

Research on the Impact of Group Privacy Conservation Status of E-commerce Platforms on Users' Consumption Intention

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Abstract

This study first combed the existing studies on group privacy protection status, user consumption willingness and user trust, divided the group privacy protection status into four aspects: group user privacy protection awareness, group user privacy leakage concern, group platform privacy protection measures and platform group privacy protection reputation, and introduced user trust as a mediator variable, and then constructed this study based on the APCO Macro Model structural model and put forward relevant hypotheses. The following main conclusions are obtained through empirical analysis: first, the role paths between user privacy protection awareness, user privacy leakage concerns, platform privacy protection measures and platform group privacy protection reputation to user trust are significant; second, the role paths between user trust to user consumer willingness are significant; third, the role paths between user trust in user privacy protection awareness, user privacy leakage concerns, platform privacy protection measures and platform group privacy protection reputation to user trust are significant; third, the role paths between user trust in user privacy protection awareness, user privacy leakage concerns, platform privacy protection measures and platform group privacy protection reputation and user consumer willingness.

Keywords

E-commerce Platform; User Consumption Intention; Group Privacy; Privacy Protection.

1. Introduction

With the rapid development of e-commerce platforms and the increase in the number of users, the collection and use of personal information has become an important part of e-commerce platform operations. However, with the continuous development of the Internet and information technology, user privacy and data security have become a growing concern. In this context, group platform privacy protection measures are receiving increasing attention as an effective way to protect user privacy and data security.

Group platform privacy protection measures aim to protect users' group information, such as users' consumption records and demographic data. E-commerce platforms can use this data to provide personalized services and recommendations to users, thereby improving their purchasing experience and loyalty. However, if this data is leaked or abused, user levels of trust and satisfaction will decrease, leading to a decline in their willingness to consume.

Currently, research on group privacy protection, user intention, and user trust in the academic field is quite scattered. Firstly, the research on group privacy protection. Shietal(2017) studied the relationship between individual privacy, social risk, and user trust in social e-commerce platforms, and proposed suggestions for user privacy protection behavior. Hajlietal (2017) combined feature selection algorithms with decision trees to predict user privacy protection behavior using user data. They found that user privacy protection behavior is influenced by many factors, such as age, gender, and cultural background. Secondly, user intention. Users' purchasing behavior is influenced by many factors. Among them, product quality, price,

functionality, and brand image are one of the main factors affecting user decisions. In addition, users' personal psychological characteristics such as attitudes, beliefs, values, and emotions will also affect their purchasing behavior. Thirdly, user trust. Companies need to pay attention to user loyalty and feedback and respond promptly to improve customer satisfaction and promote brand development. Belanger et al. (2002) found that users' trust in e-commerce platforms directly affects their focus on privacy protection. Other studies such as Malhotra et al. (2004) and Bansal et al. (2010) have found that the more users trust the privacy protection capabilities of e-commerce platforms, the more willing they are to participate in transactions. In addition, Dinev et al. (2006) found that user trust plays a mediating role between privacy protection and user consumption intentions.

In summary, there is a lack of research focusing on the relationship between group privacy protection, user intention, and user trust. Therefore, this study will utilize empirical analysis to explore the relationship between group platform privacy protection measures on e-commerce platforms and user consumption intention. The aim is to provide references and recommendations for e-commerce platforms to enhance user trust and consumption intention, thus achieving long-term stability and development.

2. Research Design and Modeling Assumptions

2.1. Research Design

2.1.1. Relationship between Group Privacy Protection Status and User Trust

By summarizing the literature, this paper explores the relationship between privacy protection status and user trust based on the actual situation of e-commerce platforms, and at the same time, combining the relevant literature, the variables are selected as follows: user privacy protection awareness, platform privacy protection measures, user privacy leakage concerns, and the platform group's reputation for privacy protection; the connotation of these variables as well as the impacts affecting the concerns are specifically described below.

1) User privacy protection awareness

User privacy protection awareness refers to an individual's awareness of the importance and sensitivity of his/her own private information, as well as his/her ability to take appropriate precautions in the face of the risk of privacy information leakage. With the development of network technology and informatization, people use the Internet more and more for information exchange and social activities, but also face more risks of privacy information leakage, so user privacy protection awareness becomes more and more important. A person with good awareness of user privacy protection will handle his/her private information more carefully, choose safe and reliable services and platforms, and be able to effectively respond to privacy information leakage incidents. Multiple studies have shown that awareness of user privacy protection has a positive effect on user trust, and individuals or organizations with higher awareness of user privacy protection tend to be more likely to trust services or platforms that provide security and privacy protection. On the contrary, if an individual or organization performs poorly in terms of privacy protection, it may undermine users' user trust, leading to user attrition and reputational damage. Based on this relationship, many organizations consider privacy protection as an important foundation for building a reliable user trust relationship and take measures to increase users' awareness of user privacy protection and user trust in order to attract more users and enhance brand value. Accordingly, this paper proposes the hypotheses:

H1: User privacy protection awareness positively affects user trust.

H1a: User trust mediates between user privacy protection awareness and user consumption willingness.

2) User Privacy Leakage Concerns

Several studies have shown that there is a positive influence between users' privacy leakage worries and users' trust. In other words, when users are concerned about the possibility of their privacy being compromised, their trust in the corresponding platform increases. Users worry about privacy leakage usually because they are concerned about the security and privacy protection of their personal information. When users perceive that a platform has taken effective privacy protection measures and has transparent privacy policies and protection mechanisms, their trust in that platform increases. Users believe that the platform is able to protect their personal privacy and reduce the risk of privacy leakage, so they are more confident in transacting with the platform or providing personal information.

Users' privacy breach concerns can be viewed as a risk perception, while trust can be viewed as a belief in the platform's ability to cope with the risk. Users' trust in a platform increases when they believe that the platform is able to effectively handle privacy risks and protect their personal information. This trust can build a good relationship between the user and the platform, prompting the user to be more willing to conduct transactions on that platform or share more personal information with the platform.

Therefore, there is a positive relationship between users' concerns about privacy leakage and users' trust in the platform. The effectiveness and transparency of privacy protection measures are crucial for enhancing users' trust, which helps to alleviate users' privacy concerns and thus contributes to the increase of users' trust in the platform. Accordingly, this paper presents the following research:

H2: User privacy leakage concerns negatively affect user trust.

H2a: User trust mediates between user privacy leakage concerns and user consumption intention.

3) Platform privacy protection measures

Platform privacy protection measures are measures taken by individuals or organizations to protect their private information from leakage or misuse; several studies have shown that platform privacy protection measures have a positive effect on user trust. When an individual or organization adopts adequate platform privacy protection measures, it can reduce the risk of privacy leakage and misuse, which improves service reliability and security, and enhances users' user trust in the organization or platform. In addition, user trust and loyalty of users towards the organization or platform can also be further enhanced through open and transparent privacy protection policies and procedures, as well as by actively responding to users' feedback and complaints. Therefore, there is a mutually reinforcing relationship between platform privacy protection measures and user-user trust. Accordingly, this paper proposes the hypothesis:

H3a: Platform privacy protection measures positively affect user trust.

4) The relationship between platform group privacy protection reputation and user trust.

Platform group privacy protection reputation[8] refers to the comprehensive evaluation of users and the social influence of the platform, which is crucial for platform operation. A good platform group privacy-protecting reputation can attract more new customers, while a damaged reputation may lead to user loss and transaction volume decline. In an e-commerce environment, platforms rely on word-of-mouth communication, so building a good reputation is an important factor in alleviating user privacy concerns. If a platform's reputation for group privacy protection is damaged and there is no timely public relations response, the blow to the platform will be drastic and the recovery time may be long. In an empirical study of the relationship between user trust and loyalty in online store shopping, Guo et al. (2019) found that users are more likely to establish user trust for online stores with a good reputation and are willing to participate more. Accordingly, this paper proposes the research hypothesis:

H3b: Platform group privacy protection reputation positively affects user trust.

2.1.2. The Relationship between User Trust and Users' Willingness to Consume

There is usually a positive relationship between user trust and user's willingness to spend, and there are many related studies that confirm this. The following are some representative studies: in 2002, Gefen et al. showed that there is a significant positive correlation between user trust in online shopping websites and their willingness to purchase. In 2011, Shankar et al. found that there is a significant positive correlation between user trust in social media advertisers and their willingness to click on advertisements and to convert to purchasing behavior. In 2014, Lee et al. showed that there is a significant positive correlation between user trust in mobile payment applications and their use and conversion to purchasing behavior. In 2014, Lee et al. showed a significant positive correlation between users' user trust in mobile payment applications and their willingness to use and recommend them. All of these studies demonstrate the positive relationship between user trust and user consumption intention and emphasize the importance of establishing a reliable user trust relationship to facilitate user decision-making and purchasing behavior. Therefore, organizations and platforms need to take steps to improve user trust in order to attract more users and promote business growth.

H4: User trust positively influences users' willingness to consume;

H5: User trust mediates the relationship between group privacy protection status and users' willingness to consume.

2.1.3. Control Variable

The control variables in this paper are:

- 1) Gender: gender differences may lead to differences in personality and behavioral sensitivities between individuals. These differences may have an impact on users' perception of privacy risks and willingness to consume.
- 2) Age: Individuals of different ages have different life experiences and values, which may have an impact on their perception of privacy risks and willingness to consume. Age may affect an individual's attitude toward privacy protection and concern for personal information.
- 3) Educational attainment: Educational attainment level is usually associated with an individual's ability to perceive and understand privacy risks. A higher level of education may mean that individuals have a clearer understanding of privacy protection and are more sensitive to the risk of privacy breaches, which may have an impact on consumption intentions.
- 4) Monthly income: the level of an individual's income usually has an impact on his or her consumption behavior. Higher income levels may make individuals more willing to take certain privacy risks in consumption, thus affecting their attitudes toward privacy protection and consumption willingness.

Table 1. Summary of research hypotheses

Assumption number	Hypothetical content
H1	User privacy awareness positively affects user trust
H1a	User trust mediates between user awareness of privacy protection and user willingness to consume
H2	User Privacy Breach Concerns Positively Affect User Trust
H2a	User Trust Mediates Between Privacy Concerns and Consumption Intentions of Users
H3a	Platform Privacy Protections Positively Influence User Trust
H3b	Platform Group Privacy Protection Reputation Positively Influences User Trust
H4	User trust positively influences users' willingness to spend
H5	User Trust Mediates Group Privacy Protection Status and User Consumption Intention

In summary, gender, age, education, and monthly income may all have an impact on individuals' perceived privacy risk and willingness to consume. These factors may influence individuals' level of concern for privacy protection and consumption decisions by shaping their attitudes, perceptions, and values.

The research hypotheses of this paper are summarized in Table 1.

2.2. Research Modeling

Based on the e-commerce platform, this paper studies the research on the impact of privacy protection status of e-commerce platform on users' consumption intention, after summarizing and sorting out the existing literature, a total of six hypotheses are put forward, and their related variables and definitions are organized as shown in Table 2.

In the construction of the theoretical model, this paper takes into account the relationship between user-level and platform-level variables and privacy protection status. User-level control variables can include gender, age, education, income, etc., while platform-level variables can include platform group privacy protection reputation, platform privacy protection measures, etc. By analyzing the relationship between these variables and users' consumption intention, we can understand users' attitudes and concerns about privacy protection. Further, this paper also focuses on the relationship between user trust and privacy protection status as well as the relationship between user trust and user consumption intention. By analyzing the mediating role of user trust in the relationship between privacy protection status and users' consumption intention, it can reveal the role of user trust as a bridge between users' trust level in the platform and their consumption intention. Finally, this paper also carries out a study on the control variables of users' consumption willingness to exclude other factors that may have an impact on consumption willingness, so as to more accurately analyze the relationship between privacy protection status and users' consumption willingness. In summary, this paper comprehensively analyzes the role of user-level and platform-level variables in relation to privacy protection status by constructing a theoretical model, and explores the relationship between privacy protection status and user trust, user trust and user consumption willingness, as well as the role played by user trust in the relationship between privacy protection status and user consumption willingness. Meanwhile, the control variables of user consumption willingness were studied to increase the accuracy and reliability of the study. The model is shown in Figure 1.

Table 2. Relevant variables and definitions

variant	define
User Privacy Awareness	It refers to the importance and willingness of users to protect their personal information and privacy.
Platform Privacy Measures	refers to the various measures and methods adopted by the Platform to protect user privacy
User privacy leakage concerns	It refers to a user's concern and anxiety about the disclosure or misuse of his or her private information.
Platform Group Privacy Protection Reputation	Comprehensive evaluation of the platform given by users in the process of enjoying the products or services provided by the platform party by integrating their own feelings and the social influence of the platform.
User Consumption Willingness	Refers to a user's willingness and ability to purchase a product or service over a certain period of time
user trust	The extent to which users believe that an e-commerce platform can protect their privacy by implementing the content of its privacy policy and whether users trust the platform

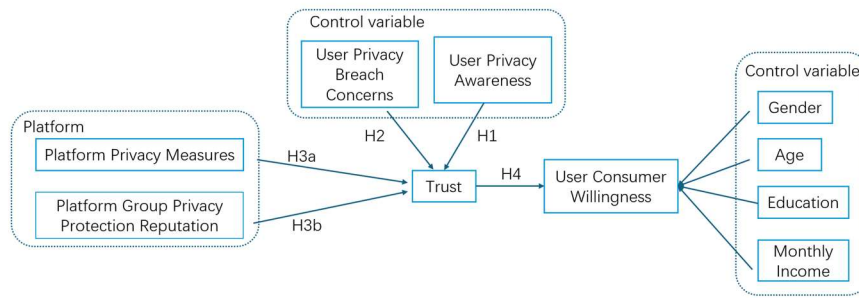


Figure 1. Theoretical model

3. Empirical Analysis

3.1. Preliminary

3.1.1. Questionnaire Designs

The questionnaire was designed using a fully closed-ended questionnaire, which was divided into three parts:

- 1) Preface: this part mainly explains who is conducting the survey, what is being surveyed and the intention of the survey, and promises to keep the respondents' answers confidential and thank them for their answers;
- 2) Personal information: five aspects including gender, age, education level and monthly income of the sample are used as control variables in this study;
- 3) Scale part: study the e-commerce platform group privacy protection status on the user consumption willingness to large impact research, the user privacy protection awareness, platform privacy protection measures, user privacy leakage concerns, platform group privacy protection reputation, user trust, user consumption willingness of the six model variables are used Likert five-level scale structure. Combined with domestic and international related literature to organize the study, each variable is set up 3 question items for measurement, details are shown in Table 3.

Table 3. Questionnaire design

variant	meters	source
User Privacy Awareness	A1 I will endeavor to protect my personal information	self-development
	A2 I will take proactive steps to protect my personal information	
	A3 I would be very offended if someone shared my personal information without my explicit permission	
User privacy leakage concerns	B1 I'm afraid my personal information will be hacked and stolen.	self-development
	B2 I am afraid that my personal information will be used by some organizations for commercial purposes.	
	B3 I am afraid that my personal information will be publicized and affect my image and credibility	
Platform Group Privacy Protection Reputation	C1 The platform can provide support for product and service assurance	Xuhui Wang (2021) [9]
	C2 I am willing to spread word of mouth about the platform	
	C3 I think the platform is top notch in its category	
Platform Privacy Measures	D1 The platform provided enough information for me to understand how they use and share my personal information	self-development
	D2 The platform allows me to choose whether or not to share my personal information with other users	
	D3 The platform has taken appropriate technical measures to protect my personal information	

Table 3. Questionnaire design (continued)

variant	meters	source
user trust	E1 I believe that the e-commerce platform is capable of protecting my personal information from being disclosed	Yuan Xiangling (2021)[10]
	E2 I believe that the e-commerce platform will make reasonable use of my personal information	
	E3 I assume that the e-commerce platform will comply with user privacy protection protocols	
User Consumption Willingness	F1 I am willing to use the e-commerce platform, including the provision of personal information	Zhou(2017)[11]
	F2 I will buy products recommended by other members of the platform	
	F3 I will continue to purchase goods from this e-commerce platform in the future	

3.1.2. Pre-survey

In order to ensure the reliability of the survey, this study actively sought suggestions for changes from teachers and students after the initial design of the questionnaire and made amendments in a timely manner. Meanwhile, the questionnaires were distributed on a small scale online and 50 copies were successfully recovered. Statistical analysis of these questionnaires revealed that the indicators were relatively stable. Given that this paper studies the impact of the privacy protection status of the e-commerce platform group on users' consumption intention, for a better investigation, we added an option in the formal response scale section, which asked whether the user had used the e-commerce platform in the past six months. After a series of modifications, we finalized the formal questionnaire. The purpose of these steps was to ensure the accuracy and reliability of the questionnaire and to avoid the influence of factors such as conceptual confusion and ambiguity on the survey results. Through such a careful research and revision process, we can better collect and analyze the data in order to gain an in-depth understanding of the relationship between the privacy protection status of e-commerce platforms and users' consumption intention.

3.1.3. Formal Investigations

In this study, a formal survey was conducted in the form of a web-based questionnaire, which was shared through the Questionnaire Star platform as well as social software such as QQ and WeChat. The questionnaire link was also dispersed and sent to users in different provinces, and they were encouraged to share the questionnaire link with their friends and relatives in different cities in their provinces. In the end, 230 questionnaires were recovered. Since 34 samples had not used the e-commerce platform in the past 6 months, we excluded these samples and finally obtained 196 valid questionnaires. This sample size is more than twice the number of questionnaire questions, indicating a representative sample for this study. The purpose of these steps is to ensure that the sample obtained in this study is somewhat broad and representative, so as to more accurately reflect users' perceptions and attitudes toward the privacy protection status and consumption intentions of e-commerce platforms.

3.2. Data Analysis

3.2.1. Descriptive Statistical Analysis

1) Demographic Characteristics

The descriptive statistics of the sample can reflect the general characteristics of the respondents, and the demographic variables in the final formal questionnaire of this study are gender, age, education level, and monthly disposable income. The statistical results are shown in Table 4.

Table 4. Demographic Characteristics

variant	form	Number	Frequency (%)
genders	male	75	38.27
	female	121	61.73
age	Below 18	2	1.02
	18-25 years	123	62.76
	26-35 years	49	25
	36-45 years	18	9.18
	46 and over	4	2.04
educational attainment	Primary and below	5	2.55
	junior high school	4	2.04
	senior high school	18	9.18
	College and Bachelor's Degree	157	80.01
	Master's degree and above	12	6.12
	other	0	0
monthly salary	Less than 1000	22	11.22
	1000-3000yuan	55	28.06
	3000-5000yuan	50	25.21
	5000-8000yuan	37	18.88
	8000-10000yuan	26	13.27
	10,000 or more	6	3.06

According to the data in the table above, our sample contains 196 participants. Among them, there are 75 males (38.27% of the sample) and 121 females (61.73% of the sample), with a male to female ratio close to 1:2. Regarding the age distribution of the survey respondents, we found that the population in the sample is mainly concentrated in the age group of 18-25 years old, which accounts for 62.76% of the sample. This age group mainly includes college students or young people who have just worked, who are the main consumer group of online shopping and the main audience of this survey. These data show that our sample is relatively balanced in terms of gender and age, and is able to represent the target population better, further enhancing the reliability of our findings. The next age group, 26-35 years old, accounted for 25%, while the number of other age groups was small. The education level of this research is mostly college and undergraduate graduates, accounting for 80.01% of the total number of samples, which shows that the people involved in this research have a high level of literacy, which ensures the quality of the questionnaire recovery, followed by master's degree graduates and above (6.12%), and the last literacy level of elementary school and below and junior high school graduates in small numbers; since most of the targets of this research are students and full-time workers, so there are fewer people with a monthly income of less than 1,000 and more than 10,000, and the largest distribution of monthly income is between 1,000 and 5,000 yuan, including 1,000-3,000 yuan accounted for 28.06%, 3,000-5,000 yuan accounted for 25.21%, and 5,000-8,000 yuan accounted for 18.88%. To summarize, this sample is mainly a group of young people, with college and undergraduate education, and the monthly income is mainly distributed between 1,000-5,000 yuan.

2) Descriptive statistics of each variable

According to the results of the analysis shown in Table 5, descriptive statistics were analyzed for each research variable in the sample. From the table, it can be seen that the minimum and maximum values of each research variable are basically in line with the 5-level scale range set

by the questionnaire. In addition, the mean values of all these variables ranged from 3.5 to 4.0. These results indicate that the overall attitudes and perceptions expressed by the participants in the sample of this study regarding each of the research variables are at a moderately positive level. This means that they hold more positive attitudes towards privacy protection status, user trust and user consumption intention. Overall, the samples of this study show a certain stability and consistency in each research variable, which provides a reliable data base for further analysis and research in this study. And the mean value of each question item of the questionnaire for the variables in this study is above 3 (median), and the standard deviation is between 1.0-2.0, with a small standard deviation, basically obeying a normal distribution. Users' awareness of their own user privacy protection and their willingness to worry about user privacy leakage are higher, and users' willingness to the platform's platform privacy protection measures and the platform group's reputation for privacy protection are also higher, especially users' willingness to trust the platform's users.

Table 5. Descriptive Statistical Analysis of Variables

variant	N	minimum value	maximum values	averages	Specimen bias
User Privacy AwarenessA1	196	1	5	3.67	1.365
User Privacy AwarenessA2	196	1	5	3.72	1.193
User Privacy AwarenessA3	196	1	5	3.48	1.311
User privacy leakage concerns B1	196	1	5	3.58	1.223
User privacy leakage concerns B2	196	1	5	3.46	1.156
User privacy leakage concerns B3	196	1	5	3.81	1.448
Platform Group Privacy Protection Reputation C1	196	1	5	3.67	1.17
Platform Group Privacy Protection ReputationC2	196	1	5	3.82	1.147
Platform Group Privacy Protection ReputationC3	196	1	5	3.66	1.154
Platform Privacy MeasuresD1	196	1	5	3.83	1.158
Platform Privacy MeasuresD2	196	1	5	3.65	1.11
Platform Privacy MeasuresD3	196	1	5	3.73	1.195
user trustE1	196	1	5	4.03	1.231
user trustE2	196	1	5	4.13	1.229
user trustE3	196	1	5	3.95	1.117
User Consumption WillingnessF1	196	1	5	3.81	1.128
User Consumption WillingnessF2	196	1	5	3.76	1.077
User Consumption WillingnessF3	196	1	5	3.77	1.171
Effective number of cases (in columns)	196	-	-	-	-

3.2.2. Reliability Analysis

The sample reliability analysis assessed the reliability of the questionnaire by using the Cronbach's alpha metric. Cronbach's alpha is the mean value obtained by calculating the folded half reliability coefficient for all possible combinations of items. The closer the value is to 1, the smaller the error in the results, indicating a higher internal consistency of the questionnaire. In this study, Cronbach's α was used to evaluate the reliability of the questionnaire indicators. According to common judgment standards, when the value of Cronbach's α is between 0.8 and 0.9, it indicates that the reliability of the scale is very good; between 0.7 and 0.8, it indicates that the reliability of the scale is good; between 0.6 and 0.7, it indicates that the reliability of the scale is acceptable; when Cronbach's α is less than 0.6, it is generally regarded that the internal consistency of the scale is insufficient. By analyzing the reliability of the sample, this study can assess the reliability and consistency of the scale and determine whether the data obtained can

be trusted and used. Higher reliability analysis scores indicate that the scale performs well in terms of internal consistency, increasing the credibility and accuracy of the study results. The results of the reliability indicators measured by Spss 26 software in this paper are shown in Table 6, the Cronbach's alpha coefficients of user privacy protection awareness, user privacy leakage concerns, platform group privacy protection reputation, platform privacy protection measures, user trust, and user consumption intention are all greater than 0.8, and the CITC values are all greater than 0.4 indicating a good correlation among the analyzed items, and also indicates a good level of reliability, and the Cronbach's α coefficient of the overall sample is 0.953. In summary, the research data reliability coefficient value is higher than 0.9, which comprehensively indicates that the data reliability is of high quality and can be used for further analysis.

Table 6. Table of results of reliability analysis for each variable

variant	Correction line total correlation (CITC)	Cronbach's alpha coefficient after deletion of terms	Cronbach's alpha coefficient
User Privacy AwarenessA1	0.789	0.952	0.953
User Privacy AwarenessA2	0.703	0.953	
User Privacy AwarenessA3	0.654	0.954	
User privacy leakage concernsB1	0.745	0.953	
User privacy leakage concernsB2	0.763	0.953	
User privacy leakage concernsB3	0.791	0.952	
Platform Group Privacy Protection ReputationC1	0.799	0.952	
Platform Group Privacy Protection ReputationC2	0.761	0.953	
Platform Group Privacy Protection ReputationC3	0.597	0.955	
Platform Privacy MeasuresD1	0.681	0.954	
Platform Privacy MeasuresD2	0.658	0.954	
Platform Privacy MeasuresD3	0.784	0.952	
user trustE1	0.748	0.953	
user trustE2	0.594	0.955	
user trustE3	0.719	0.953	
User Consumption WillingnessF1	0.673	0.954	
User Consumption WillingnessF2	0.733	0.953	
User Consumption WillingnessF3	0.810	0.952	

3.2.3. Validity Analysis

In order to assess the suitability of the sample data for factor analysis, KMO measure and Bartlett's spherical test coefficients were used in this study[12].KMO measure is used to assess the correlation between the variables, which ranges from 0 to 1, and the closer the value is to 1, the greater the correlation between the variables, which is suitable for factor analysis. Bartlett's spherical test is used to test whether the correlation between variables is significant or not, which requires a p-value less than 0.05 to indicate that there is a significant correlation between variables. Bartlett spherical test is used to test whether the correlation between the variables is significant or not, which requires a P value less than 0.05 to indicate that there is a significant correlation between the variables. According to the results of data analysis in this study, the KMO value is 0.960, which is very close to 1, indicating that the correlation between the variables in the sample data is high, which is very suitable for factor analysis. In addition,

the results of Bartlett's sphericity test also showed significance, further proving the correlation between the variables.

In summary, based on the KMO values and the results of Bartlett's spherical test, this study can conclude that the data recovered from this survey is very suitable for factor analysis and can be continued to validity test to further verify the validity of the scale.

Table 7. Table of KMO and Bartlett's test for total sample

KMO Quantity of Sample Suitability		0.915
Bartlett's test of sphericity	approximate chi-square (math.)	927.535
	(number of) degrees of freedom	15
	significance	0.000

In this study, we used Spss 26 to perform a validated factor analysis (CFA) to assess the structural validity of the model[11]. Based on the results of the analysis, this study found that the modified model has a good fit, which validates the reasonableness of the research model. As shown in Table 8, the absolute value of the standardized loading coefficients of each variable is greater than 0.6 and significant, which means that there is a good measurement relationship between these variables and their corresponding factors. In addition, in this validated factor analysis, a total of six factors and 18 analytic terms were examined in this study. As shown in Table 9, we can see that the AVE (Average Variance Extracted) values corresponding to a total of six factors are all greater than 0.5 and the CR (Construct Reliability) values are all higher than 0.7. This suggests that the data used in this analysis have good convergent validity, i.e., the factors corresponding to the individual measurement items have a high degree of internal consistency.

In summary, based on the results of the validated factor analysis, we can conclude that the research model has good construct validity. There is a good measurement relationship between each variable and its corresponding factor, and the data have good convergent validity. These results further validate the accuracy and reliability of the scales used in this study in measuring the concepts involved.

Table 8. Cross factor loading matrix

subject	User Privacy AwarenessA	User privacy leakage concernsB	Platform Group Privacy Protection ReputationC	Platform group privacy protection measuresD	user trustE	User Consumption WillingnessF
A1	0.919	0.711	0.721	0.658	0.607	0.666
A2	0.860	0.580	0.681	0.580	0.570	0.617
A3	0.840	0.622	0.617	0.537	0.454	0.536
B1	0.639	0.909	0.633	0.635	0.578	0.654
B2	0.659	0.919	0.623	0.645	0.598	0.678
B3	0.712	0.926	0.691	0.649	0.626	0.679
C1	0.750	0.671	0.887	0.691	0.685	0.668
C2	0.660	0.633	0.883	0.657	0.656	0.688
C3	0.536	0.473	0.766	0.543	0.521	0.514
D1	0.527	0.564	0.609	0.828	0.608	0.661
D2	0.542	0.555	0.573	0.817	0.540	0.634
D3	0.647	0.648	0.704	0.887	0.695	0.722
E1	0.588	0.615	0.698	0.663	0.885	0.687
E2	0.434	0.485	0.544	0.545	0.794	0.563
E3	0.573	0.566	0.638	0.658	0.876	0.682
F1	0.502	0.566	0.563	0.651	0.635	0.833
F2	0.587	0.608	0.644	0.680	0.654	0.875
F3	0.711	0.709	0.707	0.728	0.670	0.874

Note: Bolded numbers are standardized loading coefficients for each variable.

Table 9. Table of results for model AVE and CR indicators

variant	Mean variance extraction AVE value	Combined Reliability CR
User Privacy Awareness	0.658	0.852
User privacy leakage concerns	0.764	0.907
Platform Group Privacy Protection Reputation	0.589	0.809
Platform Privacy Measures	0.575	0.801
user trust	0.598	0.815
User Consumption Willingness	0.613	0.825

In this study, discriminant validity was used in this study to assess the extent of differences in observed values between variables. The test for discriminant validity is that the arithmetic square root of the AVE (average variance extracted) of each latent variable should be greater than the value of the correlation coefficient between that factor and the other latent variables (or the absolute value if the correlation coefficient is negative). Based on the results in Table 10, we can conclude that the measurement model has good discriminant validity. This is because the arithmetic square root of the AVE value of each latent variable is greater than the value of the correlation coefficient with the other latent variables, which indicates that the variables can be well differentiated on the measurements and there is no high correlation. In other words, the measurement model used in the study is able to effectively differentiate the observed values among different variables, and each variable has a good uniqueness in measurement and does not show high correlation with each other. This result further validates the validity and reliability of the research model and provides a basis for subsequent data analysis and conclusion inference.

Table 10. District Effectiveness Analysis Table

	User Privacy Awareness	User privacy leakage concerns	Platform Group Privacy Protection Reputation	Platform Privacy Measures	user trust	User Consumption Willingness
User Privacy Awareness	0.812					
User privacy leakage concerns	0.733	0.874				
Platform Group Privacy Protection Reputation	0.762	0.702	0.767			
Platform Privacy Measures	0.657	0.68	0.733	0.774		
user trust	0.614	0.652	0.73	0.726	0.772	
User Consumption Willingness	0.707	0.723	0.734	0.748	0.718	0.821

Note: Bolded diagonal numbers are AVE square root values.

Summarizing the results of the above reliability and validity analyses, it can be concluded that the measurement model used in this study has high reliability and validity. This means that the scales used are measurably reliable and valid and accurately capture the relationships between the study variables. These results provide a solid foundation for further analysis and hypothesis testing of the model to follow.

3.3. Model Checking

In this study, spssau software was used as a data analysis tool to further validate the research hypotheses and theoretical models through regression analysis, and the specific results of hypothesis validation are shown in Table 11.

Table 11. Regression coefficients of variables on user trust

	Non-standardized coefficient		Standardized coefficient	t	p	R2	F	VI F
	B	standard error	Beta					
a constant (math.)	4.01	0.437	-	9.186	0.000**	-	-	-
User Privacy Awareness	0.553	0.051	0.614	10.848	0.000**	0.378	117.67	1
User privacy leakage concerns	0.565	0.047	0.652	11.963	0.000**	0.425	143.16	1
Platform Privacy Measures	0.755	0.051	0.725	14.673	0.000**	0.526	215.307	1
Platform Group Privacy Protection Reputation	0.773	0.051	0.744	15.265	0.000**	0.553	233.017	1
Dependent variable: user trust								
* p<0.05 ** p<0.01								

From the above table:

(1) User privacy protection awareness has a significant positive effect on user trust. The regression coefficient is 0.553, which means that for every unit increase in user privacy protection awareness, user trust will also increase by 0.553 units accordingly, and the model formula is: $\text{user trust} = 4.010 + 0.553 \times \text{user privacy protection awareness}$. The fit of the model (R-square) is 0.378, indicating that user privacy protection awareness can explain 37.8% of the change in user trust.

(2) User privacy leakage concern has a significant positive effect on user trust. The regression coefficient is 0.565, which means that for every unit increase in user privacy leakage worry, user trust will also increase by 0.565 units accordingly, and the model formula is: $\text{user trust} = 3.928 + 0.565 \times \text{user privacy leakage worry}$. The fit of the model (R-square) is 0.425, indicating that user privacy leakage concerns can explain 42.5% of the change in user trust.

(3) Platform group privacy protection reputation has a significant positive effect on user trust [14]. The regression coefficient is 0.773, which means that for every unit increase in platform group privacy protection reputation, user trust will also increase by 0.773 units accordingly, and the model formula is: $\text{user trust} = 3.928 + 0.565 \times \text{user privacy leakage worry}$. The fit of the model (R-square) is 0.553, indicating that the platform group privacy protection reputation can explain 55.3% of the change in user trust.

(4) Platform privacy protection measures have a significant positive effect on user trust. The regression coefficient is 0.755, which means that for every unit increase in platform privacy protection measures, user trust will also increase by 0.755 units accordingly, and the model formula is: $\text{user trust} = 2.160 + 0.755 \times \text{platform privacy protection measures}$. The fit of the model (R-square) is 0.526, indicating that platform privacy protection measures can explain 52.6% of the change in user trust.

In other words, the results of the above analysis indicate that user privacy protection awareness, user privacy leakage concerns, platform group privacy protection reputation, and platform privacy protection measures all have an important influence on user trust, and this influence relationship is positive. These results provide strong evidence for the study, support

the relevant hypotheses, and provide a basis for further exploring the mechanism of user trust formation.

Table 12. Regression coefficients of user trust on user consumption intention

	Non-standardized coefficient		Standardized coefficient	t	p	R2	F	VIF
	B	standard error	Beta					
constant	2.319	0.4	-	5.802	0.000**	-	-	-
user trust	0.719	0.045	0.754	16.01	0.000**	0.569	256.313	1
Dependent variable: users' willingness to consume								
* p<0.05 ** p<0.01								

As can be seen from the above table:

User trust will have a significant positive impact on the user's willingness to consume relationship, as can be seen from the above table, the model formula is: user willingness to consume = 2.319 + 0.719 * user trust, the model R-squared value of 0.569, which means that the user trust can explain the reason for 56.9% of the change in the user's willingness to consume. As the level of user trust increases, the user's willingness to consume increases accordingly. The model has a high degree of fit and the F-test results are significant, further confirming the reliability of this relationship.

Table 13. Regression coefficients of control variables on users' willingness to consume

	Non-standardized coefficient		Standardized coefficient		t	p	R2	F	VIF
	B	standard error	Beta						
constant	8.65	0.722	-	11.974	0.000**	-	-	-	
genders	-0.197	0.428	-0.033	-0.461	0.645	0.001	0.212	1	
Age	0.164	0.274	0.043	0.598	0.55	0.002	0.358	1	
educational attainment	-0.662	0.309	-0.152	-2.141	0.034*	0.023	4.583	1	
monthly salary	-0.2	0.158	-0.091	-1.269	0.206	0.008	1.611	1	
Dependent variable: users' willingness to consume									
* p<0.05 ** p<0.01									

From the above table it can be seen that:

(1) From the above table, it can be seen that gender as an independent variable, while the user's willingness to consume as a dependent variable for linear regression analysis, as can be seen from the above table, the model formula is: the user's willingness to consume = 8.650-0.197*, gender model R-square value of 0.001, which means that gender explains 0.1% of the reason for the change in the willingness of the user to consume. F-test of the model found that the model did not pass the F-test (F = 0.212, p = 0.645 > 0.05), which means that gender does not affect the relationship between the user's willingness to spend.

(2) As can be seen from the above table, age as the independent variable, while the user's willingness to consume as the dependent variable for linear regression analysis, as can be seen from the above table, the model formula is: the user's willingness to consume = 7.925 + 0.164 *, the age model R-squared value of 0.002, which means that the age can explain the user's willingness to consume the reason for the change of 0.2%. F-test of the model found that the model did not pass the F-test (F = 0.358, p = 0.550 > 0.05), that is, it shows that age does not affect the relationship between the user's willingness to spend summation.

(3) From the above table, it can be seen that the education level: as the independent variable, and the user's willingness to spend as the dependent variable for linear regression analysis, as can be seen from the above table, the model formula is: the user's willingness to spend = 10.881-0.662*, the education level model R-squared value of 0.023, meaning that the education level: can explain the user's willingness to spend the reason for the change of 2.3%. F-test of the model found that the model through the F-test (F = 4.583, p = 0.034 < 0.05), that is, indicating that the

degree of education will definitely have an impact on the user's willingness to consume the sum of the relationship, and ultimately the specific analysis of the regression coefficient value of the degree of education is -0.662 ($t = -2.141$, $p = 0.034 < 0.05$), meaning that the degree of education will have a significant negative effect on the user's willingness to consume the sum of the relationship. Consumption willingness to seek and produce a significant negative impact on the relationship.

(4) From the above table, it can be seen that the monthly income is used as the independent variable, while the user's willingness to consume as the dependent variable for linear regression analysis, as can be seen from the above table, the model formula is: user's willingness to consume summation = $8.941 - 0.200*$, the monthly income is the model R-square value of 0.008, meaning that the monthly income is the reason that can explain user's willingness to consume 0.8% of the change. F-test of the model found that the model did not pass the F-test ($F = 1.611$, $p = 0.206 > 0.05$), which means that the monthly income is does not affect the relationship between the user's willingness to spend.

3.4. Mediation Effect Test

3.4.1. Definition of Intermediary Variables

Consider the influence of the independent variable X on the dependent variable Y. If X affects Y by influencing the variable M, M is said to be the mediating variable [15]. In the case of this paper, for example, if the platform privacy protection measures affect user trust, which in turn affects the user's willingness to consume, in this example, user trust is the mediating variable; assuming that all variables have been centered (i.e., the mean is zero), and if there is only one independent variable variable with one mediating variable available the following regression equation to describe the relationship between the variables: $Y = cX$; $M = aX$; $Y = c'X + bM$.

When considering the role of the mediator variable, stepwise regression analysis can be used to test whether the mediator variable plays a role or not, and further analysis can be done based on the type of mediating effect. The mediating effect can be categorized into partial mediating effect and full mediating effect; if the relationship of independent variable X on dependent variable Y still has a significant effect after the introduction of the mediating variable M, i.e., the independent variable X still has a significant direct effect on the dependent variable Y while controlling for the mediating variable. Partial mediating effects can be tested by the following steps:

First, test the relationship of independent variable X on dependent variable Y through regression analysis to ensure that the regression coefficient c is significant. Next, the relationship of the independent variable X to the mediating variable M is tested by regression analysis to ensure that the regression coefficient a is significant. Finally, the relationship of the independent variable X and the mediating variable M to the dependent variable Y is tested by regression analysis to test the significance of the regression coefficients c' and b. If the regression coefficient c' is significant but b is not, it means that there is a partial mediation effect. If the relationship of independent variable X on dependent variable Y is no longer significant after the introduction of mediator variable M, i.e., the effect of independent variable X on dependent variable Y is fully mediated through mediator variable M, controlling for the mediator variable. The full mediating effect can be tested by the following steps:

First, the relationship of independent variable X on dependent variable Y is tested by regression analysis to ensure that the regression coefficient c is significant. Next, test the relationship of the independent variable X to the mediating variable M through regression analysis to ensure that the regression coefficient a is significant. Finally, test whether the relationship of independent variable X to dependent variable Y becomes insignificant when both independent variable X and mediating variable M are considered. If the regression coefficient c' is not significant, it means that there is a full mediation effect.

By testing the above steps, it can be determined whether the mediating variable plays a mediating role between the independent variable and the dependent variable, and whether it is a partial mediating effect or a full mediating effect. In Figure 2, c is the total effect of X on Y , ab is the indirect effect after the mediating variable M , c' is the direct effect, and the regression coefficient satisfies $c = c' + ab$.

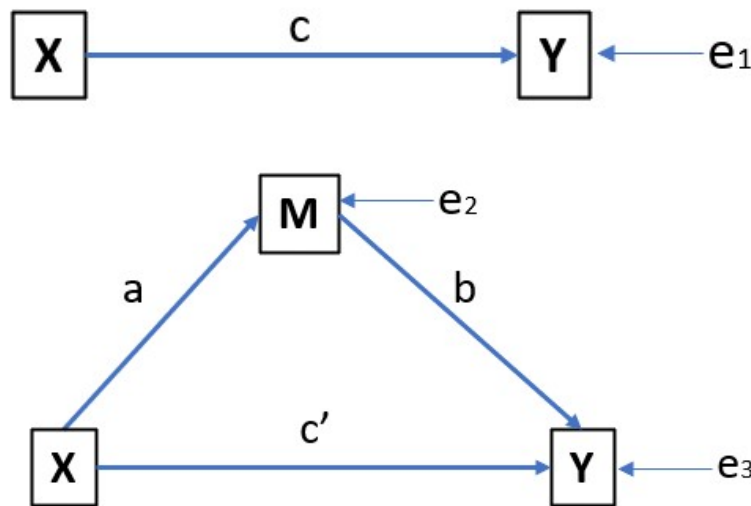


Figure 2. Schematic diagram of mediating variables

3.4.2. Tests for Mediating Effects

This study uses Spss 26 to sequentially test the regression coefficients and then test whether there is a mediating effect of the mediating variable between the independent variable and the dependent variable, through the regression coefficient analysis to further validate the mediating effect of the hypothesis of the study, the results of the test of the mediating effect are shown below:

(1) The mediation test of user trust in user privacy protection awareness and user consumption intention

As shown in Table 14, the regression coefficient $a=0.614$ ($p=0.000<0.001$), as shown in Table 15, the regression coefficient $c=0.707$ ($p=0.000<0.001$), and as shown in Table 16, the regression coefficient $b=0.454$ ($p=0.000<0.001$), the regression coefficient $c'= 0.428$ ($p=0.000<0.001$), so user trust plays a partial mediating role in user privacy protection awareness and user consumption intention.

Table 14. Regression coefficients of user privacy protection awareness and user trust.

model	Unstandardized coefficient		Standardized coefficient	t	significance	95.0% confidence interval for B		covariance statistics	
	B	standard error	Beta			lower limit	limit	tolerances	VIF
(Constant)	4.010	.437	-	9.186	.000	3.149	4.871	-	-
User Privacy Awareness	.553	.051	.614	10.848	.000	.452	.653	1.000	1.000

a. Dependent variable: user trust

Table 15. Regression coefficients of users' awareness of privacy protection and users' consumption intention.

model	Unstandardized coefficient		Standardized coefficient	t	significance	95.0% confidence interval for B		covariance statistics	
	B	standard error	Beta			lower limit	limit	tolerances	VIF
(Constant)	2.143	.264	-	8.130	.000	1.623	2.663	-	-
User Privacy Awareness	.429	.031	.707	13.941	.000	.368	.490	1.000	1.000

a. Dependent variable: user trust

Table 16. Regression coefficients of user privacy protection awareness and user consumption intention after introducing user trust.

model	Unstandardized coefficient		Standardized coefficient	t	significance	95.0% confidence interval for B		covariance statistics	
	B	standard error	Beta			lower limit	limit	tolerances	VIF
(Constant)	.915	.273	-	3.352	.001	.377	1.453	-	-
User Privacy Awareness	.260	.034	.428	7.705	.000	.193	.326	.622	1.607
user trust	.306	.037	.454	8.178	.000	.232	.380	.622	1.607

a. Dependent variable: users' willingness to consume

(2) Mediation test of user trust in user privacy leakage worry and user consumption intention As shown in Table 17, the regression coefficient a=0.652 (p=0.000<0.001), as shown in Table 18, the regression coefficient c=0.723 (p=0.000<0.001), and as shown in Table 19, the regression coefficient b=0.429 (p=0.000<0.001), the regression coefficient c'= 0.444 (p=0.000<0.001), so user trust plays a partial mediating role in user privacy leakage concerns and user consumption intention.

Table 17. Regression Coefficients of User Privacy Breach Concerns and User Trust

model	Unstandardized coefficient		Standardized coefficient	t	significance	95.0% confidence interval for B		covariance statistics	
	B	standard error	Beta			lower limit	limit	tolerances	VIF
(Constant)	3.928	.406	-	9.674	.000	3.127	4.728	-	-
User privacy leakage concerns	.565	.047	.652	11.963	.000	.472	.658	1.000	1.000

a. Dependent variable: user trust

Table 18. Regression coefficients of user privacy breach concerns and user consumption intentions.

model	Unstandardized coefficient		Standardized coefficient	t	significance	95.0% confidence interval for B		covariance statistics	
	B	standard error	Beta			lower limit	limit	tolerances	VIF
(Constant)	2.204	.249	-	8.843	.000	1.713	2.696	-	-
User privacy leakage concerns	.422	.029	.723	14.569	.000	.365	.479	1.000	1.000

a. Dependent variable: user consumption intentions

Table 19. Regression coefficients of user privacy leakage concern and user consumption intention after introducing user trust.

model	Unstandardized coefficient		Standardized coefficient	t	significance	95.0% confidence interval for B		covariance statistics	
	B	standard error	Beta			lower limit	limit	tolerances	VIF
(Constant)	1.070	.269	-	3.984	.000	.540	1.600	-	-
privacy breach concern	.259	.034	.444	7.667	.000	.193	.326	.575	1.738
trust	.289	.039	.429	7.406	.000	.212	.366	.575	1.738

a. Dependent variable: users' willingness to consume

(3) Mediation test of user trust in platform privacy protection measures and user consumption intention

As shown in Table 20, the regression coefficient a=0.726 (p=0.000<0.001), as shown in Table 21, the regression coefficient c=0.748 (p=0.000<0.001), and as shown in Table 22, the regression coefficient b=0.369 (p=0.000<0.001), the regression coefficient c'= 0.480 (p=0.000<0.001), so user trust plays a partially mediating role in platform privacy protection measures and user consumption intention.

Table 20. Regression coefficients of platform privacy protection measures and user trust.

model	Unstandardized coefficient		Standardized coefficient	t	significance	95.0% confidence interval for B		covariance statistics	
	B	standard error	Beta			lower limit	limit	tolerances	VIF
(Constant)	2.497	.426	-	5.859	.000	1.657	3.338	-	-
Platform Privacy Measures	1.055	.072	.726	14.703	.000	.913	1.196	1.000	1.000

a. Dependent variable: user trust

Table 21. Regression coefficients of platform privacy protection measures and users' consumption intention

model	Unstandardized coefficient		Standardized coefficient	t	significance	95.0% confidence interval for B		covariance statistics	
	B	standard error	Beta			lower limit	limit	tolerances	VIF
(Constant)	1.446	.277	-	5.218	.000	.900	1.993	-	-
Platform Privacy Measures	.733	.047	.748	15.705	.000	.641	.825	1.000	1.000

a. Dependent variable: users' willingness to consume

Table 22. Regression coefficients of platform privacy protection measures and users' consumption intention after introducing user trust.

model	Unstandardized coefficient		Standardized coefficient	t	significance	95.0% confidence interval for B		covariance statistics	
	B	standard error	Beta			lower limit	limit	tolerances	VIF
(Constant)	.826	.279	-	2.964	.003	.276	1.375	-	-
Platform Privacy Measures	.470	.063	.480	7.486	.000	.346	.594	.473	2.114
user trust	.249	.043	.369	5.746	.000	.163	.334	.473	2.114

a. Dependent variable: users' willingness to consume

4) Mediation test of user trust in platform group privacy protection reputation and user consumption intention

As shown in Table 23, the regression coefficient a=0.730 (p=0.000<0.001), as shown in Table 24, the regression coefficient c=0.734 (p=0.000<0.001), and as shown in Table 25, the regression coefficient b=0.389 (p=0.000<0.001), the regression coefficient c'= 0.450 (p=0.000<0.001), so user trust plays a partial mediating role in the platform group privacy protection reputation and user consumption intention.

Table 23. Regression coefficients of platform group privacy protection reputation and user trust

model	Unstandardized coefficient		Standardized coefficient	t	significance	95.0% confidence interval for B		covariance statistics	
	B	standard error	Beta			lower limit	limit	tolerances	VIF
(Constant)	2.187	.441	-	4.957	.000	1.317	3.057	-	-
Platform Group Privacy Protection Reputation	.757	.051	.730	14.872	.000	.657	.857	1.000	1.000

a. Dependent variable: user trust

Table 24. Regression coefficients of privacy protection reputation of platform groups and users' consumption intention

model	Unstandardized coefficient		Standardized coefficient	t	significance	95.0% confidence interval for B		covariance statistics	
	B	standard error	Beta			lower limit	limit	tolerances	VIF
(Constant)	1.336	.296	-	4.519	.000	.753	1.919	-	-
Platform Group Privacy Protection reputations	.513	.034	.734	15.045	.000	.446	.580	1.000	1.000

a. Dependent variable: users' willingness to consume

Table 25. Regression coefficients of platform group privacy protection reputation and user consumption intention after introducing user trust

model	Unstandardized coefficient		Standardized coefficient	t	significance	95.0% confidence interval for B		covariance statistics	
	B	standard error	Beta			lower limit	limit	tolerances	VIF
(Constant)	.762	.289	-	2.632	.009	.191	1.332	-	-
Platform Group Privacy Protection Reputation	.314	.046	.450	6.831	.000	.224	.405	.467	2.140
user trust	.262	.044	.389	5.917	.000	.175	.350	.467	2.140

a. Dependent variable: users' willingness to consume

From the above analysis, it can be concluded that user trust mediates the relationship between users' privacy protection awareness, users' privacy leakage concerns, and group privacy protection status and users' consumption intention. In summary, a table of hypothesis testing results for the results of this study was obtained, as shown in Table 26.

Table 26. Summary of hypothesis testing results

Assumption number	Hypothetical content	Test results
H1	User privacy awareness positively affects user trust	Assuming it holds
H1a	User trust mediates between user awareness of privacy protection and user willingness to consume	Assuming it holds
H2	User Privacy Breach Concerns Positively Affect User Trust	Assuming it holds
H2a	User Trust Mediates Between Privacy Concerns and Consumption Intentions of Users	Assuming it holds
H3a	Platform Privacy Protections Positively Influence User Trust	Assuming it holds
H3b	Platform Group Privacy Protection Reputation Positively Influences User Trust	Assuming it holds
H4	User trust positively influences users' willingness to spend	Assuming it holds
H5	User Trust Mediates Group Privacy Protection Status and User Consumption Intention	Assuming it holds

4. Conclusion

This study combines the privacy protection status, user trust and user consumption willingness and other related theories, based on the communication privacy management theory, ACPO theoretical model constructed e-commerce platform group privacy protection status on user consumption willingness to study the mechanism model, a preliminary study of the model. At the same time, we examine the role of hidden user trust in the whole process and analyze the mediating effect of user trust in the mechanism of action Based on the verification analysis of the model in the previous chapter, we discuss the following findings of the malefactor:

1) user privacy protection awareness, user privacy leakage concerns, platform privacy protection measures, platform group privacy protection reputation to user trust are significant in the path of action

According to the findings of this paper, the paths of user privacy protection awareness, user privacy leakage concern, platform privacy protection measures, platform group privacy protection reputation to user trust are all significant. When people are shopping online, they pay more attention to the e-commerce platform's platform privacy protection measures, platform group privacy protection reputation as well as their own user privacy leakage concerns and their own user privacy protection awareness. This is because users tend to base their user trust on the platform privacy protection measures provided by the platform. If they feel that the platform does not have adequate platform privacy protection measures or the platform group privacy protection reputation is bad, they will worry about the leakage or misuse of their personal information, which will reduce their user trust in the platform. In addition, the results of the study also show the significant impact of users' concerns about their privacy leakage on building user trust. This suggests that the risk of privacy leakage may not only affect users' purchasing decisions, but also their level of user trust in the platform. Therefore, platforms need to adopt proactive platform privacy protection measures to minimize users' concerns about user privacy leakage in order to increase users' user trust in the platform. It is worth noting that the awareness of user privacy protection has an impact on users' purchasing decisions and the degree of user trust, therefore, in the actual operation, platforms still need to strengthen the guidance and education of user privacy protection awareness to improve users' awareness of user privacy protection and sense of security.

2) User trust mediates user privacy protection awareness, privacy leakage concerns, platform privacy protection measures, and platform group privacy protection reputation

According to the results of this paper, user trust mediates user privacy protection awareness, privacy leakage concerns, platform privacy protection measures, and platform group privacy protection reputation. Specifically, in terms of user privacy leakage concerns, users' concerns about their own privacy leakage affect the level of user trust in e-commerce platforms, which in turn affects their willingness to consume. This is because if users feel that their privacy is at risk of being leaked, they will worry about the misuse of their personal information, which reduces their user trust in the platform and thus influences their purchasing behavior.

In terms of platform privacy protection measures, the better the platform privacy protection measures provided by the e-commerce platform, the higher the user trust in the platform, which increases their willingness to consume. This is because users tend to base their user trust on the platform privacy protection measures provided by the platform, and if the platform is able to provide adequate platform privacy protection measures, it will enhance users' user trust in the platform, which in turn will promote shopping behavior. In terms of platform group privacy protection reputation, the better the reputation of an e-commerce platform, the higher the user trust of users in the platform, which increases their willingness to spend. This is because a good platform group privacy protection reputation tends to reflect the reliability and credibility of the platform, which has a clear advantage in market competition. Therefore, if the platform can provide good services and products and maintain a good reputation, it will enhance users' user trust in the platform, which in turn will promote shopping behavior. In terms of users' awareness of privacy protection, when users believe that platforms can protect their privacy, they are more likely to form a positive impression about the platforms and regard them as trusted service providers.

Therefore, platforms should pay attention to users' concerns about privacy protection and take the necessary steps to enhance users' user trust in the platform. This requires platforms to enhance transparency, increase data security, improve user control, promote user education

and training and maintain a good reputation. Only in this way can platforms gain the user trust of their users, leading to rapid and solid growth.

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