

The Study on the Purchase Willingness of Cross-Border E-Commerce Retail Products and Its Influential Factors

Zhang Menghao^{1,a}, Song Jinlei², Zhuo Lihua³

¹Department of Management Engineering, Zhengzhou University, Zhengzhou 450001, China

²Department of Management Engineering, Zhengzhou University, Zhengzhou 450001, China

³Department of Information Management, Henan Light Industry Vocational College, Zhengzhou 450001, China

^a zhangmhyy@163.com

Keywords: Cross-border retail products; Cross-border e-commerce platform; Influential factors

Abstract: With the improvement of living standards, cross-border e-commerce platforms, such as Netease koala purchase, Lynx International, foreign wharf and Jingdong global purchase, are developing very rapidly. However, at the same time, cross-border e-commerce platforms face the challenges from private shopping representatives and have many problems in perceived usefulness, ease of use, safety issues and logistics. In order to help these platform enterprises bring better services for consumers and improve their competitiveness, this paper uses questionnaire method to make a deep study on the purchase willingness and its influential factors of cross-border retail products. As a result, this paper finds that consumers on average think the cross-border e-commerce platform to be user-friendly but not have many strengths on the cost and quality compared with purchasing agent or directly buying abroad. And consumers pay more and more attention to brand and quality rather than price when purchasing cross-border retail products. Meanwhile, logistics problems are the consumer's most worried problems in the process of purchasing. In addition, guaranteed quality, transaction security and speed are the top three reasons why consumers choose to purchase on cross-border e-commerce platforms. Besides, this paper also finds that the age differences, gender differences, educational background differences and monthly expenditure differences exist in cross-border retail products purchase. In addition, educational background and cross-border retail products purchase show an inverse U-shaped curve, and monthly expenditure and perceived usefulness, monthly expenditure and perceived ease of use show inverse U-shaped curves respectively. The possible reasons are discussed in the paper. Finally, some targeted suggestions are given to the cross-border e-commerce platforms.

1. INTRODUCTION

In recent years, the rapid development of internet has brought significant expansion to e-commerce especially cross-border e-commerce. According to a survey report, there were 731 million internet users in China by the end of 2016(China Internet Information Center, 2016). Also, to the end of 2015, the number of online shopping users has reached 431 million; while the number of China's overseas online shopping users was 40.91million in 2015 with an increase of 23.56 million compared with that in 2014. Although the number of cross-border shopping is still limited, it has already showed great potentials for cross-border retail purchase due to the fact that the growth rate was 135.8% in 2015(China Internet Information Center, 2015). Meanwhile, Chinese government has also paid huge attention to the cross-border e-commerce and made many beneficial policies for the import cross-border online shopping, which offers great opportunities for cross-border enterprises to expand their business. However, only those cross-border enterprises which can fully understand customers' cross-border retail product purchase willingness and its influential factors will form their competitiveness and win the market. In this sense, it is necessary to make in-depth research on the purchase willingness of cross-border retail products and its influential factors. Therefore, based on the particularity

of imported retail cross-border online shopping and the complexity of the driving factors, this paper uses questionnaire method to make empirical study on the purchase willingness of cross-border retail products and its influential factors aiming to enrich the cross-border e-commerce theoretical basis, guide the cross-border e-commerce practice and help the government to make guide policy for import retail cross-border e-commerce from consumer side.

2. LITERATURE REVIEW

The purchase willingness has been studied quite often by the scholars around the world. Yet, there is still no unified theory about its definition. Han and Tian believe that purchase willingness refers to the possibility of consumers buying the product (Han and Tian, 2005). Others, such as Liu and Fu suggest that the subjective tendency of consumers to buy a certain type production online is the definition of purchase willingness of online shopping (Liu and Fu, 2017). Based on the viewpoints of these scholars, this paper summarizes the purchase willingness as subjective probability of choosing the purchase behaviour in a given situation. As an important predictor of consumer behaviour, purchase willingness is studied within cross-border retail products and discussed with its influential factors in this paper. The literature review of some significant influential factors is made as

following.

2.1 Perceived usefulness

Perceived usefulness in the theory of technical acceptance model (TAM) refers to the extent to which the use of the system improves its performance (Davis, 1989). In this sense, perceived usefulness of online shopping refers to the recognition of the degree of improvement of the value and efficiency of consumers during the online shopping. In the literature, many researches support its importance to willingness and behaviour (Dmitrovic and Vida, 2007; Wagner et al, 2016; Makkonen, 2016). Based on TAM model, Bo concludes that perceived usefulness of online shopping has a significant positive influence on the purchase willingness (Bo, 2012). As pointed out by He and Li, when customers buy products online, perceived usefulness becomes the first important influential factor of purchase willingness (He and Li, 2006). Accordingly, when it comes to cross-border retail products purchase, if consumers get more benefits from shopping overseas through e-commerce platform compared with some other traditional methods, the purchase willingness will be strengthened leading consumers to do more shopping on the cross-border e-commerce platform.

2.2 Perceived ease of use

The concept of perceived ease of use (PEOU) also comes from the TAM theory (Davis, 1989). As suggested by the TAM theory, PEOU refers to the degree to which a person can master a working system. Thus, when it comes to shopping online, PEOU refers to the degree of easiness of the whole shopping process. As a result, many scholars confirm its relationship with purchase willingness. According to Chen, the convenience of the online shopping has a huge impact on the purchase attitude and purchase willingness (Chen, 2003). Meanwhile, based on the investigation, Szymanski and Hise suggest that website convenience, planning, and web design have significant influence on the consumer satisfaction (Szymanski and Hise, 2000). Accordingly, the perceived ease of use can be measured by the response speed of the e-commerce platform web page, the easiness of navigation and the difficulty of operation. In this sense, with the increase of perceived ease of use, consumer will have more purchase willingness (Lau, Sin and Chan, 2005).

2.3 Perceived risk

Perceived risk of online shopping mainly refers to the potential loss risk which consumers believe they may face when purchasing products or services online. He and Li explore the driving forces of consumer online shopping and find that perceived risk is the most direct factor for consumers leading to abandoning the use of online shopping (He and Li, 2006). In the study, perceived risk mainly comes from consumers' concerns about transaction security and privacy disclosure. Jin et al. analyze and suggests that there are eight types of perceived risk affecting consumers' purchase willingness (Jin et al., 2006). As Bo has pointed out, the perceived risk of security and the perceived risk of commodity quality are the main influential factors for consumers

purchasing online (Bo, 2008). Based on the literature review, this paper considers perceived risk into three types: the perceived risk from commodity; the perceived risk from internet and the perceived risk from seller. The perceived risk from commodity refers to the risk that commodity quality different from advertising. The perceived risk from internet is related to the internet risk, such as password stolen or security of payment. The perceived risk from seller is regarded as the seller's fraud practice.

2.4 Product factor

Literature review shows that the characteristics of product can also be one significant driving factor for purchase willingness. According to the report, 80% of paper publications and audio-visual products are purchased online recently (Leal et al, 2010). For those products with a high degree of standardization (such as newspaper), consumers can still discriminate between good and bad products by simply reading product introduction on the website. However, for products with less degree of standardization (such as perfume), it is difficult for consumers to identify the smell, texture and size and make final decisions. In this sense, it is believed that the higher the degree of standardization of products, the lower the perceived risk of cross-border online shopping. Besides, brand awareness is a key factor for consumers to predict the product quality when purchasing online (Dmitrovic and Vida, 2007). As a result, the higher the brand awareness of the product is, the lower the perceived risk will be in cross-border online purchases. Also, cross-border online shoppers are more sensitive to price (Mao, 2016). Thus, low price products will lower consumers' perception of online shopping risk.

2.5 Relevant experience

Regarded as the accumulation of the past knowledge, experience can have an impact on people's purchase willingness. Hoffman studies online shopping consumer in American and finds that early online shoppers are those who use computers and networks frequently (Hoffman, 1996). This opinion has also been supported by Guo and Wang. In their study, the time spent online and history experience of online shopping are key predictors of online shopping behaviour (Guo and Wang, 1999). Accordingly, consumer's relevant experience of cross-border shopping can affect purchase willingness. Featherman and Paul argue that psychological risk decreases with the increase of shopping experience on the Internet, while the convenience risk is directly proportional to the online shopping experience (Featherman and Paul, 2003). In this sense, consumers with more cross-border online shopping experiences can perceive the usefulness and ease more easily and feel less risk when making cross-border online shopping.

3. RESEARCH DESIGN

3.1 Factors selection and measurement

Table 1 measurement of variables

Experience of using internet	p1.Time used on the internet p2.Hours surfing on the internet per week p3.I feel having experience in using the internet	(Corbitt, 2003)
Online shopping experience	P4.Number of times shopping on the internet p5.Total cost of my online shopping p6.My online shopping expenses' proportion of the total shopping expenses	(Corbitt, 2003)
Perceived usefulness of online shopping	p7.I believe e-commerce shopping sites can improve my efficiency in searching for cross-border retail products p8.I think that compared with private shopping representatives, e-commerce shopping sites can make purchasing cheaper. p9.I agree e-commerce shopping sites are very useful for searching cross border shopping information	(Wagner et al, 2016) (Lei, 2014)
Perceived ease of use of online shopping	p10.I think it is easy to find and get the information I want in the e-commerce shopping sites p11.I think the cross-border shopping processes are clear in the e-commerce shopping sites p12.I think the operations of the processes such as inquiry, ordering and payment are easy.	(Lou Sin and Chan, 2005)
Attitude	p13Doing cross-border shopping on the e-commerce shopping sites is a good choice p14Online shopping is exciting and enjoyable p15 I like purchasing cross-border products online.	(Wagner et al , 2016) (Lei, 2014)
Willingness	P16 When purchasing wanted products, I will give priority to online shopping. P17When purchasing cross-border retail products, I will use online shopping sites P18Online shopping sites is my most important method for purchasing cross-border products	(Lei, 2014) (Corbitt, 2003)
Product factor	P19When buying cross-border retail products online, I will choose to purchase products with a high degree of standardization. p20When shopping online, I will choose to purchase products with low prices p21When shopping online, I will choose to purchase products with high brand awareness.	(Chinese Internet Information, 2015) (Mao, 2016)
Perceived risks of online shopping	P22 Feel worried about receiving false propaganda P23 Feel worried about the product quality P24Feel worried about the risks that the product after sale service can't be guaranteed. P25 Feel worried about the risk of privacy leakage.	(Lei, 2014) (Lou Sin and Chan, 2005)

Based on the literature review and relevant theories, this paper extends the Technology Acceptance model and adds perceived shopping risk, product factor and consumer's relevant experience as influential factors on the willingness of cross-border online shopping. In this way, it hypothesizes that the product factor affect cross-border online shopping purchase willingness through perceived risk, and consumers' relevant experience have an influence on the willingness through perceived usefulness, perceived easiness and perceived risk. According to the previous research literature,

standardization, brand and price are chosen to measure the product factor. For relevant experience, the experience of internet use and shopping experience online are used as measurement indicators. All factors and their measurement are selected on the basis of previous researches and similar questionnaires. Consequently, selected factors and measurements are listed in table 1.

3.2 Questionnaire design and sample selection

Based on the literature review and similar questionnaires, the paper's questionnaire is designed. After considering the experts' opinions, the formal questionnaire on the Chinese cross-border retail product purchase intention and its influencing factors is formed. In this questionnaire, there are five parts. The first part is to investigate the investigators' situation of internet usage and online shopping. The second part is related to the measurement of Chinese cross-border retail product purchase intention and its influencing factors using Likert 5 scale method. Then, the third one is about the study of the perceived risk of online cross-border shopping and the forth one is about the survey of the basic situation of the purchase of cross-border retail products. In addition, the fifth part is the basic information investigation.

As to sample selection, this paper uses paper questionnaires combined with network questionnaires, planning to issue 200 copies and 300 copies respectively. In total, 521 questionnaires are received at last. After deleting the invalid questionnaires, there are 469 valid questionnaires. In order to make the study more targeted and meaningful, this paper has eliminated the questionnaires that respondents have never purchased cross-border retail products on the e-commerce platform, resulting in 277 valid questionnaires obtained finally.

4. DATA ANALYSIS

4.1 Reliability and validity

In order to ensure the scientificity of the research, this paper tests the reliability and validity of the collected sample data.

4.1.1 Reliability analysis

Reliability analysis aims to test whether there is consistency within the questionnaire. Accordingly, this paper uses Cronbach's Alpha method to test the sample. As a result, all variables' α values are greater than 0.7. It indicates that the sample has reliable consistency and can be used for following analysis.

4.1.2 Validity Analysis

In the validity test, this paper uses principal component analysis method and adopts the variance maximization orthogonal rotation as factor rotation method to extract the factor to carry on the exploratory factor analysis. By analyzing the questionnaire data, KMO is 0.826(greater than 0.6), sig is smaller than 0.05, and the total variance is 70.956%. Also, as shown in table 2, the factor loading of all the items on the

respective common factor is great than 0.5 and the factor loading on other common factors is less than 0.5.

Consequently, all the above indicate that the questionnaire has a good structure validity.

Table 2 Factor loading matrix

Question item	component							
	1	2	3	4	5	6	7	8
P1	-.109	.001	-.063	.160	.776	.162	.086	.098
P2	.153	.097	-.053	.173	.775	-.133	.023	-.123
P3	.169	.316	-.136	.024	.687	.150	-.005	-.101
P4	.128	.004	-.124	.794	.150	.221	.008	.119
P5	.113	.120	-.054	.845	.199	.106	.059	-.064
P6	.422	.079	-.083	.605	.027	-.052	.095	-.099
P7	.024	.821	-.070	-.021	.140	.166	-.096	.166
P8	.061	.668	-.098	.152	-.001	-.032	.244	.040
P9	.059	.768	.035	-.002	.267	.124	-.060	.065
P10	-.042	.477	-.011	.062	-.093	.152	.323	.661
P11	.153	.467	.115	.114	.120	.333	.432	.815
P12	.174	.262	.049	.225	.209	.632	.227	.628
P13	-.045	-.109	.760	-.162	.074	.229	-.130	.020
P14	-.077	-.024	.875	-.012	-.105	-.036	-.106	.083
P15	-.098	-.020	.866	.018	-.129	-.074	-.083	.107
P16	.143	.030	.291	-.141	-.080	.708	.047	-.203
P17	.334	.419	-.109	.173	.005	.641	.017	-.040
P18	.402	.241	-.227	.110	.066	.562	.077	.120
P19	.695	.019	-.136	.196	.074	.418	.139	.180
P20	.879	.082	-.033	.099	.048	-.055	-.004	.009
P21	.847	-.013	.016	.085	.065	.039	.249	.056
P22	.086	.035	.050	.155	.030	.211	.855	.062
P23	.142	.024	-.143	.135	-.003	.122	.678	.315
P24	.227	.109	.099	-.016	-.102	-.087	.794	.216
P25	.168	.118	-.148	-.015	.075	.007	.706	-.003

4.2 Descriptive statistical analysis

4.2.1 Basic features of the sample

Table 3 Basic feature distribution of sample

	Variable	Frequency	Percentage
Gender	Female	153	55.2%
	Male	124	44.8%
Age	Under 18 years old	3	1.1%
	18 to 24 years old	176	63.5%
	24 to 30 years old	74	26.7%
	30 to 40 years old	15	5.4%
	40 years old and above	9	3.2%
Level of education	High school and below	20	7.2%
	Junior college	41	14.8%
	Undergraduate	204	73.6%
	Master and doctor	12	4.3%
Monthly expenses	100 yuan and below	3	1.1%
	100 yuan to 500 yuan	10	3.6%
	500 yuan to 1000 yuan	75	27.1%
	1000 yuan to 2500 yuan	123	44.4%
	2500 yuan and above	66	23.8%

In this study, questionnaires were distributed through both the questionnaire survey website and copy paper. Since people who have more than one time cross-border online shopping experience are considered as the

targeted informants, only 277 valid questionnaires are collected. The basic feature distribution of the sample has been shown in table 3. As can be seen from table 3, there are 124 men and 153 women in this questionnaire sample. It means that gender ratio is basically flat. In this sense, it can be seen in some degree that sample data is reliable. The majority of the respondents are between 18 and 30 years old, with the proportion reaching more than 90%. It accords with the feature of online shopping that it is mainly based on the young people. The survey respondents mainly have undergraduate education, with the proportion of 74%. All above indicate that the sample respondents are young people with high education who consequently have rich experience in internet use and high acceptance of cross-border retail products purchase. Hence, according to the distribution results in table 3, the features of the sample are reasonable and in line with the requirements.

4.2.2 Analysis of means

(1) Perceived usefulness, perceived ease of use and perceived risk of online shopping

As shown in table 4, the mean value of perceived ease of use of online shopping is high. Also, combined with table 5, it finds that agreements on the question “the operations of the processes such as inquiry, ordering and payment are easy” reach 85.2%. The reason may be that consumers are very familiar with network shopping processes and cross-border e-commerce platforms are usually similar to the domestic e-commerce platforms. In this way, consumers find the cross-border e-commerce purchases easily. As to the question “Compared with

private shopping representatives, e-commerce shopping sites can make purchasing cheaper”, only 57.8% consumers agree while 23.1% consumers are uncertain. This may be caused by the reason that many consumers have not yet tried all cross-border shopping channels resulting in difficulty to distinguish the advantages and disadvantages.

(2) Product Factors

Based on the table 6, among all the product factors,

price factor has a lower mean value while brand factor has a higher mean value. As shown in table 7, only 34.7% consumers agree to purchase products for the lower price and 73.6% are willing to buy products for nice brand. This may be related to the fact that along with the improvement of living standards, consumers pay more and more attention to brand and quality rather than price. Also, low price products online may make consumer think of inferior quality.

Table 4 Descriptive statistical analysis

variable	item	N	minimum	maximum	Mean value	Standard deviation
Perceived usefulness	P7	277	1	5	3.63	0.873
	P8	277	2	5	3.47	0.899
	P9	277	2	5	3.77	0.749
Perceived ease of use	P10	277	1	5	3.75	0.848
	P11	277	1	5	3.91	0.742
	P12	277	1	5	4.12	0.707
Perceived risk	P22	277	1	5	3.73	0.849
	P23	277	1	5	3.72	0.807
	P24	277	1	5	3.68	0.831
	P25	277	1	5	3.74	0.823

Table 5 The scoring frequency table

	item	Strongly disagree	Somewhat disagree	Not sure	Somewhat agree	Strongly agree	Total
P7	Frequency	1	40	49	157	30	277
	Percentage	0.4%	14.4%	17.7%	56.7%	10.8%	100%
P8	Frequency	0	54	64	136	24	277
	Percentage	0%	19.1%	23.1%	49.1%	8.7%	100%
P9	Frequency	0	21	53	171	32	277
	Percentage	0%	7.6%	19.1%	61.7%	11.6%	100%
P10	Frequency	1	34	35	171	36	277
	Percentage	0.4%	12.3%	12.6%	61.7%	13.0%	100%
P11	Frequency	2	12	41	175	47	277
	Percentage	0.7%	4.3%	14.8%	63.2%	17.0%	100%
P12	Frequency	1	4	36	155	81	277
	Percentage	0.4%	1.4%	13.0%	56.0%	29.2%	100%
P22	Frequency	3	23	61	150	40	277
	Percentage	1.1%	8.3%	22.0%	54.2%	14.4%	100%
P23	Frequency	2	16	79	140	40	277
	Percentage	0.7%	5.8%	28.5%	50.5%	14.4%	100%
P24	Frequency	2	21	80	136	38	277
	Percentage	0.7%	7.6%	28.9%	49.1%	13.7%	100%
P25	Frequency	1	13	93	119	51	277
	Percentage	0.4%	4.7%	33.6%	43.0%	18.4%	100%

Table 6 Descriptive statistical analysis of product factors

variable	item	N	Mean value	Standard deviation
Product factors	P19	277	3.54	0.915
	P20	277	3.09	0.909
	P21	277	3.79	0.764

Table 7 The scoring frequency table of product factors

	item	Strongly disagree	Somewhat disagree	Not sure	Somewhat agree	Strongly agree	Total
P19	Frequency	7	26	89	121	34	277
	Percentage	2.5%	9.4%	32.1%	43.7%	12.1%	100%
P20	Frequency	9	65	107	85	11	277
	Percentage	3.2%	23.5%	38.6%	30.7%	4.0%	100%
P21	Frequency	2	16	55	168	36	277
	Percentage	0.7%	5.8%	19.9	60.6%	13.0%	100%

(3) Descriptive statistics of other variables

As shown in table 8, as to question why choose to

buy foreign retail products rather than domestic retail products, 48.4% respondents agree to purchase for the

reason that the quality of products can be guaranteed, while the proportion of respondents to purchase for low price is 24.4%. In this sense, price is not that important for cross-border consumers. The reason for it may be that more and more cross-border consumers purchase products for brand and quality, and low price may give consumers a feeling of poor product quality. 43% respondents want to purchase cross-border online products due to more abundant category. It is reasonable to assume that with the improvement of people's living standard, domestic products cannot meet the needs of Chinese consumers. Hence, increasingly numbers of consumers are willing to buy the international fashion brand products which are not sold in Chinese market to show personality. From analysis of three reasons above, it is right to suggest e-commerce platform to enrich the cross-border product categories and ensure the quality of its cross-border products. In this way, it can improve the consumer's shopping experience and increase its sales.

As shown in table 8, logistics is on the top list when it comes to consumer's most worried problem in the process of purchasing. By interviewing some

respondents, consumers are worried about the time of cross-border online shopping logistics. Usually they get their products more than a week, and some are saying they wait for several months. It takes them too much time to wait by comparing to the domestic logistics. Also, due to the long transportation time, the problems of difficult to return the products and loss or damage of parcels are serious. This is supported by the respondents for the proportions of these two problems are on the second and third place respectively. For Chinese domestic consumers, returning the cross-border online shopping products is relatively time and money consuming. It is mainly because that returning products involves cross-border customs clearance, cross-border logistics and other aspects. Consequently, the products do not have an efficient channel to return to the origin and consumers need to pay for the high logistics cost. In this sense, high return fees have forced many consumers to abandon their right for after-sales service. Therefore, the cross-border e-commerce platforms should optimize their return process and reduce the consumers' perceived risk of shopping.

Table 8 Descriptive statistics of other variables

	Variables	Frequency	Percentage
Why choose cross-border retail products instead of domestic products?	Cheap price	62	22.4%
	More variety	119	43.0%
	Only sold abroad	54	19.5%
	Too many fakes in China	80	28.9%
	Guaranteed quality	134	48.4%
What is your most worried problem in the process of purchasing?	Long time of logistics	142	51.3%
	Cannot return products	125	45.1%
	Cannot check products	99	35.7%
	Products expired	62	22.4%
	Products broken or missing	122	44.0%
Why choose cross-border e-commerce platform instead of other channels?	Guaranteed quality	128	46.2%
	Higher speed	116	41.9%
	Transaction security	124	44.8%
	Nicer after-sale service	99	35.7%
	Lower price	77	27.8%
What do you buy in cross-border online shopping?	Jewelry, watches and luxurious ornaments	52	18.8%
	Digital products	99	35.7%
	Books, audio-visual products	60	21.7%
	Clothing (bags, clothes)	98	35.4%
	Household supplies	32	11.6%
	Health care products	52	18.8%
	Milk powder, baby products	56	20.2%
	Cosmetics	129	46.6%

As shown in table 8, guaranteed quality, transaction security and speed are the top three reasons why consumers choose to purchase cross-border products through e-commerce platform rather than other channels. The proportion of guaranteed quality, transaction security and speed are 46.2%, 44.8% and 41.9% respectively. The following interviews with specialists indicate that cross-border e-commerce platform can directly connect with overseas brand dealers and purchase in the origin. In this way, it can control product quality much better. Also, large cross-border e-commerce platforms usually have much better safety measures and abundant financial resources to better safeguard consumers' rights and interests. In addition, large cross-border e-commerce platforms have made

strategic partnerships with cross-border logistics companies to enable the purchased products delivered safely, conveniently and quickly to consumers. Above are the strengths of e-commerce platform to attract consumers to purchase cross-border retail products online. Therefore, these cross-border e-commerce platforms need to keep maintaining and developing their advantages in the future competition.

As shown in table 8 of results of questionnaire, consumers' interests mainly focus on cosmetics, digital products, cloths, milk powder and baby products, when it comes to cross-border retail products. With the improvement of living standards, consumers of higher safety and quality requirements, more trust in foreign products. Besides, international brand prices in China are

generally higher. Coupled with high tariffs, these international brands, especially cosmetics and clothing, have much higher price than the overseas purchase price. In this sense, it is profitable to purchase cross-border retail products online, not to mention some international brands are not sold in China. Meanwhile, the level of consumer speeding in China has been significantly improved resulting in the fact that increasingly number of Chinese consumers begin to pursue a richer variety of products. Accordingly, various cross-border products are naturally snapped up.

4.3 Difference analysis

In order to study the influential effects of gender, age, education and monthly expenditure, this paper adopts one-way anova and comparison between groups methods

Table 9 Results of one-way anova of age

		Sum of squares	df	Mean square	F	significance
Shopping experience	Among groups	14.959	4	3.740	8.929	0.000
	Intra-group	113.924	272	0.419		
	Sum total	128.882	276			
Attitude	Among groups	13.208	4	3.302	6.854	0.000
	Intra-group	131.028	272	0.482		
	Sum total	144.236	276			
Intention	Among groups	15.943	4	3.986	5.562	0.000
	Intra-group	194.910	272	0.717		
	Sum total	210.853	276			

Table 10 Comparison of means between age groups

Age	Shopping experience	Intention	Attitude
18 and under	3.1111	2.1111	1.3333
18-24 years old	4.4811	3.8011	3.5658
24-30years old	4.2444	3.8333	3.5800
30-40 years old	4.1486	3.6333	3.6944
40 and above	3.6667	3.4444	3.4074
Sum total	4.3381	3.7168	3.5354

4.3.2 Gender

As shown in table 11, gender has been tested to have significant influence on use experience, perceived usefulness and perceived ease of use respectively. Coupled with the means comparison in table 12, the analysis shows that male has more internet using experience than female on average and finds online cross-border shopping more useful and easier to use than female. This result seems to be against to the views of some scholars that female uses more online shopping than male. However, when it comes to use experience,

in the result analysis.

4.3.1 Age

As shown in table 9, age has been tested to have significant influence on shopping experience, attitude and intention respectively. Combined with the means comparison in table 10, it can be seen that the age structure of the group of people with rich shopping experience is between 18 and 40 years old. This structure accords with the age distribution characteristics of online shoppers in China. Also, people in this age structure show strong intention of purchasing cross-border retail products. Suggested by Lei, this may be caused by the reason that young and middle age people tend to have some economic bases and be receptive to new things (Lei, 2014).

perceived usefulness and perceived ease of use, this result may be right. Since female also likes to buy products on window shopping with huge money spent and tends to search more than buying more online, it is no wonder to find that male has better online use experience. In addition, as male usually has better internet skill than female and likes to buy things in a hurry and easy way, it is easier for male to find online cross-border shopping useful and nice to use. Anyway, the result suggests that gender differences exist in cross-border retail products purchase.

Table 11 Results of one-way anova of gender

		Sum of squares	df	Mean square	F	significance
Use experience of internet	Among groups	3.084	1	3.084	6.721	0.01
	Intra-group	126.184	275	0.459		
	Sum total	129.268	276			
Perceived usefulness	Among groups	5.230	1	5.230	12.022	0.001
	Intra-group	119.640	275	0.435		
	Sum total	124.870	276			
Perceived ease of use	Among groups	1.782	1	1.782	4.768	0.030
	Intra-group	102.774	275	0.374		
	Sum total	104.556	276			

Table 12 Comparison of means between gender groups

Gender	Use experience of internet	Perceived usefulness	Perceived ease of use
Male	4.0697	3.7495	4.0000
Female	3.8575	3.4731	3.8387
Sum total	3.9747	3.6258	3.9278

4.3.3 Educational background

As shown in table 13, educational background has significant influence on use experience, shopping experience and purchase attitude respectively. Also, found in table 14, undergraduate and junior college students have more experience in internet use and online shopping and more positive attitude towards cross-border online shopping. Among different educational backgrounds, undergraduate students have the highest mean values. Interestingly, at first, with the higher educational background, people tend to have better use experience, better shopping experience and better

purchase attitude towards cross-border products. However, with the educational background higher than undergraduate, the things are totally different. People with master degree and doctor degree seems to have poor internet use experience and have less time and less willingness on online shopping. One reason may be related to the hard work and spiritual pursuit of people with master or doctor degree. The educational background differences in cross-border retail products purchase and inverse U-shaped curve are really worth deep studying.

Table 13 Results of one-way anova of educational background

		Sum of squares	df	Mean square	F	significance
Use experience of internet	Among groups	9.729	3	3.243	7.406	0.000
	Intra-group	119.539	273	0.438		
	Sum total	129.268	276			
Shopping experience	Among groups	8.235	3	2.745	6.211	0.000
	Intra-group	120	273	0.442		
	Sum total	128.882	276			
Attitude	Among groups	7.154	3	2.385	4.749	0.003
	Intra-group	137.082	273	0.502		
	Sum total	144.236	276			

Table 14 Comparison of means between educational background groups

Educational background	Use experience	Shopping experience	Attitude
High school and below	3.3500	3.8500	3.6667
Junior college	4.0976	4.4472	3.7967
Undergraduate	4.0261	4.3905	3.7810
Master and above	3.7222	3.8889	3.0000
Sum total	3.9747	4.3381	3.7413

4.3.4 Monthly expenditure

As shown in table 15, monthly expenditure on cross-border products purchasing has significant impact on perceived usefulness, perceived ease of use and perceived risk respectively. Coupled with table 16, the results show that there is an inverse U-shaped curve between monthly expenditure and perceived usefulness. This may be caused by the reason that when monthly expenditure is low, consumer tends to pay more attention to cost or delivery time and consequently chooses to buy domestic products rather than cross-border products on the e-commerce platform. In this sense, consumer may find e-commerce platform is less useful when buying cross-border retail products. Also, there is an inverse U-shaped curve between monthly expenditure and perceived ease of use. When consumers spend more money, they buy more cross-border products. In this

sense, they can use the cross-border e-commerce platform to search and buy the products they want easily. And the more they use the platform, the more familiar they will be with the platform. Hence, their perceived ease of use will be higher. However, those consumers who spend too much money monthly, they are more likely to buy some very expensive cross-border products. In this case, they may choose more secure channels, such as shoppe, or go abroad to purchase. Meanwhile, as risk is often related to the cost, the perceived risk grows when the monthly expenditure increases. The consumers whose monthly expenditures are really low accord with this explanation. However, due to the reason that consumers who buy less cross border products use less platform leading to distrust, the consumers who spend more than 500 yuan monthly have lower perceived risk than those who spend less than 500 yuan monthly.

Table 15 Results of one-way anova of monthly expenditure

		Sum of squares	df	Mean square	F	significance
Perceived usefulness	Among groups	4.687	4	1.172	2.652	0.034
	Intra-group	120.182	272	0.442		
	Sum total	124.870	276			
Perceived ease of use	Among groups	5.265	4	1.316	3.606	0.007
	Intra-group	99.291	272	0.365		
	Sum total	104.556	276			
Perceived risk	Among groups	10.077	4	2.519	5.886	0.000
	Intra-group	116.427	272	0.428		
	Sum total	126.504	276			

Table 16 Comparison of means between educational background groups

Monthly expenditure	Perceived usefulness	Perceived ease of use	Perceived risk
Less than 100 yuan	2.8889	3.5556	4.1667
100-500 yuan	3.2333	3.6667	4.6250
500-1000 yuan	3.5822	3.7467	3.6467
1000-2500 yuan	3.7263	4.0379	3.6443
2500 yuan and above	3.5808	3.9848	3.7727
Sum Total	3.6258	3.9278	3.7166

5. CONCLUSION AND DISCUSSION

By studying the influential factors on the willingness of cross-border retail products, this paper finds that consumers on average think the cross-border e-commerce platform to be user-friendly but not have many strengths on the cost and quality compared with purchasing agent or directly buying abroad. As to product factors, brand has a higher mean value than price. It means that consumers pay more and more attention to brand and quality rather than price when purchasing cross-border retail products. Also, logistics problems such as long transportation time, difficult to return the products and loss or damage of parcels are the consumer's most worried problems in the process of purchasing. As returning products involves cross-border customs clearance, cross-border logistics and other aspects, returning the cross-border online shopping products is relatively time and money consuming for Chinese domestic consumers. In this way, high return fees have forced many consumers to abandon their right for after-sales service. In addition, guaranteed quality, transaction security and speed are the top three reasons why consumers choose to purchase cross-border products through e-commerce platform rather than other channels. Meanwhile, on the cross-border e-commerce platform, consumers' interests mainly focus on the products such as cosmetics, digital products, cloths, milk powder and baby products.

Besides, this paper finds that age has significant influence on shopping experience, attitude and intention respectively. According to the questionnaire analysis, consumers aged between 18 to 40 years old have the richest shopping experience and the highest willingness to purchase cross-border retail products. Gender has significant influence on use experience, perceived usefulness and perceived ease of use respectively. Male has better online use experience on average due to the reason that female likes to spend a large number of money on window shopping, tends to search more than buying more online, and has other ways to purchase cross-border products. In addition, as male usually has better internet skill than female and likes to buy things in a hurry and easy way, it is easier for male to find online cross-border shopping useful and nice to use. Educational background has significant influence on use experience, shopping experience and purchase attitude respectively. The educational background and cross-border retail products purchase show an inverse U-shaped curve in the study. As a result, consumers with undergraduate degree tend to have the most intense purchase attitude. One reason may be related to the hard work and spiritual pursuit of people with high

educational background such as master or doctor degree. Monthly expenditure has significant impact on perceived usefulness, perceived ease of use and perceived risk respectively. There is an inverse U-shaped curve between monthly expenditure and perceived usefulness. Also, monthly expenditure and perceived ease of use show an inverse U-shaped curve growth. The possible reasons are discussed in the paper above.

Based on the analysis above, suggestions for Cross-border e-commerce platforms are listed as following:

(1) Since brand has a higher mean value than price, pay more attention to brand and quality of the products sold on platforms.

(2) From analysis of three reasons why buy cross-border products, it is right to suggest e-commerce platform to enrich the cross-border product categories and ensure the quality of its cross-border products.

(3) From analysis of consumer's most worried problem, it is suggested that cross-border e-commerce platforms should optimize their return process and reduce the consumers' perceived risk of shopping.

(4) From analysis of three reasons why chose platform, this paper suggests that cross-border e-commerce platforms need to keep maintaining and developing their advantages in the future competition

(5) Due to the interesting discovery of age, gender, educational background and monthly expenditure, the e-commerce platforms need to segment consumer groups and do accurate marketing.

REFERENCES

- [1] Bo, G., 2012. Analysis of influential factors of consumers' online shopping based on the TAM method, *Statistics and decision*. (23), pp. 105-107.
- [2] Bo, G., 2008. The influential effects of perceived risk of safety and quality of goods on online shopping behaviour, *Science and technology information: science, teaching and research*. (8), pp.137-137.
- [3] China Internet Information Center., 2016. China's Internet development statistics[EB/OL].
- [4] China Internet Information Center., 2015. Chinese online shopping market research report[EB/OL].
- [5] Chen,H., 2003. An empirical study on the determinants of online shopping intention, *Quantitative & technical economics*.20(11), pp.150-153.
- [6] Corbitt et al., 2003.Trust and ecommerce: a study of consumer perception, *Electronic Commerce Research and Application*. (19), pp.203-215.
- [7] Dmitrovic, T., Vida, I., 2007. An examination of cross-border shopping behaviour in South-East Europe, *European Journal of Marketing*. 41(3/4), pp.382-395.
- [8] Davis, F D., Bagozzi, R P., Warshaw, P R., 1989.User Acceptance of Computer Technology: A Comparison of Two

- Theoretical Models, *Management Science*. 35(8), pp.982-1003.
- [9] Guo, C., Wang, Y J., 2009. A study of cross-border outshopping determinants: mediating effect of outshopping enjoyment, *International Journal of Consumer Studies*. 33(6), pp. 644-651
- [10] Han, R., Tian, Z L., 2005. Research on the impact of promotional types on consumer perception and behavioral intentions, *Management science*. 18(2), pp.85-91
- [11] He, Q G., Lin, M H., 2006. Empirical research on the influence factors of online shopping, *Economics and management*. (10), pp.44-49.
- [12] Hoffman, P., Novak, P., 1996. Marketing in Hypermedia Computer Mediated Environments: Conceptual Foundations, *Journal of Marketing*. 60 (7), pp. 50-68.
- [13] Jin, M., Zhou Y., Lu W., 2006. The study on consumer perceived risk in the internet shopping environment, *Journal of Shanghai Jiaotong University*, 40(4), pp.607-610.
- [14] Liu, D., Fu, S., 2017. The influential factors of online consumer purchase intention-based on brand perspective, *E-commerce*. (4), pp.18-20
- [15] Lau, H., Sin, L Y., Chan, K K., 2005. Chinese cross-border shopping: An empirical study, *Journal of Hospitality & Tourism Research*, 29(1), pp. 110-133.
- [16] Leal, A., Lopez-Laborda J., Rodrigo, F., 2010. Cross-border shopping: a survey, *International Advances in Economic Research*. 16 (2), pp. 135-148.
- [17] Lei, C., 2014. The study of the influence of the market factors on the cross border purchase strategy based on the comparative analysis, *Contemporary Economics*. 09, pp. 134-136.
- [18] Makkonen, T., 2016. Cross-border shopping and tourism destination marketing: the case of Southern Jutland, Denmark, *Scandinavian Journal of Hospitality and Tourism*. 16(sup1), pp.36-50.
- [19] Mao, Y T., 2016. A brief analysis on the influential factors of the purchase willingness on cross border e-commerce platforms, *Modern marketing day magazine*. (5), pp.6-6.
- [20] Featherman, M S., Pavlou P A., 2003. Predicting e-services adoption: a perceived risk facets perspective, Academic Press, Inc.
- [21] Szymanski, D M., Hise, R T., 2000. E-satisfaction: an initial examination, *Journal of Retailing*. 76(3), pp.309-322.
- [22] Wagner, G., Schramm-Klein, H., Schu, M., 2016. Determinants and Moderators of Consumers' Cross-Border Online Shopping Intentions, *Marketing ZFP*. 38(4), pp. 214-227.