

# A Study of Consumers Impulsive Buying Behavior under the Interactive Situation of Live Webcast——Taking Individual Impulsive Characteristics as a Moderating Factor

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**Abstract:** Aiming at the mode of "e-commerce + live broadcast", this paper studies the impulsive purchase behavior of consumers in the interactive situation of live webcast. Using sor model, taking platform interaction, anchor interaction, consumer interaction (mutual assistance interaction, sharing interaction) as independent variables, customer trust as intermediary, personal impulsive characteristics as regulatory variables, this paper analyzes consumers' impulsive buying behavior.

**Keywords:** E-commerce Live Broadcast, Interactivity, S-O-R Theory, Personal Impulsive Traits, Impulsive Purchase

## 1. Introduction

With the rapid development of the webcast industry, the global COVID-19 broke out, and the consumption scene was in a state of "power failure" for several times. During the period of home isolation, the consumption mode advantage of webcast shopping became more prominent and became a new growth point of economic development. This paper mainly carries out research work on the basis S-O-R theory, and analyzes impulsive buying behavior with personal impulsive characteristics as the regulating factor and customer trust as the intermediary factor, in order to provide some guidance for participants in the online live shopping situation.

## 2. Literature review

### 2.1 Webcast

In 2005, webcast appeared for the first time in China, and 2016 was a turning point, ushering in development. Based on the collation of literature, this study defines "webcast" as a form of network service in which the anchor takes the Internet as the technical basis, the anchor shares live on the platform through computers, mobile phones and other media, and users use bullet screens and other forms to interact with the anchor in real time.

### 2.2 Interaction theory

Interactivity was first popular in academia in the 1970s and was widely popularized in the 1990s.<sup>[1]</sup> Wiener (1948) proposed that interaction means that the information receiver reads, processes and feeds back the received information, and the information sender continuously modifies it, so as to finally achieve effective communication. By combing the literature and combining with the interactive situation of webcast in this study, consumers will have interactive behavior with platforms, anchors and other consumers in the process of watching webcast. Therefore, this study mainly summarizes the interaction into the following three aspects from the micro level: consumers and webcast platforms, consumers and anchors, consumers and consumers.

### 2.3 S-O-R theory

S-O-R theory comes from environmental psychology.<sup>[2]</sup> Mehrabian and Russell (1974) proposed that this theory mainly studies how the external environment, as a stimulating factor, affects people's

internal psychological state and external behavior. Specifically, the theoretical model is composed of stimulus variable (s), organism variable (o), and response variable (R). In this study, the interactivity of the webcast platform, the interactivity of the anchor, and the interaction between consumers (mutual assistance and sharing) are used as external incentives to enhance customers' trust in the platform and products, and personal impulsive traits are used as regulatory factors to finally lay the foundation for customers' impulsive buying behavior, based on which the corresponding model framework is constructed.

#### **2.4 Customer trust**

At present, the key area of customer trust research is the e-commerce industry. This research mainly focuses on the research of consumer trust under the live broadcast e-commerce mode. Through the existing research results, we can understand that customer trust behavior affects consumers' purchase behavior. In this process, consumers' personal factors (personal characteristics), external factors (platform security system), social factors (interaction between consumers) affect consumers' trust in the live e-commerce model. In terms of the research carried out in this paper, the meaning of customer trust is that for webcast, consumers are willing to believe that the live broadcasting platform and the businesses, anchors and commodities settled on the live broadcasting platform can safeguard the interests of consumers and abide by the agreements reached with customers.

#### **2.5 Personal impulsive traits.**

For impulsive buying behavior, personal impulsivity is one of the most important factors, and impulsivity is different due to different age, culture, personality, personality and other characteristics of consumers. Through the research and collation of relevant literature, scholars generally pointed out that people with high personal impulsivity traits of consumers often have the characteristics of free will and easy to be influenced. To sum up, impulsive trait is a unique personal trait of customers, which refers to the tendency of consumers to buy naturally, hastily, immediately and casually.

#### **2.6 Impulsive buying behavior.**

Academic research in this field began to pay attention around 1950. DuPont company of the United States first proposed the concept of impulse purchase research. In order to facilitate measurement in the survey of people's consumption habits around 1940, the company regarded the unplanned purchase behavior as impulse purchase, and compared the shopping list of consumers before shopping with the list of products actually purchased. All products not listed on the list but actually purchased are impulse purchases. [3]Weun et al. (1998) pointed out that consumers' unplanned, careless and serious immediate purchase behavior is called impulsive purchase tendency. Subsequently, some scholars questioned. [4]Nesbitt (1959) pointed out that the definition of traditional impulsive buying behavior is too simple and arbitrary. Some unplanned buying behaviors are actually buying behaviors generated by consumers after comprehensive comparison of sales places, including product information. This kind of buying behavior is more mature. [5]Piron (1991) pointed out that only the consumption behavior of purchasing under external stimulation, sudden decision-making and unplanned state belongs to impulsive purchasing. [6]Stern (1962) proposed that consumers' personality characteristics, cultural background, economic status, shopping time and space factors all have an impact on consumers' impulsive buying behavior. [7]Beatty and Ferrell (1998) discussed on the basis of previous studies, and finally pointed out that impulse buying behavior is a behavior that consumers buy or consume in time under the influence of their own purchase desire. This behavior is not only unplanned, but also does not seriously think about the consequences of behavior. Many scholars gradually agree with the view of impulsive buying behavior from this psychological perspective.

Based on the above points of view, the conclusions of this study are as follows: consumers in the live broadcast room, due to the influence of anchor promotion, other customers' planting grass and other factors, based on the trust of the anchor or seller, have a strong desire to buy but not carefully considered, unplanned immediate purchase behavior is impulsive purchase behavior.

### 3. Research models and assumptions

#### 3.1 Research model

According to S-O-R theory, under the influence of consumer stimulus factors, corresponding emotional and cognitive changes will usually be formed, making consumers have corresponding behaviors. In this study, the interactivity of the webcast platform, the interactivity of the anchor, and the interaction between consumers (mutual assistance and sharing) are used as external incentives to enhance customers' trust in the platform and products, and personal impulsive traits are used as regulatory factors to finally lay the foundation for customers' impulsive buying behavior, based on which the corresponding model framework is constructed.

The purpose of this study is to comprehensively explore the relationship between external stimuli and personal impulsive traits, a regulatory variable, and impulse purchase intention. The research theoretical model is shown in Figure 1:

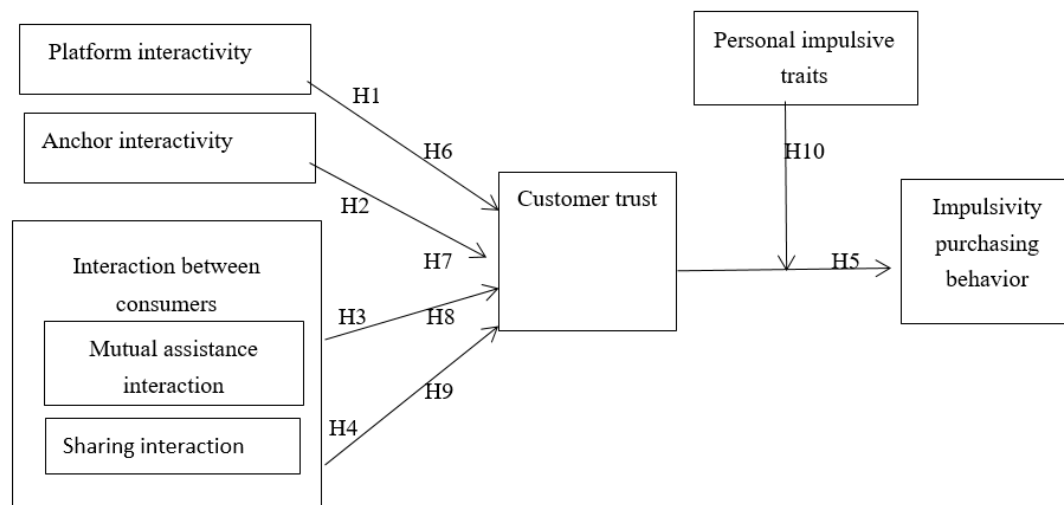


Figure 1: Theoretical model diagram

In this research model, the selection of variables is extracted by analyzing the characteristics of e-commerce live broadcast and summarizing the previous relevant research results. According to S-O-R theory, the formation of consumers' impulsive buying behavior includes three stages, namely external stimulation, psychological activity and consumer response. In the context of live online shopping, first of all, consumers get product related information through interaction with platforms, anchors and consumers, so they are stimulated externally; Emotionally aroused sense of trust; Finally, it causes individual reaction; When carrying out corresponding activities, personal impulsive traits will have a regulatory function, and impulsive buying behavior will appear due to the influence of various links.

#### 3.2 Research hypothesis

In recent years, scholars have pointed out that the "immersive" shopping experience in live e-commerce is more conducive to improving users' trust than the traditional business model to a certain extent. The "second kill" phenomenon in the live broadcast room is the purchase behavior of consumers based on their trust in businesses and anchors. This trust requires businesses to provide high-quality goods in order to be continuously consolidated. As an important way for customers to recognize product related information, consumers will give the anchor a certain trust and recognition during the live broadcast, so as to generate an understanding of the goods. As an important gatekeeper of product quality, the anchor needs to show and apply the products during the live broadcast, and obtain the recognition of consumers in the process of continuous communication. During the live broadcast, consumers often share their experience of using goods or buying experience. It is precisely because of this kind of information interaction that customers' cognition of product information has also been deepened, thus avoiding the hesitation behavior caused by information asymmetry to a great extent, and prompting consumers to obtain effective information in the live broadcast to solve the

problem of lack of product information, Strengthen trust in goods to increase the probability of purchase. Make assumptions:

H1 the interaction of e-commerce live broadcast platform has a positive impact on customer trust

H2 e-commerce anchor interaction has a positive impact on customer trust

H3 mutual assistance interaction among consumers has a positive impact on customer trust

H4 sharing interaction among consumers has a positive impact on customer trust

The virtuality of the network leads to consumers' trust in brands, stores and products, which is the main driving force for consumers' Consumption Motivation in online shopping. <sup>[8]</sup>Lee and turbon (2001) pointed out that the professionalism, integrity and goodwill of online merchants in the online consumption environment, and customers' perception of the security of the Internet shopping environment will significantly affect customers' trust in shopping websites, and ultimately have a corresponding impact on customers' purchasing activities.

Hypothesis: h5: customer trust and impulsive buying behavior have a positive impact

In consumer behavior, most people point out that customers' subjective feelings will have a direct impact on their purchase behavior. In the network environment, trust is more complex. While the webcast platform provides customers with interactive access to product details, it also faces the test of whether the product is consistent with the anchor's introduction and whether the seller is reliable. Zhao Dongmei and Ji Shuxian pointed out that customer trust is the decisive factor of online purchase intention. <sup>[9]</sup>Morgan and hunt (1994) pointed out that the role of integrity will be highlighted when both parties conduct transactions, and it is through the interaction with the anchor that consumers realize the whole trust process and impulse purchase. <sup>[10]</sup>Zhao Yuna (2010) added trust as a regulating variable when analyzing the modeling of impulse buying, indicating that customers with a stronger sense of trust are more likely to impulse buy.

<sup>[11]</sup>Fan Xiucheng and Zhang Yunlai (2006) pointed out that when facing the choice of goods, consumers' subjective feelings will change at any time due to the stimulation of other objects in the shopping scene. Positive changes will awaken consumers' positive emotions, including a sense of trust, so that customers can generate corresponding purchase intention. The more positive emotions consumers obtain in the live broadcast process, in this case, Customers are likely to make impulse purchases. <sup>[12]</sup>Scholar Beatty & Ferrell (1998) based on the evaluation of external environmental factors such as price, realized an effective analysis of the influencing factors of consumers' impulse buying behavior, and believed that it was consumer sentiment that played a mediating role.

Therefore, by combing the views of scholars, this study proposes:

H6: customer trust has a mediating effect between platform interaction and impulsive buying behavior

H7: customer trust has a mediating effect between anchor interaction and impulsive buying behavior

H8: customer trust has a mediating effect between mutual assistance interaction and impulsive buying behavior among consumers

H9: customer trust has a mediating effect between shared interaction and impulsive buying behavior among consumers

There are many discussions about consumer personality traits in academia. <sup>[13]</sup>Moore (1995) proposed that the main role of the concept of personality is to play its role as a regulatory variable, and the personality traits of consumers play an important regulatory role in whether they will produce impulsive buying behavior. Through the collation of relevant literature, the characteristics of impulsive buying are mainly reflected in the characteristics of not thinking carefully and needing immediate satisfaction, as well as the characteristics of pursuing stimulation and psychological satisfaction. Scholars have studied the role of individual impulse characteristics of consumers in the generation of impulsive purchase intention. <sup>[14]</sup>Zhang Min and Zhang Zhe (2015) pointed out in the research on the influence mechanism of consumers' impulsive characteristics on impulsive buying behavior that consumers' personality traits are different. When receiving external stimuli, in this case, if customers' impulsive characteristics are relatively higher, there will be more intense emotions, and they will be more decisive in making purchase judgments, forming impulsive purchases, Therefore, the impulsive characteristics of customers will have a significant regulatory effect.

Hypothesis: h10: personal impulsive traits have a moderating effect between customer trust and impulsive buying behavior

#### **4. Empirical research**

##### ***4.1 Questionnaire design and samples.***

This study adopts random sampling and follows the principle of equal opportunity. It is possible for all age groups to fill in the questionnaire. The questionnaire design includes four parts: questionnaire description, screening survey objects, basic information survey and variable measurement of this study. The target samples of this study are consumers who have experience in live shopping. Based on the pre survey results, the measurement items are effectively eliminated. The number of measurement items in the questionnaire is 33, and the final number of samples for this study is about 400. The total number of effective questionnaires that can produce research effect is 357, accounting for 89%. There are 154 male participants, accounting for 43.1%, and 203 female participants, accounting for 56.9%. Generally speaking, it is relatively balanced. In terms of the education level of the interviewees, 149 college students, accounting for 41.7%, and 103 undergraduate students, accounting for 28.9%, are the main interviewees. In terms of the frequency of online shopping among the respondents, 46 people bought almost every day, accounting for 12.9%, 78 people bought several times a week, accounting for 21.8%, and 233 people bought several times in January and half a year, accounting for 65.3%.

##### ***4.2 Reliability and validity test.***

The reliability test tool used in this study is the value of Cronbach coefficient. If its value is higher than 0.9, it proves that it has good internal consistency. If the coefficient is smaller than 0.9, but larger than 0.7, it is also within the confidence interval at this time. The results show that the Cronbach's alpha values of platform interaction, anchor interaction, consumer sharing interaction, consumer mutual assistance interaction, customer trust, personal impulsive traits and impulsive buying behavior are 0.898, 0.896, 0.907, 0.875, 0.909, 0.863 and 0.875 respectively, and the results are greater than 0.7, with high reliability. And their CR values are greater than 0.6, which once again shows the reliability of each dimension.

In order to further analyze the validity of the scale, this study uses the kmo value and the significance of Bartley's sphericity test as the judgment indicators to test whether the questionnaire design is effective, as shown in Table 19, in which the value of kmo is 0.875, larger than 0.7; In addition, its significance level, that is, the p value is 0.000, so it can be seen that all the data obtained from the questionnaire can be used to carry out the corresponding factor analysis.

##### ***4.3 Correlation analysis.***

According to the Pearson correlation coefficient test, the correlation coefficients between the independent variable platform interaction, anchor interaction, consumer sharing interaction, consumer mutual assistance interaction and the intermediary variable customer trust are 0.289, 0.241, 0.310, 0.325 respectively, and the significance level is less than 0.01, which passes the test; The correlation coefficients of platform interaction, anchor interaction, consumer sharing interaction, consumer mutual assistance interaction and dependent variable impulse buying behavior are 0.232, 0.131, 0.308 and 0.267 respectively, and the significance levels are less than 0.05, which passes the test. It can be seen that the results of correlation analysis between variables provide preliminary support for the hypothesis verification of this study.

##### ***4.4 Regression analysis***

The results show that the correlation between customer trust, standardization coefficient and platform interaction is quite close, and the specific coefficient can reach 0.244, especially at the level of 1%, which proves that there is a positive correlation between platform interaction and consumer trust. Hypothesis 1 is verified. The anchor interaction coefficient is 0.222, and P is more than 0.001, which is more prominent when it is at the level of 1%, indicating that hypothesis 2 has been verified. The coefficient of consumer sharing interaction is specifically 0.2552, and P exceeds 0.001, which is more prominent at the level of 1%, proving that hypothesis 3 can be verified, and the coefficient of consumer mutual assistance interaction is 0.297, and  $p < 0.001$ , which is significant at the level of 1%, indicating

that hypothesis 4 has been verified. In terms of platform interaction coefficient, its value is 0.249. In addition,  $p < 0.001$ , it can be seen that its significance level is 1%. It can be seen that there is also a positive correlation between platform interaction and customer impulsive buying activities. At the same time, after the intermediary variable, customer trust, is applied, the coefficients of platform interaction and customer trust are 0.182 and 0.272 respectively, and there is an obvious positive correlation attribute. This can confirm the rationality of hypothesis 6. The coefficient of anchor interaction is 0.129. In addition,  $p < 0.001$ , and its significance level is 1%. It can be seen that there is also a positive correlation between online anchor interaction and consumers' impulse buying behavior. Moreover, after the intermediary variable customer trust is applied, the coefficients of anchor interaction and customer trust are 0.061 and 0.312 respectively, both of which belong to a positive correlation, indicating that Hypothesis 7 is reasonable. The coefficient of interactive interaction between consumers is 0.268, and  $p < 0.001$ , which is significant at the level of 1%, which proves that there is a positive correlation between interactive mutual assistance between consumers and cardiac purchasing behavior. After applying the intermediary variable of customer trust, the coefficients of interactive interaction between consumers and customer trust are 0.19 and 0.264, respectively, which are positive and significant. That is, Hypothesis 8 is verified. The coefficient of sharing interaction among consumers is 0.009, in addition,  $p < 0.001$ , and its significance level is 1%. It can be seen that there is also a positive correlation between the sharing interaction coefficient between customers and customers' impulsive buying behavior, and after applying the intermediary variable of customer trust, the coefficients of sharing interaction between consumers and customer trust are 0.222 and 0.252, respectively. Have a positive effect, that is, hypothesis 9 is true. In order to verify the moderating effect of personal impulsive traits on customer trust and impulsive buying behavior, in terms of the control of customer gender, age, educational background and online shopping frequency, add the interaction item of personal impulsive traits in customer trust, and the results are shown in table 22. When looking for the results without the interaction item, the coefficients of customer trust and personal impulsive traits are 0.235 and 0.38, respectively, which are significant at the level of 1%. After adding the decentralized interaction term, the interaction term coefficient is 0.024, which is significant at the level of 1%, and the  $R^2$  of the regression is 0.251, which is higher than that of the regression model, indicating that hypothesis 10 has been verified.

## 5. Research conclusion and discussion

### 5.1 Research conclusion

E-commerce live broadcasting has developed rapidly, and relevant research has been constantly enriched and improved. Based on S-O-R theory and interaction theory, taking personal impulsive characteristics as the regulating factor, this study explores the impact and mechanism of live broadcasting platform, anchor and consumer interaction (sharing and mutual assistance) on consumers' impulsive purchase behavior in the context of live broadcasting interaction from the platform, anchor and consumer level, and draws the following conclusions through empirical analysis.

#### 5.1.1 The webcast platform has a positive impact on customer trust

According to the data analysis, consumers mainly watch the live broadcast through platforms such as Tiktok and Taobao. The platform they choose when watching the live broadcast is essentially a technical system. In this system, the overall environment, such as the functional layout of the live broadcast room, visual attractiveness and background environment, has an impact on consumers' shopping. In the live broadcasting room, the more professional the functional layout of the platform is, the higher the visual attractiveness is, and the easier it is to buy impulsively.

#### 5.1.2 Network anchor interaction has a positive impact on customer trust

Consumers mainly obtain product information through the anchor, and during the live broadcast, their trust in the anchor will gradually turn to selling products. Research shows that the anchor is suitable for talking to consumers through product display, which is conducive to arousing consumers' trust, stimulating their desire to buy, and finally reaching a deal.

#### 5.1.3 Consumer interaction has a positive impact on customer trust

During the live broadcast, consumers often share their use experience or purchase experience, and spontaneous word-of-mouth is easier to gain customers' trust. On the other hand, interpersonal interaction between consumers unrelated to product information is also powerful in improving

consumers' emotional experience in the whole shopping process. Relaxed and pleasant communication not only meets consumers' Social needs, but also enhances consumers' understanding of product information, It reduces the hesitation caused by information asymmetry, urges consumers to obtain effective information in live broadcast, solves the problem of lack of product information, and strengthens the trust in goods, thereby increasing the probability of purchase.

#### ***5.1.4 Customer trust has a positive impact on impulsive buying behavior***

Under the influence of brand merchants and various factors of products, consumers' purchasing behavior will also change. In this study, we mainly measured the trust value generated by consumers from the three dimensions of goodwill, honesty and ability in the context of webcast interaction. The research shows that if consumers perceive that businesses will safeguard their interests, the information they publish is authentic, and they have confidence that businesses can meet their needs, they have a greater chance of buying behavior.

#### ***5.1.5 Customer trust is between interactive factors (platforms, anchors, consumers) and impulsive buying behavior***

In consumer behavior, scholars generally believe that consumers' personal emotions have a significant impact on consumers' purchase decisions, in which customer trust plays a significant role in the impact path of impulse purchase behavior. The empirical analysis results of this study show that platform interaction, anchor interaction and consumer interaction have an indirect impact on consumers' impulsive buying behavior by enhancing customers' sense of trust. The higher the platform interaction perceived by consumers, the higher the active interaction, and the higher the interaction between consumers, the more it can stimulate trust and purchase.

#### ***5.1.6 Personal impulsive traits positively regulate the relationship between customer trust and impulsive buying behavior***

Impulsive buying characteristics show that they need to be met immediately without careful thinking, and have the characteristics of pursuing stimulation and psychological satisfaction. The personality characteristics of consumers play an important role in regulating whether they will have impulsive buying behavior. The results of empirical analysis show that compared with people with low impulsive traits, people with high impulsive traits show that consumers with high impulsive traits are more likely to be influenced by marketing, have trust in businesses and products, and produce impulsive purchases, including spending money carelessly in daily life, being easy to succumb to the marketing temptation of businesses, buying at will, and making a large number of unplanned purchases, Female consumers are more obvious.

### ***5.2 Management enlightenment***

Combined with the results of empirical analysis, this study mainly puts forward the following suggestions from the perspectives of platforms, anchors, businesses and consumers.

The first is to strengthen the supervision of the live broadcast platform and raise the threshold for businesses to settle in. Second, we should pay attention to the interactive function design of the platform, so as to enrich the interactive forms and make the interactive effect more remarkable. Third, we should innovate gameplay and increase interest. E-commerce live broadcasts should explore more and more interesting content to attract consumers. Fourth, we should enhance the visual appeal and enrich the form of product display. The first is to improve the level of professional quality and gain insight into users' psychology. Second, we should strengthen the audit to ensure the quality of goods sold. Third, we should highlight personal characteristics and establish a distinctive personal design. First, businesses should strictly control product quality. The second is to formulate a reasonable price promotion plan. Consumers' impulse purchase of unplanned or even unwanted goods often leads to a waste of money and a sense of regret. Therefore, in order to save money and avoid unnecessary regrets, remember to blindly believe in marketing rhetoric. Even in the face of anchors who are close to their psychology, they should also buy products that can be used in the near future according to their normal needs. In addition, consumers are encouraged to formulate necessary consumption plans, convert the classification of psychological accounts into actual expenditure plans, and improve their consumption self-control in the face of seductive and fuzzy classified expenditure items, reduce the impact of psychological account flexibility, and avoid impulsive consumption.

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