Empirical Research on Users' Continuous Use Intention of Live Broadcast Platform in the Context of Digital Societ

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Abstract: With the rapid development of live broadcast industry, the competition between live broadcast platforms is becoming more and more fierce. It is very important for live broadcast platform to retain users and enhance their continuous use intention. In this paper, we construct the model of live broadcast platform users' continuous use intention, collect data through the way of questionnaire investigation, analyze and process the data by using SPSS software, draw conclusions and put forward relevant suggestions, which will provide reference for enhancing the user stickiness and competitiveness of live broadcast platform.

1 INTRODUCTION

With the integration and development of the new generation of information technology and traditional fields, industrial and social transformation is imminent. The digital society characterized by digitization, networking and intelligence has become the general trend. At the same time, with the accelerated upgrading of people consumption and the continuous growth of diversified and personalized demand, live broadcast, as a new consumption mode, has been rapidly accepted by the public. Compared with traditional texts and pictures, live broadcast can make people more convenient and fast to obtain information and emotional communication. Therefore, the live broadcast industry has achieved vigorous development in recent years. According to *The 47th China Statistical Report on Internet Development* issued by China Internet Network Information Center (CNNIC), by December 2020, the number of live broadcast users in China had reached 617 million, an increase of 57.03 million over March 2020, accounting for 62.4% of the total Internet users. (China Internet Network Information Center, 2021)

The vigorous development of the live broadcast industry also makes it become a hot spot in the academic and industrial circles in recent years. Therefore, this article explores the factors that influence the users' continuous use intention of live broadcast platform. It can help the live broadcast platform better understand user needs, improve service quality, enhance user stickiness, promote healthy and rapid development of the live broadcast industry, and better build Internet ecosystem.

2 LITERATURE REVIEW

Live broadcast is a new trend of highly interactive Internet. It shows the current situation of ongoing activities to end users and meets the needs of users through network media. This communication mode absorbs and continues to maintain the advantages of Internet, with intuitive expression, rich content, full interaction and no time and space constraints.

Xiaojun Fan (2020) believed that the interactivity of mobile live-video broadcast has a significant positive effect on the satisfaction and the intention of continuous use of user by improving the viewing experience and anchor identity. (Fan, 2020) Lijia Tang (2018) believed that different interface modes should be developed according to the personalized experience of different users to provide users with efficient and accurate content. (Tang, 2018) Xiwei Wang (2020) constructed a conceptual model of influencing factors of webcast app users' use behavior and conducted empirical analysis to prove that perceived interactivity, perceived value and perceived risk have a significant effect on users' use intention. (Wang, 2020)

Based on the rational behavior theory, Davis (1989) proposed a technology acceptance model
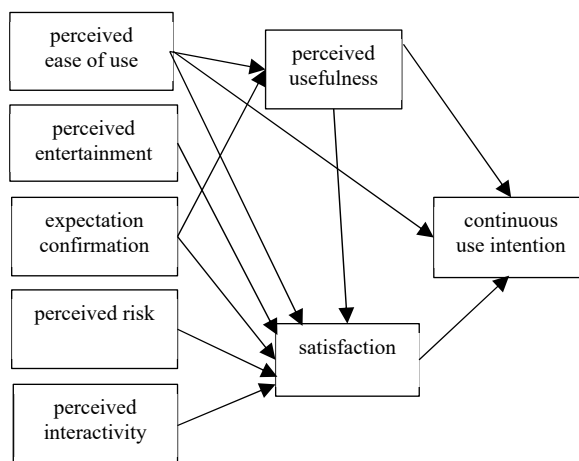
Figure 1: Framework of the model.

(TAM) when analyzing people's use of information systems, in which there are two very important factors: perceived ease of use and perceived usefulness. (Davis, 1989) Bhattacherjee (2001) proposed the expectation confirmation model of information system continuance (ECM-ISC), Users' perceived usefulness and satisfaction affect their continuous use, and satisfaction is affected by users' perceived usefulness and expectation confirmation. (Bhattacherjee, 2001)

3 RESEARCH MODEL AND DATA COLLECTION

3.1 Research Model and Hypothesis

Referring to TAM and ECM-ISC model, this paper constructs the research model, as shown in Figure 1.

According to the model, the following assumptions are proposed:

H1: Perceived ease of use has a positive effect on perceived usefulness.

H2: Perceived ease of use has a positive effect on satisfaction.

H3: Perceived ease of use has a positive effect on users' continuous use intention.

H4: Perceived entertainment has a positive effect on satisfaction.

H5: Expectation confirmation has a positive effect on perceived usefulness.

H6: Expectation confirmation has a positive effect on satisfaction.

H7: Perceived risk has a negative effect on satisfaction.

H8: Perceived interactivity has a positive effect on satisfaction.

H9: Perceived usefulness has a positive effect on satisfaction.

H10: Perceived usefulness has a positive effect on users' continuous use intention.

H11: Satisfaction has a positive effect on users' continuous use intention.

3.2 Questionnaire and Data Collection

The questionnaire consists of three parts.

The first part is the introduction, which explains the research purpose, confidentiality and content of the questionnaire, so as to help the respondents better understand the research background.

The second part is the basic situation of the respondents, including gender, age, occupation, education level and the weekly using frequencies of live broadcast platform.

The third part is the key research content. It includes 8 variables, including perceived usefulness, perceived ease of use, perceived entertainment, expectation confirmation, perceived risk, perceived interactivity, satisfaction and continuous use intention, with a total of 28 items.

This paper conducted a questionnaire survey posted electronic questionnaire online. The online questionnaire is made through the questionnaire star platform and distributed through online channels. Finally, 256 complete questionnaires are returned. After excluding 11 invalid questionnaires, 245 valid questionnaires are finally received, with a detailed sample description as shown in Table 1.

Table 1: Distribution of Respondents.

	Category	Frequency	Percentage
Gender	Male	129	52.7
	Female	116	47.3
Age	Below 18	33	13.5
	18-25	160	65.3
	26-35	37	15.1
	36-45	12	4.9
	Above 45	3	1.2
Education	Specialists and below	92	37.6
	Bachelor	131	53.5
	Master and above	22	9
Occupation	government employees	16	6.5
	employees of firms and enterprises	26	10.6
	liberal professions	6	2.4
	Private owners	39	15.9
	students	158	64.5
Using frequencies of live broadcasting platform	1 time	20	8.2
	2-5 times	69	28.2
	6-10 times	97	39.6
	11 times and above	59	24.1

Table 2: Reliability Analysis.

Research Variable	Cronbach α	Item
perceived ease of use	0.845	3
perceived entertainment	0.841	3
expectation confirmation	0.861	3
satisfaction	0.847	3
perceived risk	0.879	5
perceived ease of use	0.824	3
perceived interactivity	0.855	4
continuous use intention	0.898	4

Table 3 KMO and Bartlett Test.

KMO		0.881
Bartlett Test of Sphericity	Approx. Chi-Square	3925.481
	df	378
	Sig.	.000

4 DATA ANALYSIS

4.1 Reliability Analysis and Validity Analysis

This paper tests the reliability and validity by SPSS software. In the reliability analysis, Cronbach alpha coefficient is generally used to test the consistency of the research variables of each measurement item. As shown in Table 2, the Cronbach's alpha coefficient of each variable is greater than 0.8, indicating that it has higher internal consistency.

The validity analysis is shown in Table 3. KMO=0.881, greater than 0.8, indicating that there is a strong correlation between variables.

4.2 Structural Equation Analysis

In this study, AMOS 23.0 software is used for structural equation modeling, and the relationship between variables is verified. According to the research hypothesis, based on the research model, the
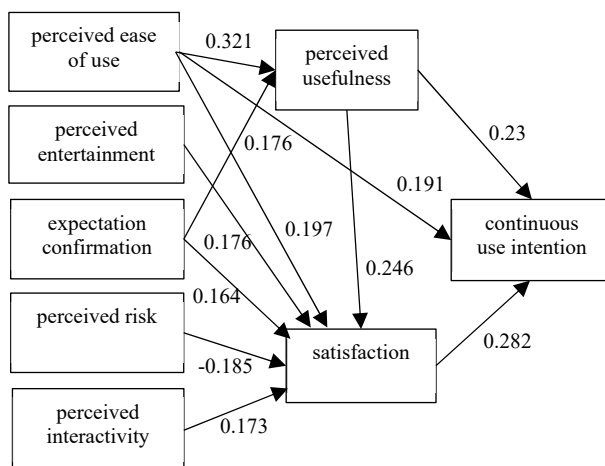
Figure 2: Action Path.

Table 4: Model Fitness Test.

Goodness of Fit Index	Model Matching Criteria	Value	Result
CMIN	——	395.907	——
DF	——	329	——
CMIN/DF	<3	1.203	Good
RMR	<0.08	0.040	Good
GFI	>0.8	0.898	Acceptable
AGFI	>0.8	0.874	Acceptable
NFI	>0.9	0.903	Good
IFI	>0.9	0.982	Good
TLI	>0.9	0.979	Good
CFI	>0.9	0.982	Good

structural equation model is established by AMOS, and we get the standardized path coefficient, as shown in Figure 2.

After constructing the users' continuous use intention model of live broadcast platform, this paper tests and modifies the fitting relationship between the model and the data, and finally obtains a model with high fitting degree. The model fitting results are shown in Table 4.

The better the fitting degree of the model, the higher the effectiveness, applicability and persuasion of the initial model of the influencing factors of users' continuous use intention of live broadcast. It can be seen from the above table that the fitness indexes of the research model meet the research standards, and the fitness of the model is good.

The model path coefficients and research hypothesis test results of the structural equations are shown in Table 5. From the model test results in Table 5, it can be seen that perceived ease of use has a positive effect on perceived usefulness ($\beta=0.321$, P<0.001), thus, H1 assumption is effectively

validated. Perceived ease of use has a positive effect on satisfaction ($\beta=0.197$, P<0.05), thus, H2 assumption is effectively validated. Perceived ease of use has a positive effect on users' continuous use intention ($\beta=0.191$, P<0.05), thus, H3 assumption is effectively validated. Perceived entertainment has a positive effect on satisfaction ($\beta=0.176$, P<0.05), thus, H4 assumption is effectively validated. Expectation confirmation has a positive effect on perceived usefulness ($\beta=0.176$, P<0.05), thus, H5 assumption is effectively validated. Expectation confirmation has a positive effect on satisfaction ($\beta=0.164$, P<0.05), thus, H6 assumption is effectively validated. Perceived risk has a negative effect on satisfaction ($\beta=-0.185$, P<0.05), thus, H7 assumption is effectively validated. Perceived interactivity has a positive effect on satisfaction ($\beta=0.173$, P<0.05), thus, H8 assumption is effectively validated. Perceived usefulness has a positive effect on satisfaction ($\beta=0.246$, P<0.001), thus, H9 assumption is effectively validated. Perceived usefulness has a positive effect on users' continuous use intention ($\beta=0.23$, P<0.05), thus, H10.

Table 5: Model Validation Results.

Assumed Path			standardized coefficient	Non-standardized coefficient	S.E.	C.R.	P	Test Results
perceived usefulness	<---	perceived ease of use	0.321	0.35	0.086	4.087	***	True
satisfaction	<---	perceived ease of use	0.197	0.205	0.078	2.634	0.008	True
continuous use intention	<---	perceived ease of use	0.191	0.208	0.091	2.275	0.023	True
satisfaction	<---	perceived entertainment	0.176	0.175	0.067	2.631	0.009	True
perceived usefulness	<---	expectation confirmation	0.176	0.159	0.068	2.355	0.019	True
satisfaction	<---	expectation confirmation	0.164	0.141	0.059	2.376	0.018	True
satisfaction	<---	perceived risk	-0.185	-0.238	0.084	-2.828	0.005	True
satisfaction	<---	perceived interactivity	0.173	0.205	0.078	2.639	0.008	True
satisfaction	<---	perceived usefulness	0.246	0.235	0.059	3.988	***	True
continuous use intention	<---	perceived usefulness	0.23	0.231	0.072	3.196	0.001	True
continuous use intention	<---	satisfaction	0.282	0.296	0.093	3.182	0.001	True

assumption is effectively validated. Satisfaction has a positive effect on users' continuous use intention (β=0.282, P<0.05), thus, H11 assumption is effectively validated.

5 CONCLUSIONS

According to the results of data analysis, the following conclusions can be drawn:

5.1 Analysis of Factors Affecting Continuous Use Intention

The path coefficients of perceived usefulness, perceived ease of use and satisfaction were 0.23, 0.191 and 0.282 respectively. The path coefficient of satisfaction is the largest, indicating that satisfaction has the greatest effect on continuous use intention. This means when users are satisfied with platform live content and related services, they will continue to use it, and their continuous use intention will naturally increase.

5.2 Analysis of Factors Affecting Satisfaction

The path coefficients of perceived usefulness, perceived ease of use, perceived entertainment, perceived interactivity, expectation confirmation and

perceived risk to satisfaction were 0.246, 0.197, 0.176, 0.173, 0.164 and -0.185 respectively. Among them, the path coefficient of perceived usefulness and perceived ease of use is the largest, and the path coefficient of perceived risk is negative, but its absolute value is large, indicating that these three factors have a great effect on satisfaction.

5.3 Analysis of Factors Affecting Perception Usefulness

The path coefficients of perceived ease of use and expectation confirmation for perceived usefulness are 0.321 and 0.176 respectively. The path coefficient of perceived ease of use is higher, indicating that perceived ease of use has the greater effect on perceived usefulness.

Therefore, live broadcast platform should pay more attention to factors such as perceived usefulness, perceived ease of use, perceived risk. Firstly, they should timely follow up user needs, constantly update and upgrade real-time content, so that users can obtain the most useful and high-quality information resources in learning, work and life, and promote the diversification of real-time content. Secondly, the platform layout and pages strive to be concise and clear, simplify operation steps, abandon complex operation functions, so that people of all ages can accept and understand them. It will effectively improve users' first impression and stimulate users' continuous use intention. Finally, the platform should

protect user privacy and data security, eliminate unnecessary spam, build a complete information security protection management mechanism, provide guaranteed service measures and diversified products to meet the needs of users.

REFERENCES

A. Bhattacherjee, Understanding iformation sstems continuance: an expectation confirmation model, Mis Quarterly, vol. 25, pp. 351-370, 2001.

China Internet Network Information Center. (2021) The 47th China Statistical Report on Internet Development. http://www.cnnic.net.cn/hlwfzyj/hlwxzbg/.

F.D. Davis, R.P. Bagozzi, P.R. Warshaw, User acceptance of computer technology: a comparison of two theoretical models, Management Science, vol. 35, pp. 982-1003, 1989.

L.J.Tang, Z.Q.Zhao, Analysis of the way and problem of TikTok communication from the perspective of big data, Editors Monthly, vol. 6, pp. 52-56, November 2018.

X.J.Fan, X.Y.Jiang, R.R.Ni, X.B.Dong, Influence of interactivity of mobile live-video broadcast on intention of continuous use of users, Journal of Systems and Management, vol. 29, pp. 294-307, March 2020.

X.W. Wang, W.L. Liu, F.Q. Jia, C. Zhang, Model and empirical study on influencing factors of webcast app usage behavior, Library and Information Work, vol. 64, pp. 22–31, March 2020.