The Research on the Influencing Factors of Consumer Information Adoption of Live E-commerce

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Abstract: Based on the reality of the development of China's live e-commerce, this paper selects performance expectation, effort expectation, social impact, contributing factors and perceived risk as the factors that affect the adoption of live e-commerce consumer information. Since adoption behavior is driven by adoption intention, which has been regarded as an intermediary variable. The questionnaire was sent out through the network channel to collect data. The empirical results show that performance expectation, effort expectation, social influence and contributing factors have significant positive effects on adoption intention, and adoption intention has positive effects on adoption behavior. Therefore, live e-commerce should meet users' expectations, improve users' expectations, build a good social impact, and enhance the enabling conditions.

1. Introduction

Since the "first year of online live broadcast" in 2016, online live broadcast has improved the popularity and influence of individuals and enterprises. In 2019, the number of online live broadcast users in China has reached 501 million, with an increase rate of 9.9%. The sales user scale of the live e-commerce is also growing. The epidemic in 2020 has also brought a surge in the popularity of live e-commerce.

Live broadcast sales help e-commerce enterprises deepen the relationship between the anchor, goods and consumers and stimulate consumers' purchase. The marketing mode of combination of live broadcast and e-commerce makes up for some shortcomings of traditional e-commerce. But there are many obstacles in the development of live e-commerce. The conversion rate of many e-commerce platforms is at a low level. In order to improve the future development of live e-commerce, it is necessary to study the factors that affect the adoption of consumer information.

The current situation of the development of live e-commerce is described fiestly. Then combined with the relevant research of consumer information adoption, the factors that may affect the consumer information adoption of live e-commerce are analyzed. The theoretical assumptions are put forward and a theoretical model based on the assumptions is also established. After that, the hypothesis and model are tested and modified by empirical analysis. Finally, the paper puts forward reasonable optimization strategies for the live e-commerce to improve consumer information adoption.

2. Live E-commerce

Live e-commerce is based on e-commerce and uses live broadcasting as a means. The products and users can be directly connected in the live broadcast room. It shortens the distance between consumers and products and fully displays product information. The main body of live e-commerce includes platform, anchor and consumer. There are two ways to realize live e-commerce: one is to add live function on the traditional e-commerce platform, and each business can live in its own shop. Live columns are generally set on the homepage of the platform for users to watch. The other is to add a shopping button on the live platform, place a link of the same product on the video or live interface, and the user can jump to purchase after clicking [1].

2.1 Development Stage of Live E-commerce

Live e-commerce is born with the emergence of live broadcasting. At that time, the purpose of live e-commerce was to increase consumers' stay time on the platform. In the past few years, China's live e-commerce has gradually entered a period of rapid development, and will continue to mature in the future. The development of China's live e-commerce can be roughly divided into four stages:

First stage: The live platforms want to get users' trust and attract more traffic by "live + content + e-commerce" mode.

Second stage: The emergence of new things such as supply chain makes the industry.

Third stage: The platforms paid more attention to the selection of the anchor, and make full use of the supply chain technology to integrate the resources.

Fourth stage: Live e-commerce will end the scuffle of e-commerce industry, and different modes of e-commerce will achieve good differentiation [2].

2.2 Characteristics of Live E-commerce Information

Compared with traditional e-commerce, live e-commerce has the following information characteristics:

First, the credibility of live e-commerce information is higher. Both pictures and videos of the products are uploaded to the shop web page after beautification and editing. It is difficult to obtain direct and real commodity information. Live e-commerce can shorten the distance between consumers and commodities, and solve the problem of information asymmetry between merchants and consumers. Once the live broadcast is started, the real-time information of the host's behavior and products will be displayed in front of the consumers. More importantly, in the live broadcast, the anchor can directly use the product to show the product effect and gain the trust of consumers.

Second, live e-commerce information is more interactive. Live e-commerce realizes face-to-face communication and interaction between the anchor and the consumer. In the live broadcast room of e-commerce, the flow of information is multi-directional. There are not only the product information exported by the anchor, but also the questions raised by consumers to the anchor to be answered in time. Consumers can also understand each other's ideas and experiences through comments. According to the most timely consumer feedback information, the host can adjust the live content in real time.

Third, it is easier to get informationt. Live e-commerce generally pushes live time, content and other information on the front page of the platform and other social channels in advance. The time of information push and live broadcast usually chooses the peak time when users use mobile phones to ensure that more users can see the push information and watch live broadcast. The live broadcast time is usually set at noon or at night, which is most people's free time. At this time, people have no sense of urgency, and shopping desire is more likely to be stimulated.

Fourth, the quality of live e-commerce information is high. The professional e-commerce anchor has a very high professional quality, and his words and deeds often have a great impact on the purchase attitude of consumers. The anchor with good comprehensive quality will provide consumers with high-quality information and provide basis for consumers' choice.

3. Influencing Factors of Consumer Information Adoption of Live E-commerce

3.1 Unified Theory of Acceptance and Use of Technology Model

Venkatesh et al. (2000) [3] puts forward UTAUT model on the basis of relevant research summary, aiming at the influencing factors of users' cognitive. There are four core dimensions of UTAUT, including performance expectation, pay expectation, community influence and cooperation. Gender, age, experience and voluntariness have significant influence on these four core dimensions.

The ability of UTAUT model to explain user adoption behavior is as high as 70%. It is considered to be more effective and comprehensive than any other information technology adoption

model in the past. Therefore, this paper constructs the influencing factor model of consumer information adoption of live e-commerce based on this model.

3.2 Model of the Influencing Factors of Consumer Information Adoption

3.2.1 Defination of the Factors

Based on the UTAUT model and combined with the information characteristics and development status of live e-commerce, this paper identifies factors influencing the adoption intention of consumers, including performance expectation, effort expectation, social impact, contributing factor and perceived risk. Performance expectation refers to the degree to which consumers expect the live e-commerce platform to meet their needs. The more the satisfaction of consumers' expectations, the greater the possibility of purchasing goods. Effort expectation refers to the degree of effort consumers are willing to make in order to purchase the goods they are satisfied with. Social impact refers to that consumers of live e-commerce are influenced by the surrounding people, evaluation and other external factors to decide whether to purchase goods. Contributing factors refer to the extent to which consumers are supported by their own preferences, economic and technical conditions, as well as commodity discounts, etc. Perceived risk refers to consumers' subjective prediction of various risks that may exist after watching live broadcast or purchasing goods in the process of information adoption.

Adoption intention refers to consumers' subjective willingness to adopt live platform information. Adoption intention is often used to predict the final adoption behavior of consumers. Consumer's intention of information adoption usually determines the behavior of information adoption. Because there must be motivations behind the behavior, this study takes the adoption intention as an intermediary variable between the influencing factors and the adoption behavior.

3.2.2 Research Hypothesis

Performance expectation has a significant positive effect on adoption intention [4-5].This paper proposes the hypothesis H1: Performance expectation has a positive impact on consumer information adoption intention of live e-commerce.

Effort expectation is a key factor, which has a positive impact on users' willingness to use [6]. This study proposes hypothesis H2: Effort expectation has a positive impact on consumer information adoption intention of live e-commerce.

Everyone is in the society and may be influenced by the people around when making decisions. This paper proposes hypothesis H3: Social impact has a positive impact on consumer information adoption intention of live e-commerce.

Contributing factors have a positive impact on users' information adoption [7]. This study proposes hypothesis H4: Contributing factors have a positive impact on consumers' information adoption intention of live e-commerce.

The relationship between perceived risk and adoption intention is not consistent. Once consumers have a high prediction of various risks that may exist after watching live broadcast or purchasing goods, in order to avoid risks, they usually reduce their willingness to adopt information. This study proposes hypothesis H5: Perceived risk has a negative impact on consumer information adoption intention of live e-commerce.

In UTAUT model, adoption intention has a positive effect on adoption behavior. This paper proposes the hypothesis H6: consumer information adoption intention of live e-commerce has a positive impact on adoption behavior.

4. Empirical Analysis

The questionnaire was designed according to Likert's five-level scale. The items were totally disagree (1 point), basically disagree (2 points), uncertain (3 points), basically agree (4 points) and completely agree (5 points). The data were collected in the form of anonymous questionnaire on the Internet. The questionnaire links and QR codes were sent through the questionnaire star platform,

common social software and social network platform. A total of 365 questionnaires were collected in this survey, and 347 valid questionnaires were obtained after eliminating the questionnaires of users who had not watched the live e-commerce and those with obvious problems.

4.1 Descriptive Statistics

4.1.1 Frequency Distribution

In general, the gender ratio of the participants in this survey is balanced, and the respondents mainly focus on the age group of 18-25 years old. 82.1% of them have bachelor degree or above. 61.4% of the respondents had purchased goods in the studio, while the rest only watched the live broadcast but did not make any shopping. Interestingly, the professional e-commerce platforms like Taobao and Jingdong are still widely used. This phenomenon is explained by the reasons for platform selection. At present, consumers are still inclined to the popularity of professional e-commerce platforms and the richness of commodities. Table 1 shows the frequency distribution of the survey data.

Table 1 Frequency Distribution

Survey information	Option	Samples Number	Proportion (%)
Gender	M	147	42.4%
	F	200	57.6%
Age	0-18	5	1.4%
	18—25	281	81%
	26—35	27	7.8%
	36—50	30	8.6%
	50-	4	1.2%
Educational Background	High School	31	8.9%
	Junior College	31	8.9%
	Bachelor Degree	268	77.2%
	Master Degree	17	4.9%
Choice of Platform	Taobao / Tmall	231	66.6%
	JD	8	2.3%
	Tiktok	90	25.9%
	Kwai Fu	9	2.6%
	Others	9	2.6%
Select Reason	Platform Popularity	129	37.2%
	Anchor Fame	94	27.1%
	Commodity Category	107	30.8%
	Others	17	4.9%
Purchase	Y	213	61.4%
	N	134	38.6%

4.1.2 Summary Satistics

The average value of all measurement indicators in this questionnaire is greater than 3, which means that each indicator has been recognized by most respondents. From the standard deviation point of view, the standard deviation of all indicators is about 1, which shows that the attitude of interviewees on each question is quite different.

4.2 Reliability and Validity Analysis

There are 27 items in the questionnaire in this study. The reliability test of the whole data shows that the coefficient of clonbach of all variables is 0.912, which shows that the internal consistency of the scale is very strong.

Kmo sampling fitness is 0.904 > 0.9, which shows that there is a high degree of partial correlation between variables in the scale, and it can also be seen that the factor analysis has a very

high sampling fitness. The chi-square value of Bartlett test is 4323.149 and the p-value of significance test is 0.000 < 0.01, reaching a very significant level. The results of both tests show that the data of the questionnaire is suitable for factor analysis and the validity of the content is good.

4.3 Correlation Analysis

The correlation coefficient between performance expectation dimension and adoption intention dimension is 0.550 > 0.5, which indicates that there is a significant positive correlation between performance expectation and adoption intention, which preliminarily verifies hypothesis H1.

The correlation coefficient of effort expectation dimension and adoption intention dimension is zero point six two two > Zero point five It shows that there is a significant positive correlation between effort expectation and adoption intention, and preliminarily verifies the hypothesis H2.

The correlation coefficient of social impact dimension and adoption intention dimension is 0.581 > 0.5, which indicates that there is a significant positive correlation between social impact and adoption intention, and preliminarily verifies the hypothesis H3.

The correlation coefficient between facilitation and adoption intention is 0.628 > 0.5, which indicates that there is a significant positive correlation between facilitation and adoption intention, and preliminarily verifies hypothesis H4.

The correlation coefficient between perceived risk dimension and adoption intention dimension is 0.174 < 0.3, indicating that there is only a weak correlation between perceived risk and adoption intention, indicating that consumers' worries about risk have little impact on the final purchase intention, and users have the ability to identify general risks. Therefore, perceived risk will not be considered as the influencing factor of consumer information adoption of live e-commerce.

The correlation coefficient of adoption intention dimension and adoption behavior dimension is 0.741 > 0.5, which indicates that there is a significant positive correlation between adoption intention and adoption behavior, and preliminarily verifies the hypothesis H6.

4.4 Regression Analysis

The regression coefficient of performance expectation dimension is 0.669, which shows that the impact of performance expectation on adoption intention is positive. The stronger the performance expectation is, the stronger the adoption intention is. This conclusion is consistent with hypothesis H1. The adoption intention will increase by 0.669 points for every 1 point increase in performance expectation. When the performance expectation is 0, consumers also have 1.266 points of adoption intention. Adoption intention = 1.522 + 0.603 × Effort expectation.

The regression coefficient of effort expectation is 0.603, indicating that the effect of effort expectation on adoption intention is positive. The higher the score of effort expectation, the higher the score of adoption intention. This conclusion is consistent with the hypothesis H2 of this study. Adoption intention = 1.253 + 0.684 × Social impact

The regression coefficient of social impact dimension is zero point six eight four, indicating that the impact of social impact on adoption intention is positive. The higher the respondents' social impact score, the higher their adoption intention score. This conclusion is consistent with hypothesis H3 of this study. Adoption intention = 1.127 + 0.691 × Contributing factors.

The regression coefficient of adoption intention dimension is 0.749, which shows that the effect of adoption intention on adoption behavior is positive. The higher the adoption intention score, the higher the adoption behavior score. This conclusion is consistent with hypothesis H6 of this study. Adoption behavior = 0.718 + 0.749 × Adoption intention.

The hypotheses of H1, H2, H3, H4 and H6 in this study have been verified.

Table 2 Regression Coefficient

Model	Non standardized coefficient		Standard coefficient	t	Significance
	B	standard deviation	Beta		

1	(constant)	1.266	0.215		5.892	0.000
	Performance expectation	0.669	0.055	0.550	12.241	0.000
2	(constant)	1.522	0.162		9.421	0.000
	Effort expectation	0.603	0.041	0.622	14.760	0.000
3	(constant)	1.253	0.199		6.286	0.000
	Social impact	0.684	0.052	0.581	13.272	0.000
4	(constant)	1.127	0.185		6.093	0.000
	Contributing factors	0.691	0.046	0.628	15.000	0.000
5	(constant)	0.718	0.144		4.999	0.000
	Adoption intention	0.749	0.037	0.741	20.504	0.000

5. Countermeasures and Suggestions

To promote consumers' information adoption behavior, the live e-commerce should take measures to meet users' expectations. First, they should analyze the consumers' needs and ensure the authenticity and quality of information. Second, they should grasp consumer psychology, guide users, screen customer types and increase user stickiness. Third, it's important to improve the platform's popularity and expand the scope of influence and cultivate excellent anchors. Finally, live e-commerce should pay attention to social functions and promote information dissemination.

6. Conclusion

Through the empirical research, this paper concludes four factors that affect consumers' information adoption intention of live e-commerce, namely performance expectation, effort expectation, social influence and contributing factors. These factors lead to adoption behavior by improving consumers' adoption intention. According to the influencing factors, this paper puts forward four optimization strategies: meeting users' expectations; improving users' expectations; building a good social impact and enhancing the enabling conditions.

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