The Mediating Role of Consumer Cognition in the Relationship Between Live Streamers' Personal Qualities and Consumer Purchase Intention

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Abstract

Online live-streaming platforms have rapidly emerged as streaming media technology advances. E-commerce live-streaming is a new business concept that combines live-streaming with regular e-commerce, going beyond simple entertainment. Marketing hosts are essential to this new marketing paradigm. Therefore, the purposes of this study are to 1) examine the relationship between the personal characteristics of e-commerce live-streaming hosts and the intention of consumers to make a purchase, and 2) use consumer cognition as a mediating variable to further examine the relationship between the personal characteristics of live streamers and the intention of consumers to make a purchase. The findings indicated that consumer purchase intention was positively impacted by the personal characteristics of live streamers. Consumer cognition had a positive impact on consumer purchase intention and the relationship between live streamers' personal traits and consumer purchase intentions was mediated by consumer cognition, according to the statistical analysis.

Keywords: E-commerce live-streaming, personal traits, purchase intention, consumer cognition

Introduction

The rapid growth of mobile networks and smart devices has led to the emergence of live-streaming platforms, which have received considerable publicity. By the end of 2022, over 1,100 live-streaming platforms were operational, providing businesses with innovative ways to market products. Live-streaming marketing enhances consumer trust and shopping experiences compared to traditional online shopping. Major Chinese e-commerce platforms like Douyin, Taobao, and Kuaishou have adopted this trend, significantly altering consumer behavior. Streamers on platforms like Douyin can be categorized as influencers or seller streamers, with their followers count varying widely. The top streamer, Crazy Little Yang Ge, boasts over 98 million followers, showcasing the impact of individual traits on marketing effectiveness. Factors such as appearance, personality, and marketing ability, as outlined in interpersonal attraction theory, play a crucial role in influencing consumer purchase intentions (Luo, 2013). Positive traits in streamers can enhance consumer trust and increase purchase likelihood.

Hence, this research aims to explore the relationship between streamers' individual traits and consumer purchase intention, focusing on the following aspects: the impact of personal traits on purchase intention, the relationship between personal traits and consumer cognition, and the mediating role of consumer cognition in these dynamics. Understanding these relationships can help businesses refine marketing strategies and improve sales on e-commerce platforms (Luo, 2013).

Exploring the relationship between streamers' individual traits and consumer purchase intention is crucial for consumer behavior research. It helps in understanding the impact of live-streaming marketing on consumer behavior and provides valuable insights for marketing practices. This study explores how to enhance consumer engagement and increase transaction volumes on e-commerce platforms, such as Douyin, Taobao, and Kuaishou, in the context of rapid development in China's mobile internet and the widespread use of smart devices. This research specifically examines the following research hypotheses:

H1: Live streamers' personal traits have a positive effect on consumers' purchase intentions on e-commerce platforms

H2: Live streamers' personal traits have a positive effect on consumer cognition.

H3: Consumer cognition has a positive effect on consumer purchase intention.

H4: Consumer cognition mediates the relationship between live streamers' personal traits and consumer purchase intention.

Literature Review

The concept of Interpersonal Attraction Theory highlights the tendency to evaluate others positively or negatively, which is crucial for forming and maintaining relationships (Berger & Calabrese, 1974; Bekiari & Hasanagas, 2015). Interpersonal attraction was influenced by cognitive assessments of how well a person could meet others' needs, fostering communication and closeness (Han & Yang, 2018). In live-streaming sales, this interaction could create emotional bonds, with emotional and behavioral attraction playing key roles (Montoya & Horton, 2014). Factors influencing interpersonal attraction included individual traits, proximity, and reciprocity (Luo, 2013), with individual traits encompassing appearance, talent, and personality qualities.

E-commerce live-streaming merged with traditional e-commerce with real-time interaction, enhancing customer engagement and relationship-building (Tan, 2017; Liang, 2019). Hosts in this environment showcased products and engaged with consumers, thus creating a more authentic shopping experience (Xie et al., 2019; Gao, 2020). Personal traits of streamers, such as appearance, talent, and personality, significantly influenced consumer purchase intentions (Luo, 2013; Xu, 2013).

Consumer cognition refers to how consumers perceive and respond to products and marketing processes, influencing their purchase intentions (Fan, 2014). The conceptual framework illustrated that streamers' personal traits enhanced both consumer cognition and purchase intention, with cognition serving as a mediator in this process. The interplay between interpersonal attraction, personal traits of streamers, consumer cognition, and purchase intention was critical in the context of e-commerce live-streaming, shaping consumer behavior and decision-making (Zhang et al., 2016; Wang, 2021).

Figure 1 shows that live streamers' personal traits directly enhance consumer purchase intention (H1) and consumer cognition (H2). Consumer cognition further positively influences purchase intention (H3) and mediates the effect of streamers' traits on purchase intention (H4), indicating a pathway from traits to cognition to intention.
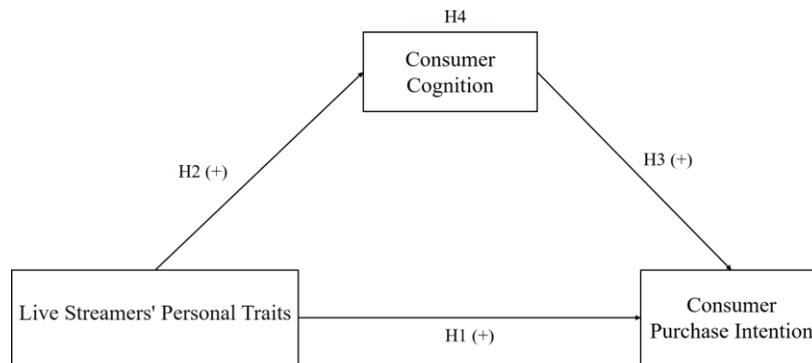
Figure 1: Conceptual Framework of Research

Methodology

Participants

This study used a quantitative research method. As previously described, the population of this study included Douyin users in China who had watched e-commerce live streams and those who had participated in purchasing products through these live streams, which consisted of hundreds of millions of individuals. Based on this large population size, the sample size used in this study was 413 internet users.

Instruments

The study used a questionnaire as an instrument, of which the researchers checked the reliability and validity. Reliability determines if the data were consistent, stable, and dependable. We performed this evaluation using Cronbach's Alpha coefficient, typically considering a value above 0.7 to indicate good reliability of the sample. In this study, Cronbach's alpha for each variable ranged between 0.83 and 0.95, and composite reliability (CR) ranged between 0.86 and 0.92, indicating good reliability the research variables.

Validity analysis refers to the effectiveness and accuracy of a questionnaire scale, i.e., assessing whether the design of the questionnaire items was reasonable. In this study, validity was measured using convergent validity and discriminant validity. Anderson and Gerbing (1988) suggested that if all item standardized factor loadings were greater than 0.5 and statistically significant, it indicated that the measurement scale had good convergent validity. Fornell and Larcker (1981) argued that the square root of the average variance extracted (AVE) for latent variables should be greater than the correlation coefficients between different variables, which indicated good discriminant validity.

The standardized factor loadings for all items in this study ranged between 0.70 and 0.91, and each indicator was statistically significant, demonstrating good convergent validity for each research variable. Furthermore, the square root values of the AVE for each variable ranged from 0.71 to 0.82, indicating that the discriminant validity of each item was also well established.

Despite the questionnaire for this study being developed through an extensive literature review and referencing established scales from prior research, the reliability and validity of the adapted questionnaire remained uncertain. Therefore, following the initial completion of all questionnaire content, a pilot survey was executed to ensure the measurement items' content and face validity. This study engaged three experts and scholars in relevant fields to assess the Item Consistency Index (IOC) of the questionnaire. They appraised each item in the questionnaire, assigning ratings of 1 (conforms to the measurement), -1 (does not conform to the measurement), or 0 (ambiguity regarding conformity). The IOC index for the questionnaire achieved a score of 1.00 across all aspects, as detailed in Table 1.

Table 1: IOC Evaluation Form for Questionnaire Items

	Personal Traits	**Item Score**
1	I find that hosts with good looks and temperaments attract me more.	1
2	I pay special attention to whether the host's facial expressions make me feel comfortable.	1
3	The appearance and image of the host are very important.	1
4	The host's mental state affects the duration of time I watch the live stream.	1
5	It is important whether the host showcases any talents.	1
6	I prefer marketing hosts who are articulate.	1
7	A host's sense of humor can attract me.	1
8	The number of viewers watching the live stream affects my interest in the product.	1
9	A host's sincere personality makes me trust the products they promote more.	1
10	It is important to me whether the host promotes products truthfully.	1
11	The host's past behavior in adhering to ethical standards is important to me.	1
	Consumer Cognition	**Item Score**
1	I find myself inexplicably wanting to watch some shopping hosts during their live streams.	1
2	After being attracted to a live stream, I tend to stay and watch for a longer time.	1
3	When watching a host I am interested in, I want to learn more about the products they are selling.	1
	Consumer Purchase Intention	**Item Score**
1	I am willing to learn about the products being marketed by the host while watching Douyin shopping live streams.	1
2	I am willing to recommend the Douyin shopping live streams or marketing hosts I frequently purchase from to my friends.	1
3	When I see a desired product, I will make a purchase during the live stream.	1
4	In the future, I will consider purchasing products promoted by the host in Douyin shopping live streams again.	1

Data Collection

This study utilized a questionnaire survey method, and employed Wenjuanxing, a widely used online crowdsourcing platform in mainland China, to distribute questions and collect data from participants. The survey primarily was disseminated through Douyin live stream rooms and WeChat groups associated with Douyin e-commerce activities. In Douyin live stream rooms, the questionnaire was distributed using a simple random sampling method based on public screen replies. On WeChat, the questionnaire was shared in groups related to Douyin e-commerce activities. The data analysis section utilized statistical software, Mplus 7, to analyze the collected data.

Results and Discussion

Correlation Analysis

The correlation analysis in this study primarily verified the interrelationships among the variables and assessed the magnitude of correlation coefficients between them. It is important to note that correlation does not imply causation. Pearson correlation coefficients were used to reflect the degree of linear correlation between the variables and to determine whether these correlations were statistically significant. A higher value indicated a stronger linear relationship between the variables, and vice versa. A positive sign between two variables indicated a positive relationship, while a negative sign indicated a negative correlation.

A threshold value of 0.7 is often used as a benchmark. The correlations below this value suggested that there was no collinearity issue between the variables. As presented in Table 2, the correlation coefficients for each latent variable involved in this study were all below 0.7, indicating that there were no issues of multicollinearity among them.

Table 2: Correlation Analysis

	LSPT	CC	CPI
LSPT	1		
CC	0.619	1	
CPI	0.601	0.597	1

Note: LSPT = Live Streamers' Personal Traits, CC = Consumer Cognition, CPI = Consumer Purchase Intention.

Model Fit Analysis

Analyzing the fit of a structural equation model (SEM) is crucial for testing how well the data conform to the hypothesized model. Fit indices evaluate whether the data and the hypothesized model match each other effectively. According to the standards recommended by Browne and Cudeck (1992), the fit indices for this study were as follows: χ^2 = 1378.32, df = 786, χ^2/df = 1.75, p = 0.000, CFI = 0.93, TLI = 0.95, RMSEA = 0.04, SRMR = 0.03. These results indicated that the model had a good fit. The specific results were displayed in Table 3.

These indices collectively suggested that the model was appropriately fitted to the data, thereby supporting the theoretical hypotheses with statistically significant and substantial fit measures.

Table 3: Model Fit Indices

Fit Index	Recommended Criteria	Model Result	Compliance
ML χ^2	Lower is better	1378.32	
Df	Higher is better	786	
χ^2/ Df	1<χ^2/ Df <3	1.75	Complies
CFI	>0.9	0.93	Complies
TLI	>0.9	0.95	Complies
RMSEA	<0.08	0.04	Complies
SRMR	<0.06	0.03	Complies

Testing Research Hypotheses

This study aimed to address four research questions through statistical hypothesis testing. The research questions were: 1) Do live streamers' personal traits influence consumer purchase intention? 2) Do live streamers' personal traits affect consumer cognition? 3) Does consumer understanding affect purchase intention? 4) Does consumer cognition mediate the relationship between live streamers' personal traits and consumer purchase intention? We conducted correlation, path, and mediation effects analyses to verify the theoretical hypotheses and models. After analyzing the collected data, the study yielded findings relevant to each of the questions, as detailed in the following parts.

Direct Effects Testing

Path analysis was utilized to investigate the causal relationships within the research model, specifically examining the direct effects among variables related to Research Questions 1 to 3. The Mplus 7 software was employed to facilitate this path analysis, testing the hypotheses and determining their support by the data. The results, displayed in Table 4, reveal that all unstandardized regression estimates for the variables are significant ($p < 0.001$), indicating that:

For research question 1, the finding supported H1 by postulating that live streamers' personal traits positively impact consumer purchase intentions. The standardized path coefficient from live streamers' personal traits to consumer purchase intention was 0.58, with a P-value < 0.001. This significant positive relationship indicated that consumers were more likely to intend to purchase products when live streamers exhibited favorable personal traits. This suggested that the attributes such as trustworthiness, attractiveness, and expertise of the live streamers played a crucial role in influencing consumers' purchasing decisions during live streams.

Regarding research question 2, the significant positive effect of live streamers' personal traits on consumer cognition validated H2, with a standardized path coefficient of 0.65 and a P-value < 0.001. The result showed that live streamers' personal traits significantly enhanced consumer cognition. In other words, when live streamers displayed strong personal traits, consumers were more likely to have positive cognitive responses toward the products or services being promoted. Such responses could include better understanding of product features, perceived value, and brand recognition.

For research question 3, the positive influence of consumer cognition on consumer purchase intention confirmed H3. The standardized path coefficient from consumer cognition to consumer purchase intention was 0.53, with a P-value < 0.001. This significant positive relationship indicated that higher levels of consumer cognition were associated with increased purchase intentions. This concluded that when consumers had a better understanding and perception of the products, they were more inclined to purchase them.

Furthermore, the Coefficient of Determination (R^2) values expounded substantial explanatory power for the variables within the model. Specifically, the R^2 for consumer cognition was 0.58, and for consumer purchase intention was 0.52, both surpassing the acceptable threshold of 0.33. These results implied that the model effectively accounted for a significant proportion of the variance in these constructs.

These results directly addressed the research questions by demonstrating significant relationships between the variables. The findings indicated that live streamers' personal traits not only directly influenced consumer purchase intentions but also affected consumer cognition, which in turn influenced purchase intentions.

Table 4: Research Model Hypothesis Analysis

DV	IV	Std. Est.	S.E.	Est./S.E.	P-Value	R^2	Hypothesis Support
CPI	LSPT	0.58	0.05	11.6	***	0.52	Supported
	CC	0.53	0.03	17.67	***		Supported
CC	LSPT	0.65	0.04	16.25	***	0.58	Supported

Note: DV=Dependent Variable**,** IV=Independent Variable, LSPT = Live Streamers' Personal Traits, CC = Consumer Cognition, CPI = Consumer Purchase Intention. *** = $p<0.001$.

Mediation Effects Testing

Mediation effect testing investigates whether an independent variable influences a dependent variable through a mediator. To address research question 4, the study examined whether consumer cognition mediated the relationship between live streamers' personal traits and consumer purchase intentions. The bootstrap method, a robust approach for testing mediation effects, was utilized with 1,000 resamples in Mplus 7 software, following Hayes (2009).

As shown in Table 4.4, the analysis indicated that consumer cognition significantly mediated the relationship between live streamers' personal traits and consumer purchase intentions. The standardized indirect effect of live streamers' personal traits on consumer purchase intention through consumer cognition was 0.47, with a P-value < 0.001. The 95% confidence interval did not include zero, confirming the presence of a mediation effect and supporting H4. The result suggested that consumer cognition partially mediated the relationship between live streamers' personal traits and consumer purchase intentions. In other words, live streamers' personal traits not only directly influenced consumer purchase intentions, but also enhanced consumer cognition, which in turn promoted purchase intentions.

Table 5: Consumer Cognition Indirect Effect Analysis

	Point Est.	Product of Coefficients			BOOTSTRAP 1000 TIMES 95%CI			
					Percentile		Bias corrected	
		S.E.	Est./S.E.	P-Value	Lower	Upper	Lower	Upper
LSPT→CPI	0.47	0.05	9.4	***	0.42	0.66	0.46	0.71

Note: LSPT = Live Streamers' Personal Traits, CC = Consumer Cognition, CPI = Consumer Purchase Intention. *** = $p<0.001$.

The findings were consistent with previous research, confirming the significant roles of live streamers' personal traits and consumer cognition in influencing purchase intentions in e-commerce live streaming. The results emphasized the need for companies to focus on both the selection of suitable streamers and the enhancement of consumer cognition through meaningful interaction. However, contrasts in some studies suggested that factors such as product attributes, consumer skepticism, and information overload may also significantly influence these relationships, indicating areas for future research.

Conclusion and Suggestions

This study investigated how live streamers' personal traits and consumer cognition affected purchase intentions in e-commerce live streaming. The results confirmed the previous findings that personal traits of streamers, such as attractiveness and expertise, positively influenced consumer purchase intentions (Xu et al., 2020; Chen and Lin, 2018). However, Cai and Wohn (2019) posited that in some contexts, the entertainment value of streamers was more critical. The study postulated that appealing personal traits enhanced consumer cognition, which aligned with the work of Lim et al. (2017) and Xu et al. (2020),

who found that influencers' authenticity and charisma improved product understanding. Additionally, the study reaffirmed the notion that consumer cognition positively impacted purchase intentions, as presented by Sun et al. (2019) and Hu and Chaudhry (2020), although it warns against information overload (Zhang et al., 2020). The research also pointed out consumer cognition as a mediator between personal traits and purchase intention, extending findings from Lou and Yuan (2019) and Wongkitrungrueng and Assarut (2020). Furthermore, it emphasized the role of interaction in enhancing cognition and purchase intentions, which was consistent with Kang et al. (2021) and Wu and Huang (2023), while cautioning that interaction without meaningful content may lead to consumer fatigue (Liu et al., 2021). To sum up, the study reinforces the importance of live streamers' traits and consumer cognition in driving purchase intentions, suggesting that the companies should select suitable streamers and foster meaningful interactions. It also points out the need for further research into factors like product attributes and consumer skepticism that may influence these dynamics. In future research, the relationship between personal traits, consumer cognition, and purchase intentions observed in e-commerce livestreaming could be explored in other industries, such as banking, insurance, and financial services. It is recommended that adjusting the variables to fit these contexts may reveal whether the influence of employee personal traits on purchase intentions differs across service industries, which is helpful for customer relationship management.

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