



Research on the Impact of E-Commerce Live Streaming on Consumers' Purchase Intention

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Abstract. The e-commerce live streaming industry in China has been developing recently. In the context of an e-commerce live broadcast, this paper primarily investigates the elements that influence consumers' buy intentions. Based on the S-O-R theory and TAM models, this study designs a questionnaire and collects data on five different dimensions: perceived usefulness, perceived ease of use, perceived emotional value, trust, and purchase intention. The data is then analyzed and sorted out using the SPSSAU software. According to data analysis, perceived usefulness, perceived ease of use, perceived emotional value, and trust are all positively correlated with purchase intention. Businesses should focus on enhancing consumers' perceived value in these four aspects during the marketing process.

Keywords: Technology Acceptance Model · Stimulus-Organism-Response theory · Data analysis · Consumer behavior

1 Introduction

By December 2021, there were 1.032 billion Internet users in China, a rise of 42.96 million over December 2020, and the Internet penetration rate was 73.0%, according to the 49th Statistical Report on Internet Development in China, which was released by China Internet Network Information Center (CNNIC) in Beijing. China now has 842 million online shoppers, up 59.68 million from December 2020. This represents 81.6% of all Internet users in the country. E-commerce live streaming has flourished and become a popular online shopping method as a result of the enormous number of people who engage in online shopping.

"E-commerce live streaming," according to Guo Quanzhong (2020) [1], is a new type of e-commerce in which the anchor recommends and sells goods in the form of a video live broadcast. This form, in which stars, online celebrities, key opinion leaders, etc. serve as the anchor, aids in achieving the synchronous expansion of brand volume and product sales. The total size of China's live e-commerce industry reached 1,201.2 billion yuan in 2021 and is expected to reach 213.73 billion yuan by 2025, according to liMedia Research. AI liMedia Research analysts argued that as Internet technology has advanced, the KOL promote goods model represented by live broadcast offers consumers a more intuitive and engaging purchase experience, one that has a high conversion rate and

positive marketing effects, and gradually becomes a new growth driver for e-commerce platforms and content platforms.

E-commerce live streaming in China first appeared in 2016. 2016 might be viewed as the first stage of E-commerce live streaming. In this stage, in order to increase the stickiness of target consumers and realize internet traffic monetizing, the live broadcasting platform is attempting to combine “live streaming + content + e-commerce.” The second phase of e-commerce live streaming can be viewed as occurring in 2017. At this point, the industry started to separate itself, a variety of roles emerged, and the industry started to advance towards refinement. The period from 2018 to 2019 can be viewed as the third stage of live e-commerce streaming. To address the issue of the lengthy industrial cycle, e-commerce live broadcasting is starting to move in the direction of integrating upstream and downstream resources in the anchor, supply chain, and other industrial chains. 2020 can be seen as the fourth stage of live e-commerce, live e-commerce will end the war of the herd. The situation, between different electric business live modes also eventually achieve differentiation. After the development from 2016 to the present, China has experienced the start-up and rapid development phases of live broadcast e-commerce and will continue to grow in the future toward maturity.

2 Research Theoretical Model

As of July 15, 2022, the keywords “e-commerce live streaming” and “consumers” can be used to search 2327 related literature. The influencing factors of consumer behavior in the context of live e-commerce broadcasts have been researched by numerous scholars [2, 3]. For instance, Gao Jun (2022) studied the influence mechanism of live e-commerce experience on consumers’ impulse consumption in the context of the Internet, such as Liu Pingsheng and Shi Yongdong (2020) on the influence mechanism of the live with goods marketing model on consumers’ purchase decision, and Liu Jia, Zou Yunjie and Liu Zexi (2021) studied various factors influencing consumers’ purchase intention in live e-commerce based on SEM model. This paper combines the theoretical basis of previous scholars’ research and draws mainly on the following two theoretical models for the study [4, 5].

2.1 Stimulus-Organism-Response Theory

As seen in Fig. 1, Mehrabian and Russell proposed the Stimulus-Organism-Response (S-O-R) theory in 1974. The basis behind S-O-R theory is psychology. According to this theory, the influence of external environmental stimuli can affect an individual’s cognition or emotion and then produce an internal or external behavioral response. The internal responses are expressed as attitudes or intentions, and the external behavioral responses are expressed as two behaviors: approach or avoidance. S-O-R theory demonstrated that consumers’ psychological or emotional reactions to stimuli from the outside world will have an impact on their purchasing intentions and behavior. To a certain extent, the SOR theory can explain the internal mechanism of consumer buying behavior.



Fig. 1. S-O-R model

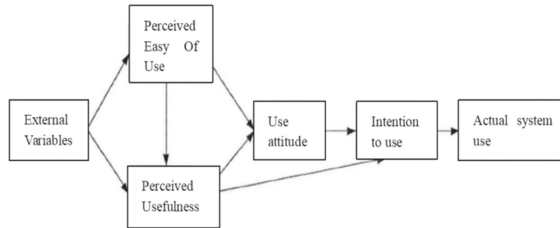


Fig. 2. Technology Acceptance Model

2.2 Technology Acceptance Model (TAM Model)

The Technology Acceptance Model, forth by Davis in 1989, a theory that suggests that individuals' attitudes toward new technologies depend on Perceived Usefulness and Perceived Easy of Use. This is shown in Fig. 2. The term "Perceived Usefulness" describes the extent to which users subjectively perceive that new technology will improve efficiency when they use it. While Perceived Ease of Use refers to the subjective perception of the amount of energy and effort required to use new technology.

3 Questionnaire Survey

3.1 Questionnaire Design

Two sections make up the majority of the questionnaire. One is the questions related to personal statistics variables, in which the option "which of the following platforms do you often watch e-commerce live broadcast" is used to screen out the target respondents who have experience in watching live e-commerce and supplemented by the answer time to screen out the valid questionnaire. The questionnaire's content is mostly centered on five aspects in the second section, which is based on the S-O-R theory and the Technology Acceptance Model: perceived usefulness, perceived ease of use, perceived emotional value, trust, and purchase intention. The questionnaire options are given using a Likert scale, which makes it easily reflects the strength of respondents' attitudes toward different issues.

3.2 Descriptive Statistics

The questionnaire of this study was edited and produced through wenjuan.com and distributed by link through channels such as WeChat group or WeChat friends' forwarding. 638 questionnaires were collected, and the final valid questionnaire was 603, with an effective rate of 94.5%. The basic information of the survey sample is shown in Table 1.

Table 1. Basic information of the survey sample

| Title | Option | Frequency | Percentage (%) |
|---|----------------------------------|-----------|----------------|
| Gender | Female | 382 | 63.3 |
| | Male | 221 | 36.7 |
| Age | Under 24 year old | 196 | 32.5 |
| | 25–35 years old | 229 | 38 |
| | 36–45 years old | 129 | 21.4 |
| | Over 46 years old | 49 | 8.1 |
| Education | Junior college and below | 133 | 22 |
| | bachelor degree | 369 | 61.2 |
| | postgraduate students | 79 | 13.1 |
| | Ph.D. or above | 22 | 3.7 |
| Occupation | Enrolled Students | 255 | 42.3 |
| | Employees of public institutions | 87 | 14.4 |
| | Private enterprise staff | 208 | 34.5 |
| | Freelancer | 53 | 8.8 |
| Average monthly disposable consumption amount | Less than 2000 | 232 | 38.5 |
| | 2000–3000 | 130 | 21.6 |
| | 3000–5000 | 122 | 20.2 |
| | More than 5,000 | 119 | 19.7 |

4 Data Analysis

The collected data were analyzed using SPSSAU for data analysis. The reliability coefficient value was 0.905, which is greater than 0.9, thus indicating the high quality of reliability of the study data. The validity was verified using KMO and Bartlett test, and the KMO value was 0.900, which is greater than 0.8, thus indicating that the validity of the study data is good.

Table 2. Frequency analysis

| Title | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
|---------------------------|----------------|-------|---------|----------|-------------------|
| Perceived usefulness | 17.50 | 53.50 | 24.50 | 4.00 | 0.50 |
| Perceived ease of use | 14.50 | 29.00 | 43.00 | 12.50 | 1.00 |
| Perceived emotional value | 9.00 | 30.00 | 50.00 | 9.50 | 1.50 |
| Trust | 10.50 | 24.00 | 54.00 | 11.00 | 0.50 |
| Purchase intention | 11.00 | 56.50 | 25.50 | 6.50 | 0.50 |

Unit: %

4.1 Frequency Analysis

Frequency analysis is used to study the distribution of relevant data, choosing what the frequency and percentage were, respectively. As shown in Table 2. From Table 2, it can be seen that the perceived usefulness sample has a higher percentage of agreeing 53.50%, and neutral 24.50%, the perceived ease of use sample has a higher percentage of neutral 43.00%, and agreeing 29.00%, the perceived emotional value sample has a higher percentage of neutral 50.00%, and agreeing 30.00%, the trust sample has a higher percentage of neutral 54.00%, and agreeing 24.00%, and purchase intention samples were more likely to agree 56.50%, and neutral 25.50%.

4.2 Correlation Analysis

4.2.1 Perceived Usefulness and Purchase Intention

Correlation analysis was used to investigate the correlation between “purchase intention” and “perceived usefulness”, and the Pearson correlation coefficient was used to indicate the strength of the relationship. According to the specific analysis, the correlation coefficient between “purchase intention” and “perceived usefulness” is 0.511, which is significant at the 0.01 level, thus indicating that there is a significant positive correlation between “purchase intention” and “perceived usefulness”.

4.2.2 Perceived Ease of Use and Purchase Intention

The correlation analysis was used to study the correlation between “perceived ease of use” and “purchase intention”, and the Pearson correlation coefficient was used to indicate the strength of the correlation. The specific analysis shows that the correlation coefficient between “perceived ease of use” and “purchase intention” is 0.357, which is significant at the 0.01 level, thus indicating that there is a significant positive correlation between “perceived ease of use” and “purchase intention”.

4.2.3 Perceived Emotional Value and Purchase Intention

Correlation analysis was used to study the correlation between “perceived emotional value” and “purchase intention”, and the Pearson correlation coefficient was used to

indicate the strength of the relationship. According to the specific analysis, the correlation coefficient between “perceived emotional value” and “purchase intention” is 0.638, which is significant at the 0.01 level, thus the correlation between “perceived emotional value” and “purchase intention” is significant. There is a significant positive correlation between “perceived emotional value” and “purchase intention”.

4.2.4 Trust and Purchase Intention

The correlation analysis was used to study the correlation between “trust” and “purchase intention”, and the Pearson correlation coefficient was used to indicate the strength of the correlation. The specific analysis shows that the correlation coefficient between “trust” and “purchase intention” is 0.519, which is significant at the 0.01 level, thus indicating that there is a positive correlation between “trust” and “purchase intention”.

5 Conclusions and Recommendations

5.1 Overall Consumer Attitudes Toward E-commerce Live Streaming

Consumers agree on the perceived usefulness of E-commerce live streaming, according to Table 2's frequency analysis, with the sum of the agree and strongly agree options being 71%. It demonstrates that consumers think live e-commerce streaming can make their purchasing selections more effective. Consumers are also very likely to generate purchase intention by watching live e-commerce, with the sum of agreeing and strongly agreeing on options at 67.5%, indicating that the application of live e-commerce channels by companies is a very effective marketing method. The sum of agreeing and strongly agree on options for perceived ease of use, perceived emotional value, and trust is 43.5%, 39%, and 34%, respectively, but also neutral to agree overall indicating that consumers' recognition of perceived ease of use, perceived emotional value and trust in E-commerce live streaming is also better. It is advised that businesses should fully utilize e-commerce live broadcasting during the marketing process in conjunction with the internal and external environments to enhance consumers' perceived ease of use, perceived emotional value, and trust.

5.2 Improving Consumers' Perceived Usefulness

Table 3 shows that there is an evident positive association between consumers' perceived usefulness and buy intention. As a result, increasing consumers' perceived usefulness will likely increase consumers' purchase intention. To help consumers comprehend products more thoroughly and give them the impression that they can purchase the helpful things they desire through e-commerce live broadcast, the anchor can introduce product functions or perform function deduction from various angles.

5.3 Improving Consumer Perceived Ease of Use

From Table 4, we can see that there is a significant positive correlation between consumer perceived ease of use and purchase intention, so if you want to improve consumer purchase intention you can improve consumer perceived ease of use. Can make consumers

Table 3. Pearson correlation 1

| | | |
|----------------------|-------------------------|--------------------|
| | | Purchase intention |
| Perceived usefulness | Correlation coefficient | 0.511** |
| | p value | 0 |

Table 4. Pearson correlation 2

| | | |
|-----------------------|-------------------------|--------------------|
| | | Purchase intention |
| Perceived ease of use | Correlation coefficient | 0.357** |
| | p value | 0 |

Table 5. Pearson correlation 3

| | | |
|---------------------------|-------------------------|--------------------|
| | | Purchase intention |
| Perceived emotional value | Correlation coefficient | 0.638** |
| | p value | 0 |

feel that it is easy to buy goods in the live broadcast, can be introduced by the anchor so that consumers feel that the anchor has helped consumers from a professional point of view to do the screening, save the time experience of consumer screening, and do a good job in the purchase process of logistics and after-sales work, improve the perceived ease of use of consumers.

5.4 Increasing the Perceived Emotional Value of Consumers

Table 5 shows that there is an obvious positive correlation between consumers' perceived emotional value and their intention to make a purchase. As a result, if you wish to increase consumers' purchase intention, you can increase customers' perceived emotional value. Consumers will consider the emotional value of the live broadcast room during the e-commerce live broadcast process in addition to the functional value of the products. They will care about whether the live broadcast room is entertaining, whether it can elicit positive emotions from consumers, such as pleasure or empathy, and whether it can reach out and touch consumers' hearts.

5.5 Increasing Consumer Trust

According to Table 6, we can see that consumer trust has a significant positive relationship with purchase intention, so if you want to improve consumer purchase intention you can improve consumer trust. In the process of watching an E-commerce live streaming, consumers' trust may come from the anchor himself, from the trust in the product brand,

Table 6. Pearson correlation 4

| | | Purchase intention |
|-------|-------------------------|--------------------|
| Trust | Correlation coefficient | 0.519** |
| | p value | 0 |

or due to the sales channel or live broadcast platform, etc. Improving consumers' trust is more conducive to improving consumers' purchase intention.

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