcker, 1981). This indicates that the variables exhibit strong discriminant validity.

Table 2. Discriminant Validity.

	P	Int	Inf	F	PI
P	0.835				
Int	0.336	0.795			
Att	0.366	0.326	0.812		
F	0.406	0.369	0.416	0.827	
PI	0.492	0.498	0.492	0.552	0.805

Note. P=Professionalism; Int=Interactivity; Att=Attractiveness; F= Flow; PI=Purchase Intention The bold diagonal value is the square root of AVE.

Path Analysis

The Variance Inflation Factor (VIF) for all variables was found to be less than 3, which is well below the critical threshold of 3.3, indicating that multicollinearity is not a significant concern. The R^2 values for purchase intention and flow experience are 0.305 and 0.281, respectively, indicating some explanatory power for the model (Hair et al., 2013). The results from the structural model demonstrate that professionalism (β = 0.242, $p < 0.001$), interactivity (β = 0.202, $p < 0.001$), and attractiveness (β = 0.261, $p < 0.001$) each exert a significant positive influence on flow experience, thus supporting hypotheses H1, H2, and H3. Moreover, flow experience (β = 0.552, $p < 0.001$) has a significant positive effect on purchase intention, validating hypothesis H4 (see Table 3).

Flow experience partially mediates the relationships between professionalism and purchase intention, with both direct (β = 0.242, $p < 0.001$) and indirect (β = 0.134, $p < 0.001$) effects being significant. Similarly, flow experience partially mediates the relationship between interactivity and purchase intention, as evidenced by both the direct (β = 0.202, $p < 0.001$) and indirect (β = 0.112, $p < 0.001$) effects being significant.

Furthermore, flow experience partially mediates the relationship between attractiveness and purchase intention, with both the direct (β = 0.261, p < 0.001) and indirect (β = 0.144, p < 0.001) effects being significant. Thus, hypotheses H5a, H5b, and H5c are all supported (see Table 4).

Table 3. Results.

	Path Coefficient	Standard Deviation	T-Value	p-Value	f^2	Decision
P → F	0.242***	0.043	5.634	0.000	0.067	Supported
Int → F	0.202***	0.045	4.531	0.000	0.048	Supported
Att → F	0.261***	0.047	5.600	0.000	0.078	Supported
F → PI	0.552***	0.029	19.222	0.000	0.439	Supported
P → F → PI	0.134***	0.025	5.361	0.000	-	Supported
Int → F → PI	0.112***	0.027	4.164	0.000	-	Supported
Att → F → PI	0.144***	0.028	5.235	0.000	-	Supported

Note. P=Professionalism; Int=Interactivity; Att=Attractiveness; F=Flow; PI=Purchase Intention

Table 4. Mediator Analysis

	Indirect Effects	T-Value	Confidence Interval		P value	Decision
			Low	Up		
P → F → PI	0.134***	5.361	0.085	0.183	0.000	Supported
Int → F → PI	0.112***	4.164	0.060	0.165	0.000	Supported
Att → F → PI	0.144***	5.235	0.091	0.201	0.000	Supported

Note. P=Professionalism; Int=Interactivity; Att=Attractiveness; F=Flow; PI=Purchase Intention

Conclusion and Discussion

The study had two main objectives. First, it aimed to explore how three key characteristics of live streamers—professionalism, interactivity, and attractiveness—affect Chinese consumers' purchase intentions using the SOR (Stimulus-Organism-Response) theoretical framework. Second, it sought to determine whether flow experience mediates these relationships. As anticipated, our findings indicate that live streamers' characteristics significantly and positively influence the flow experience. Specifically, streamers who

demonstrate high professionalism, engage interactively with their audience, and possess strong attractiveness are more likely to induce a flow experience for consumers during live streams. This flow experience, in turn, positively affects consumers' purchase intentions. Our results corroborate previous research highlighting the importance of live streamers' traits—such as professionalism, interactivity, and attractiveness—in influencing consumer purchasing decisions within the realm of live streaming commerce (e.g., Ma, 2023; Chen & Wu, 2024; He & Jin, 2024; Zhang et al., 2024; Wang et al., 2024). Notably, attractiveness was found to have the most significant impact on flow experience, suggesting that it plays a crucial role in capturing and maintaining viewers' attention, thereby enhancing their overall engagement and satisfaction. Furthermore, while attractiveness, professionalism, and interactivity each contribute to purchase intention, their effects are mediated through the flow experience. Therefore, a balanced approach that optimizes all these characteristics to foster a robust flow experience may be more effective than focusing on any single attribute.

Theoretical Contributions

First, this study confirms the application of the SOR (Stimulus-Organism-Response) theoretical framework for understanding how live streamers' characteristics impact consumer behavior within a Chinese context. By demonstrating that flow experience mediates the relationship between streamer attributes and purchase intentions, the research both validates and extends the framework's relevance in the realm of live streaming commerce. Additionally, the study's focus on the Chinese market contributes to a broader theoretical understanding of how cultural and contextual factors shape the application of the SOR framework, highlighting the need for theoretical models to be adaptable to diverse cultural contexts and media environments. Finally, this research sheds light on how professionalism, interactivity, and attractiveness collectively influence consumer behavior. The key theoretical implication is that a holistic approach, integrating multiple streamer characteristics, is essential for a comprehensive understanding of consumer engagement and decision-making. This challenges previous theories that may have examined individual characteristics in isolation.

Practical Contributions

Brands and marketers should prioritize selecting streamers who demonstrate high levels of professionalism, strong interactivity, and notable attractiveness. Streamers excelling in these areas are more likely to create a flow experience for viewers, which can encourage engagement and drive purchase intentions. To maximize the impact on purchase intentions, content creators should focus on optimizing all three key characteristics: delivering content professionally, engaging actively with the audience, and maintaining an appealing personal presence. Integrating these elements effectively can significantly enhance consumer interest and drive buying behavior.

Training programs for streamers should concentrate on developing their professionalism, interactive skills, and personal appeal. By improving these traits, streamers can create more engaging flow experiences, leading to higher purchase intentions. Marketing strategies should emphasize the characteristics that contribute to a compelling flow experience. Campaigns can be designed to highlight the professionalism, interactivity, and attractiveness of streamers to attract more viewers and increase the likelihood of conversion.

Limitation and Future Research

One limitation of our study is that it exclusively focuses on Chinese consumers. Future research could examine our model in different cultural contexts to assess whether the findings are consistent across various cultures. Additionally, future studies could investigate how different facets of attractiveness—such as physical appearance, charisma, and fashion sense—affect flow and engagement. Gaining insights into these aspects could help refine strategies for content creators and advertisers.

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