



# An Assessment of Factors Influencing the Continuous Use of Cross-Border Social Network Users at Guangdong China

Huan Chen<sup>1</sup>✉ and Bin Gu<sup>2</sup>

<sup>1</sup> School of Management, Guangdong University of Science and Technology, Dongguan 523083, Guangdong, China  
chenhuan@gdust.edu.cn

<sup>2</sup> Department of Electronic Business, South China University of Technology, No. 382, Waihuan East Road, University Town, Guangzhou 510000, China

**Abstract.** As cross-border social networks are becoming more and more accepted by users, cross-border social networks use socialization to attract customers, and more and more social networking platforms have begun to accept this model. Due to the combination of social networking and the Internet, communication between people can be greatly improved. The success of social networks can also bring effective publicity to the platform. The characteristics of cross-border social networks include allowing users to easily share information with friends around the world, providing users with rich multimedia content, and supporting multiple languages to meet the needs of users from different cultural backgrounds, providing users with cross-border or cross-organizational functions such as instant messaging. However, due to their own characteristics and political, economic, technological, educational, cultural and other factors of cross-border information flow, the development of major social network platforms is not satisfactory. Research on cross-border social networks helps platforms better understand platform construction and further improve their social platforms on the basis of user feedback. Therefore, it is particularly important to conduct in-depth research on the impact of cross-border social network users' willingness to use.

**Keywords:** Cross-border social networking · social network · influencing factors

## 1 Introduction

China Network Information Center's "China Internet Development Status Report" pointed out that by 2022, the number of Internet users in China has surpassed that of all European countries, and the Internet usage rate is as high as 60% [1]. Among them, network users mainly use social software, followed by comprehensive e-commerce. It can be seen from this that social software has already occupied a place among domestic users, and socialization can promote the dissemination of more information and ideas.

A cross-border social network is a network connected by multiple nodes across national borders, allowing users to share information, exchange information and socially

interact internationally. The characteristics of cross-border social networks include: (1) allowing users to easily share information with friends around the world; (2) providing rich multimedia content; (3) supporting multiple languages to meet the needs of users from different cultural backgrounds; (4) Provide cross-border or cross-organization instant messaging; (5) Support community expansion and other functions.

## **2 Dimension Analysis of Socialization**

### **2.1 Dimensions of Social Information**

The root of social development lies in the acquisition and sharing of information. The articles of Lenhart and Madden (2007) and Chung (2012) also show that socialization is actually a communication and exchange of information. In addition, Chung et al. (2012) also pointed out that users' verbal communication will have an impact on users' final shopping decisions. Starting from the dimension of social information, this thesis sets two variables of information acquisition and information sharing for detailed discussion.

Sharing in the true sense only appeared after the emergence of social networks. Compared with the acquisition of information, users can obtain information from various fields such as news, newspapers, and magazines, but they have no right to publish and share it [2]. The social platform is to meet this need. Taking WeChat as an example, users can express what they want to show at any time. In short, the shared information can indeed meet some psychological needs of users.

### **2.2 Dimensions of Social Networks**

According to the definition given by Lenhardt and Madden (2007), it is cyberspace. The development of socialization must have a space that brings users together. These different users are all here, so a lot of different information can be provided [8].

### **2.3 Dimensions of Social Technology**

Technology is crucial to improving the satisfaction of cross-border social APP users [7]. The socialization mentioned in the previous literature refers to the existence of social technology, and its essence is to build a tool so that it can be realized. Moreover, different results can be obtained by designing different social models.

Interactivity refers to whether or not to have a variety of editing functions for users to interact with other users when designing social products [3]. Similar to profile pictures, signatures, circle of friends, likes, comments, etc. on WeChat, all allow users to interact with friends, create more topics, and create more information.

Connectivity refers to whether the design of functions can make users and platforms, users and users well connected in social products [9]. Just like "fans" on Weibo, the platform will set up a "fan" so that "fans" can see that their "fans" are in the state of following and interact with "fans" without "friends". "A connection was established". The player's sense of presence and participation has been greatly improved.

### 3 Research Design

#### 3.1 Research Hypothesis

Access to information is primarily about access to information. In today's society, people obtain a variety of information. With the emergence of social networks, the new generation of teenagers no longer obtain information through traditional channels such as TV and newspapers, but through new channels such as the Internet and self-media. Social Tools. Social software such as Facebook and Twitter allow users to obtain more information in advance [4]. Therefore, this paper believes that in cross-border social media, social information will affect users' willingness to participate, and then affect users' willingness to use. Therefore, this paper puts forward the following assumptions:

H1: Cross-border social network information significantly and positively affects users' willingness to use.

Scholars such as He Shengjun and Hoye have mentioned the influence of group size on society [5]. Therefore, at the level of social scale, we established a specific research object with network size as a variable. On this basis, this paper draws a conclusion: social networks will affect users' interaction needs, and then affect their willingness to use. Therefore, this paper puts forward the following assumptions:

H2: The scale of cross-border social networks significantly positively affects users' willingness to use.

Technology is the key to improving user satisfaction of cross-border social applications. Previous studies believed that socialization is a kind of social technology, and its essence is to construct a tool to enable it to be implemented, and various effects can be obtained by constructing various social models. On this basis, this paper makes the following assumptions:

H3: Cross-border social network APP technology has a significant positive impact on users' willingness to use.

#### 3.2 Model Establishment

Based on the above assumptions, this paper uses the willingness model as shown in Fig. 1.

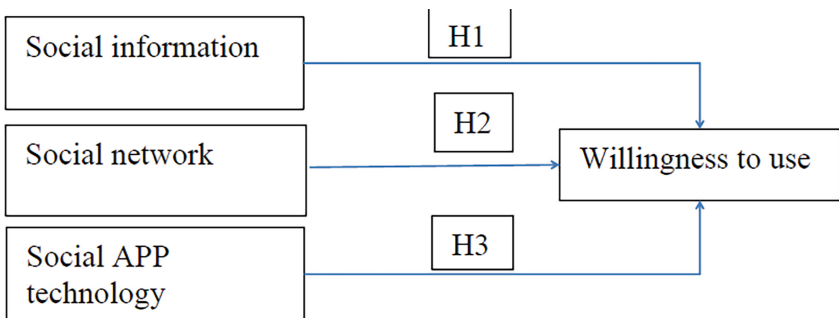


Fig. 1. Research model of cross-border social network users' willingness to continue using

**Table 1.** Relevant variables and measurement items

<b>Variable name</b>	<b>Measurement items</b>
<b>Social information</b>	Information on social networking platforms is informative and timely
	The content of information on social networking platforms is very attractive to me
	I can know a lot on social networking platforms
	I share information through social networking platforms
	I use the platform to share valuable information
<b>Social network</b>	I can meet a lot of people who are helpful to me through social networking platforms
	I can share information with people around me through social networking platforms
	I can communicate with some helpful people through social networking platforms
<b>Social APP technology</b>	Social networking platforms allow me to post what I want to show
	I can embellish my personal elements through social networking platforms
	I can get a good impression of me from other users of the social networking platform
	I can use social networking platforms to enhance my relationships
	I feel like I'm part of a social networking platform online team
	Social networking platforms allow me to gain many friends
<b>Willingness to use</b>	My current social networking platform satisfies me
	I will recommend to people around
	I often compliment the platforms I use
	I think current social networking platforms are already good

**3.3 Measurement Items**

This article is based on the existing mature scale, modified according to the content of the interview and relevant literature. The Table 1 lists relevant variables and measurement items.

**3.4 Research Data**

The research method of this paper is to conduct a questionnaire survey on a professional questionnaire survey website to obtain relevant information. Before the official release of the questionnaire, the author first conducted a preliminary survey of users who use cross-border social network APPs around her. The results showed that the survey results were reasonable and logical.

In this study, a total of 347 questionnaires were distributed, and unfinished invalid and non-target questionnaires were excluded, and a total of 289 valid questionnaires were obtained.

## **4 Research Results**

### **4.1 Sample Descriptive Statistical Analysis**

The survey objects selected in this article include gender, age, educational background, monthly income, social network sections used, duration of use, weekly login times, and each login time. Due to limited space, this article does not describe the details, but only summarizes its characteristics as follows:

#### **More women**

In this survey, there is a big difference in the ratio of boys and girls, 70.3% girls and 29.7% boys. In fact, this number has exceeded the expectations of this article, because the ratio of male and female users in Instagram is 1:10, but considering that other platforms also have a certain audience, the proportion of male readers is higher than that of Instagram.

#### **Rejuvenation**

Among all age groups, the proportion of people aged 26 to 30 is the highest at 39.89%, followed by people aged 20 to 25 at 32.91%; respondents aged 30 and over are only 28.20%. This means that cross-border social networks may involve multiple languages, which may cause difficulties for younger users. If they don't fully understand the language other users speak, they risk missing out on important information and social interactions. At the same time, cross-border social networks may promote mutual understanding and learning among young people, helping them appreciate the culture, history and way of life of other countries or regions. This may help to broaden their thinking and horizons and stimulate their curiosity and imagination. Therefore, it can be seen that in cross-border social networks, most of the users are between 20 and 30 years old.

#### **Most of them have bachelor degree or above**

From the perspective of the distribution of education level, the impact of education level, coupled with the fact that the questionnaire itself is a reflection of the subjective value of the respondents, therefore, respondents with lower education levels lack awareness of social networks. In terms of educational background distribution, university education is the highest, accounting for 79.33%.

#### **The surveyed groups meet the requirements**

Among social network applications, 49.89% of respondents have used them for more than two years, which is also the long-term contact of users with social network applications. In terms of weekly use and stay time, most of the respondents will use it within two weeks, 50.99% of people visit once a day, and 0.81% of people stay on the Internet for 10 min, which shows that they are interested in social networking. The web knows all too well.

## 4.2 Reliability and Validity Test

### Reliability test

Confidence is the credibility of the variable scale. In this study, SPSS21.0 was used to study the reliability of the questionnaire, and the correlation between the Cronbach  $\alpha$  coefficient and the modified items was studied. Typically, the Cronbach’s alpha coefficient is between 0 and 1. When the factor value is less than 0.6, it is generally considered to lack internal consistency; in the range of 0.7–0.8, the reliability of the scale is high; between 0.8–0.9, the reliability of the scale is very high. The value of CITC should be above 0.5.

In this paper, Cronbach’s  $\alpha$  reliability coefficient method is used to measure the internal compatibility of the method, and the results are as shown in Table 2.

From the results in the above table, the reliability coefficients of each scale are above 0.8, which shows the internal consistency of the scale and meets the subsequent measurement requirements.

### Validity test

This article is based on the existing questionnaires and combined with relevant facts. Since there is no prior information, it is impossible to understand the impact of each factor in the scale on the observed variables, so this paper uses exploratory factor analysis to test the structural validity of the questionnaire and find out the factors that may have an impact on the observed variables. The specific operation steps are as follows: test the KMO of each variable to determine whether it is suitable for factor analysis; secondly, use the Bartlett ball test to determine whether there are common factors for the items suitable for factor analysis; finally, use The method of principal component analysis is to conduct principal component analysis on the items with common factors in the question, select the common factors, and use the maximum variance method to perform orthogonal rotation to obtain the factor loading matrix after rotation to test its structural validity.

#### (1) Social information

The experimental results show that the KMO value of the five test items is 0.761, which is close to 1; the test result of the Bartlett ball method is 429.415,  $p < 0.001$ , indicating that there are common factors in the items, which is suitable for factor analysis.

**Table 2.** Reliability test of variables

Variable name	Item	Cronbach’s alpha
Social information	Content 1–5	0.835
Social network	Characteristic 1–3	0.901
Social APP technology	Recommend 1–6	0.889
Willingness to use	Will 1–4	0.879

## (2) Social network

This paper designs 3 test questions, and analyzes the test results of the 3 test questions. The test results show that the KM0 of the three items is 0.819, which is close to 1; the KM0 of the Bartlett ball method is 222.5821,  $p < 0.001$ , indicating that there are common factors in the questions, which is suitable for factor analysis.

## (3) Social APP technology

Through the test, it is found that the KM0 value of the 6 questions is 0.771, which is close to 1, and the Bartlett ball method is 451.324,  $p < 0.001$ , which shows that there are common factors in the questions, and it is a good method.

## (4) Willingness to use

This paper analyzes the test results of 4 test questions through the test of 4 test questions. The results showed that the KM0 value of the four items was 0.831, which was close to 1; while the KM0 value of the Bartlett ball method was 256.383,  $p < 0.001$ , which indicated that there were common factors in the items and it was suitable for factor analysis.

### 4.3 Empirical Analysis

#### Descriptive statistics of each variable

First, each variable in the study is analyzed with descriptive statistics. It can be seen from the table that the variation interval of most variables is within 1, which shows that the variable values of the questionnaire are relatively stable, which is consistent with the analysis method later. From the perspective of skewness, the absolute value of the deviation is less than 2, indicating that the data has become normal and comparable to a certain extent.

#### Correlation analysis

Correlation analysis was used to test the causal relationship between variables. As shown in Table 3, the Pearson correlation of each variable is above 0, and the two-sided significance is below 0.001, indicating that there is a significant positive relationship between each variable, and the willingness to continue using and the antecedent variables in the assumption. There is also a significant positive relationship, which shows that the causal relationship between these variables is very obvious (Table 4).

**Table 3.** Summary table of descriptive statistics for each variable

Variable	N	Min	Max	average	variance	Skewness	kurtosis
Social information	289	1.1	5	3.71	1.05	-1.5	0.61
Social network	289	1	5	3.79	1.03	-1.3	0.48
SocialAPP technology	289	1	5	3.80	1.10	-1.3	0.46
Willingness to use	289	1	5	3.73	1.07	-1.4	0.40

**Table 4.** Descriptive statistics and correlation coefficient matrix among variables

Variable	Social information	Social network	SocialAPP technology	Willingness to use
Social information	1			
Social network	0.869***	1		
SocialAPP technology	0.891***	0.869***	1	
Willingness to use	0.901***	0.849***	0.888***	1

Note: \* (p < 0.05); \*\* (p < 0.01); \*\*\* (p < 0.001)

**Regression analysis**

The independent variables of the hypothesis test are social information, social network, and APP technology, and since the variable is willingness to use, the results of multiple linear regression are as shown in Table 5.

As shown in the Table 5, social information ( $\beta = 0.441, p < 0.001$ ) has a significant positive correlation with users’ willingness to use, that is, if users positive attitude towards cross-border social network information increases by 1 point, then their Willingness to use will increase by 0.451. Social networks ( $\beta = 0.141, p = 0.001$ ) have a significant positive correlation with users’ willingness to use. If users’ positive attitude towards the scale of cross-border social networks increases by 1 point, their willingness to use will increase by 0.149. Social APP technology ( $\beta = 0.369, p < 0.001$ ) has a significant positive impact on usage intention. When users’ positive attitude towards cross-border social networking APP technology increases by 1 point, their usage intention will increase by 0.361. Through the calibration of the model,  $R^2 = 0.839$ , indicating that the proposed method can reflect 83.9% of the user’s wishes, and the F value has a very high level, indicating that the model is very suitable.

According to the above results, the regression equation of willingness to use can be obtained:

**Table 5.** Regression Analysis of Factors Affecting Willingness to Use

Dependent variable	Independent variable	b	$\beta$	t	P	Adj.R2	F
Willingness to use	Constant	0.163		2.052	0.039	0.839	264.019***
	Information	0.451	0.441	9.4	<0.001		
	Network	0.149	0.141	3.301	0.001		
	Technology	0.361	0.369	7.901	<0.001		



**Table 6.** H1–H3 Hypothesis Test Results

Hypothesis	Path coefficient	T	P	Established or not
H1	0.451	9.4	<0.001	established
H2	0.149	3.301	0.001	established
H3	0.361	7.901	<0.001	established

Willingness to use = 0.163 + 0.451 \* cross-border social network information + 0.149 \* cross-border social network scale + 0.361 \* cross-border social network APP technology.

The regression formula shows that cross-border social network platforms need to strengthen information updates, network scale and APP technology in order to increase users' willingness to use.

Through the analysis, the research hypotheses of this paper are organized as shown in Table 6.

## 5 Conclusion

Based on the questionnaire, this paper uses relevant data for empirical analysis, verifies the correctness and credibility of the questionnaire data, and draws the following conclusions:

Through empirical research on data, this paper believes that users of cross-border social networking platforms have the following two characteristics. 1) In terms of age, the users of social sections of cross-border social networks are relatively young. But it can be seen that their main force is to have a fixed job and income. 2) From the perspective of education status, most cross-border social network users have a bachelor's degree or above. It shows that the acceptance of foreign new things in education has increased, and the main boundary is the university.

Through the analysis of questionnaire data, it is concluded that cross-border social network information, cross-border social network scale, and cross-border social network APP technology have a significant positive correlation with users' willingness to use. The path factors are 0.451, 0.149, 0.361 respectively. Therefore, in order to improve users' willingness to use, cross-border social network platforms must strengthen information updates, network scale and APP technology.

Since the main research of this paper is the influence of cross-border social networks on users, but for this research, this paper believes that there are still many deficiencies and places worthy of further research. For example, in terms of research objects, the effective questionnaires collected in this study mainly come from WeChat distribution, and most of the survey objects are limited to China, and the sample size of foreign users is relatively small. In terms of social dimension design, since different platforms have different social characteristics, this article does not analyze them one by one. Instead, it mainly uses the Facebook public platform to analyze the impact of cross-border social networks on users. Therefore, future research can carry out classification research on different types of cross-border social networking platforms.

## References

1. Huang Junjie, Qiu Ting. Research on the Influence of Parent-child Information in Social Networks on Fertility Intention [J]. *Population and Society*, 2022, 38(06): 79-93. DOI: <https://doi.org/10.14132/j.2095-7963.2022.06.007>.
2. Qiu Xiaoyan, Wang Jiajia. Research on rumor propagation model with truth disseminator in social network [J]. *Journal of Applied Technology*, 2022, 22(04):413-420.
3. Zhao Xiaoyun. The Motives and Social Effects of the Phenomenon of “Eating Melons” in Social Networks [J]. *Theoretical Observations*, 2022(10):92-96.
4. Lv Xinyi, Huang Xianying, Liu Xiaoyang. Social Network Rumor Propagation Model Integrating Media Effects and Psychological Factors [J]. *Computer Simulation*, 2022, 39(10): 342–348+419.
5. Wang Jian, Peng Yuqi, Zhao Yufei, Yang Jian. A review of social network public opinion information extraction methods based on deep learning [J]. *Computer Science*, 2022, 49(08): 279-293.
6. Song Xinyue, Shuai Tianping, Chen Bin. The Maximization Problem of False Information in Social Networks Corrected by Adding Edges [J]. *Computer Science*, 2022, 49(11): 316-325.
7. Zhou Xiaoqian. Analysis of value measurement and influencing factors of associated privacy in social networks [D]. Zhengzhou University, 2021. DOI: <https://doi.org/10.27466/d.cnki.gzzdu.2021.002219>.
8. Han Xinxin. Analysis and research on influencing factors of POI recommendation based on location social network [J]. *Computer Knowledge and Technology*, 2020, 16(24): 47-48. DOI: <https://doi.org/10.14004/j.cnki.ckt.2020.2664>.
9. Huang Yiyan. Analysis of Influencing Factors of User Information Security in Social Networks [J]. *China New Communications*, 2018, 20(24): 163.

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter’s Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

