Analysis on the influencing factors of cross-border E-commerce website users' purchase intention

Zhanling Liu¹, Zhen Zhong², Brian Sheng-Xian Teo³*
¹Graduate School of Management and Science University, Shah Alam, Selangor, Malaysia
²Henan University of Technology, Zhengzhou, China.
³International Academic Affairs Department, Management and Science University, Shah Alam, Selangor, Malaysia

ABSTRACT

This study takes TMALL International platform as an example to analyze the relevant factors affecting consumers' purchase intention in cross-border e-commerce websites, and formulate targeted e-commerce marketing countermeasures to promote the sustainable development of cross-border e-commerce industry. At the present stage, which factors play a decisive role in the willingness and acceptance of users of cross-border e-commerce platforms is the key issue studied by e-commerce enterprises. The competition in the cross-border e-commerce market is fierce, with various enterprises competing for market share and racking their brains to expand new consumers on the basis of retaining old customers. The conclusion of this research is as follows: perceived usefulness, ease of use and security all have a positive impact on the purchase intention, and among the dependent variables that have an impact on the purchase intention of consumers, perceived security has the greatest impact. Perceived trust also has a positive impact on the purchase intention of users. The intermediary variable perceived trust has a mediating effect on the purchase intention among the security and usefulness variables, which is consistent with the reality. This is because TMALL International will hold relevant marketing activities to stimulate consumers' shopping, and at the same time enhance users' trust and shopping security.

Keywords: cross-border e-commerce websites; TMALL International; Consumers; Purchase intention; Influencing factor.

1 Introduction

With the Chinese government fully implementing the "Internet +" strategy in recent years, the electronic commerce has gradually entered the development new era. In August 2021, China Internet Network Information Center (CNNIC) released the 48th Statistical Report on the Development of the Internet in China. By June 2021, there were 1.012 billion Internet users in China, an increase of 21.78 million compared with 2020, reaching 71.7% of the national Internet penetration rate. The number of Internet users gradually increased and it also promoted the development of domestic e-commerce. Especially with the emergence of e-commerce shopping boom, more and more Chinese e-commerce enterprises began to realize that the previous development mode of e-commerce could not bring profits for enterprises, so these enterprises successively expanded the market and slowly entered the field of cross-border e-commerce. In 2018, The State Council approved the construction of 23 cross-border comprehensive pilot zones, further strengthening opening-up efforts and promoting the development of cross-border e-commerce. This study takes Tmall International platform as an example to analyze the relevant factors affecting consumers' purchase intention in cross-border e-commerce websites and formulate targeted e-commerce marketing countermeasures to promote the sustainable development of cross-border e-commerce industry. At the present stage, which factors play a decisive role in the willingness and acceptance of users of cross-border e-commerce platforms is the key issue studied by e-commerce enterprises. The competition in the cross-border e-commerce market is fierce, with various enterprises competing for market share and racking their brains to expand new consumers on the basis of retaining old customers. Therefore, it is of great significance for the operation and development of e-commerce enterprises to study the factors affecting the purchase intention of cross-border e-commerce consumers.
2 Literature review and theoretical basis

2.1 Perceived risk theory

During the purchase period, the perceived risk is the subjective feeling of the consumer to the risk, which is composed of the multi-dimensional perceived risk. Cross-border e-commerce is an organic combination of traditional trade and e-commerce. In the process of consumption, users may perceive the uncertainty of traditional foreign trade and e-commerce at the same time, so the consumption loss will be predicted from multiple aspects such as service, economy, society and time. Moreover, cross-border e-commerce has diversified operation modes and complex consumption environment, which will affect users' perceived risks. Therefore, through the theory of perceived risk, this study studies the subjective expectation of loss during the consumption period of users, and analyzes the influence of different marketing methods on consumers' perceived risk.

2.2 Information asymmetry theory

Information asymmetry is the asymmetric distribution of fact information. In the asymmetric information market, enterprises with information advantages will carry out a series of operations unfavorable to enterprises with inferior information in order to pursue the maximization of benefits, and eventually cause the problem of moral hazard. However, as enterprises with inferior information cannot distinguish products effectively, it is difficult for them to make the best purchase decision, which will lead to the decrease of market price and affect market efficiency, which is the so-called adverse selection. The study on the perceived risks of cross-border e-commerce users from the perspective of information asymmetry can help cross-border e-commerce enterprises develop countermeasures to reduce the perceived risks of users from the perspective of information credibility and openness.

2.3 Value theory

According to the theory of value, consumers evaluate the service or product as a whole after weighing the cost paid and the benefits of the service or product. This theory provides a theoretical basis for the study of the factors affecting the consumption of cross-border e-commerce users. It points out that benefits and costs are the determinants affecting value, and the value of services and products will have a decisive impact on users' purchasing behavior. In other words, under the influence of factors such as cost and income, perceived risk as a component of mental cost affects consumers' purchasing intention. Therefore, in the process of studying cross-border e-commerce users' purchase intention, costs and benefits should be fully taken into account to accurately consider the impact of perceived risks on consumers' purchase intention.

2.4 Theory of planned behavior

According to the theory of planned behavior, human behavior is mainly guided by three considerations: considering the result of behavior, considering the expectation of important others, and considering whether there are factors that hinder the result of behavior. Considering the consequences of behavior can influence individual judgment. As for the consumption intention of cross-border e-commerce users, as a multi-dimensional concept, perceived risk intersects with subjective norms, attitudes and perceived behavior control. For example, subjective norms are similar to social risk dimensions in the social pressure of perceived individual behaviors. Therefore, the theory of planned behavior is of great theoretical guiding value for the impact of cross-border e-commerce users' perceived risks on their purchasing behaviors.

3 Research design and methods

The methods used in this study include literature research, questionnaire survey, statistical analysis and quantitative and qualitative analysis. Questionnaires were designed specifically, and questionnaires were distributed to consumers on TMALL International platform through wechat group chat. Data analysis was carried out on the recovered valid questionnaires, and the degree of influencing variables was determined according to the data analysis results, so as to confirm the largest variable affecting users' purchase intention.

3.1 Model construction and research hypothesis

3.1.1 Objects of investigation

This research takes the consumers of TMALL International platform (only Chinese consumers) as the survey object. The reason why only Chinese consumers are selected is that: (1) The population base of Chinese users is large and the consumption potential is relatively large. Especially with the increase of per capita GDP index in

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recent years, more and more people try high-tech, which is stimulating for people to contact cross-border online shopping; (2) TMALL International cross-border e-commerce is the earliest platform for cross-border business in China, and TMALL International has the highest consumer base; (3) With Chinese consumers as the object, the main purpose is to facilitate the collection of data. Chinese consumers have no cultural differences, so the collected data has high credibility.

Model building and research hypothesis. The TAM model applicable to cross-border e-commerce websites is studied and analyzed. Based on the theory of perceived risk, the "perceived security" is added. Through interviewing online shopping demands and feelings collected by TMALL International consumers, the external variables are clarified, so as to build the relevant theoretical model of factors affecting consumers' purchase intention of cross-border e-commerce websites.

3.1.2 Selection process of external variables

External variables of TAM model influence consumers' perceived ease of use and perceived usefulness, thus influencing consumers' purchase intention. The TAM model applicable to cross-border e-commerce websites is studied and analyzed. Based on the theory of perceived risk, the "perceived security" is added. Through interviewing online shopping demands and feelings collected by TMALL International consumers, the external variables are clarified, so as to build the relevant theoretical model of factors affecting consumers' purchase intention of cross-border e-commerce websites.

3.1.2.1 TMALL International user interview process

This time, I choose to communicate with the interviewee face to face. Since the factors affecting consumers' purchase intention are psychological issues, structured interview is not applicable to consumers' emotions, so I choose to ask questions in a rough outline. The interviewees are 16 long-term users of TMALL International, including 6 males and 10 females. They have face-to-face communication indoors. The interview time of each respondent is 5-10min.

3.1.2.2 Interview results

The results of this interview mainly discuss the consumption demands of cross-border e-commerce users from four aspects: conspicuous demand, convenience demand, experience demand and security demand. (1) Security requirements. Cross-border e-commerce is less secure than traditional e-commerce because it targets global consumers, has differences in language and culture, and has possible behaviors such as false publicity and fraud. The results of this survey show that it is difficult to discriminate the authenticity of goods in small and medium-sized shops on TMALL International, and it can be effectively guaranteed only by commodity evaluation and merchant commitment. (2) Convenience demand. Convenience is the biggest advantage of cross-border e-commerce platforms. However, the survey found that TMALL International cross-border e-commerce has many problems, such as customs clearance inspection, web design, cross-border payment and goods mailing, which will affect the convenience of users' consumption. (3) Experiential demand. Generally speaking, commodities are not the main reason for cross-border online shopping. Some consumers enjoy the process of searching, browsing and payment. This interview survey found that TMALL International shopping experience needs to be optimized and improved. The platform lacks personalized recommendation and member experience area, which is not applicable to users with low purchase intention. (4) Conspicuous demand. Among the respondents, 10 consumers said that cross-border online shopping is mainly to buy luxury goods, such as international brands, expensive bags, etc., which is consistent with the characteristics of cross-border e-commerce consumption at the present stage. Cross-border e-commerce logistics costs are relatively high, the transportation time is long, cross-border e-commerce can be bought in China, and usually do not go to cross-border online shopping. Unless it is difficult to buy international brands will use TMALL International platform to buy.

3.1.2.3 Determination of external variables

After analyzing the survey results, the external variables of the research model are summarized into commodity factors, purchase experience factors and cultural value factors. Table 1 shows the characteristics of external variables.

<table>
<thead>
<tr>
<th>External variable</th>
<th>Relevant statement</th>
<th>Extract feature</th>
</tr>
</thead>
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<tr>
<td></td>
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</tbody>
</table>
3.1.3 Definition of variables and basic assumptions

Based on the interview results of TMALL users, three external variables are included in the TAM model, so as to build the TAM model of TMALL international cross-border e-commerce.

3.1.3.1 Dependent variable

The ultimate behavior of consumers is not downloading apps or visiting cross-border platforms, but consumption, and purchase intention is an important index to predict consumer behavior.

3.1.3.2 Independent variables

Perceived ease of use and usefulness of TAM model are the core independent variables of this study. Based on the perceived risk theory, perceived security is regarded as a relevant factor affecting the purchase intention of users of cross-border e-commerce platforms. According to the characteristics of TMALL International, external variables are appropriately added, and the following assumptions are proposed: (1) Commodity factors. This variable is a direct reflection of the commodity characteristics of cross-border e-commerce platforms. Commodity diversification can provide consumers with more choices. There is a positive correlation between product quality and brand degree. Some scholars have found that the higher the quality of goods, the greater the sense of security for users, so as to improve their perceived security. Therefore, this study proposes the following hypothesis: H1a: goods have a positive impact on perceived usefulness; H1b: Goods have a positive impact on perceived ease of use; H1c: Goods have a positive impact on perceived security; (2) Shopping experience factors. This factor mainly includes website browsing, product selection, order, payment, logistics and after-sales service six links. Some studies believe that interesting and convenient shopping experience can improve users' sense of belonging to the platform during the shopping process. This study proposed the following hypothesis: H2a: shopping experience has a positive effect on perceived usefulness; H2b: Shopping experience has a positive impact on perceived ease of use; H2c: Shopping experience has a positive impact on perceived security; (3) Cultural value factors. This factor is the thought or concept espoused by the social group, which can regulate individual attitudes and behavior. As "face-saving" Chinese people, their thoughts will drive the purchase desire. Some scholars have found that Chinese consumers pay more attention to luxury brands in the process of cross-border online shopping, and the main factor leading to this consumption concept is Chinese traditional values. This study proposed the following hypothesis: H3a: Cultural value has a positive effect on perceived usefulness; H3b: Cultural value has a positive impact on perceived ease of use; H3c: Cultural value has a positive impact on perceived safety; (4) Perceived usefulness. Hypothesis: H4a: Perceived usefulness has a positive effect on perceived trust; H4b: Perceived usefulness has a positive effect on purchase intention; (5) Perceived ease of use. Hypothesis: H5a: Perceived ease of use has a positive effect on perceived trust; H5b: Perceived ease of use has a positive effect on purchase intention; (6) Perceived security. Hypothesis: H6a: Perceived security has a positive impact on perceived trust; H6b: Perceived security has a positive impact on purchase intention. (7) Perceived trust. Hypothesis: H7: Perceived trust has a positive effect on purchase intention.

3.1.3.3 The mediating role of perceived trust

Different from traditional domestic e-commerce platforms, cross-border e-commerce platforms are more uncertain and the quality of merchants is uneven, so consumers will be worried about the quality of the products

<table>
<thead>
<tr>
<th>Shopping experience factor</th>
<th>Commodity factor</th>
<th>Cultural value factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. The website design has a large space for progress; b. Surfing the Internet in his spare time; c. High customer service quality; d. Problems in cross-border logistics transportation; e. Diversification of payment methods</td>
<td>a. Pay most attention to the quality of goods; b. It cannot be determined whether the goods are genuine or not; c. Only look at whether the product has a discount or not; d. A wide variety of goods</td>
<td>a. Most of the goods purchased are luxury goods; b. Consumption of low-priced goods is rare; c. Buying luxury goods with the intention of showing off. d. The quality of imported goods is better</td>
</tr>
<tr>
<td>Web design; Customer service quality; Shopping experience; Logistics transportation; Method of payment</td>
<td>Guarantee of genuine goods; The quality of goods; Types of commodities; preference</td>
<td>Luxury goods; Conspicuous consumption; High consumption</td>
</tr>
</tbody>
</table>
they buy. And the sense of trust can reduce the uncertainty, to ensure that consumers buy at ease. Therefore, perceived trust is the intermediary variable of the consumer acceptance model. This study proposes the following hypothesis: H8a: Perceived trust plays a mediating role among the factors influencing consumers' purchase intention of perceived usefulness; H8b: Perceived trust plays a mediating role among the factors influencing consumers' purchase intention. H8c: Perceived trust plays an intermediary role among the factors that affect consumers' purchase intention in perceived security.

3.1.4 Model construction

Based on the perceived risk theory and TAM model, this paper draws on the research results of others and combines with the characteristics and current situation of TMALL international cross-border e-commerce to study the factors influencing consumers’ purchase intention from the perspective of consumers. First, external variables affect the independent variables of TAM model; second, it verifies that perceived ease of use, usefulness, security and trust affect users' purchase intention; third, it verifies the mediating effect of perceived trust.

Figure 1. Variable research model

3.1.5 Scale design

3.1.5.1 Measurement dimensions of commodity factor

First of all, TMALL international product categories, which is a key factor for users to cross-border online shopping; Secondly, the quality of goods. Many consumers believe that the quality of foreign goods is higher than that of domestic goods, which is one of the reasons for cross-border online shopping. Thirdly, the intensity of cross-border commodity incentives will also have an impact on users' purchase, showing a positive correlation. To this end, the dimensions of commodity factors are mainly measured from the following aspects: a. TMALL International cross-border e-commerce products are abundant; b. The quality of imported goods is better; c. TMALL International product discounts have an impact on purchase intention.

3.1.5.2 Measurement dimensions of shopping experience factor

The design of cross-border e-commerce websites, logistics quality, customer service quality and payment method will all affect the purchasing experience of users. Therefore, the following measurement dimensions are proposed: a. I am satisfied with TMALL International shopping; b. I am satisfied with TMALL International logistics transportation; c. I am satisfied with the customer service of TMALL International; d. Diversified order payment can help me pay quickly.

3.1.5.3 Measurement dimensions of cultural value factors

As an external variable, cultural value mainly studies the behavioral motivation of consumers shopping on cross-border e-commerce platforms. The cultural value factors are mainly measured in the following dimensions: a. TMALL International platform is of high quality; b. TMALL International platform has a strong shopping superiority; c. Most of the purchases on TMALL International platform are luxury goods.
3.1.5.4 Dimensions of perceived usefulness measurement

Some scholars believe that the perceived usefulness can be measured by the richness of goods. The richer the types of goods are, the more users' needs can be satisfied, followed by purchasing preferences. Many users prefer to consume on cross-border e-commerce platforms. Based on the measurement analysis, the following dimensions are proposed: a. There are more services or commodities for me to choose on TMALL International platform; b. I have a high purchasing efficiency in TMALL International; c. Compared with overseas generation gap, TMALL International platform has a higher reputation; d. TMALL International platform can meet my life needs.

3.1.5.5 Perceive the dimensions of ease of use measurement

At the present stage, TMALL International cannot use the installment payment function of Huabao. If the consumer has a favorite product, but the money is not enough to buy it, the perceived usability of the user will be reduced. The dimensions are as follows: a. I can quickly find the service or product I want; b. TMALL International page is simple and easy to operate; c. TMALL International payment process is relatively simple.

3.1.5.6 Dimensions of perceived security measurement

User risks of cross-border online shopping mainly fall into four categories: personal privacy risk, product risk, fund payment risk and international logistics risk. Perceived security is measured from four dimensions: a. There is no quality problem with the goods purchased online on TMALL International. b. TMALL Global shall keep users' personal information confidential; c. TMALL International payment process is relatively safe; d. No damage to goods transported internationally.

3.1.5.7 Dimensions of perceived trust measurement

Combined with the characteristics of the research object, the measurement dimensions of perceived trust include: a. The reliability and authenticity of TMALL International product information; b. TMALL International commodity credit rating is reliable; c. TMALL International has transparent fees and no additional charges; d. TMALL International consumers have high credibility in evaluating products.

3.1.5.8 Purchase intention measurement dimension

As the dependent variable of this study, purchase intention is the user's consumption intention. The purchasing intention of users is measured from the following three dimensions: a. I like shopping on TMALL International; b. I will also spend more on TMALL Global in the future; c. I will recommend TMALL Global to relatives and friends.

4 Questionnaire design and data analysis

4.1 Questionnaire design

4.1.1 Design ideas

Before the questionnaire is designed, the questionnaire contents related to the model variables accepted by cross-border e-commerce consumers are consulted, and the research results are referenced. Then, relevant items that are in line with the consumers of TMALL International cross-border e-commerce platform are found, and the preliminarily determined items are improved. In order to ensure the accuracy of the survey, the collected data are sorted out and analyzed, and the scale contents are adjusted according to the analysis results.

4.1.2 Questionnaire content

This questionnaire is mainly divided into two parts. The first part is to investigate personal information, including age, gender, monthly income, occupation, etc., and the second part is the core part of the questionnaire, including eight variables and 28 items in total. The five-level A-E scale is selected.

4.1.3 Data sources

Due to the limitation of consumer groups in this study, only consumption questionnaires on TMALL International platform were collected. In order to improve the authenticity of the questionnaires, the author participated in summer camp activities related to TMALL International, and the questionnaire data was collected from the activity experience.

4.1.4 Data issuance and recovery
"Questionnaire Star" was used to design and distribute the questionnaire, which was distributed through WeChat group chat. A total of 300 questionnaires were distributed and 268 valid questionnaires were collected. To ensure the accuracy of the survey, the following questionnaire was proposed: a. Users with incomplete information; b. Inattentive; c. Busy with the questionnaire. After elimination, 233 valid questionnaires were obtained.

4.2 Data analysis

4.2.1 Descriptive analysis

As a reminder before questionnaire survey, descriptive analysis is to preliminarily understand user characteristics, including gender, age and occupation of respondents. (1) Gender characteristic variables. Among the 233 respondents, 112 (47.6%) were male and 121 (52.4%) were female; (2) Age characteristic variable. The respondents mainly concentrated between 20 and 30 years old, accounting for 44.3%; (3) Characteristic variable of educational background. Among the 233 respondents, those with a master's degree or above were less, accounting for 9.5% and 2.5% respectively, while those with a bachelor's degree were more, as high as 44.3%. (4) occupational characteristic variable. Among the interviewees, 27 are students, accounting for 11.6%. State-owned enterprises and private enterprises account for 29.4% and 28.4% respectively, while freelancers and government institutions are relatively few. (5) income characteristic variable. The monthly income of the respondents is more than 6000 to 12000, accounting for 46.7%, while the group below 6000 and above 3000 accounts for 31.2%. The results of the above descriptive statistical data show that domestic cross-border online shoppers mainly show characteristics such as lack of high education, young age and high income, and the characteristic variables of respondents are in line with the author's expectations.

4.2.2 Correlation analysis

As a statistical method to test the relationship between different variables, correlation analysis can only make a rough judgment of the relationship between variables. However, this method is a prerequisite for regression analysis. Correlation analysis was performed by Pearson coefficient method.

4.2.2.1 Correlation analysis between external variables and perceived usefulness

Table 2 Correlation analysis between external variables and perceived usefulness

<table>
<thead>
<tr>
<th>Variable</th>
<th>Perceived usefulness</th>
<th>Cultural value</th>
<th>Shopping experience</th>
<th>commodity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commodity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural Value</td>
<td>1</td>
<td>0.575**</td>
<td>0.618**</td>
<td></td>
</tr>
<tr>
<td>Shopping Experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived usefulness</td>
<td></td>
<td>1</td>
<td>0.618**</td>
<td></td>
</tr>
</tbody>
</table>

**Correlation was significant at 0.01 value

As can be seen from Table 2, the correlation coefficients of cultural value, commodity, shopping experience and perceived usefulness are all above 0.01, indicating a significant positive correlation, and the coefficients of perceived usefulness, commodity and shopping experience are all 0.618 and 0.667, indicating a strong correlation.

4.2.2.2 Correlation analysis between external variables and perceived ease of use

Table 3 Correlation analysis between external variables and perceived ease of use

<table>
<thead>
<tr>
<th>Variable</th>
<th>Perceived usefulness</th>
<th>Cultural value</th>
<th>Shopping experience</th>
<th>commodity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commodity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural Value</td>
<td>1</td>
<td>0.618**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shopping Experience</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Perceived usefulness</td>
<td></td>
<td>0.621**</td>
<td>0.639**</td>
<td></td>
</tr>
</tbody>
</table>

*Correlation was significant at 0.01 value

As can be seen from Table 3, the correlation coefficients of cultural value, commodity, shopping experience and perceived ease of use are all above 0.01, and the positive correlation is obvious, and the coefficient of perceived
usefulness and shopping experience reaches 0.639, which is an external variable with the strongest correlation.

4.2.2.3 Correlation analysis of external variables and perceived security

<table>
<thead>
<tr>
<th>Variable</th>
<th>Perceived usefulness</th>
<th>Cultural value</th>
<th>Shopping experience</th>
<th>Commodity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commodity</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Cultural Value</td>
<td></td>
<td></td>
<td>0.618**</td>
<td>0.604**</td>
</tr>
<tr>
<td>Shopping Experience</td>
<td></td>
<td>1</td>
<td>0.562**</td>
<td>0.604**</td>
</tr>
<tr>
<td>Perceived usefulness</td>
<td></td>
<td>0.666**</td>
<td>0.631**</td>
<td></td>
</tr>
</tbody>
</table>

**Correlation was significant at 0.01 value

As can be seen from Table 4, the correlation coefficients of goods, shopping experience and perceived security are all above 0.01, showing obvious positive correlation, and the coefficient of perceived security and cultural value reaches 0.666, which is an external variable with the strongest correlation.

4.2.2.4 Correlation analysis of perceived trust and dependent variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Perceived trust</th>
<th>Perceived security</th>
<th>Perceived ease of use</th>
<th>Perceived usefulness</th>
</tr>
</thead>
<tbody>
<tr>
<td>trust</td>
<td>1</td>
<td>0.584**</td>
<td>0.577**</td>
<td>0.567**</td>
</tr>
<tr>
<td>security</td>
<td></td>
<td>1</td>
<td>0.588**</td>
<td>0.565**</td>
</tr>
<tr>
<td>Ease of use</td>
<td></td>
<td></td>
<td>1</td>
<td>0.653**</td>
</tr>
<tr>
<td>usefulness</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

**Correlation was significant at 0.01 value

As can be seen from Table 5, the correlation coefficients of perceived trust and the three dependent variables of usefulness, security and ease of use are all above 0.01, showing obvious positive correlation, and the coefficient of perceived security and trust reaches 0.584, which is an external variable with the strongest correlation.

4.2.2.5 Correlation analysis of purchase intention and dependent variable

<table>
<thead>
<tr>
<th>Variable</th>
<th>Purchase intention</th>
<th>Perceived trust</th>
<th>Perceived security</th>
<th>Perceived ease of use</th>
<th>Perceived usefulness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase intention</td>
<td>1</td>
<td>0.678**</td>
<td>0.632**</td>
<td>0.639**</td>
<td>0.583**</td>
</tr>
<tr>
<td>trust</td>
<td></td>
<td></td>
<td>0.584**</td>
<td>0.577**</td>
<td>0.567**</td>
</tr>
<tr>
<td>security</td>
<td></td>
<td></td>
<td>1</td>
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</tr>
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<td>Ease of use</td>
<td></td>
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<td></td>
<td>1</td>
<td>0.653**</td>
</tr>
<tr>
<td>usefulness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

**Correlation was significant at 0.01 value

As can be seen from Table 6, the correlation coefficients between purchase intention and consumer perceived usefulness, security, ease of use and trust dependent variables are all above 0.01, and the positive correlation is obvious, and the coefficient between purchase intention and consumer perceived ease of use reaches 0.639.

4.2.3 Regression analysis

4.2.3.1 Regression analysis of perceived usefulness

Through regression analysis, it is found that the adjusted R-square value of perceived usefulness is 0.592, that is,
the external variable explains the degree of perceived usefulness is 59.2%, the significance level of cultural value, commodity and shopping experience is below 0.05, and the corresponding standardization coefficient is 0.251, 0.434 and 0.296. The perceived usefulness is significantly correlated with each variable, and there is a positive linear correlation. The corresponding coefficient between perceived usefulness and goods is 0.434, indicating that goods have greater influence on perceived usefulness than cultural value and shopping experience. Based on the above analysis, hypothesis H3a, H2a and H1a in this study are valid.

4.2.3.2 Regression analysis of perceived usability

The adjusted R-square value is 0.642, indicating that external variables explain perceived ease of use is 64.2%, and the regression coefficients of shopping experience and goods are 0.497 and 0.195, indicating that the above two variables are linearly positive correlated with perceived ease of use. The regression coefficient of shopping experience is 0.497, indicating that the linear correlation degree of shopping experience is greater than that of commodity factors. However, the significance level of cultural value is 0.164, indicating that the linear relationship between cultural value and perceived ease of use is not obvious. Based on the above analysis, hypothesis H2b and H1b in this study are valid, but H3b is not.

4.2.3.3 Regression analysis of perceived security

The adjusted R-square value is 0.538, indicating that the external variable explained perceived security is 53.8%, and the significance level of shopping experience, goods and cultural value are all below 0.05, indicating that cultural value, goods, shopping experience and perceived security are significantly positively correlated. Based on the above analysis, hypothesis H3c, H2c and H1c in this study are valid.

4.2.3.4 Regression analysis of perceived trust

The adjusted value of R square is 0.554, the significance levels of perceived usefulness and security are both below 0.05, and the standard regression coefficients are 0.412 and 0.377, indicating that perceived trust and the above two variables have a linear positive correlation. The maximum regression coefficient of perceived security is 0.412, indicating that perceived security affects perceived trust to a large extent. However, the significance level value of perceived ease of use is 0.071, indicating that the positive correlation between perceived ease of use and trust is not obvious. Based on the above analysis, hypothesis H4a and H6a in this study are valid, but H5a is not.

4.2.3.5 Regression analysis of purchase intention

The adjusted value of R square is 0.671, the significance levels of perceived safety, usefulness and ease of use are all below 0.05, and the regression coefficients are 0.452, 0.222 and 0.291, respectively. It can be seen that perceived safety, usefulness, ease of use and consumers’ purchase intention have a linear positive correlation. Based on the above analysis, H4a, H6 and H5b were established.

4.2.3.6 Regression analysis of purchase intention and perceived trust

The adjusted value of R square is 0.617, indicating that the degree of perceived trust in explaining purchase intention is 61.7%, the significance level of perceived trust is below 0.05, and the standardized regression coefficient of 0.806 shows that there is a significant linear positive correlation between perceived trust and consumers’ purchase intention. Based on the above analysis, H7 is assumed to be true.

4.2.4 Mediation effect analysis

The software package SPSS21.0 was used to conduct regression analysis on perceived security, usefulness and mediating variables. The empirical results showed that perceived ease of use and trust had no obvious positive correlation, so perceived trust did not play a mediating role in influencing purchase intention and perceived ease of use. Therefore, hypothesis H8b could not be established.

By expanding the mediation effect analysis on variables, it is found that the regression analysis coefficient of purchase intention and perceived usefulness is 0.697. With the increase of perceived trust, the coefficient of perceived usefulness and purchase intention drops to 0.421. Therefore, it can be seen that the perceived newbie has a mediating effect between purchase intention and perceived usefulness, so hypothesis H8a is valid. The regression coefficient of purchase intention and perceived security is 0.816, and decreases to 0.535 after increasing perceived trust, indicating that perceived trust plays a mediating function between purchase intention and perceived usefulness, which indicates that hypothesis H8c is valid.
5 Research conclusions and strategies

5.1 Research conclusions

Based on the investigation and analysis of users of TMALL International cross-border e-commerce platform, this study draws the following conclusions: perceived usefulness, ease of use and security all have a positive impact on purchase intention, and among the dependent variables that have an impact on consumers' purchase intention, perceived security has the greatest impact. Perceived trust also has a positive impact on the purchase intention of users. The intermediary variable perceived trust has a mediating effect on the purchase intention among the security and usefulness variables, which is consistent with the reality. This is because TMALL International will hold relevant marketing activities to stimulate consumers' shopping, and at the same time enhance users' trust and shopping security.

5.2 Strategy analysis

5.2.1 Increase the variety of goods and introduce foreign high-quality goods

The empirical study found that the goods on TMALL International platform are abundant and of high quality, which can help improve users' perceived security, usefulness and ease of use, and have a direct impact on users' purchase intention. In the future, TMALL International should attract more high-quality merchants worldwide, especially cross-border nutrition and health care, beauty and skin care products with a high purchase rate, so as to provide users with more choices. At the same time, we should strengthen the supervision of foreign businesses, choose international shops or brands with good reputation, and impose administrative penalties on e-commerce businesses that sell substandard products or imitation products.

5.2.2 Simplify the operation process and improve users' shopping experience

First, to simplify the process of consumer registration, for example, Taobao users can browse the TMALL International page through one-click login, without verification code or authentication; Secondly, the search interface of cross-border e-commerce websites is optimized to facilitate consumers to find target products in a short time. Big data is used to set "guess you like" partition for consumers, which is very attractive for users to click and browse, so as to improve their purchase desire. Again, ensure the simplicity of the interactive interface. Generally, cross-border e-commerce platforms belong to foreign shops, and if the names of shops use the characters of different countries, it will be extremely unfavorable for domestic users to browse and consume. Therefore, no matter the pages or mobile apps, translation functions should be implemented to improve users' shopping experience.

5.2.3 Cater to cultural psychology and develop marketing programs

The cultural value of cross-border e-commerce users will have an impact on their perceived security and usefulness, and then on their purchase intention. Therefore, in order to fit in with the cultural psychology of users, cross-border e-commerce platforms should attach more importance to luxury goods, set up a luxury area, analyze user characteristics through big data, so as to create high-end product recommendation chest and meet users' various needs. To attract more consumers, we can also jointly organize new product conferences and fashion weeks with luxury brands to enhance brand and platform exposure and attract more consumer groups.

5.2.4 Reduce platform risks and improve consumer security

This research finds that the perceived security of users will have a positive impact on their purchase intention, and risk is the main reason why users refuse to consume. Therefore, cross-border e-commerce users should: (1) strictly control the quality of cross-border products. In the process of cross-border online shopping, users pay most attention to product quality, which is an important guarantee for the sustainable development of the platform. Therefore, the platform should ensure the safety and reliability of the cooperative shops, the products must be from reliable sources, and the quality of products must be strictly monitored. (2) Effective supervision of logistics transportation. The distance of cross-border logistics distribution is relatively long, and many of them are distributed by sea via cruise ships. Therefore, it is necessary to improve the requirements on express packaging to ensure fast and safe logistics transportation, so as to enhance consumers' sense of shopping security.

5.2.5 Focus on user engagement and enhance consumer trust
First, increase the economic value of the promotion to users. The platform can provide more high-quality services and preferential prices to consumers. Although the net profit of the platform will decline in the short term, it can enhance user trust and be very attractive to new users, whose potential economic benefits are greater than short-term loss of benefits. Secondly, focus on the construction of cross-border e-commerce communities to cultivate more sticky consumers. Through the way of question and answer community and live video, to increase the intimacy between consumers and the platform, pay attention to user stickiness, can also use the community + network celebrity marketing model, such as Big Young brother, Li Jiaqi and other high visibility with goods, stimulate consumers to buy, which can not only improve the platform activity, but also contribute to the promotion of platform activity.

Reference