The Impact of Interactivity on Customer Purchase Intention in Social Media Marketing: The Mediating Role of Social Presence

Yuanyuan Jiang [1,2], Siwarit Pongsakornrungsilp [3],
Pimlapas Pongsakornrungsilp [3], Long Li [4]

[1] *College of Graduate Studies, Walailak University, Nakhon Si Thammarat 80160, Thailand*
[2] *School of Business Administration, GuangXi Vocational Normal University, NanNing 530000, China*
[3] *Center of Excellence for Tourism Business Management and Creative Economy, School of Management, Walailak University, Nakhon Si Thammarat 80160, Thailand*
[4] *School of Business, Nanning Vocational and Technical University, NanNing 530000, China*

Abstract – **This research utilizes the S-O-R (stimulus-organism-response) framework to investigate how essential quality factors impact consumer behavior in social media marketing. Specifically, it assesses the impact of information quality, which includes believability, usefulness, and vividness, on social presence and customer purchase intention. Additionally, it evaluates interaction quality, characterized by responsiveness, real-time interaction, and empathy, and its influence on these variables. Data were obtained from 652 Chinese consumers engaged in live broadcasts through an online survey. Employing PLS-SEM with SPSS and SmartPLS software, the analysis revealed significant impacts from both information and interaction quality on the results of the study. These factors were found to enhance customers' perception of social presence, significantly affecting their intent to purchase on social media live platforms.**

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The findings offer crucial theoretical and practical insights for merchants to refine marketing strategies, underlining the importance of high-quality information and interaction in boosting consumer engagement and driving purchase decisions.

1. Introduction

Internet technologies have enabled the rise of new consumption patterns. Social media marketing, as a modern media form, has emerged in this context, allowing users to build social relationships on social media platforms [1]. These platforms provide an effective means to facilitate users in obtaining, sharing, and circulating information [2]. Social media live streaming (SMLS), which combines social media and live media, has garnered significant recognition from merchants and customers for its distinctive content and frequent live interactions.

In China, live streaming e-commerce has experienced rapid growth, significantly increasing its influence. As reported by CNNIC in 2023, there were 1.067 billion internet users in China, with 526 million involved in live streaming e-commerce [3]. To stimulate growth, social media platforms are seeking cross-field partnerships, focusing on constant improvement of the content, form, and depth within the live streaming industry ecosystem [4]. Since June 2018, two major short video platforms with a large user base in China, Kuaishou and TikTok, each established their own live shopping sections on their platforms. Social giants such as WeChat, RED and Toutiao have also followed the pace and launched business applications such as live marketing.

Live streaming has become the primary consumption method, yet traditional communication methods based on visuals and text no longer satisfy client expectations [5]. Interactivity has become essential in modern marketing [6], significantly altering customer decision-making with its real-time and immersive nature [7].

In live streaming, customer focus shifts towards meeting their informational and interactive needs [8]. Merchants showcase products via live video, engaging consumers through instant communication and comments, thereby enhancing product understanding and social presence, and ultimately boosting purchase intentions [9]. Despite the critical importance of information and interaction quality in social media marketing, gaps in research on their impact on social presence call for further investigation. It is crucial to deeply analyze how these qualities influence customer interactions and purchase intentions to gain better insights into social media marketing's effect on consumer behavior.

Scholars use social presence from communication studies to describe how individuals perceive others and their environment during media interactions [10]. Social presence means the characteristics of media that enable communicators to perceive each other as "real people" and establish a sense of connection through mediated interactions [11], [12]. Within e-commerce contexts, the perception of social presence is considered to be the internal feeling generated by customers, such as psychological involvement [13], sense of communal presence [14], and sense of warmth [15]. Social media live streaming, combined with customer co-creation scenarios, provides customers with richer and multi-dimensional experiential value. This is achieved through instantaneous, varied, and customized social interactions with businesses, platforms, and other customers [16]. Customers no longer make purchase decisions independently, but are placed in a virtual shopping situation where others are present, and have social interaction with others [6], and change their attitudes and behaviors under the influence of others. As this understanding is crucial for boosting customer purchase intention and sales, it is imperative for merchants to understand the impact of interactivity on social presence.

The S-O-R framework is applied to investigate how interaction influences purchase intention in SMLS. This model suggests that an organism's internal state (O) is impacted by external stimuli (S), then resulting in behavioral responses (R) in online shopping contexts [17]. This model effectively outlines how environmental cues influence consumer internal processes and resulting actions in SMLS [18]. This study uses two interaction features as stimulus components, like earlier experiments.

Ying *et al.* [12] have suggested that social presence functions as an intermediary in the relationship between the interaction of e-commerce livestream information and user engagement, social presence is thus considered an organism in this context. Furthermore, while previous research has primarily examined customer purchase intention in social media platforms [19] or patronage intention [20] as response factors, this study specifically considers customer purchase intention as the determinant of response factors explored how interactivity (information quality and interactivity quality) impacts purchase intentions by social presence. Thus, the primary inquiries of the research are:

RQ1: What are the contributions of information quality and interaction quality to fostering social presence in social media marketing?

RQ2: In what ways does social presence influence customer purchase intention?

RQ3: Is social presence a mediator in the relationship between information quality, interaction quality, and purchase intention?

2. Review of Literature and Hypothesis Development

This section reviews the literature and formulates hypotheses on how information quality and interaction quality influence social presence and purchase intentions in SMLS. It emphasizes their roles as second-order formative variables and provides a framework for understanding how these qualities impact social presence and drive purchase intentions.

2.1. Interactivity and Social Presence

Liu and Shrum [21] suggested that interactivity should be defined as the mutual influence between two or more individuals or involving the medium, expressed through the magnitude of impact. Seeking effective shopping information and interactive communication are the primary purposes of using live streaming for shopping [22]. Previous research highlights how interaction and information quality significantly influence customers' purchasing decisions in live e-commerce. Drawing insights from previous literature in fields like e-commerce and online healthcare, this study treats information quality and interaction quality as second-order formative variables. Within this framework, believability, usefulness, and vividness are the first-order reflective indicators of information quality. These indicators reflect customers' subjective assessments regarding the quality and relevance of the information provided by sellers.

Responsiveness, real-time interaction, and empathy signify interaction quality, gauging customers' perceptions of their interactions with sellers on SMLS [23].

2.1.1. Information Quality and Social Presence

In the process of live broadcasting, customers can freely exchange views and share their common concerns, values and useful information, which reduces the sense of distance between interpersonal relationships in live broadcasting marketing, mutual recognition, and interactive perception can enhance community identity through individual self-generalization and community embedding. Mutual connection produces reciprocity norms and shared responsibility consciousness that are close to the reality of social interaction [24], which reflects the impact of the usefulness of information quality on customers' sense of social presence. Vividness of information quality means more information forms (such as image display, text description, real-time video, and "face-to-face" communication) and more sensory channels (visual, auditory, etc.) [25]. Hsieh and Tseng [26] found that the lively and interesting language style and diversified marketing information of streamers increased customers' curiosity and interest in brands and products, and the language interaction based on bullet screen easily made customers feel the virtual presence of streamers and other customers. At the same time, the non-editable nature of live video increases the credibility of information. Building on these insights, the following hypothesis is formulated：

H1: Information quality significantly enhances social presence in SMLS.

2.1.2. Interaction Quality and Social Presence

Research on SMLS indicates that the interactivity of shopping websites significantly enhances customers' sense of social presence. Real-time interactive features include rapid webpage loading and quick retrieval of feedback information [27]. A similar impact is observed in live streaming contexts [28]. Smooth interactive experiences enable customers to distinctly feel a sense of immediacy akin to interpersonal communication, thereby boosting social presence.

The responsiveness of interaction quality reflects the perception of providing relevant information based on customers' purchasing needs. Responsiveness changes the level of social presence based on interactions between customers and enterprises in SMLS, as well as among customers [29].

Xue et al. [30]demonstrate that streamers' professional explanations and timely responses to customer queries not only lead customers to perceive them as friendly, honest, and reliable but also communicate a sense of empathy. This reduces the psychological distance between streamers and customers, thereby potentially enhancing social presence. Hence, a streamer's responsiveness, combined with an empathetic approach, might significantly bolster social presence. Building on these insights, the following hypothesis is formulated:

H2: Interaction quality significantly enhances social presence in SMLS.

2.2. Customer Purchase Intention and Social Presence

Customers are more inclined to take the edge path due to their low motivation and ability, and the virtuality of live shopping makes customers easily fall into information asymmetry [6]. In this case, customers have lower cognitive effort and depend on edge cues related to target behaviors in the process of attitude formation. Such as suggestions, goodwill, and affinity from streamers or other customers[31]. Therefore, customers usually take an edge path to make a heuristic consumption decision, that is, "easy task"[32]. Within a broadcast room charged with a high purchasing atmosphere, social presence becomes a key factor; customers are more likely to indicate purchase intentions for items favored by the group, aiming for acceptance and avoiding the discomfort of being different. This dynamic illustrates how social presence reinforces conformity and group acceptance, thereby driving purchase intentions. Conversely, the social presence of other participants can trigger a fear of missing out, as their engagement and interaction within the SMLS environment create a sense of urgency and a desire to participate actively. As the anchor presents high-quality products or time-limited discounts, the heightened sense of social presence can amplify customers' anxiety over missing out on the shared positive shopping experiences, pushing them towards becoming part of the purchasing majority rather than a non-participating minority. The fear of missing out, fueled by the presence of others within SMLS, this demonstrates the nuanced dynamics between social presence and purchase intentions among customers within SMLS. Building on these insights, the following hypothesis is formulated：

H3: Social presence significantly enhances customers' purchase intention in SMLS.

2.3. The Mediating Role of Social Presence

Social presence reflects how media characteristics make communicators view each other as "real people," creating a connection through the communication process [33]. According to Hassanein and Head [34], social presence is characterized by the enjoyable experience of human-like interaction on a website. They discovered that higher degrees of social presence positively influence consumers' intent to make purchases.

Within the SOR framework, purchasing intention is seen as a response to something. A reaction refers to the psychological outcome that is impacted by external stimuli [35], [36]. Since purchase intention accompanies strong emotional reactions and decreased cognitive control [37], changes in the "organism's internal state" must occur before customers develop purchase intentions. In this chain, intrinsic perceptual variables play an intermediary role [17]. In other words, the role of interactivity in influencing customer purchase intention is mediated by customers' intrinsic perceptions, instead of having a direct influence. This understanding has received some research support [38]. Building on these insights, the following hypotheses are formulated：

H4a: Social presence serves as an intermediary between information quality and consumer purchase intention.

H4b: Social presence serves as an intermediary between interaction quality and consumer purchase intention.

2.4. Interactivity and Purchase Intention

This section discusses the information quality, interaction quality, and behavior – purchase intention. The interaction and information quality were discussed to demonstrate how marketing can drive purchase intention.

2.4.1. Information Quality Positively Impacts Customers' Purchase Intention

Information quality, characterized by its believability, usefulness, and vividness, is crucial for tailoring information to meet customer needs [39]. Customers depend on the quality of this information to make informed comparisons among products, brands, or companies [22].

In the setting of SMLS, the provision of information is significantly enhanced. This platform allows customers to experience live product demonstrations and interact with streamers, thereby increasing the richness and vividness of the information presented.

Such enhanced information quality directly strengthens customers' purchase intentions, illustrating the integral role of interaction quality in the purchasing process [40]. Building on these insights, the following hypothesis is formulated:

H5: Information quality significantly enhances customers' purchase intention in SMLS.

2.4.2. Interaction Quality Positively Impacts Customers' Purchase Intention

This study breaks down the interactive quality of live shopping into three dimensions: responsiveness, real-time communication, and empathy. Streamers, employing a natural and engaging language, encourage active consumer participation [22]. Their skill in crafting an interactive atmosphere boosts enjoyment and fulfills emotional needs [41], leading to positive customer experiences [42]. Such experiences can heighten receptivity to the streamer's empathy, thereby enhancing purchase intentions [43].

Additionally, utilizing modern information technology, live shopping overcomes the barriers of time and space, providing a platform for immediate interaction. Streamers can swiftly address consumer queries via bullet-screen comments, using their extensive product knowledge to filter and convey essential information, satisfying individual consumer demands [44]. This responsiveness narrows the emotional gap and strengthens the connection with the audience [44], [22], which can amplify consumers' willingness to purchase. Building on these insights, the following hypothesis is formulated:

H6: Interaction quality significantly enhances customers' purchase intention in SMLS.

However, there is still a gap in the research on interaction quality and information quality, especially how social presence affects customers' purchase intention. Hence, the research delves into this matter to aid Chinese retailers in identifying the most effective marketing channels and, as shown in Figure 1, boosting customers' purchase intentions.
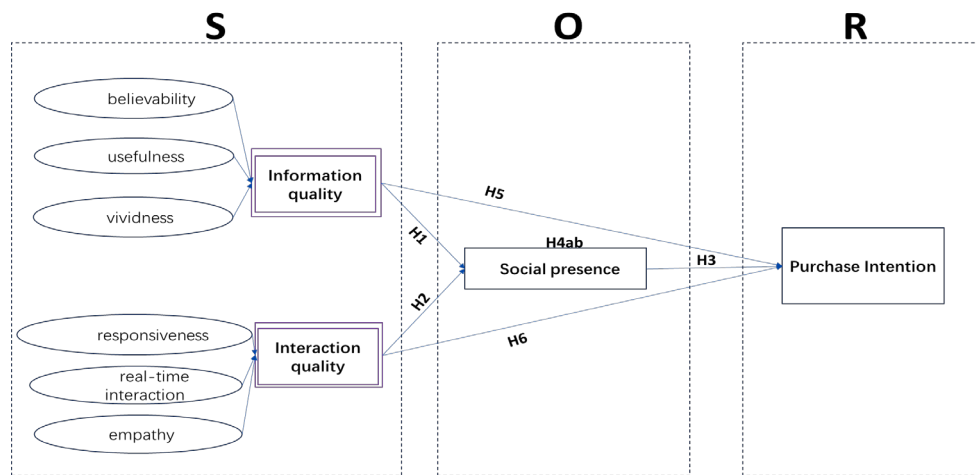
Figure 1. Research framework

3. Research Methodology
4.

This section details the research methodology, including measurement development, data collection, and analysis techniques. Using adapted scales for SMLS, data was gathered from 652 valid online survey responses and analyzed with PLS-SEM to validate the conceptual framework. This approach robustly examines the impact of information and interaction quality on social presence and purchase intentions.

4.1. Development of Measurements

To test the conceptual framework, an empirical study was conducted using questionnaires. The survey items, largely based on established literature, were reworded to suit the specific context of SMLS, ensuring domain-specific relevance. Believability was assessed using items adapted from research by Lee *et al.* [46]. Usefulness was assessed using items adapted from research by Cheung *et al.* [45], Erkan and Evans [47]. Vividness was assessed using a set of items sourced from the works conducted of Zhang *et al.* [48] and Orús *et al.* [49]. Responsiveness was evaluated using items adapted from the research conducted by Akter et al. [50] and Gorla et al. [51]. Empathy was measured using questions adapted from Gorla et al. [51] and Ananda and Devesh [52]. Real-time interaction was examined by questions adapted from Etemad-Sajadi [53]. Social presence was measured using four indicators derived from the research conducted by Gefen & Straub's [54] study. Three items, derived from Hong and Cha [55], were used to measure purchase intention. The questionnaire consisted of 33 self-report items, utilizing a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree).

The appendix provides detailed measurement items and their sources. The survey underwent translation into Chinese using the forward-backward technique, which ensured accuracy through initial translation and back-translation by different researchers. A pre-test with 57 respondents was conducted to refine the scales.

4.2. Sampling and Data Collection

This paper focuses on consumers with live streaming shopping experience, utilizing a quantitative approach and convenience sampling for data collection. Surveys were conducted online through China's Wenjuanxing platform (https://www.wjx.cn/, accessed on 10 Dec 2023), known for its large scale with over 10 million daily participants and distributed via social media platforms like WeChat, Weibo, and QQ. Wenjuanxing's extensive reach and integration with popular social platforms enable precise participant targeting and improved sample diversity specific to China.

A grand total of 790 questionnaires were gathered, out of which 138 questionnaires were eliminated due to the screening criteria listed below: The user had no prior experience with live broadcasting, finished the questionnaire in just 1.5 minutes, and provided consistently extreme and unchanging responses. Following the screening process, 652 valid responses were secured, indicating an effective rate of 82.5%. This rate is adequate for performing PLS-SEM analysis, as recommended by Hair Jr *et al.* [57]. Table 1 provides a detailed breakdown of the participants' demographic characteristics.

Table 1. Demographic information of participants (n=652)

Characteristic	Item	Frequency	Percentage
Gender	Male	271	41.6
	Female	381	58.4
Age	18~25	307	47.1
	26~30	93	14.3
	31~40	85	13
	41~50	91	14
	Above 50	76	11.7
Level of education	High school or below	102	15.6
	Junior college	242	37.1
	Bachelor's degree	269	41.3
	Master degree and above	39	6
Monthly income	Student	205	31.4
	Below RMB 2000	26	4
	RMB 2001~4000	61	9.4
	RMB 4001~6000	81	12.4
	RMB 6001~8000	183	28.1
	Above RMB 8000	96	14.7
Occupation	Student	211	32.4
	Company employee	191	29.3
	Civil servants or employees of public institutions	102	15.6
	Freelancer	140	21.5
	Others	8	1.2

4.3. Data Analysis Method

The model was validated using PLS-SEM, chosen due to its suitability for complex predictive models and theory testing, as the data analysis method. firstly, Using PLS-SEM for data analysis, the model was validated. This technique was chosen because it can model higher-order constructs. PLS-SEM effectively handles both reflective and formative constructs, offering flexibility in modeling [58] secondly, This research endeavors to identify antecedents and forecast outcomes, focusing more on exploratory analysis than on theory confirmation; and thirdly, PLS-SEM is suitable for handling data that is not normally distributed [59]. Moreover, according to the inverse square root method, Assuming that the minimum expected path coefficient is significantly between 0.05 and 0.10, and the corresponding effect is significant at a 5% level, exceeding the minimum sample size of 619, the 652 valid responses validate the use of PLS-SEM for this paper [56].

5. Data Analysis and Results

The measurements' descriptive statistics were evaluated using IBM SPSS Statistics 22. The study model was tested utilising a PLS-SEM technique, specifically utilising Smart PLS version 3.

5.1. Testing for Common Method Bias

To mitigate common method bias (CMB), items were clearly described, responses were anonymous, and survey measures for independent and dependent constructs were separated [60], [61]. Despite these precautions, the singular survey approach might still introduce CMB [58]. Harman's one-factor test [60], [61] was applied for CMB analysis, where factor analysis revealed 11 factors exceeding eigenvalues of 1.0, explaining 77.6% of the variance. The foremost factor accounted for 39.1%, below the critical 50% mark, suggesting insignificant CMB [60], [61]. VIF analysis showed values ranging from 2.012 to 4.210, below the multicollinearity threshold of 5.0 [56], confirming no multicollinearity in our data.

5.2. Measurement Model Testing

A two-step process, as recommended by Sarstedt *et al.* [56], was used to evaluate the measurement model. Initially, the study assessed the lower-order constructs' reliability and validation, including believability, usefulness, vividness, responsiveness, real-time interaction, empathy, social presence, and purchase intention. The findings indicated factor loadings surpassing the 0.65 mark, composite reliability (CR) values exceeding 0.7, and average variance extracted (AVE) values above 0.5, thereby demonstrating the measurement model's high reliability and convergent validity [56].

Using the Fornell-Larcker criterion and loadings analysis, discriminant validity was established, showing no cross-loadings. Each construct's AVE square root surpassed its correlations with other constructs, thereby confirming discriminant validity. Furthermore, the Heterotrait-Monotrait (HTMT) ratios stayed beneath the conservative limit of 0.850 [56], confirming discriminant validity.

Table 2. Construct reliability and validity assessment (lower-order construct correlations)

Constructs	Items	Factor Loading	CR	AVE	Cronbach's α
Believability(BEL)	BEL1	.864	.921	.745	.886
	BEL2	.864			
	BEL3	.856			
	BEL4	.869			
Usefulness (USE)	USE1	.863	.914	.727	.875
	USE2	.854			
	USE3	.839			
	USE4	.854			
Vividness (VIV)	VIV1	.850	.931	.730	.907
	VIV2	.851			
	VIV3	.860			
	VIV4	.859			
	VIV5	.852			
Responsiveness (RES)	RES1	.859	.924	.751	.890
	RES2	.864			
	RES3	.871			
	RES4	.873			
Real-time interaction (EMP)	RTI1	.861	.929	.725	.905
	RTI2	.849			
	RTI3	.845			
	RTI4	.852			
	RTI5	.850			
Empathy (EMP)	EMP1	.847	.916	.731	.877
	EMP2	.849			
	EMP3	.858			
	EMP4	.865			
Social Presence (SP)	SP1	.915	.951	.828	.931
	SP2	.909			
	SP3	.906			
	SP4	.910			
Purchase Intention (PI)	PI1	.938	.956	.879	.931
	PI2	.941			
	PI3	.933			

Table 3. Correlation and square root of the AVE (lower-order construct correlations)

Constructs	BEL	EMP	PI	RES	RTI	SP	USE	VIV
BEL	**.863**							
EMP	.378	**.855**						
PI	.411	.461	**.937**					
RES	.396	.596	.452	**.867**				
RTI	.346	.608	.459	.625	**.851**			
SP	.417	.414	.588	.372	.405	**.910**		
USE	.557	.340	.422	.424	.416	.365	**.853**	
VIV	.597	.307	.436	.382	.373	.388	.559	**.854**

Notes: Values along the diagonal in boldface represent the square roots of the AVE.

Table 4. Heterotrait–Monotrait Ratio of Correlations (lower-order construct correlations)

Constructs	BEL	EMP	PI	RES	RTI	SP	USE	VIV
BEL								
EMP	.428							
PI	.452	.509						
RES	.445	.675	.495					
RTI	.386	.681	.499	.696				
SP	.459	.458	.631	.408	.440			
USE	.632	.387	.466	.481	.467	.405		
VIV	.665	.343	.474	.425	.412	.422	.627	

Table 5. Weights and VIFs (higher-order construct)

Constructs	Indicator	Weight	Loading	VIF
Information Quality	BEL	0.415***	0.859***	1.750
	USE	0.359***	0.818***	1.639
	VIV	0.408***	0.857***	1.757
Interaction Quality	EMP	0.450***	0.878***	1.806
	RES	0.312***	0.830***	1.870
	RTI	0.399***	0.867***	1.911

An assessment was carried out on information quality and interaction quality, both defined as second-order reflective-formative constructs, validating their respective metrics. With statistically significant loadings and VIF values below 3, the validity of the higher-order construct was confirmed [56]. Lastly, the model's fit was evaluated using the SRMR, which yielded a result of 0.029, significantly lower than the 0.08 threshold, indicating an adequate fit [56].

5.3. Structural Model Evaluation

An in-depth analysis of the structural model interactions was conducted using bootstrapping techniques with 5,000 resamples to ensure robust statistical conclusions. Through this evaluation, the importance of each path coefficient was established, and the research model hypotheses were verified., according to the guidelines by Chin *et al.* [62]. Table 6 and Figure 2 provide evidence that the structural model had predictive capability, as indicated by the customer engagement values of R^2 surpassing 0.25 [56]. Based on the study conducted by Hair *et al.* [56], To ensure precision, Stone-Geisser's Q2 value was utilized to assess the structural model's predictive accuracy. This was achieved through the resampling blindfolding technique. The findings indicate that all endogenous constructs exhibit Q2 values exceeding 0.00, indicating a strong predictive validity of the structural model (Table 6).

The analysis validates all hypotheses, showing significant impacts of information quality ($\beta = 0.306$, $p < 0.001$) and interaction quality ($\beta = 0.309$, $p < 0.001$) on social presence, and their positive effects on purchase intention (information quality: $\beta = 0.195$, $p < 0.001$; interaction quality: $\beta = 0.257$, $p < 0.001$), as detailed in Table 6. Moreover, social presence significantly boosts purchase intention with path coefficient equal to 0.379 ($p < 0.001$), highlighting the critical influence of these factors in social media marketing contexts.

Table 6. Results of PLS path analysis

Hypotheses	β	f^2	R^2	Q^2	T-Value	ρ	Results
Social Presence			.285	.232			
H1:Information Quality ->SP	.306	.097			7.285	.000	Support
H2:interaction Quality -> SP	.309	.099			7.325	.000	Support
Purchase Intention			.457	.395			
H3:SP->PI	.379	.189			9.863	.000	Support
H5:Information Quality -> PI	.195	.047			5.112	.000	Support
H6:interaction Quality -> PI	.257	.082			6.600	.000	Support

Notes: SP = Social Presence; PI = Purchase Intention; Q2 = Stone–Geisser's Q2.
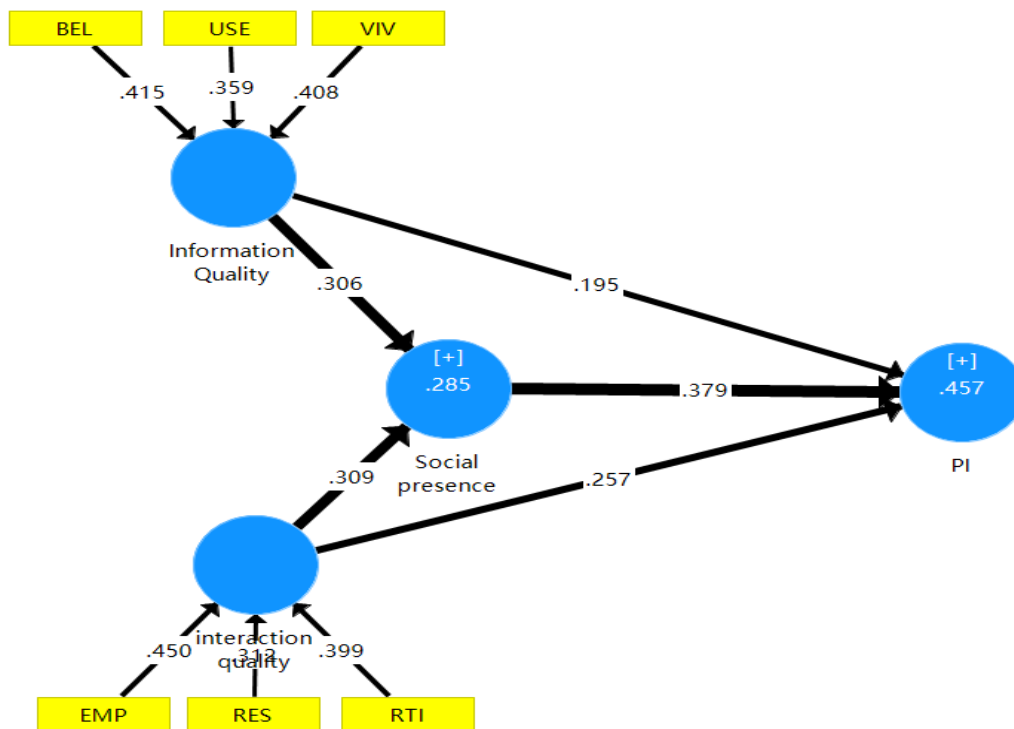
Figure 2. Results of PLS path analysis from SmartPLS

Bootstrapping results confirm the statistical significance of the total effect, direct effect, and indirect impact across all mediating channels. This is evidenced by the confidence intervals, which do not include 0 at the 95% confidence level.

Therefore, the findings suggest that social presence partially mediates the relationship between information quality, interaction quality, and customer purchase intention, supporting H4a and H4b.

Table 7. Path coefficients of mediating effects

Effects	Path Relationship	β	T-Value	ρ	95% Confidence Lower	95% Confidence Upper	Results
Specific Indirect	Information Quality -> SP -> PI	.116	5.769	.000	.079	.158	H4a: Support
Direct Effects	Information Quality -> PI	.195	5.112	.000	.122	.271	
Total Indirect	Information Quality -> PI	.116	5.769	.000	.079	.158	
Total Effects	Information Quality -> PI	.311	8.516	.000	.240	.383	
Specific Indirect	Interaction Quality -> SP -> PI	.117	6.055	.000	.081	.156	H4b: Support
Direct Effects	Interaction Quality -> PI	.257	6.600	.000	.183	.335	
Total Indirect	Interaction Quality -> PI	.117	6.055	.000	.081	.156	
Total Effects	Interaction Quality -> PI	.374	9.879	.000	.300	.446	

6. Discussion

The study investigates the influence of social presence on customer purchase intentions within SMLS, revealing that social presence significantly influences purchase intentions. Customers' perceptions of the believability, usefulness, and vividness of information are found to be positively linked to social presence. Moreover, live streaming platforms enable merchants to gain insights into customer product expectations, highlighting that providing useful information allows customers to quickly find what they need, thereby enhancing social presence on social media live streaming.

In the live steaming the trustworthiness of information boosts customers' trust perceptions, positively affecting their virtual presence. Furthermore, this research highlights the vital role of interactivity in enhancing a customer's social presence, with interaction quality (0.306) having an equal impact on information quality (0.309). Research outcomes show that social presence serves as an intermediary, linking interactivity with intention to purchase by consumers. This paper also underscores the crucial role of interactivity in bolstering customers' purchase intentions.

It reveals that both interaction quality (0.195) and information quality (0.257) significantly influence purchase intentions, highlighting their pivotal impact in the context of SMLS. This aligns with previous research on communication in online communities and supports the notion that real-time online interactions can significantly boost purchase intentions [53].

Additionally, the study investigates the internal mechanisms through which social presence influences customer behavior. Merchant can enhance customers' perceptions of interaction quality by offering timely feedback (responsiveness) and personalized services (empathy), catering to customers' information-seeking and purchasing needs. This comprehensive approach to interactive quality fulfills both informational and transactional requirements of customer.

7. Conclusion

To sum up, this research delineates interactivity dimensions within SMLS. It identifies core aspects of interaction quality, such as real-time interaction, responsiveness, and empathy, while information quality is characterized by usefulness, believability, and vividness. This research adds substantial evidence to the notion that both information quality and interaction quality significantly impact customers' purchase intentions. It also emphasizes the crucial function of social presence in clarifying this connection. These discoveries provide crucial empirical evidence and improve the conceptual understanding of interactive factors in SMLS. Furthermore, the findings of this research are positioned to aid merchants in developing and implementing advanced marketing strategies for live streaming.

7.1. Theoretical Implications

This research utilizes S-O-R model to examine Chinese social media marketing complexities, focusing on live streaming interactivity. Highlighting the significance of high-quality information and interaction, this research contributes novel insights into how these elements enhance social presence and, consequently, customer purchase intentions. It notably addresses the gap in literature regarding the assessment of social presence, distinguishing itself by conceptualizing social presence as an organism and exploring its mediating role [63]. Furthermore, the study advances the understanding of information and interaction quality's impact on purchase intentions, enriching the dialogue around the complexity of interactivity within social media marketing [64].

By broadening the conceptualization of social presence and evidencing its impact on consumer behavior, this research not only clarifies the dynamic between interaction and social presence but also sets a foundation for future inquiries into the determinants of consumer engagement in live streaming contexts [65].

7.2. Managerial Implications

This research delineates practical strategies for merchants to boost social presence and purchase intentions via social media live streaming. Merchants are encouraged to fully leverage live streaming's potential by ensuring high-quality information and engaging interactions. Concentrating on the clarity, utility, and credibility of the information can not only augment its vividness but also establish trust among consumers.

Moreover, it's crucial for merchants to tailor their marketing strategies to enhance live streaming experiences, showcasing attentiveness and adaptability to consumer preferences. Such commitment to improving interaction quality is pivotal for cultivating a community feel and a sense of belonging among the audience, directly impacting their willingness to purchase.

E-commerce platforms should also focus on bolstering both information and interaction quality to heighten consumers' sense of social presence. Engaging in positive, reciprocal interactions and information sharing with consumers can solidify social presence, thereby elevating consumer engagement and influencing purchasing decisions[6] [22].

7.3. Limitations and Future Research

The research provides foundational understanding into social media live marketing but acknowledges several limitations:

Firstly, it does not explore potential moderating variables such as consumer-streamer relationship strength, impulsivity, which are crucial for comprehending the impact of live streaming on purchase intentions. Upcoming studies should address these moderating effects to more accurately define live streaming's influence on consumer behavior.

Secondly, the focus is primarily on purchase intention, overlooking post-purchase behaviors like regret and returns that are prevalent in live streaming contexts. Investigating these behaviors, with a particular focus on customer satisfaction, could offer valuable guidance for improving live marketing strategies.

Thirdly, given that this research was conducted within the Chinese market, its applicability to other markets with differing institutional frameworks is uncertain. Additional studies are necessary to determine whether the findings can be generalized to other markets or countries.

By addressing these limitations, future research can further elucidate live streaming's impact on consumer behavior and assist in the development of more effective marketing strategies for the digital era.

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