

Quasi-Social Interaction, Information Sharing, and Impulsive Buying: A Study of Tourism Consumers in Livestream E-commerce

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Abstract: *With the rapid integration of 5G network technology and e-commerce, livestream marketing has become a primary channel for promoting tourism service products. This study obtains research sample data through questionnaire surveys and employs exploratory and confirmatory factor analysis, discriminant validity testing, and direct and indirect effect analyses to empirically examine the impact of quasi-social interaction between livestream hosts and consumers on impulsive consumption among tourism consumers, as well as the mediating roles of consumption process complexity and information sharing volume. The following conclusions are drawn. First, quasi-social interaction in e-commerce livestream marketing exerts a significant positive effect on consumers' impulsive consumption behavior. Second, quasi-social interaction negatively affects consumption process complexity, which in turn inhibits impulsive consumption. Third, quasi-social interaction significantly and positively influences consumers' information sharing volume within the livestream room, and information sharing volume subsequently promotes impulsive consumption. Fourth, both consumption process complexity and information sharing volume serve as important mediating mechanisms in the relationship between quasi-social interaction and impulsive consumption. Based on these findings, this paper proposes relevant managerial recommendations for tourism e-commerce livestream marketing practice.*

Keywords: E-commerce live broadcast; Impulsive consumption; Tourism industry; Marketing; Quasi-social interaction.

1. Introduction

With advantages such as timeliness, interactivity, experientiality, breaking through time and space limitations, and low cost, e-commerce live streaming has become a newly emerging marketing model widely used in the industry. Tourism e-commerce live streaming can directly display tourism products, scenic spots, and related tourism services to consumers in the form of videos. The real-time quasi-social interaction and doubt-solving between the live streamer and consumers can help consumers better understand and select tourism products and services, playing an important role in expanding the tourism consumption market and promoting the development of the tourism industry. Tourism e-commerce live streaming mainly uses video live streaming to display the content of tourism service products such as scenic spot scenery, travel routes, hotel accommodation, transportation methods, and catering, and conducts tourism product marketing through precise and personalized promotion, thereby stimulating the impulsive purchase demand of tourism consumers. Currently, e-commerce platforms such as Ctrip, Douyin, and WeChat have all carried out relevant tourism e-commerce live streaming marketing and achieved good results. In this context, deeply exploring the influence mechanism of e-commerce live streaming marketing on the impulsive purchase behavior of tourism consumers has important practical significance for promoting the prosperity of the tourism market and expanding domestic demand consumption.

Reviewing the relevant literature, it is found that few scholars have studied the influence mechanism of e-commerce live streaming marketing on the impulsive purchase behavior of tourism consumers. Therefore, this paper will attempt to explore the influence of quasi-social interaction in tourism

e-commerce live streaming on consumers' impulsive consumption, aiming to enrich the relevant research on the marketing effects of tourism e-commerce live streaming.

2. Theoretical Analysis and Research Hypotheses

The direct impact of quasi-social interaction in e-commerce live streaming on tourists' impulsive consumption. In e-commerce live streaming marketing, hosts and consumers can generate a quasi-social interaction experience similar to face-to-face communication through the Internet. Relying on their popularity, influence, and charm, hosts interact with consumers in e-commerce live streaming, which can arouse consumers' trust, sense of value, and identity, help them find personalities that match their preferences, imagine establishing an emotional connection with the host celebrities, and thus stimulate consumers' impulsive consumption desire through pleasant interaction experiences. The quasi-social interaction process between hosts and consumers in tourism e-commerce live streaming has certain implicit induction factors, which can enable consumers to generate corresponding emotional resonance and positive cognitive evaluations, and then contribute to impulsive tourism consumption decision-making behaviors. Generally, consumers' impulsive consumption is affected by consumers' consumption behaviors, inner desires, educational levels, psychological emotions, and product cognitions. This consumption process generated under impulse can bring pleasure and psychological satisfaction to consumers rather than caring about the commodity itself, and the pleasant satisfaction of consumption emotions has a positive promoting effect. Quasi-social interaction in tourism e-commerce live streaming can enable consumers to obtain a large amount of information about tourism products in a

timely and rapid manner through host recommendations, and reduce the perceived consumption risks through emotional stimulation factors such as trust, value, and identity, increase the probability of consumers' impulsive consumption, and prompt consumers to make impulsive consumption.

Based on the above analysis, this paper proposes the following research hypotheses:

H1: Quasi-social interaction in e-commerce live streaming has a direct positive impact on tourists' impulsive consumption.

The mediating mechanism of the complexity of the consumption process. The complexity of the consumption process mainly refers to the complexity of consumption procedures and operations. Consumers' recognition of technological convenience can affect their willingness to consume online. If consumers perceive the consumption process to be too complex in a virtual environment, their consumption willingness will decrease. The quasi-social interaction relationship formed between tourism e-commerce live streamers and consumers can provide consumers with meticulous guidance on procedures and operations in real time, helping consumers complete the process of choosing and paying for tourism products. If consumers feel that the degree of quasi-social interaction and communication efficiency is higher, the perceived risk of consumers will decrease and they will generate impulsive consumption. Therefore, the quasi-social interaction in tourism e-commerce live streaming can effectively reduce the complexity of the online consumption process, thus promoting the impulsive consumption of tourism consumers. At the same time, when tourism consumers search online for suitable tourism products in the consumption process, they not only need time costs, but also need to face problems such as limitations in information acquisition, information asymmetry, and the complexity of the online search process. The complexity of the online consumption environment and the tediousness of consumption operation procedures will significantly affect consumers' willingness to consume tourism. Therefore, consumers are easily influenced by various explicit or implicit consumption stimuli pushed by e-commerce live streamers online and choose tourism marketing product service information that can be obtained quickly and easily, resulting in consumers making irrational impulsive consumption decisions. In addition, due to the quasi-social interaction established between tourism e-commerce live streamers and consumers, when tourism consumers encounter technical problems during consumption operations, tourism e-commerce live streamers and customer service will directly guide consumers to solve problems or dispel doubts through chat, eliminating consumers' consumption concerns, thereby enhancing the willingness for impulsive consumption. In short, effectively reducing the complexity of the purchase procedures of tourism service items in the process of tourism e-commerce live streaming marketing, enabling tourism consumers to easily master consumption procedures and operation methods, and providing consumers with high-quality services during the consumption process are important ways to attract consumers to consume.

Based on the above analysis, this paper proposes the

following research hypotheses:

H2: Quasi-social interaction in tourism e-commerce live streaming marketing can significantly reduce the complexity of the consumption process, and thus play an indirect mediating role in the impulsive consumption of tourism consumers;

H3: Quasi-social interaction in tourism e-commerce live streaming marketing can positively affect the impulsive consumption of tourism consumers by reducing the complexity of tourism consumption procedures;

H4: Quasi-social interaction in tourism e-commerce live streaming marketing can positively affect the impulsive consumption of tourism consumers by reducing the complexity of tourism consumption operations.

The mediating mechanism of the amount of shared information. The amount of shared information refers to the richness of the information about tourist attractions provided by e-commerce live stream hosts to consumers. Before traveling, tourists will consult relevant materials, learn about tourist attractions, and make various travel plans in order to reduce the uncertain risks brought by the travel consumption process. When the supply and demand sides interact in the live stream, the information about tourist attractions provided by the seller is very important to consumers. Therefore, the symmetry of the information shared and exchanged between the supply and demand sides of travel consumption is very important. The consumers' favorability towards e-commerce live stream hosts and their professional knowledge reserves, as well as the consumers' access to the amount of information about tourist attractions, will significantly affect consumers' travel consumption willingness. That is, the more frequent the quasi-social interaction in e-commerce live stream for tourism is, the greater the amount of information consumers can obtain and the better they can understand relevant travel information. At the same time, the abundance of the amount of information consumers obtain about travel products is crucial for whether they choose travel consumption. Generally, in the process of presenting and recommending travel service products through quasi-social interaction in e-commerce live stream for tourism, the more information consumers obtain about travel products, the more likely they are to make a decision to choose travel consumption. Therefore, travel live stream merchants will try their best to provide consumers with information sharing that is conducive to promoting consumers' choice of travel consumption, so as to prompt consumers to make travel consumption decisions without a consumption plan. That is, the more comprehensive and detailed the quasi-social interaction in e-commerce live stream marketing is for consumers' sharing of information, the more it can reduce consumers' perceived risks, and thus will contribute to the impulsive consumption of travel consumers. In addition, the quasi-social interaction in e-commerce live stream marketing for tourism can accurately recommend and share various travel service product information that consumers want, providing real-time, personalized, and characteristic travel product information services, thus boosting the impulsive consumption of travel consumers.

Based on the above analysis, this paper proposes the following research hypotheses:

H5: Quasi-social interaction in e-commerce live stream marketing for tourism can enhance consumers' access to the amount of shared information about travel products, thereby promoting the impulsive consumption of travel consumers;

H6: The amount of shared information obtained by consumers in e-commerce live stream marketing for tourism has a positive impact on consumers' impulsive consumption; H7: The amount of shared information obtained by consumers in e-commerce live stream marketing for tourism plays an indirect mediating role in the process of the impact of quasi-social interaction on impulsive consumption.

3. Research Methods, Data Samples, and Variable Selection

Research methods and data samples. This paper uses the questionnaire survey method to obtain research sample data and empirically analyzes the influence mechanism of quasi-social interaction in e-commerce live broadcasts on the impulsive consumption of tourism consumers. To this end, this paper distributes research questionnaires through Wenjuanxing. First, in order to ensure the objectivity of the selected tourism videos in the questionnaire design, a pre-survey is conducted. The selected tourism videos mainly come from different tourism e-commerce live broadcast rooms on Douyin. The tourism products recommended in the selected tourism videos all include the host's explanation of the products (scenic spots + accommodation + catering + routes). During the design of the questionnaire, 8 research samples are selected according to the content, duration, and detail of the host's explanation of the tourism videos in the tourism e-commerce live broadcast room. When conducting the questionnaire survey, the survey respondents can only answer the questions in the questionnaire after watching the tourism video completely (without fast forwarding or dragging). In the pre-survey, 6 WeChat friends who had consumption behavior in the tourism e-commerce live broadcast room in the past two years were selected as the survey objects, and an online questionnaire survey was conducted for 3 days. According to the problems feedback from the pre-survey, the questionnaire was revised and improved to form a formal research questionnaire. The number of samples participating in the formal research was 800. After excluding the unqualified questionnaires, a total of 746 valid questionnaires were recovered, and the effective rate was 93.25%. Among the selected research samples, the proportion of females was 63.3%, and the proportion of males was 36.7%; the number of samples aged 18 - 50 was 558, accounting for 74.8% of the total samples; the samples with a bachelor's degree or above accounted for 62.7% of the total samples; consumers with an average monthly income of 8000 - 10000 yuan accounted for 65.3% of the total samples. Then,

through variable conversion of the data samples obtained from the research questionnaires, the mean value of each variable is calculated and compared. Finally, the tourism e-commerce live broadcast video with the highest comprehensive mean value is selected for research. The variables in this paper's questionnaire are mainly measured using a Likert 5-point scale.

Variable selection. This paper mainly studies the impact of the quasi-social interaction relationship formed between the live streamer and consumers in the live streaming marketing of tourism e-commerce on consumers' impulsive consumption, and examines the mechanism of the complexity of the consumption process and the amount of information shared therein. Therefore, in view of the relevance requirements of the research theme and content of this paper, the quasi-interactive social interaction between the live streamer and consumers in the live streaming marketing of tourism e-commerce is selected as the independent variable, the impulsive consumption of tourism consumers is selected as the dependent variable, and the complexity of the consumption process and the amount of information shared are selected as the mediating variables. Based on the sample data obtained from the questionnaire survey, a systematic empirical analysis of the research theme of this paper is carried out.

4. Empirical Analysis

Exploratory and confirmatory factor tests analysis. First, number the data samples obtained from the questionnaire survey, and divide them into odd-numbered groups and even-numbered groups according to the numbers. Use SPSS software to conduct exploratory factor analysis (EFA) on the odd-numbered samples. The test results are shown in Table 1. Second, use Amos28 to conduct confirmatory factor tests (CFA) on the even-numbered groups in the samples. The test results are shown in Table 2.

As can be seen from Table 1, there is only one factor variable among the variables selected in this paper. The Cronbach's α coefficients of the factors are all greater than 0.8, indicating relatively high reliability. The variance interpretation rates all exceed 70%, indicating that the data obtained from the questionnaire survey in this paper is credible. The factor loading values are all greater than 0.7, indicating a very strong correlation between the variables and the factors. At the same time, the results of the confirmatory factor tests in Table 2 show that $\chi^2/df = 1.439$, $RMSEA = 0.039$, $GFI = 0.889$, $CFI = 0.873$, $NFI = 0.912$, $TLI = 0.915$, $IFI = 0.875$, indicating good goodness of fit between variables. The factor loading values of the four variables of quasi-social interaction, consumption process complexity, amount of information shared, and impulsive consumption are all greater than 0.7, and the composite reliability values and average variance extracted values are respectively greater than 0.7 and 0.5, indicating good reliability and good convergent effect.

Table 1: Results of Exploratory Factor Analysis

Variable	Measurement Index	Factor Loading	Eigen value	Explained Variance %	Cronbach's a
Para-social Interaction	Do you like the host of this tourism e-commerce live stream room?	0.925	5.725	82.314	0.872
	Do you like the atmosphere of this tourism e-commerce live stream room?	0.874			
	Will you follow this tourism e-commerce live stream room?	0.889			
	Will you continue to watch the live stream of this host?	0.903			
	Will you interact with the host in the live stream room?	0.868			
	Will you follow the relevant dynamics of this live stream room?	0.896			
Complexity of Consumption Process	Are the order placement steps in this tourism e-commerce live stream room complicated to operate?	0.962	3.247	83.416	0.972
	Does the tourism product in this tourism e-commerce live stream room meet your requirements?	0.910			
	Does it take a long time to consume in this tourism live stream room?	0.872			
Amount of Shared Information	How much information does the host of this tourism live stream room explain about the tourism product?	0.913	3.261	86.324	0.947
	Do you fully understand the product in this tourism live stream room?	0.931			
	Does this live stream room output a large amount of information about the tourism product?	0.943			
	Do you have the willingness to consume after the host explains the tourism product?	0.905			
Impulsive Consumption	Will you make unplanned consumption in this live stream room when watching the tourism live stream?	0.915	3.525	88.712	0.931
	If there is a live stream of your favorite scenic spot in this tourism live stream room, will you place an order?	0.937			
	Will you buy tourism products that you have not planned to consume recently after watching the live stream?	0.821			
	Will you make a purchase after watching this tourism live stream?	0.893			

Table 2: Results of Confirmatory Factor Analysis

Variable	Measurement Index	Factor Loading	Composite Reliability	Average Variance Extracted
Para-social Interaction	Do you like the host of this tourism e-commerce live stream room?	0.891	0.871	0.843
	Do you like the atmosphere of this tourism e-commerce live stream room?	0.885		
	Will you follow this tourism e-commerce live stream room?	0.901		
	Will you continue to watch the live stream of this host?	0.893		
	Do you interact with the host in the live stream room?	0.896		
	Will you follow the relevant dynamics of this live stream room?	0.902		
Complexity of the consumption process	Are the steps to place an order in this tourism e-commerce live stream room complicated?	0.916	0.841	0.762
	Do the tourism products in this tourism e-commerce live stream room meet your requirements?	0.892		
	Does it take a long time to consume in this tourism live stream room?	0.887		
Total amount of shared information	How much information does the host in the live stream room provide about tourism products?	0.901	0.863	0.846
	Do you fully understand the product in this tourism live stream room?	0.913		
	Does this live stream room output a large amount of information about tourism products?	0.911		
	Do you have the willingness to consume through the host's explanation of tourism products?	0.892		
Impulsive Consumption	Do you make unplanned purchases in the live stream room while watching the live stream?	0.887	0.831	0.863
	If there is a live stream of your favorite scenic spot in this live stream room, will you place an order?	0.872		
	Will you consume tourism products that you didn't plan recently after watching the live stream?	0.863		
	Will you make a purchase after watching this tourism live stream?	0.871		

Table 3: Results of Discriminant Validity Test

Variable	Para-social interaction	Complexity of the consumption process	Amount of information shared	Impulsive consumption
Para-social interaction	0.918			
Complexity of consumption process	-0.647**	0.873		
Amount of information shared	0.563**	-0.533**	0.920	
Impulsive consumption	0.638**	-0.583**	0.584**	0.929

Note: In the table, ** indicates $p < 0.01$. The data with ** represents Person correlation data, and the diagonal numbers represent the square root of the average variance extracted.

Analysis of discriminant validity test. This paper conducts tests on the discriminant validity of the variables. The specific test results are shown in Table 3. As can be seen from Table 3, the square root values of the average variance extracted values of the four variables of quasi-social interaction, consumption process complexity, amount of information shared, and impulsive consumption are all greater than the correlation coefficient values in this column, indicating relatively good discrimination between the selected variables.

Analysis of direct effect test. In this paper, SPSS software is

used for direct effect test, and the specific test results are shown in Table 4. As can be seen from Table 4, the path influence coefficients of quasi-social interaction in tourism e-commerce live marketing on consumers' impulsive consumption, consumption process complexity, and information sharing volume are 0.231, -0.768, 0.795, respectively, and the corresponding t values are 5.334, -32.198, 23.263, and the p-values are all less than 0.001, indicating that the quasi-social interaction between the host and consumers in tourism e-commerce live can promote consumers' impulsive consumption, significantly reduce the

complexity of consumers' consumption process, and help improve the information sharing degree of the host to consumers. Therefore, Hypotheses H1, H2, and H5 in this paper are verified; the influence coefficient of the consumption process complexity of tourism products in e-commerce live marketing on consumers' impulsive consumption is -0.583 , t , the -25.023 , p value is less than 0.001 , indicating that the consumption process complexity of tourism products in e-commerce live marketing will have a negative impact on consumers' impulsive consumption. Therefore, Hypothesis H3 in this paper is verified; the path coefficient of the information sharing volume in the process of e-commerce live marketing on consumers' impulsive consumption is 0.232 , t , the value is 6.114 , and the p -value is less than 0.001 , indicating that the greater the information sharing volume of the host in the process of e-commerce live marketing, the more it can promote consumers' impulsive consumption. Therefore, Hypothesis H6 in this paper is verified.

Table 4: Direct effect test results

Hypothesis	Path coefficient value	t-value	Standard error (S.E.)	95% confidence interval		Test result
				LLCI	ULCI	
H1	0.231***	5.334	0.034	0.151	0.0263	Verification holds
H2	-0.768^{**}	-32.198	0.023	-0.972	-0.872	Verification holds
H3	-0.583^{**}	-25.023	0.037	-0.654	-0.746	Verification holds
H5	0.795***	23.263	0.036	0.873	0.875	Verification holds
H6	0.232***	6.114	0.025	0.209	0.351	Verification holds

Note: *** indicates that the p -value is less than 0.001 , the same as the following table.

Indirect effect test analysis. In this paper, the sampling with replacement method is adopted for the indirect effect test. First, the total sample is used as the sampling population, and the sample is repeatedly drawn 10,000 times from the population. Second, the parameters obtained from each sampling are averaged, and the obtained average value is the result value of the indirect effect test. If the 95% confidence interval does not contain the number 0, it indicates that there is an indirect effect. After comparing the effect values of the direct effect and the total effect, the indirect effect value is obtained. The specific values are shown in Table 5. As can be seen from Table 5, the 95% confidence interval does not include the value 0, indicating that there is an indirect effect for the two mediating variables of the complexity of the consumption process and the amount of shared information; the influence coefficient of the direct effect of the quasi-social interaction established between the anchor and the consumer in the process of e-commerce live marketing on consumers' impulsive consumption is 0.231 , and the total effect of the two mediating variables of the complexity of the consumption process and the amount of shared information in the influence of quasi-social interaction on consumers' impulsive consumption is 0.916 . Therefore, the total effect is greater than the direct effect, and the difference between the two is the indirect effect value. The specific results of the indirect effect test are shown in Table 6. As can be seen from Table 6, the indirect effect of the complexity of the consumption process in the influence of quasi-social interaction on consumers' impulsive consumption is 0.487 , and the 95% confidence

interval does not include the value 0. Therefore, Hypothesis H4 of this paper is verified; the indirect effect of the amount of shared information in the influence of quasi-social interaction on consumers' impulsive consumption is 0.198 , and the 95% confidence interval does not include the value 0. Therefore, Hypothesis H7 of this paper is verified.

Table 5: Direct and total effect values of parasocial interaction on consumers' impulsive consumption

Effect	Path coefficient	t value	Standard error (S.E.)	95% confidence interval	
				LLCI	ULCI
Direct effect	0.231***	5.334	0.034	0.151	0.0263
Total effect	0.916***	32.114	0.025	0.783	0.894

Table 6: Results of Indirect Effect Tests

Hypothesis	Path coefficient	Standard error (S.E.)	95% Confidence interval		Test result
			LLCI	ULCI	
Total indirect effect	0.685	0.031	0.637	0.683	
H4	0.487	0.035	0.426	0.562	Verified
H7	0.198	0.030	0.113	0.232	Verified

5. Policy Recommendations

First, in the live e-commerce marketing of tourism, the live streamers should attach importance to the quasi-social interaction with consumers, optimize the communication methods with consumers according to their consumption motives, strengthen the maintenance of quasi-social interaction relationships with consumers, and effectively guide and facilitate the consumption behavior decisions of tourism consumers. Second, simplify the order placement process for consumers in the live e-commerce marketing of tourism. While recommending and explaining tourism service products, display the order operation process to guide consumers to place orders, thereby promoting the consumption behavior decisions of tourism consumers. Third, the live streamers in the tourism e-commerce live rooms should try to comprehensively display and recommend tourism service products within a limited time, share more information related to tourism service products, and try to narrow the information gap between tourism service providers and tourism consumers, so as to prompt consumers to make consumption choices based on a full understanding of tourism service product information, thereby effectively improving the marketing performance of tourism e-commerce live broadcasts.

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