

The Influence of Host Social Presence on Online Purchase Intention: The Mediating Effect of Consumer Trust

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ABSTRACT This study investigates the influence of live-streaming hosts' social presence on consumers' online purchase intention and examines the mediating role of consumer trust. A questionnaire survey is conducted among consumers with livestreaming shopping experience, and regression analysis is used to test the proposed model. The results show that respondents hold positive perceptions of hosts' social presence, consumer trust, and online purchase intention. Hosts' social presence can reduce perceived distance and uncertainty in online shopping by enhancing emotional presence, interactive presence, and co-presence. Social presence significantly and positively affects consumers' online purchase intention, while consumer trust also significantly and positively affects purchase intention. Consumer trust is further verified as the core mediating mechanism through which social presence influences purchase intention. The study confirms the positive role of hosts' social presence in live-streaming e-commerce and provides decision-making reference for optimizing live-streaming platform operation, host communication strategies, and consumer trust-building mechanisms.

INDEX TERMS live-streaming e-commerce, social presence, consumer trust, online purchase intention, mediation effect

I. INTRODUCTION

LIVE-streaming e-commerce merges online live streaming with digital shopping, blending the interactivity of live broadcasts with the commercial dynamics of online retail [1]. Consequently, live-streaming shopping has evolved into a pivotal form of online shopping for consumers, driving the digital transformation of the textile industry as its market scale and user base expand steadily. This phenomenon has profoundly transformed the traditional online shopping model and its underlying ecosystem. Live streamers act as intermediary sales agents in live-streaming e-commerce scenarios, motivating audiences to make immediate purchases during live broadcasts through detailed product demonstrations and persuasive sales narratives [2]. This demonstrates that live streamers are not merely product promoters. Their core value lies in actively creating and conveying a sense of social presence through concrete demonstrations and interactive communication, ultimately transforming viewers' cognitive recognition and emotional tendencies into immediate purchasing behavior.

Extant literature has demonstrated that social presence exerts a positive impact on consumers' online purchase intention [3-5]. This positive influence elevates live-stream shopping from a mere transactional setting to a consumption scenario with both social and experiential value by

conveying tangible social signals and emotional resonance [6]. It not only enhances consumers' willingness to actively participate in the shopping process but also transforms short-term purchase impulses into long-term purchasing tendencies through the establishment of stable psychological connections. This conversion effect has become increasingly prominent in the context of the continuous penetration of online consumption scenarios [7], emerging as one of the key underlying drivers of the sustained growth of live-stream e-commerce.

Based on this, this study focuses on live-streaming shopping contexts and selects experienced consumers as research participants to explore the relationships among social presence, consumer trust, and online purchase intention. The research objectives are as follows:

- (1) To analyze the direct effect of hosts' social presence on consumers' online purchase intention;
- (2) To investigate the specific pathways through which social presence affects consumer trust;
- (3) To identify the key mediating pathways through which social presence influences online purchase intention via consumer trust.

By collecting and analyzing empirical data, this study intends to clarify the intrinsic mechanism underlying the relationships between hosts' social presence, consumer trust,

and purchase intention, thereby enriching the theoretical framework of live-streaming e-commerce research. Furthermore, this study seeks to provide scientific decision-making references for live-streaming e-commerce platforms to optimize their operational strategies, for hosts to improve their communication efficiency, and for textile enterprises to enhance their marketing conversion rates.

A. RESEARCH HYPOTHESES AND THEORETICAL MODELS

1) Research Hypotheses

2) Social Presence and Online Purchase Intention

The concept of social presence was first introduced in Short et al.'s seminal work *Social Psychology of Communication* (2016), where it is defined as the warmth, sociability, personalization, and sensitivity experienced during social interactions [6-7]. Dabiran et al. (2024) further emphasized the positive role of social elements in shaping online purchasing behaviors. Building upon this theory, research indicates that social presence in live-stream marketing encompasses three dimensions: co-presence, interaction, and emotional presence [8]. The core mechanism involves overcoming the physical barriers of online transactions to establish psychological connections between hosts and consumers, thereby influencing their purchasing decisions.

The theoretical framework of this relationship can be elucidated through the lens of social exchange theory.

At its core lies the principle of reciprocity: when receiving favors from others, individuals reciprocate with emotional commitments and corresponding actions [9]. Streamers generate value for consumers by providing product insights, emotional support, and real-time feedback, while consumers respond with purchases. A strong sense of social presence reduces online transaction uncertainties [10], thereby influencing consumer behavior and enhancing purchase intent [11].

Emotional presence refers to a host's ability to empathize with consumer needs and the sincerity and infectiousness of their emotional expression. In live streaming scenarios, consumers' purchasing decisions are often influenced by emotional factors. The emotional intensity conveyed through language, the dynamic synchronization of facial expressions, and the depth of emotions embedded in semantic content significantly modulate viewers' psychological engagement and identification [12], thereby driving consumers to develop purchase intentions based on positive emotional experiences.

The interactive presence effect manifests as real-time two-way communication between hosts and consumers, transforming passive information recipients into active participants. This empowers consumers with a sense of involvement and control, fostering positive attitudes toward live streaming scenarios and hosts while enhancing product acceptance. Research has confirmed that hosts' high interactivity and appeal effectively recreate offline shopping

experiences, thereby boosting consumer purchase intent [13].

The sense of co-presence refers to the anchor's ability to perceive a genuine sense of belonging and shared virtual interaction space with other consumers. This perception can alleviate the loneliness associated with online shopping, mitigate consumption anxiety [14], and strengthen group identity and social connections. Research by Dabiran et al. (2024) has confirmed that the social dimension of "shared presence" significantly positively influences online purchasing behavior [15]. Additionally, Srivastava and Chandra (2018) noted that the perception of co-presence in virtual interactions fosters trust and intimacy [16].

Building upon this, we hypothesize:

H1: The live-streamer's social presence significantly enhances consumers' online purchase intention.

H1a: Emotional presence significantly positively influences consumers' online purchase intention

H1b: Interactive presence significantly positively influences consumers' online purchase intention

H1c: Coexistence presence significantly positively influences consumers' online purchase intention

3) Social Presence and Consumer Trust

From psychological and sociological perspectives, trust is a mental state where individuals, in uncertain environments, hold positive expectations about the reliability and goodwill of the other party in transactions and are willing to assume corresponding risks. In the context of live-streaming e-commerce, it can be defined as consumers' beliefs and expectations throughout the entire live shopping process regarding the reliability, honesty, competence, and goodwill of hosts, live-streaming platforms, and recommended products/services, and their willingness to make purchasing decisions based on these perceptions [17]. According to the nature of trust, it can be categorized into two dimensions: cognitive trust, which stems from rational judgments about the capabilities and reliability of transactional parties, and affective trust, which is formed through psychological identification based on emotional connections.

Social presence significantly contributes to trust-building by establishing psychological connections between hosts and consumers. Research confirms that users experiencing strong presence in virtual environments demonstrate markedly enhanced sense of belonging, trust levels, and sustained engagement [18]. High social presence effectively bridges interpersonal psychological gaps, fosters positive emotions, and lays emotional foundations for trust formation [19]. Studies show that enhancing emotional presence through friend-like interactions with consumers shortens emotional distance, thereby increasing trust in hosts and product recognition [20]. The quasi-social relationships formed through real-time interactions between hosts and consumers further strengthen trust and emotional intimacy [21], a mechanism particularly prominent in live-streaming e-commerce scenarios. Social presence manifests as users'

perception of each other's presence, creating shared presence that reinforces group identity and social connections. This not only reduces information asymmetry to enhance cognitive trust but also deepens emotional trust through the construction of belonging [22].

Building upon this, we hypothesize:

H2: The live-streamer's social presence significantly enhances consumer trust.

H2a: Emotional presence significantly enhances consumers' cognitive trust.

H2b: Emotional presence significantly enhances consumers' emotional trust.

H2c: Interactive presence significantly enhances consumer trust perception.

H2d: The interactive presence significantly enhances consumers' emotional trust.

H2e: The perceived presence significantly enhances consumers' trust perception.

H2f: Cognitive presence significantly enhances consumers' emotional trust.

4) Consumer Trust and Online Purchase Intention

Volition serves as the prerequisite for behavior, where the intensity of willingness directly determines the likelihood of action [23]. Research indicates that the formation and reinforcement of consumer purchase intent primarily stem from two interacting factors: personal emotional experiences and identification with the livestreamer and product. These elements ultimately drive purchasing decisions [24]. Empirical evidence confirms that online trust in virtual shopping environments significantly enhances purchase intent [25], a principle equally applicable to live-streaming e-commerce. Consumers' trust in live-streamers, platforms, and products directly determines whether viewing behavior translates into immediate purchases. This influence arises not from a single driver, but from the synergistic effect of cognitive and emotional trust operating through distinct pathways.

In marketing studies, consumer trust primarily stems from their perception of both the purchased product and the merchant [26]. During live-stream shopping, consumers cannot physically interact with products, making their understanding of quality, functionality, and value heavily dependent on the information conveyed by the host. When consumers develop cognitive trust, it provides them with a sense of security in online decision-making, laying the groundwork for immediate purchases. Similarly, during live interactions, consumers are emotionally influenced by the host's demeanor, experiencing positive emotional engagement. Higher levels of emotional trust can reduce perceived risks in online shopping environments, thereby positively impacting consumers' willingness to purchase. Purchasing behavior thus transcends mere recognition of product value, becoming a response to emotional connections [27]. Based on this, the present study proposes the following research hypotheses:

H3: Consumer trust significantly enhances online purchase intention.

H3a: Cognitive trust significantly enhances consumers' online purchase intention.

H3b: Emotional trust significantly enhances consumers' online purchase intention.

5) The Mediating Role of Consumer Trust

In live-streaming e-commerce scenarios, the influence of the host's social presence on consumers' online purchase intention is not a direct linear transmission, but rather mediated through key psychological variables, with consumer trust serving as the core bridge connecting the two. Existing research has confirmed that trust often plays a significant mediating role between social factors in e-commerce contexts and purchase intention, providing crucial theoretical support for this study's analysis of the mediating mechanism.

Meanwhile, according to the Social-Organizational-Response (SOR) framework, external environmental stimuli elicit emotional and cognitive responses in individuals [28]. This model consists of three components: environmental stimuli, organismal state, and organismal response. Social presence, as an external stimulus (S), cannot directly trigger the behavioral response of purchase intention (R). Instead, consumer trust, as the core component of the internal psychological state (O), serves as the conduit for stimulus transmission. By alleviating the loneliness of online shopping, reducing information asymmetry, and strengthening emotional connections, social presence facilitates the formation of consumer trust. This, in turn, mitigates consumers' risk perception, enhances decision-making security, and ultimately drives the emergence of purchase intention.

Based on this, the present study proposes the following research hypotheses:

H4: Consumer trust mediates the relationship between the host's social presence and online purchase intention.

B. THEORETICAL MODEL

This study investigates how the social presence of live-streaming hosts influences consumers' online purchase intention in e-commerce scenarios, while examining the mediating role of consumer trust. Building on social presence theory, social exchange theory, and SOR theory, we propose the following hypothesis model as illustrated in Figure 1:

II. RESEARCH METHODS

A. QUESTIONNAIRE DESIGN

1) Questionnaire Structure

This study employs a questionnaire survey to investigate the impact of streamers' social presence on online purchase intention, while validating four proposed hypotheses. The questionnaire design strictly adheres to academic research standards, building upon established measurement scales with adaptive adjustments and item supplements tailored to the unique context of live-streaming e-commerce. The

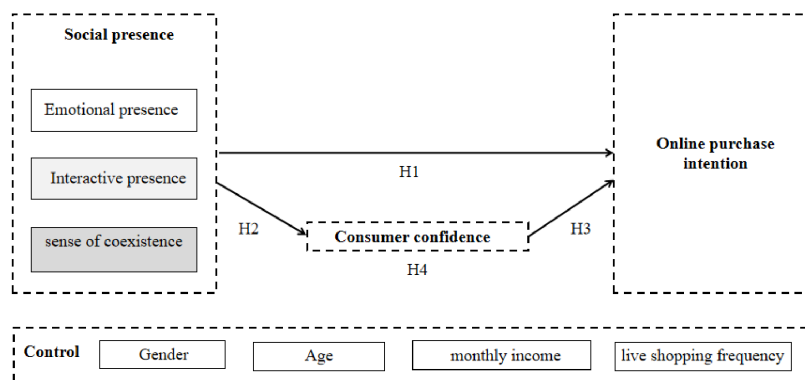


FIGURE 1. Hypothesized model

final questionnaire comprises three sections with 24 items, as detailed below:

Investigation Description Section: This section clearly states the research objectives of the study and the requirements for questionnaire completion, emphasizing that the data will be used solely for academic research purposes. Personal information will undergo anonymization, and the respondent's privacy will be strictly protected.

Sample Screening Section: A filter question was set: "Have you ever experienced live-stream shopping?" Only respondents who answered "Yes" were allowed to proceed to the subsequent response phase, ensuring that the survey sample consisted exclusively of consumers with live-streaming shopping experience.

Main Item Section: This section includes variable measurement items and control variable items. All variable measurement items employ a 5-point Likert scale, with scoring criteria as follows: 1= completely disagree, 2= somewhat disagree, 3= neutral, 4= somewhat agree, 5= completely agree. This scoring method quantifies respondents' subjective perceptions and attitude tendencies.

2) Variable Measurement

Independent variable: Social Presence (SP)

This study measures social presence based on the classic Social Presence Scale developed by Gunawardena & Zittle (1997), with adaptive adjustments referring to localized adaptations by Chinese scholars for live-streaming e-commerce scenarios. The scale contains 9 items across three core dimensions: Emotional Presence (EP), Interactive Presence (IP), and Coexistence Presence (CP). The Cronbach's α coefficient of the scale is 0.892, indicating good internal consistency.

Mediating variable: Consumer Trust (CT)

Consumer trust is measured using the mature Trust Scale developed by Gefen et al. (2003), which is divided into two dimensions: Cognitive Trust (CTc) and Affective Trust (CTe, consistent with the "emotional trust" construct in subsequent analysis). The scale includes a total of 8 items, with a Cronbach's α coefficient of 0.876, showing high reliability.

Dependent variable: Online Purchase Intention (PI)

Online purchase intention is defined as the likelihood and willingness of consumers to make purchases of textile products during the live-streaming shopping process. The initial scale is adapted from the classic purchase intention scale developed by Dodds et al. (1991), with targeted optimization for the unique attributes of live-streaming shopping scenarios.

3) Limitations of the Classic Baseline Scale

The original 3-item scale developed by Dodds et al. (1991) only covers three core general dimensions: purchase possibility, purchase willingness, and purchase inclination. This scale is only applicable to conventional online shopping scenarios with non-real-time information transmission and independent decision-making cycles. It cannot effectively capture the unique attributes of live-streaming e-commerce (such as real-time interaction, limited-time marketing, and impulsive in-scene decision-making), resulting in insufficient contextual adaptability for this study.

4) Scale Adaptation Logic and Full Item Composition

To address the above limitations, this study expands the scale to 7 items on the basis of the classic scale, strictly following academic norms of scale development. The adapted scale retains the core measurement logic of the classic scale to ensure its mature theoretical validity, and supplements scenario-specific items combined with the real-time, impulsive, and context-exclusive attributes of live-streaming e-commerce, to improve the fit with the research setting. All items are measured by a 5-point Likert scale (1 = completely disagree, 5 = completely agree), with full content and classification as follows:

5) Real-Time Attribute Capture Design

The newly added scenario-exclusive items are designed to precisely capture the real-time nature of livestreaming shopping (the core feature distinguishing it from conventional online shopping), with theoretical support from relevant studies on the real-time and impulsive characteristics of live-

streaming shopping (Feng & Lu, 2020; Xiao et al., 2026). The specific design logic is as follows:

Items PI4 and PI5 focus on immediate decision-making within the live broadcast cycle, capturing consumers' instantaneous purchase intention generated during the streamer's real-time explanation and before the end of the live broadcast, restoring the time-sensitive decision-making scenario of live-streaming shopping; Item PI6 adapts to the limited-time marketing characteristics of live-streaming e-commerce, measuring consumers' willingness to make immediate decisions driven by live-exclusive benefits;

Item PI7 supplements the measurement of impulsive purchase intention in live-streaming scenarios, which fits the core behavioral feature of consumers' unplanned purchases triggered by real-time interaction and product demonstration in live broadcasts.

6) Reliability and Structural Validity Test

The Cronbach's α coefficient of this scale is 0.854, indicating good internal consistency. Confirmatory Factor Analysis (CFA) was conducted to test the structural validity of the scale, with detailed results presented in Section 4.2.1.

7) Control Variables

Referring to existing research on live-streaming e-commerce and consumer purchase behavior, this study selects four demographic and behavioral characteristics as control variables, including gender (G), age (A), monthly income (I), and live shopping frequency (F), all measured by single-choice questions.

B. MODEL CONSTRUCTION

This study strictly follows the Baron & Kenny classic four-step mediation effect testing framework, and constructs a hierarchical progressive regression model system based on social presence theory, social exchange theory, and SOR theory, to examine the relationships among streamers' social presence, consumer trust, and online purchase intention. All regression equations are different steps in the mediation test process, rather than independent models.

First, we uniformly define the symbols of all models: G (gender), A (age), I (monthly income), F (live shopping frequency) are control variables; EP (Emotional Presence), IP (Interactive Presence), CP (Coexistence Presence) are dimensions of the independent variable SP; CTc (Cognitive Trust), CTe (Affective Trust) are dimensions of the mediating variable CT; PI (Online Purchase Intention) is the dependent variable; $\alpha_0, \beta_0, \gamma_0, \delta_0, \epsilon_0$ are intercept terms of each model; $\alpha_1-\alpha_7, \beta_1-\beta_7, \gamma_1-\gamma_7, \delta_1-\delta_6, \epsilon_1-\epsilon_9$ are standardized regression coefficients; $\mu_1-\mu_5$ are random error terms of each model.

1) Step 1: Baseline Regression of Control Variables on Dependent Variable

We first constructed a baseline regression model with only control variables to examine the basic influence of demo-

graphic and behavioral characteristics on purchase intention, corresponding to Model 1 in Table 6:

$$PI = \alpha_0 + \alpha_1 G + \alpha_2 A + \alpha_3 I + \alpha_4 F + \mu_1 \quad (1)$$

2) Step 2: Main Effect Test of Social Presence on Purchase Intention

To examine the direct effect of streamers' social presence on online purchase intention, we added three dimensions of social presence to the baseline model to test Hypothesis H1, corresponding to Model 2 in Table 6:

$$PI = \alpha_0 + \alpha_1 G + \alpha_2 A + \alpha_3 I + \alpha_4 F + \alpha_5 EP + \alpha_6 IP + \alpha_7 CP + \mu_1 \quad (2)$$

3) Step 3: Effect Test of Social Presence on Mediating Variable Consumer Trust

To investigate how streamers' social presence influences consumer trust, we developed two regression models with cognitive trust and emotional trust as dependent variables respectively, to test Hypothesis H2:

$$CTc = \beta_0 + \beta_1 G + \beta_2 A + \beta_3 I + \beta_4 F + \beta_5 EP + \beta_6 IP + \beta_7 CP + \mu_2 \quad (3)$$

$$CTe = \gamma_0 + \gamma_1 G + \gamma_2 A + \gamma_3 I + \gamma_4 F + \gamma_5 EP + \gamma_6 IP + \gamma_7 CP + \mu_3 \quad (4)$$

4) Step 4: Direct Effect Test of Consumer Trust on Purchase Intention

To examine the direct effect of consumer trust on online purchase intention, we constructed a regression model with two dimensions of consumer trust as core predictors, to test Hypothesis H3, corresponding to the model in Table 8:

$$PI = \delta_0 + \delta_1 G + \delta_2 A + \delta_3 I + \delta_4 F + \delta_5 CTc + \delta_6 CTe + \mu_4 \quad (5)$$

5) Step 5: Mediation Effect Full Model Test

Finally, to examine the mediating role of two-dimensional consumer trust between social presence and purchase intention, we incorporated the independent variable, mediating variable, and control variables into the same model to test Hypothesis H4:

$$PI = \epsilon_0 + \epsilon_1 G + \epsilon_2 A + \epsilon_3 I + \epsilon_4 F + \epsilon_5 EP + \epsilon_6 IP + \epsilon_7 CP + \epsilon_8 CTc + \epsilon_9 CTe + \mu_5 \quad (6)$$

C. DATA COLLECTION

An online survey was conducted via the Wenjuanxing platform using convenience sampling, targeting consumers with live-streaming shopping experience. A total of 335 questionnaires were distributed, with 317 returned. After excluding 9 invalid responses (those with less than 60 seconds of response time or identical answers for all items),

308 valid responses were obtained, yielding an effective response rate of 91.94%. All participants signed an informed consent form.

D. DATA ANALYSIS

To rigorously test research hypotheses and validate theoretical models, this study integrated multiple statistical tools and analytical techniques. All data analyses were conducted using SPSS26.0 and Hayes PROCESS Macro 4.2 for regression and mediation effect testing, while AMOS24.0 was employed for confirmatory factor analysis (CFA) to assess the fit of measurement models.

Prior to formal hypothesis testing, outlier tests were performed on the core variables (Social Presence, SP; Consumer Trust, CT; Online Purchase Intention, PI) using the Z-score method, with $|Z| > 3$ defined as the critical threshold for statistically significant extreme outliers. For the subsample of super-users who reported 13 or more live shopping trips per month ($n=16$), the Z-scores of all core variables ranged from -2.78 to 2.54, with no values exceeding the critical threshold. This indicates that the core variable values of this group fall within a reasonable range and do not qualify as statistical outliers, so no sample elimination was required. In addition, live shopping frequency was included as a control variable in all regression models, which fixed the impact of shopping frequency differences on purchase intention and eliminated potential interference of this super-user group on the core research results.

III. RESULTS AND ANALYSIS

A. PARTICIPANT PROFILE

TABLE 1. Demographic Characteristics of Respondents

Dimensions	Category	Frequency (n)	Percentage (%)
Gender	Male	148	48.05
	Female	160	51.95
Age	18 years old and below	12	3.89
	19–25 years old	156	50.65
	26–35 years old	112	36.36
	36–45 years old	22	7.14
	46 years old and above	6	1.95
Monthly Income	3000 RMB and below	88	28.57
	3001–5000 RMB	102	33.12
	5001–8000 RMB	76	24.68
	8001–12000 RMB	32	10.39
	12001 RMB and above	10	3.25
Live Streaming Shopping Frequency	1 time or less per month	42	13.64
	2–4 times per month	118	38.31
	5–8 times per month	96	31.17
	9–12 times per month	36	11.69
	13 times or more per month	16	5.19

To examine whether the behavioral characteristics of super-users differ significantly from the majority sample, an independent samples t-test was conducted to compare the mean values of core variables between the super-user group (13+ live shopping trips per month, $n=16$) and the mainstream user group (2–4 live shopping trips per month, $n=118$). The test results are presented in Table 2.

TABLE 2. Independent Samples T-test Results of Core Variables Between Groups

Core Variables	Super-user Group (M±SD)	Mainstream User Group (M±SD)	t-value	Significance (2-tailed)
Social Presence (SP)	3.82±0.56	3.61±0.70	1.172	0.243
Consumer Trust (CT)	3.71±0.52	3.55±0.67	0.947	0.345
Online Purchase Intention (PI)	3.58±0.64	3.39±0.73	1.016	0.311

The results show that there is no statistically significant difference in the mean values of all core variables between the super-user group and the mainstream user group (all $p > 0.05$). This directly demonstrates that the super-user subsample does not cause systematic bias to the overall sample distribution, and will not skew the core regression results of the study.

B. DESCRIPTIVE STATISTICAL ANALYSIS

Descriptive analysis was conducted on the core variables and their dimensions included in this study. Table 3 indicates that the mean values of all variables and dimensions ranged between 3.42 and 3.78, reflecting respondents' positive perceptions of these variables. The SD ranged from 0.63 to 0.75, indicating moderate to low variability, with responses demonstrating relative concentration and reasonable differences. All variables exhibited absolute values of skewness and kurtosis below 0.5, meeting the criteria for normal distribution, indicating reasonable data distribution and good reliability.

TABLE 3. Descriptive Statistical Results of Variables and Dimensions

Variables and Dimensions	M	SD	Minimum	Maximum	Skewness	Kurtosis
SP	3.65	0.68	1.89	4.92	-0.32	-0.21
-EP	3.78	0.72	2.00	5.00	-0.41	-0.18
-IP	3.62	0.69	1.92	4.87	-0.28	-0.33
-CP	3.55	0.75	1.89	4.91	-0.35	-0.25
CT	3.58	0.65	1.94	4.88	-0.29	-0.17
-CTc	3.61	0.67	2.00	4.90	-0.33	-0.22
-CTe	3.55	0.63	1.94	4.85	-0.27	-0.19
PI	3.42	0.71	1.78	4.89	-0.38	-0.24

To verify the structural validity of the Online Purchase Intention (PI) scale and address concerns regarding the validity of this measurement instrument, this study performed Confirmatory Factor Analysis (CFA) on the PI scale using AMOS 24.0. The test results are presented in Table 4.

TABLE 4. Results of Confirmatory Factor Analysis and Convergent Validity Test for the PI Scale

Item No.	Standardized Factor Loading	T-value	Significance
PI1	0.72	14.26	***
PI2	0.75	14.98	***
PI3	0.70	13.85	***
PI4	0.68	13.42	***
PI5	0.65	12.87	***
PI6	0.63	12.51	***
PI7	0.62	12.30	***
Validity Indicators	CR = 0.872; AVE = 0.563	–	–

Note: *** indicates $p < 0.001$.

The results show that the standardized factor loadings of all items are greater than 0.6 and significant at the $p < 0.001$ level. The Composite Reliability (CR) of the scale is 0.872, which is above the critical value of 0.7, and the Average Variance Extracted (AVE) is 0.563, which is above the critical value of 0.5. These findings fully demonstrate that the PI scale has sound structural validity and convergent validity, providing empirical support for the effectiveness of the measurement instrument.

C. CORRELATION ANALYSIS

Pearson's product moment correlation analysis was conducted to evaluate the relationships between core variables and their dimensions. As shown in Table 5, all core variables and dimensions exhibited significant positive correlations ($p < 0.001$), with correlation coefficients ranging from 0.52 to 0.73, indicating no severe multicollinearity issues. The highest correlation coefficient (0.68) was observed between emotional presence and emotional trust. All dimensions of social presence demonstrated positive associations with online purchase intention, while cognitive trust (0.70) and emotional trust (0.72) showed strong correlations with purchase intention.

TABLE 5. Pearson Correlation Coefficient Matrix of Core Variables and Dimensions

Variables	Number	1	2	3	4	5	6
EP	1	1.000					
IP	2	0.63***	1.000				
CP	3	0.58***	0.60***	1.000			
CTc	4	0.64***	0.62***	0.53***	1.000		
CTe	5	0.68***	0.60***	0.55***	0.73***	1.000	
PI	6	0.65***	0.61***	0.52***	0.70***	0.72***	1.000

Note: $p < 0.001$, $p < 0.01$, $p < 0.05$

D. REGRESSION ANALYSIS

1) Analysis of Streamer's Social Presence on Online Purchase Intention

The regression results in Table 6 demonstrate that Model 1, which only included control variables, exhibited weak explanatory power ($R^2 = 0.16$). When social presence was added to Model 2, the R^2 increased significantly to 0.58 ($\Delta R^2 = 0.42$, $\Delta F = 89.63$), indicating that the streamer's social presence significantly enhances online purchase intention.

Specifically, emotional presence ($\beta = 0.23$, $t = 4.68$), interactive presence ($\beta = 0.27$, $t = 5.32$), and coexistence presence ($\beta = 0.19$, $t = 3.85$) all positively influenced online purchase intention, with regression coefficients statistically significant at the 0.001 level. Thus, Research Hypothesis H1 and its sub-hypotheses H1a, H1b, and H1c were all validated.

TABLE 6. The Effect of Streamer Social Presence on Online Purchase Intention

Variables	Model 1	Model 2
Constant	2.15 ($t = 3.28^{**}$)	1.02 ($t = 1.85^{*}$)
Gender	0.08 ($t = 1.56$)	0.05 ($t = 1.02$)
Age	0.11 ($t = 2.13^{*}$)	0.07 ($t = 1.45$)
Monthly Income	0.13 ($t = 2.46^{**}$)	0.09 ($t = 1.83^{*}$)
Live Shopping Frequency	0.15 ($t = 2.87^{**}$)	0.10 ($t = 2.01^{*}$)
Emotional Presence (EP)	–	0.23 ($t = 4.68^{***}$)
Interactive Presence (IP)	–	0.27 ($t = 5.32^{***}$)
Coexistence Presence (CP)	–	0.19 ($t = 3.85^{***}$)
R^2	0.16	0.58
Adjusted R^2	0.14	0.57
ΔR^2	–	0.42
F	12.85***	68.32***
ΔF	–	89.63***
Durbin-Watson	1.98	2.03

Note: $p < 0.001$, $p < 0.01$, $p < 0.05$; Standardized regression coefficients (β) are reported

2) Analysis of Streamer's Social Presence on Consumer Trust

The regression analysis was conducted with cognitive trust and affective trust as dependent variables, incorporating control variables and each dimension of social presence. The results are presented in Table 7. When cognitive trust was the dependent variable, the regression model showed excellent overall fit after adding social presence, with an explanatory power of 0.55 ($F = 62.48$). Among these, interactive presence demonstrated the most significant positive effect ($\beta = 0.24$, $t = 4.91$), followed by emotional presence ($\beta = 0.21$, $t = 4.25$). Coexistence presence also exhibited a significant positive effect ($\beta = 0.18$, $t = 3.67$). These results collectively validate the validity of Hypotheses H2a, H2c, and H2e.

The regression model, with emotional trust as the dependent variable, demonstrated strong explanatory power, achieving an R^2 of 0.57 ($F = 65.83$). The most significant positive effect on emotional trust was observed in emotional presence ($\beta = 0.29$, $t = 5.87$), followed by interactive presence ($\beta = 0.20$, $t = 4.03$). Coexistence presence also significantly enhanced emotional trust ($\beta = 0.17$, $t = 3.42$), validating Hypothesis H2f. These results provide robust empirical support for Hypotheses H2b, H2d, and H2f.

In conclusion, the streamer's social presence significantly enhances consumer trust across all dimensions, confirming both Hypothesis H2 and its sub-hypotheses H2a-H2f.

TABLE 7. Hierarchical Regression Results of Social Presence on Consumer Trust

Variables	Cognitive Trust (CTc)	Emotional Trust (CTe)
Constant	1.15 (t=2.03*)	1.08 (t=1.96*)
Gender	0.06 (t=1.21)	0.04 (t=0.85)
Age	0.09 (t=1.78*)	0.05 (t=1.03)
Monthly Income	0.10 (t=1.95*)	0.08 (t=1.67*)
Live Shopping Frequency	0.12 (t=2.38**)	0.11 (t=2.24**)
Emotional Presence (EP)	0.21 (t=4.25***)	0.29 (t=5.87***)
Interactive Presence (IP)	0.24 (t=4.91***)	0.20 (t=4.03***)
Coexistence Presence (CP)	0.18 (t=3.67***)	0.17 (t=3.42***)
R ²	0.55	0.57
Adjusted R ²	0.54	0.56
F	62.48***	65.83***
Durbin-Watson	2.01	1.97

Note: p<0.001, p<0.01, p<0.05

3) Analysis of Consumer Trust on Online Purchase Intention
The regression analysis, with online purchase intention (PI) as the dependent variable and control variables along with two dimensions of consumer trust (CTc and CTe), yielded results as shown in Table 8. The model's overall explanatory power was $R^2=0.59$ ($F=69.25$). Both cognitive trust ($\beta=0.32$, $t=6.43$) and affective trust ($\beta=0.35$, $t=6.98$ ***) significantly promote online purchase intention, with regression coefficients statistically significant at the 0.001 level. Thus, Research Hypotheses H3, H3a, and H3b were all validated.

TABLE 8. Regression Results of Consumer Trust on Online Purchase Intention

Variables	Online Purchase Intention (PI)
Constant	0.98(t=1.76*)
Gender	0.04(t=0.89)
Age	0.06(t=1.27)
Monthly Income	0.08(t=1.72*)
Live Shopping Frequency	0.09(t=1.89*)
Cognitive Trust (CTc)	0.32(t=6.43***)
Emotional Trust (CTe)	0.35(t=6.98***)
R ²	0.59
Adjusted R ²	0.58
F	69.25***
Durbin-Watson	2.05

Note: p<0.001, p<0.01, p<0.05

E. MEDIATION EFFECT TEST

The mediation effect was tested using the Bootstrap method ($n=5000$), with results presented in Table 9. The overall effect of the streamer's social presence on online purchase intention was statistically significant ($\beta=0.74$, $SE=0.045$, 95%CI [0.65,0.83]). When consumer trust was included, the direct effect of social presence on purchase intention remained significant ($\beta=0.28$, $SE=0.052$, 95%CI [0.18,0.38]), and the 95% confidence interval did not contain zero, indicating that consumer trust plays a partially mediating role between social presence and purchase intention.

The total indirect effect was 0.46, $SE=0.055$, 95%CI [0.35,0.57], accounting for 62.16% of the total effect, indicating that 62.16% of the influence of the streamer's social

presence on online purchase intention is transmitted through the mediating path of consumer trust. Thus, Hypothesis H4 is validated.

TABLE 9. Results of Mediating Effect Test (Bootstrap Method, $n=5000$)

Effect Type	Path	Effect Value	SE	95% Confidence Interval (Lower Bound)	95% Confidence Interval (Upper Bound)
Total Effect	SP → PI	0.74	0.045	0.65	0.83
Direct Effect	SP → PI	0.28	0.052	0.18	0.38
Indirect Effect	EP → CTc → PI	0.067	0.018	0.034	0.105
Indirect Effect	EP → CTe → PI	0.102	0.023	0.059	0.151
Indirect Effect	IP → CTc → PI	0.077	0.020	0.040	0.120
Indirect Effect	IP → CTe → PI	0.070	0.019	0.035	0.110
Indirect Effect	CP → CTc → PI	0.058	0.017	0.027	0.094
Indirect Effect	CP → CTe → PI	0.059	0.018	0.026	0.097
Total Indirect Effect	SP → CT → PI	0.46	0.055	0.35	0.57

Note: All effects are standardized regression coefficients; CI does not contain 0 indicates significant effect

F. ROBUSTNESS CHECK

To further eliminate the potential impact of the super-user subsample on the stability of the research conclusions, a robustness test was conducted by excluding the 16 samples of users with 13 or more live shopping trips per month, and re-running the core main effect regression and mediation effect tests on the remaining 292 valid samples.

The re-test results show that, after excluding the super-user subsample, the positive predictive effect of the streamer's social presence on consumers' online purchase intention remains significant ($\beta=0.71$, $SE=0.047$, $p<0.001$), which is highly consistent with the benchmark regression results. Meanwhile, the mediating effect of consumer trust remains statistically significant, with a total indirect effect value of 0.44 ($SE=0.057$, 95%CI=[0.33, 0.55]), accounting for 61.97% of the total effect. The core coefficients, significance levels, and mediating effect proportion are almost identical to the benchmark test results. This fully proves that the core conclusions of this study are not affected by the super-user subsample, and the research results have good stability and robustness.

IV. DISCUSSION

This study addresses gaps in research on the interplay between live-streaming streamers' social presence, consumer trust, and online purchase intent within the live-streaming e-commerce domain. The findings enhance existing scholarship by clarifying how streamers' social presence influences consumer purchasing decisions in this hybrid social-commerce environment.

A. THEORETICAL CONTRIBUTION

The theoretical contributions of this study are mainly reflected in three aspects:

This study expands the research domain of how social presence affects consumers' online purchase intention in live-streaming e-commerce scenarios. Empirical analysis demonstrates that the three dimensions of social presence—emotional presence, interactive presence, and coexistence presence—all exert significant positive impacts on online

purchase intention, with quantified differences in their respective influence intensities. By integrating social presence theory, social exchange theory, and SOR theory, this study constructs a comprehensive logical framework that aligns with the social-commercial integration characteristics of live-streaming e-commerce. It not only expands the application boundaries of SOR theory in this specific context but also provides a new theoretical perspective for explaining the psychological pathways of online consumption behavior [5-6].

This study advances research on the mediating mechanisms of consumer trust. It systematically examines the mediating roles of cognitive trust and affective trust in consumer trust, clarifies the internal structure of trust mediation, and addresses the limitations of incomplete path analysis in previous studies [7]. Furthermore, the research provides targeted yet universally applicable empirical evidence to enrich the theoretical framework of live-streaming e-commerce, laying the groundwork for future in-depth exploration of related variable relationships [8].

B. PRACTICAL IMPLICATIONS

This study provides targeted practical guidance for live-streaming e-commerce platforms, streamers, and textile enterprises. For streamers, the focus should be on enhancing social presence, with interactive presence and emotional presence showing the strongest predictive effects. Streamers should improve empathy for consumer needs and sincerity in emotional expression by authentically sharing product experiences and promptly addressing emotional appeals to bridge psychological distance. They should also leverage real-time two-way communication to create interactive experiences, using methods like roll call interactions and Q&A sessions to transform consumers into active participants, recreating the immersive feel of offline shopping. Simultaneously, fostering a collaborative atmosphere can alleviate the loneliness associated with online shopping.

For live-streaming e-commerce platforms, establishing streamer behavior guidelines and product review mechanisms is essential to strengthen consumer trust, while developing multi-user interaction features to provide technical support for streamers to build coexistence presence. For textile enterprises, prioritizing streamers with high social presence traits, offering comprehensive and precise product information, and helping streamers enhance cognitive trust through professional explanations while deepening emotional trust through emotional connections can boost purchase conversion. This approach fully demonstrates the practical value of social presence in driving consumption decisions through trust transmission.

In terms of heterogeneous user characteristics, although the core conclusions are universally applicable to users with different live shopping frequencies, marginal differences exist in the influence paths across user groups. For super-users with high-frequency live shopping experience, the mediating effect of emotional trust is more prominent: long-

term live viewing experience makes them more inclined to make purchase decisions based on emotional identification with the streamer. For mainstream users with moderate shopping frequency, cognitive trust and emotional trust play a more balanced role, as they pay equal attention to the professional product information conveyed by the streamer and the emotional connection built through social presence.

For the textile industry's segmented markets, targeted strategies should be formulated based on consumer characteristics. For the Gen Z core consumer group, streamers should focus on strengthening emotional presence and interactive presence to stimulate impulsive purchase intention. For the middle-aged and elderly segmented markets of the textile industry (such as home textiles, functional textile fabrics), streamers should focus on building cognitive trust through professional product explanation, and strengthen emotional connection through community-based coexistence presence creation, to cover the diverse market demands of the textile industry.

V. CONCLUSION

This study demonstrates through empirical analysis that the social presence of live-streaming streamers significantly enhances consumers' online purchase intention for textile products by effectively conveying material quality and aesthetic value in live-streaming e-commerce scenarios. It further examines the transmission mechanism of social presence influencing consumer follow-up behavior from the perspective of consumer trust, confirming that consumer trust not only significantly promotes online purchase intention but also serves as a key mediator between social presence and purchase intention. The research constructs and validates a theoretical model aligned with the social-commercial integration characteristics of live-streaming e-commerce, expanding the application boundaries of relevant theories and refining the internal transmission path of trust-mediated effects. This provides a scientific basis for optimizing functional design on live-streaming e-commerce platforms.

A. RESEARCH LIMITATIONS

This study has several limitations that need to be addressed in future research. First, the sample is dominated by Gen Z consumers aged 19-25, accounting for 50.65% of the total sample. This group's textile consumption is characterized by a preference for live-streaming channels, emphasis on emotional interaction and social attributes, and susceptibility to streamer influence. In contrast, consumers aged 35 and above, who consume textile categories such as home textiles and functional textile fabrics, pay more attention to product quality, cost performance and functionality, have lower live shopping frequency, and have significantly different sensitivity to streamers' social presence compared with Gen Z. Therefore, the conclusions of this study are more applicable to the Gen Z-dominated textile and apparel live-streaming e-commerce scenario, and have certain limitations in the

generalizability to the segmented markets of the textile industry for middle-aged and elderly groups.

Second, this study focuses on the textile industry, and the generalizability of the model to other industry categories needs to be further verified. Third, this study only explores the mediating mechanism of consumer trust, and other potential mediating variables (such as perceived value, flow experience) and moderating variables (such as product involvement, platform reputation) are not included in the model, which can be further explored in future research.

B. FUTURE RESEARCH DIRECTIONS

Future studies can expand the sample size and sample coverage, increase the proportion of consumers aged 35 and above, compare the differences in influence paths across different age generations, and verify the generalizability of the model in different segmented categories of the textile industry (home textiles, functional fabrics, middle-aged and elderly apparel, etc.), to further improve the external validity of the research conclusions. In addition, future research can explore the boundary conditions of the impact of streamers' social presence on purchase intention by introducing moderating variables such as product type and consumer involvement, and enrich the research on the influencing mechanism of live-streaming e-commerce purchase intention.

AUTHOR CONTRIBUTIONS

Conceptualization – Cao Yu and Chen Mingke; methodology – Cao Yu and Chen Mingke; investigation – Cao Yu and Chen Mingke; writing-original draft preparation – Cao Yu and Chen Mingke. All authors have read and agreed to the published version of the manuscript.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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