Research on Residents' Cross-border E-Commerce Consumption Behavior

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Abstract: This paper studies the characteristics of residents' cross-border e-commerce consumption behavior, as well as the internal factors affecting residents' use of cross-border e-commerce consumption. The empirical results show that the characteristics of cross-border e-commerce platform have a significant impact on consumers' consumption intention. The more reasonable the price of goods and the richer the types of goods is, the stronger the consumers' willingness to use cross-border e-commerce platform for shopping will be. Secondly, the more usefulness consumers perceive, the more willingness consumers will use cross-border e-commerce shopping.

1. Introduction

With the rapid development of economic globalization and the widespread application of Internet and mobile Internet technology, cross-border e-commerce is developing rapidly. According to the 43rd China Internet Development Statistics Report issued by China Internet Information Center (CNNIC), by the end of December 30, 2018, the number of Internet users in China had reached 830 million, and the Internet penetration rate was over 60%. The scale of Internet users in China shows a trend of large-scale and high-speed development. Moreover, e-commerce and social network applications are deeply integrated and developed, and the penetration rate is rapidly rising. The government has continuously promulgated relevant policies and measures to encourage and standardize the development of e-commerce in China, especially cross-border e-commerce. Specific measures include opening pilot cities for imported e-commerce, reducing tariffs on imported products, etc., which have helped to promote the sustained and rapid growth of cross-border e-commerce in China. According to the Data Monitoring Report on China's E-commerce Market in 2017, the scale of E-commerce in China has reached 28 trillion yuan, but at the same time it still maintains a high growth rate of 24%.

With the rapid development of the overall e-commerce market, e-commerce enterprises also ushered in new opportunities for high-speed development. According to incomplete statistics, the number of imported e-commerce enterprises in the Chinese market has exceeded 6,000, presenting a variety of cross-border e-commerce models, among which the more well-known cross-border e-commerce platforms are Tianmao Haitao, Jingdong Global Purchase, Koala Haitao, Xiaohongshu, Jumei Goods and so on. These emerging cross-border e-commerce platforms also provide a wide range of convenience for consumers to cross-border shopping. A natural question is, in the process of cross-border shopping, what are the characteristics of consumers' behavior? What are the key factors affecting consumers' choice of cross-border e-commerce platform, which are worthy of our in-depth thinking and analysis Because clarifying the factors affecting consumers' use of e-commerce platform will not only help e-commerce platform to better carry out the corresponding business, but also help government departments to regulate market behavior and improve the further development of cross-border e-commerce market (Huang Tengyue, 2018; Giuffrida et al., 2017).

Through literature review, theoretical analysis and other analytical methods, this paper systematically combs the literature of basic situation of cross-border e-commerce platform. At the same time, it uses questionnaire survey and quantitative analysis to study the factors and internal mechanism that affect consumers' use of cross-border e-commerce platform.

The main contents of this paper can be divided into the following parts: The first part is the introduction. The second part is literature review and theoretical analysis. The third part is the

empirical results of the conclusion analysis of the questionnaire survey. The fourth part is the summary of the full text.

2. Theoretical Research on Cross-border E-Commerce

2.1 Basic Concepts of Cross-border E-commerce

The development of e-commerce benefits from the vigorous development of information technology such as the Internet, which can improve the convenience and efficiency of transactions and reduce the corresponding transaction costs. Cross-border e-commerce is the business activity of commodity trade exchange between transnational countries, which essentially still belongs to the category of e-commerce, but involves the subject of trade in different countries (Gomez-Herrera et al, 2014).

2.2 Theoretical Analysis of Influencing Factors of Cross-border E-commerce Consumption Behavior

Firstly, based on the previous studies and the main idea of this paper, this chapter defines the influencing factors of cross-border e-commerce consumption, which can be divided into three aspects: the characteristics of cross-border e-commerce platform, the perceived value of consumers and the demographic characteristics of consumers (Huang Tengyue, 2018).

2.2.1 Characteristics of Cross-Border E-Commerce Platform

The characteristics of cross-border e-commerce platform are reflected in the following two aspects: the price and quality of goods and the service quality of the platform. The price and quality of commodities are the direct factors that affect whether consumers will buy commodities. For example, the majority of e-commerce platforms attract a large number of rural consumers to buy commodities at low prices. In addition, the service quality of cross-border e-commerce platform is also an important factor affecting consumer satisfaction and repurchase. Generally speaking, consumers tend to shop on cross-border e-commerce platform which can provide better services, so service quality is an important factor affecting consumers' consumption intention. Specifically, the quality of platform services includes whether the types of goods are complete, whether the prices of goods are low, and whether the logistics level is fast, etc.

2.2.2 Consumer Perceived Value

Referring to Zhu and Hu (2018) and other studies, this paper uses Technology Acceptance Model (TAM) to analyze consumers' perceived consumer value in the process of cross-border e-commerce use. Technology acceptance model was first proposed to explain the user's acceptance of technology system. Later, it was widely used to explain the acceptance degree of consumers' willingness to use technology system. The specific model framework is as follows:
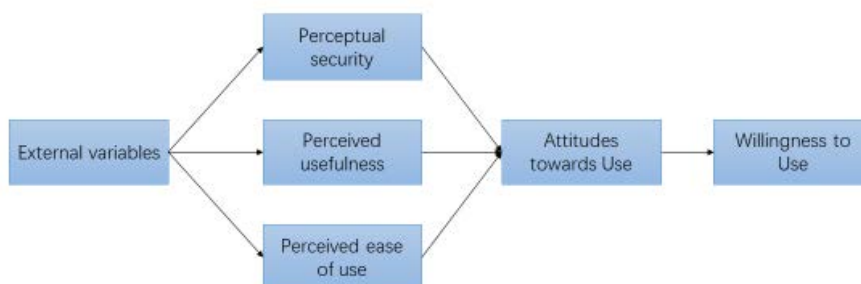

Figure 1. TAM model framework

Combined with the above theory, customer perceived value includes three aspects: perceived security, perceived ease of use and perceived usefulness. Among them, perceived security refers to the safety factor perceived by consumers in the process of using cross-border e-commerce platform, so as to avoid the risk of customer information leakage, which makes consumers willing to conduct

cross-border consumer activities on the cross-border e-commerce platform. Generally speaking, the higher the safety factor perceived by consumers by cross-border e-commerce platform is, the more willing consumers will be to make consumer shopping on this cross-border e-commerce platform.

Perceived ease of use refers to the degree of convenience consumers perceive in the process of using a cross-border e-commerce platform. The more convenient the cross-border e-commerce platform is, the more willing consumers are to consume on the corresponding e-commerce platform, which has a significant positive impact on consumers' willingness to use.

Perceived usefulness focuses on the analysis of whether cross-border e-commerce platform can effectively help consumers to complete their own shopping needs, so that consumers can really feel that the e-commerce platform for their own consumer behavior is valuable.

2.2.3 Demographic Characteristics of Consumers

Finally, the demographic characteristics of individual consumers are also important factors affecting consumers' shopping behavior, including consumers' age, gender, income, education level and so on (Valarezo et al., 2017). Age is one of the important factors affecting consumers' decision-making. Consumers of different ages have different preferences for consumption patterns and consumption. Gender is also an important factor affecting consumers' online shopping behavior. It is generally believed that male consumers tend to buy online more than female consumers. Personal income is an important factor that directly affects consumers' shopping. Finally, some scholars have found that the degree of consumers with the higher degree are more likely to buy online (Garn-Muozet al., 2019).

3. Empirical Results

The network survey totally received 254 questionnaires. 245 samples are valid. The descriptive statistics analysis of the questionnaire results are as follows:

3.1 Consumer's Personal Characteristics

The age distribution in the sample is as shown in Table 1. Because this questionnaire mainly uses the online survey. Through the survey, we find that the proportion of people aged 26-50 is 81.22%, so we can draw a conclusion that the majority of people who participate in the survey through the network and are willing to buy foreign goods are young and middle-aged people.

Table 1. Age distribution statistics

Age(year)	Total	Percentage
< 18	11	4.49%
18-25	17	6.94%
26-40	82	33.47%
40-50	117	47.76%
>50	17	6.94%
Valid Samples	245	100%

245 valid samples are collected, including 152 males (62.04%) and 37.96 females. The results of this study show that men have become the main purchasers of foreign goods. The gender distribution in the sample is shown in Figure 2.
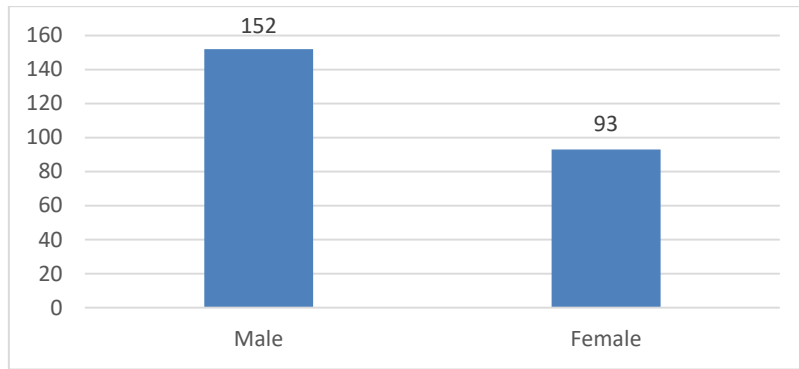
Figure 2. Gender distribution of the sample

Among the sample, 26 are secondary school students and below, accounting for 10.61%; 33 are junior college students, accounting for 13.47%; 91 are undergraduates, accounting for 37.55%; 94 are graduates and above, accounting for 38.37%. The results show that the majority of people who buy foreign goods are those with bachelor degree or above. For the sample, the gender distribution is shown in Figure 3.
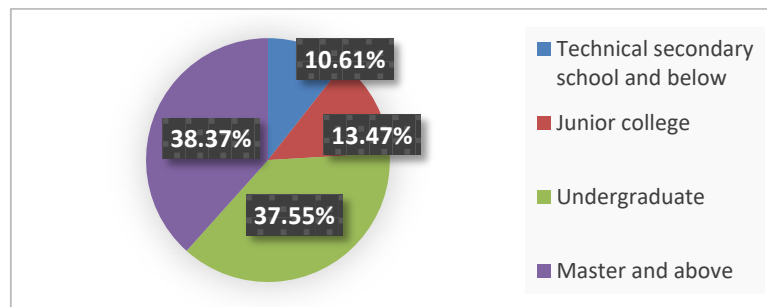

Figure 3. Education distribution

Among the sample, 204 are married, accounting for 62.04%; 41 are unmarried and single, accounting for 37.96%. The results of this study show that married people are the main buyers of foreign goods. The distribution of marital status in the sample is shown in Figure 4.
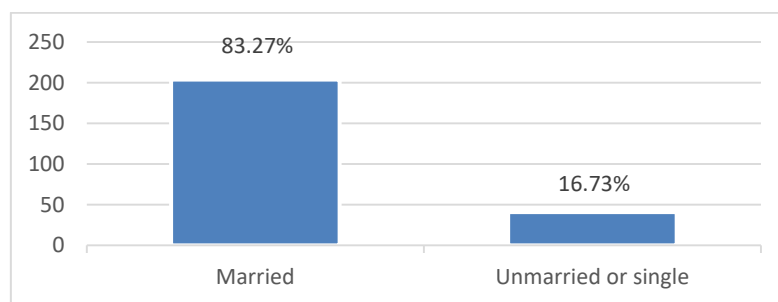

Figure 4. Distribution of marital status

3.2 Behavior Characteristics of Online Shopping of the Respondents

The distribution of online shopping experience in the sample is shown in Figure 5. 5 people never purchased online, accounting for 2.04%; 10 people's experience of using online shopping is under one year, accounting for 4.08%; 45 people's experience of using online shopping is within one to three years, accounting for 18.37%; 34 people's experience of using online shopping is within four to five years, accounting for 13.88%; 151 people's experience of using online shopping is over six years, accounting for 61.63%. The survey results show that people who have 6 years or more of online shopping experience are the main group to buy foreign goods.
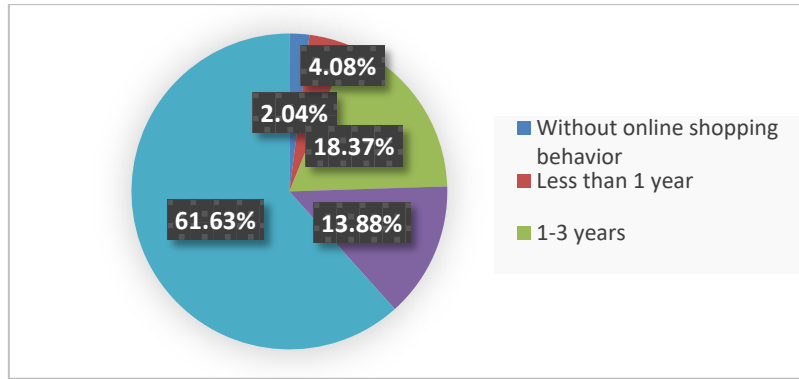
Figure 5. Experiences of online shopping

The willingness distribution of cross-border e-commerce platform for purchasing overseas goods in the sample is shown in Figure 6. Of the 245 valid samples, 187 are willing to use the online shopping, accounting for 76.33% and 58 are unwilling, accounting for 23.67%. The survey results show that the majority of people are willing to use cross-border e-commerce platform to purchase overseas goods.
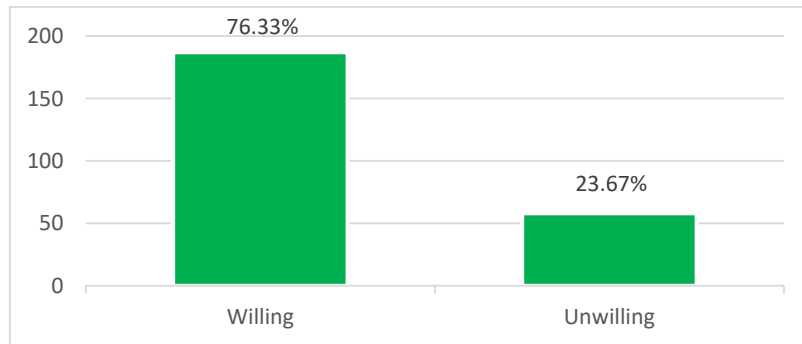

Figure 6. Willingness of online shopping

3.3 Influencing Factors of E-commerce Platform

The distribution of attitude of reasonability of commodity prices of cross-border e-commerce platforms is shown in Figure 7. The survey results show that the majority of people who believe that the commodity prices of cross-border e-commerce platforms are reasonable.
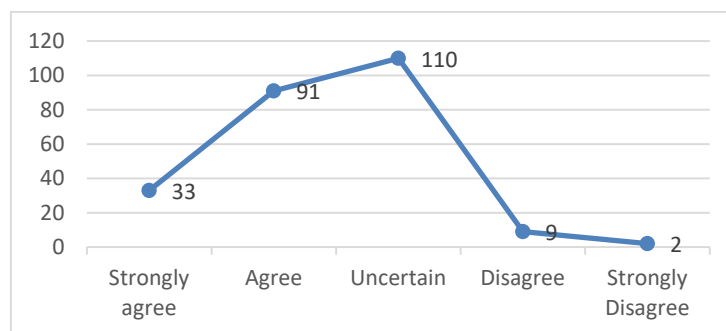

Figure 7. Descriptive statistics on commodity prices considered reasonable for cross-border e-commerce platforms

Figure 8 shows descriptive statistics on the variety of goods considered to be abundant in cross-border e-commerce platforms. The survey results show that 60% of the people who think that cross-border e-commerce platform has abundant commodity types, which indicates that at present cross-border e-commerce platform has abundant commodity types and can basically meet the daily commodity purchase needs of residents, but 33.06% of the people think that it is general, indicating

that cross-border E-commerce platform still exists the problem that some goods and services do not cover the actual needs of residents.
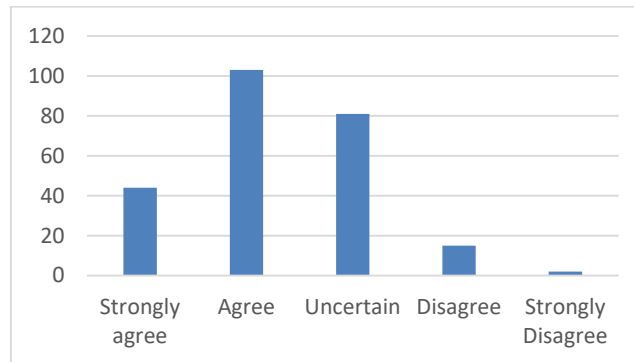

Figure 8. Descriptive statistics on the variety of goods considered to be abundant in cross-border e-commerce platforms

3.4 Analysis of Perceived Value of Cross-Border E-Commerce Use by Consumers

According to the TAM model, this paper analyses the perceived value of cross-border consumption from three aspects: security, usefulness and ease of use.

3.4.1 Security

Figure 9 shows the descriptive statistics on personal information security issues in shopping with cross-border e-commerce platform. The survey results show that 68.98% of the sample strongly agree with or agree with the question, which indicates that on the one hand, the purchasers pay more attention to personal information security; on the other hand, the purchasers are worried about the new type of fraud on the Internet. Part of the media renders the huge harm of personal information security leak, which leads to the low security trust of purchasers to cross-border e-commerce platforms.
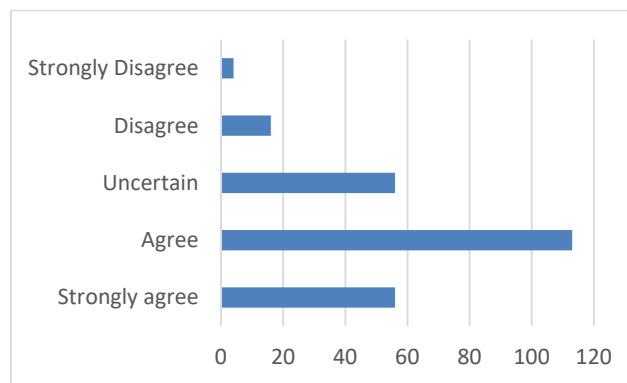

Figure 9. Descriptive Statistics on Personal Information Security Issues in Shopping with Cross-border E-commerce Platform

Figure 10 shows the descriptive statistics on cross-border payment security issues for shopping on cross-border e-commerce platform. The survey results show that 60.42% strongly agree with or agree with the question. However, compared with other research issues, the proportion is not high. The main reason is that the majority of cross-border shopping payments are paid by online banking settlement and business platform. On the one hand, it is due to the trust of online banking security; on the other hand, it is also related to the efforts and commitments made by cross-border e-commerce platforms in payment security.
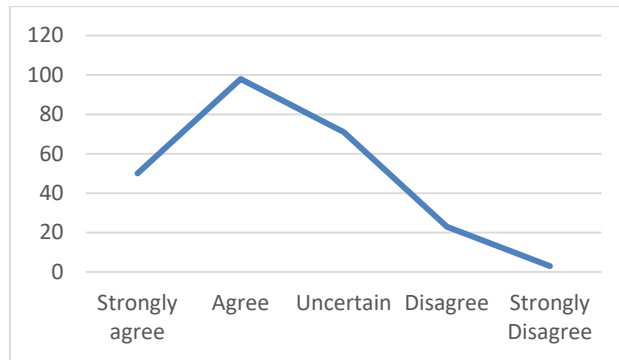
Figure 10. Descriptive Statistics on Cross-Border Payment Security Issues for Shopping on Cross-Border E-Commerce Platform

3.4.2 Usefulness

Figure 11 shows the descriptive statistics of attitude of cross-border e-commerce platforms meeting shopping needs. The survey results show that 66.12% of the sample strongly agree with the question, which indicates that after years of development, cross-border e-commerce platform has made great progress, and has become a part of their daily life. The consumption habits of residents have been greatly changed. E-commerce platform consumption, overseas shopping and online payment have been well received by the residents.
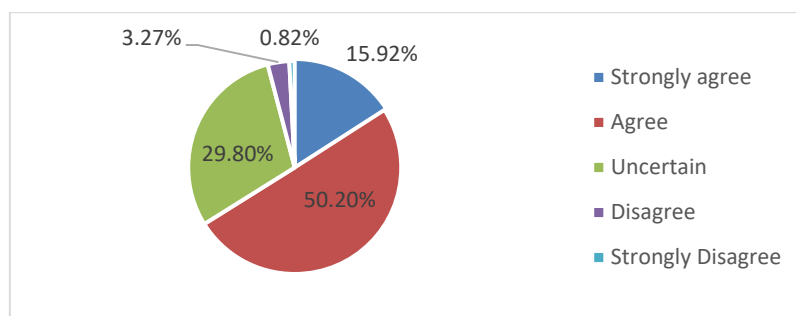

Figure 11. Descriptive statistics of cross-border e-commerce platforms in general meeting shopping needs

Figure 12 shows the descriptive statistics on the use of cross-border e-commerce platforms to improve shopping efficiency. The survey results show that among the people who think that using cross-border e-commerce platform to improve shopping efficiency, the total proportion of people who agree with or agree with it is the largest, reaching 62.86%. This indicates that the usefulness of cross-border e-commerce platform is constantly improving, and the processing of some cross-platform payment and information exchange is more convenient, but there are still some problems. There is a certain gap between the actual operation and the psychological expectations of some users, and the user friendliness of new users is not enough.
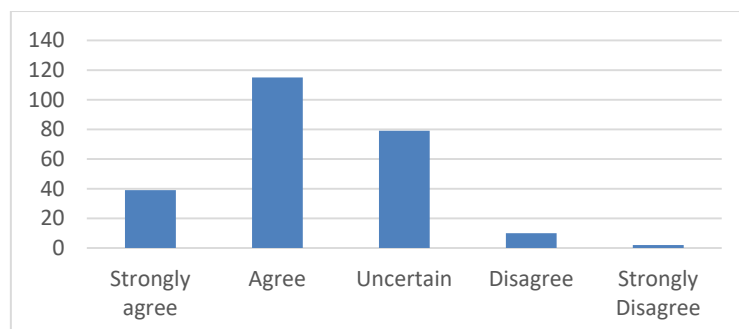

Figure 12. Descriptive statistics on the use of cross-border e-commerce platforms to improve shopping efficiency

3.4.3 Ease of Use

Figure 13 shows the descriptive statistics for convenient use of cross-border e-commerce platforms. The results show that the majority people argue that it is very convenient to use the cross-border e-commerce platforms to buy goods overseas. While some people still think that it is more convenient to use the traditional methods to buy goods than using the cross-border e-commerce platforms
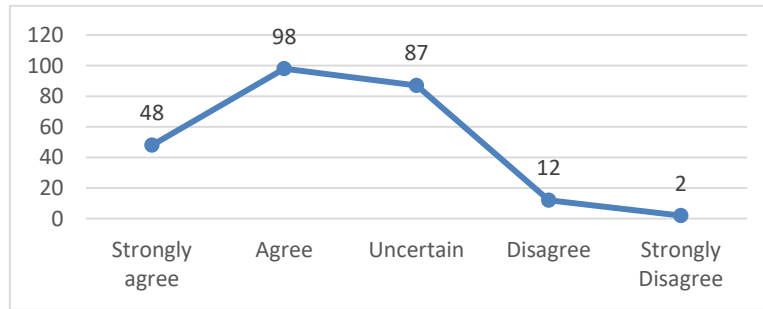

Figure 13. Descriptive statistics for convenient use of cross-border e-commerce platforms

Figure 14 reports the descriptive statistics for more convenient operation of cross-border e-commerce platforms. The survey results show that 42.04% of the people who think that cross-border e-commerce platform can improve the efficiency of shopping, indicating that although the ease of use of cross-border e-commerce platform continues to improve, there is still a gap between the actual operation and the psychological expectations of some users.
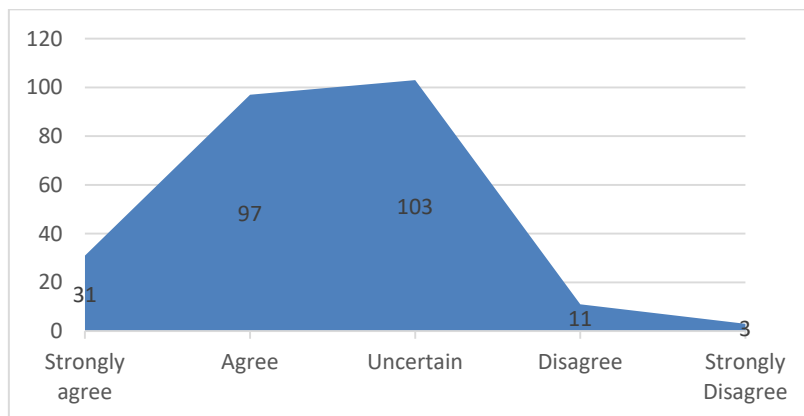

Figure 14. Descriptive statistics for more convenient operation of cross-border e-commerce platforms

3.5 Regression Analysis of Residents' Willingness to Use Cross-border Electronic Commerce

This paper uses the following regression model to analyze the influencing factors of residents' willingness to use cross-border e-commerce. The specific models are as follows:

$$Buy_i = \alpha_0 + \alpha_1 gender_i + \alpha_2 age_i + \alpha_3 edu_i + \alpha_4 mari_i + \alpha_5 incom_i + \alpha_6 \exp e_i + \alpha_7 platform_i$$
$$+ \alpha_8 safety_i + a_9 uesful_i + a_{10} easy_i + \varepsilon_i$$

Among them, the *buy* is whether residents are willing to use cross-border e-commerce platform to purchase. $buy = 1$ expresses willingness. $gender$ indicates gender; age indicates the age of residents; edu indicates the education level of residents, by introducing dummy variables in the equation. Edu1 indicates junior college education; edu2 undergraduate education; edu3 graduate education and above. $mari$ indicates the marital status of residents; $mari = 1$ indicates married, and $mari = 0$ means unmarried; $incom$ indicates residents' income by introducing the dummies; incom1 means

less than 3500; incom2 means 3500-5000; incom3 means 5000-7000; incom4 means more than 7000 yuan; *platform* indicates the characteristics of e-commerce platform, including price rationality of e-commerce platform and product variety; *safety* indicate consumers' perceived safety of cross-border consumption, including personal information security and payment security; *easy* denotes the convenience of cross-border e-commerce platform, specifically including the convenience of cross-border e-commerce platform; *useful* expresses the usefulness of cross-border e-commerce shopping, including whether e-commerce meets the shopping needs and whether it can enhance the shopping efficiency. Taking the price rationality of e-commerce platform as an example, we assign 5-1 points to five replies, and the same treatment to the richness of e-commerce platform types. Both of them are worth obtaining the characteristic variable information of e-commerce platform. This paper uses the logit model to estimate the above model. The empirical results are in Table 2.

The empirical results show that the variables *platform* and *useful* are significant at 1% level, which indicates that the quality of cross-border e-commerce platform and the usefulness of cross-border e-commerce are positively related to the willingness of residents to use cross-border e-commerce. The more reasonable the price of cross-border e-commerce platform is, the richer the number of goods is, and the more willingness of using of the residents will be. Similarly, the more useful the cross-border e-commerce platform is, the more likely it is to stimulate residents' willingness to use it. In addition, the residents with higher educational degree are more willing to use cross-border e-commerce.

Table 2. Empirical Research on the Influencing Factors of Residents' Willingness to Use Cross-border Electronic Commerce

Variable	Coefficient	Std	Wald Chi square	P value
Intercept	-6.9009	1.6609	17.2643	<.0001
gender	-0.2524	0.4101	0.3788	0.5382
age1	0.1149	1.0622	0.0117	0.9139
age2	0.1858	1.1211	0.0275	0.8684
edu1	0.222	0.5532	0.161	0.6883
edu2	1.1501	0.625	3.3865	0.0657
Mari	0.2094	0.3335	0.3944	0.53
incom1	0.2522	0.9268	0.0741	0.7855
incom2	-1.2424	0.8122	2.34	0.1261
incom3	0.1428	0.7201	0.0393	0.8428
platform	1.2519	0.3822	10.7316	0.0011
security	-0.1228	0.2429	0.2557	0.6131
easy	-0.4554	0.494	0.8496	0.3567
useful	1.6377	0.5778	8.0327	0.0046

4. Conclusion

With the rapid development of Internet and mobile internet, e-commerce also shows the characteristics of high-speed development. More and more young consumers begin to use cross-border e-commerce platform to carry out cross-border e-shopping. Through theoretical analysis and questionnaire survey, this paper studies the influencing factors of cross-border e-commerce consumer. The results show that, firstly, the main groups of cross-border e-commerce shopping are

still young consumers, and some older consumers need to be further popularized and broadened. Secondly, this paper further investigates the factors affecting consumers' choice of cross-border e-commerce platform for shopping by logit regression. From the characteristics of cross-border e-commerce platform, the price of the platform, to a large extent, will affect consumers' shopping willingness; from the perspective of consumers' perceived value, the usefulness of cross-border shopping has a significant impact on consumer decision-making; from the perspective of demographic characteristics of consumers, young people are more willing to shop through cross-border e-commerce platforms, and the more educated consumers are more willing to use this method.

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