

Explore the Influence of E-commerce Live Broadcast on Consumers' Purchase Intention: Based on the Motivational Psychology Theory

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Abstract: E-commerce online live shopping has become intricately woven into the fabric of people's daily lives. This study adopts empirical statistical research methods to identify factors influencing consumers' purchase intentions within the realm of e-commerce live broadcasting. Drawing upon the Stimulus-Organism-Response (S-O-R) model and motivational psychological theory, a comprehensive model for consumer purchase intentions in the context of e-commerce live streaming is formulated. Users' perceived interactivity, perceived content quality, and perceived trust in live streamers are taken as antecedent variables, and users' emotional motivation and cognitive motivation are taken as intermediate variables. Use the user's purchase intention as the result variable. Assume that the three antecedents positively affect the two intermediate variables, and the two intermediate variables positively affect the outcome variables. After a series of data analyses, all the proposed hypothesis studies are valid. In other words, the interaction of users' perception of live broadcasts when watching e-commerce, the quality of content, and their trust in live streamers will positively affect users' emotional motivation and cognitive motivation, and the emotional motivation and cognitive motivation generated by users will also positively affect users' purchase intention. There are mediating effects between affective motivation and cognitive motivation in the hypothesis model.

Keywords: E-commerce live broadcast, S-O-R theory, Motivational psychology theory

1. Introduction

In today's digital age, live streaming has become an innovative hot shopping mode. E-commerce platform by live interaction, immediacy, and other advantages, provides consumers with the most intuitive, clear, and active shopping experience. By 2022, the quantity number of live-streaming users in China reached 716 million, 12.9 million more than in December 2021 [1]. However, with the popularization of online purchasing methods, consumers can obtain information in various aspects, and the personalized purchasing trend is gradually enhanced. To a certain extent, consumers' consumption habits have changed, and their psychology will also be changed. It can be seen that consumers' views and attitudes on the mechanism of live delivery still need to be further studied. Starting from consumer psychology, this study will focus on exploring the influence of live streaming on consumers' purchase intention. Based on the S-O-R model and Motivational Psychology Theory,

a large-scale questionnaire survey will be conducted to investigate consumers' psychological conditions and attitudes in the face of live streaming and explore the factors that affect consumers' purchase intention. This study will establish a research model based on this theory, take the incentive factors such as perceived interactivity, perceived content quality, and perceived trust in live streamers as anthems, and take the body reaction generated by intrinsic motivation as the intermediate variable. Intrinsic motivation is divided into emotional motivation and cognitive motivation, and the purchase intention of consumers is the result variable.

2. Literature Review

2.1. E-Commerce Live Streaming

Within the realm of online broadcasting, e-commerce live streaming constitutes a business model rooted in e-commerce platforms. Through live broadcasts, live streamers show products to users, interact with users in real-time, use various means to stimulate users' desire to buy, and combine users with product sales [2]. Examining Jinhua and Tong's research through the lens of telepresence, reveals that the enhanced sense of vivid, interaction with others, and reality in live video broadcasts positively influences consumers' purchase intentions by impacting real-time feeling and trust perception [3]. To sum up, despite the available literature, there remains a need for comprehensive research into the technical aspects of e-commerce live broadcasting and the behavioral decision-making of e-commerce live broadcasting media. This is essential to uncover the underlying factors influencing users' consumption motivation.

2.2. S-O-R Model

Mehrabian and Russell proposed the S-O-R theory in 1974, known as the Stimulus-Organism-Response model. Grounded in environmental psychology, this theory posits that external stimuli can impact individuals' cognition and emotions, subsequently giving rise to internal or external bodily responses [4].

Initially, Eroglu and Machleit successfully applied the S-O-R theory to the online shopping environment, affirming its relevance [5]. In 2023, Yang et al. analyzed the impact of sensory experiences in online shopping on consumers' impulse buying behavior, drawing on the S-O-R theory [6]. S-O-R theory can explain the internal mechanism of consumers' purchasing behavior to some extent. Based on S-O-R theory as the basic framework, this study takes a series of atmospheric scenarios felt by users in the broadcast room as the stimulus factor, takes consumers' intrinsic motivation as the body reaction factor, and takes purchase intention as the result reaction.

2.3. Motivational Psychology Theory

Drawing from Maslow's hierarchy of needs, the motivational psychological theory initially categorizes human needs into physiological, safety, social, respect, and self-actualization needs. These needs propel individuals to take action toward satisfaction, a concept later expanded upon by Maslow in 1987, emphasizing that human behaviors are triggered by external stimuli [7]. With the deepening of psychological research, researchers begin to pay attention to the distinction between internal motivation and external motivation. Teormina and Gao pointed out that people's psychological needs are divided into internal and external needs, which can be satisfied from two aspects: emotion and cognition [8]. In the study combining the factors of consumers' purchase intention in the case of live streaming of e-commerce, Chen proposed and found in 2021 that users' perception ability has a decisive impact on consumers' purchase impulse psychology, and perceived enjoyment and other factors have a positive impact on impulse psychology [9].

According to the application of motivational psychology in the scope of live broadcasting, more influences need to be explored. Based on this theory, this study takes the emotional motivation and cognitive motivation of consumers' psychological intrinsic motivation as the intermediary variables and proposes that consumers are affected by three major factors in the presence of live broadcasting, such as the interaction of consumers' perception, the quality of perceived content and perceived trust. It affects the willingness to buy.

2.3.1. Influence of Perceived Interaction on Psychological Motivation

Consumers' interaction with anchors and real-time bullet-screen interaction with other consumers is called consumers' perceptual interaction. E-commerce live streaming provides consumers with a personalized experience, fostering a sense of direct communication with real salespeople. This immersive interaction makes them feel actively present in the shopping scene [10]. Hernando et al. analyzed the impact of interaction on consumers' purchase motivation and proposed the pivotal connection between interaction and purchase intention [11]. Therefore, consumers and anchors or other participants can establish a connection with the psychological changes of consumers through online display. Based on this, the following hypothesis is proposed:

H1: Perceived interaction positively affects consumers' emotional motivation

H2: Perceived interaction positively affects consumers' cognitive motivation

2.3.2. Influence of Perceived Content Quality on Psychological Motivation

The perception of quality content means that consumers can get the quality information they want and learn quality knowledge through the product introduction in the broadcast room. In the context of live broadcast consumption, quality content is an important factor in supporting the platform to absorb capital, and the acquisition of content improves the cognition level and enhances the stickiness of users [12]. At the same time, some studies have suggested that people's perception of the quality of information received can affect the development of people's purchasing attitudes in terms of cognitive needs [13]. Therefore, based on the above, this paper proposes the following hypothesis:

H3: Perceived content quality positively affects consumers' emotional motivation

H4: Perceived content quality positively affects consumers' cognitive motivation

2.3.3. Influence of Perception on Live Streamers' Trust in Psychological Motivation

In e-commerce live broadcasting, prominent figures such as celebrities, internet influencers, and authoritative personalities often take on the role of live streamers. With a notable level of professionalism and significant influence, they can be regarded as opinion leaders. Gefen and Straub's research affirms that trust in online merchants plays an essential part in enhancing consumers' purchase strategy [14]. At the same time, brand trust has an impact on consumers' cognition when purchasing products [15]. Domestic and foreign scholars generally agree that consumers' perceived trust in live streamers has a significant influence. Based on this, this paper proposes the following hypothesis:

H5: The perceived trust of live streamers in live streaming positively affects consumers' emotional motivation

H6: The perceived trust of live streamers in live streaming positively affects the cognitive motivation of consumers

2.4. Influence of Psychological Motivation on Consumers' Purchase Intention

Psychological motivation belongs to the internal psychological scope of consumers, which can be started from two aspects: emotional motivation and cognitive motivation. Consumers' emotional emotion will affect the final result orientation of consumers' choice. When consumers are stimulated by live broadcasting, they will have emotional changes and thus affect their purchase intention. Based on this, the following hypothesis is proposed:

H7: The emotional motivation generated by consumers during live delivery positively affects consumers' purchase intention.

Consumers' cognitive motivation refers to their acceptance of information. Consumers obtain information and related knowledge through watching live broadcasts, thus causing changes in consumers' cognition. Based on this, the following hypothesis is proposed:

H8: The cognitive motivation generated by consumers during live delivery positively affects consumers' purchase intention.

3. Method

3.1. Sample and Procedure

The research used the questionnaire method to study the impact of live streaming on consumers' purchase intention. The questionnaire method is a quantitative research method that sends questionnaires to specific groups and collects data. Compared with other research methods, a questionnaire survey is relatively low-cost and easy to implement. This is usually done in an anonymous manner, which makes participants more willing to share their opinions and behaviors. In this paper, distributed questionnaires through various social platforms and collected 303 valid questionnaires.

3.2. Measures

The perceived interactivity scale was modified based on the Users' Loyalty Questionnaire in Ridings's study in 2004, and the internal consistency of the scale is higher than 0.70 which means it has good reliability. The perceived content quality is based on Knowledge Sharing Scale by Kathryn M. Bartol et al., in 2009 and the internal consistency coefficient of the scale is 0.95, with good reliability. The perceived Trust of live streamers is based on the Affect-based Trust Scale by Zhang, J. et al., in 2015, the internal consistency coefficient of this scale is 0.88, indicating good reliability. The Affective motivation scale is based on the scale by Gagne, M. et al. called Motivation at Work Scale in 2010 and the internal consistency coefficients of the four sub-scales are 0.89, 0.83, 0.75, 0.69, respectively, showing good reliability. The Cognitive Motivation Scale is based on the cognition and Affect-based Trust Scale of Ng, K. Y. and Chua, R. Y. In 2006, the cognitive trust scale had an internal consistency coefficient of 0.85, and the emotional trust scale had an internal consistency coefficient of 0.81 and exploratory factor analysis showed that the factor load for all items ranged from 0.66 to 0.88 which means it has good reliability. The purchase intention scale is based on The Influence of the CSR on Consumers' Purchase Intention Questionnaire by Deng Xinming, Zhang Ting, and Xu Yang, in 2016, and the internal consistency coefficients of their scale is 0.85, with good reliability.

In this study, SPSS software was used to conduct variable descriptive statistics on the collected data, then the reliability and validity of variables were analyzed, and finally, linear regression analysis and intermediary utility analysis were conducted.

4. Result

Use linear regression analysis to test the hypothesis. First, the linear relationship between independent variables (perceived interactivity, perceived content quality, and perceived trust in live streamers) and intermediary variables (affective motivation and cognitive motivation) is studied. By observing the B coefficient, this study found that users' perceived interactivity, perceived content quality, and perceived trust in live streamers all positively affect consumers' emotional motivation and cognitive motivation respectively. Then this research explores the linear relationship between the intermediary (emotional motivation, cognitive motivation) and consumers' purchase intention. According to the H7B coefficient (0.419) & gt; 0, H8B coefficient (0.505) & gt; 0; It can be concluded that emotional motivation and cognitive motivation generated by users positively affect consumers' purchase intention respectively.

Table 1: Regression analysis of antecedent variable and intermediate variable (Dependent variable: Affective motivation).

	B	SE _x	Beta	t	P
(Constant)	.342	.144		2.373	.018
Perceptual interactivity	.190	.058	.181	3.256	.001
Perceived content quality	.354	.052	.357	6.789	.000
Perceive trust in the live streamer	.380	.054	.398	7.058	.000

Table 2: Regression analysis of antecedent variable and intermediate variable (Dependent variable: Cognitive motivation).

	B	SE _x	Beta	t	P
(Constant)	.627	.141		4.446	.000
Perceptual interactivity	.282	.057	.283	4.949	.000
Perceived content quality	.160	.051	.170	3.137	.002
Perceive trust in the live streamer	.428	.053	.473	8.140	.000

Table 3: Regression analysis of intermediate and outcome variables (Dependent variable: Purchase intention).

	B	SE _x	Beta	t	P
(Constant)	.389	.160		2.432	.016
Affective motivation	.505	.055	.500	9.096	.000
Cognitive motivation	.419	.058	.394	7.167	.000

5. Discussion

This study is to explore the impact of consumers' perceived interactivity, content quality, and trust in live streamers on consumers' purchase intention under the mediating effect of emotional motivation and cognitive motivation. First, this study identifies a noteworthy positive correlation between consumers' perception of interactivity and their emotional motivation, aligning with the findings of Hewei and Youngsook [16]. Examining consumers' perspectives, ongoing interaction with live streamers or fellow consumers consistently influences purchasing attitudes. Concurrently, the research reveals a substantial positive impact of consumer-perceived interaction on cognitive psychology. Secondly, consumers perceive that the quality of content has a significant positive impact on both emotional motivation and cognitive motivation. The reason for this finding indicates that

consumers learn about product information through live streaming, thus stimulating their inner emotional trends and improving their perception and cognition of products [17]. Furthermore, consumers experience a notable boost in their intrinsic emotional motivation when perceiving trust in live streamers. This observation aligns with Wang and Chen's research, indicating that the attributes of live streamers significantly positively influence consumers' purchase intentions and mobile experiences. Factors such as the professionalism of live streamers contribute to consumers' trust [18]. In other words, consumers' emotional motivation can be influenced by perceived trust. At the same time, the perceived trust of live streamers has a positive impact on cognitive motivation, but the significance is relatively low. However, it can also indicate that from the cognitive level, consumers can act on the cognitive motivation of consumers by accepting and trusting the leadership opinions of live streamers. Ultimately, this research indicates that consumers' intrinsic motivation, specifically emotional and cognitive motivation, exerts a noteworthy positive influence on their purchase intention within the broadcast room. This aligns with the findings presented by Liu et al. [19].

6. Conclusion

This study points to the significant part of e-commerce platform factors and online consumer psychology in shaping behavioral intent. It can be seen that the effective motivation and cognitive motivation proposed in this study play a mediating role between consumers' perceived interactivity, perceived content quality, and perceived trust in live streamers, and their purchase intention. This study adopts empirical research methods and combines motivational psychology theory to explore the influence of live streaming on consumer purchase intention based on the stimulus organism response (S-O-R) model. Using consumers' perceived interactivity, perceived quality of content, and perceived trust in live streamers as antecedent variables, consumers' emotional and cognitive motivation as intermediate variables, and purchasing intention as outcome variables. The research results show that three antecedent variables (perceived interactivity, perceived quality of content, and perceived trust in live streamers) positively affect two intermediate variables (emotional motivation, and cognitive motivation), respectively. Two intermediate variables (emotional motivation and cognitive motivation) positively affect consumers' purchase intention, respectively. Explaining that consumers' interactivity, perceived quality of content, and trust in live streamers when watching live broadcasts can positively influence consumers' motivation to purchase. Exploring the influence of e-commerce live streaming on consumers' purchase intentions holds valuable insights for live-streaming platform brands. In the future, more influencing factors may be refined to modify the research model to increase the accuracy of the research.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

References

- [1] CNNIC. (2022) *The 50th China Statistical Report on Internet Development*. Available at: <http://www.cnnic.net.cn>.
- [2] Wang, X., Lin, X., Spencer, M.K. (2019) *Exploring the Effects of Extrinsic Motivation on Consumer Behaviors in Social Commerce: Revealing Consumers' Perceptions of Social Commerce Benefits*. *Int. J. Inf. Manag.* 45 (Apr.), 163-175.
- [3] Jin, H.T. (2017) *A Study on the Effect of Web Live Broadcast on Consumers' Willingness to Purchase*. *Open Journal of Business and Management*.
- [4] Mehrabian A., Russell, J. (1974) *An Approach to Environmental Psychology*, Cambridge: MIT Press.
- [5] Eroglu, S.A., Machleit, K.A. and Davis, L.M. (2001) *Atmospheric Qualities of Online Journal of Business Research, Retailing: A Conceptual Model and Implications*. 54(2), 177-184.
- [6] Yang, Liu, Yihe, et al. (2023) *Research on the Relationship between Online Shopping Experience and Consumer Impulse Buying*.

- [7] Wahba, M.A., Bridwell, L.G. (1973) *Maslow Reconsidered: A Review of Research on the Need Hierarchy Theory*. *Organizational Behavior & Human Performance*. 15(2):212-240.
- [8] Taormina, R.J. and Gao, J.H. (2013) *Maslow and the Motivation Hierarchy: Measuring Satisfaction of the Needs*. *The American Journal of Psychology*. 126(2), 155-77.
- [9] Chen, C.W. (2021) *Impulse Buying Behaviors in Live Streaming Commerce Based on the Stimulus-Organism-Response Framework*. 12.
- [10] Li, C. (2019) *How to Do Social Commerce Constructs Influence Customers' Social Shopping Intention? An Empirical Study of a Social Commerce Website*. *Technol. Forecast. Soc. Change* 144 (Jul.), 282–294.
- [11] Hernando, C., Julio Jiménez-Martínez, Maria José Martín-De Hoyos, et al. (2023) *Emotional Responses in Online Social Interactions: The Mediating Role of Flow*. *Asia Pacific Journal of Marketing and Logistics*. 35(7):1599-1617.
- [12] Lidan, L. (2016) *Webcast Sustainable Development Path Analysis*. *Journal of Southern TV*. (4): 3.
- [13] Gengfeng, N., Genqiang, L., Xiexin, G. et al. (2016) *The Impact of Online Reviews' Quality and Quantity on Online Purchasing Intention: The Moderating Effect of Need for Cognition*. *Journal of Psychological Science*.
- [14] Gefen, D., Karahanna, E., & Straub, D.W. (2003) *Trust and TAM in Online Shopping: An Integrated Model*, *MIS Quarterly*. 27(1), 51-90.
- [15] Tomar, V.S., Tomar, R.S., Khattri, V. (2020) *Moderating Role of Brand Trust on Offline vs Online Shoppers and its Impact on Cognitive Dissonance*.
- [16] Hewei, T., Youngsook, L. (2021) *Factors Affecting Continuous Purchase Intention of Fashion Products on Social E-commerce: SOR Model and the Mediating Effect*. *Entertainment Computing*.
- [17] Ahmed, R. (2018) *Immersive Virtual Reality Advertisement: Examining the Effects of Vividness and Interactivity on Consumer's Psychological Responses*.
- [18] Wang, P., Chen, W. (2023) *The Influences of the Characteristics of Opinion Leaders on Consumer Purchase Intention in A Mobile E-Commerce Webcast Context*. *International Journal of Networking and Virtual Organizations*.
- [19] Liu, Z., Jiang, X., Zhu, P., et al. (2023) *The Influences of Live Streaming on Online Purchase Intention: Examining Platform Characteristics and Consumer Psychology*. *Industrial Management & Data Systems*.