Online-Journals.org

iTDAF IETI Transactions on Data Analysis and Forecasting

iTDAF | eISSN: 2959-0442 | Vol. 1 No. 3 (2023) | OPEN ACCESS

https://doi.org/10.3991/itdaf.v1i3.44233

PAPER

# Study on Peasant Household's Willingness to Continue Using E-Commerce Platform for Agricultural Products

**Kaiyuan Liu[1](✉), Ziru Xue[2], Yali Zhang[3]**

[1]School of Management, Wuhan Polytechnic University, Wuhan, China

[2]Business School, University of Shanghai for Science and Technology, Shanghai, China

[3]INWASCON, Cyberjaya, Malaysia

358946514@qq.com

**ABSTRACT**

The agricultural product e-commerce platform enables users in agriculture-related fields to complete online production, sales, trading, and payment. This paper employs a structural equation model to empirically examine the significant positive impact of platform environment, trust, satisfaction, polyfunctionality, operation cost, and other factors on peasant households' intention for continuous use. This is achieved through the collection of questionnaires and the development of hypotheses and models using structural equation model (SEM). The platform environment, trust, satisfaction, and MF all benefit from lower operating costs.

**KEYWORDS**

peasant household, e-commerce, e-commerce platform for agricultural product, continuity participation intention

## 1 INTRODUCTION

E-commerce platforms, in general, refer to e-commerce platforms, and retaining users and attracting customers has become an unavoidable marketing problem. Existing research on agricultural e-commerce platforms has done a lot of analysis and demonstration on the first use, innovation, drainage, and platform content of peasant households, but little research has been done on the platform's continuous use intention. The brand loyalty and stickiness of peasant households are extremely important to e-commerce businesses. Based on the literature review, this paper chooses four representative factors for analysis: polyfunctionality (MF), platform environment (PE), trust (TR), and satisfaction (CSI), and uses operation cost (PE) as a regulating variable. For data analysis, the structural equation model (SEM) was used.

Liu, K., Xue, Z., Zhang, Y. (2023). Study on Peasant Household's Willingness to Continue Using E-Commerce Platform for Agricultural Products. *IETI Transactions on Data Analysis and Forecasting (iTDAF)*, 1(3), pp. 18–31. https://doi.org/10.3991/itdaf.v1i3.44233

Article submitted 2023-08-13. Revision uploaded 2023-09-16. Final acceptance 2023-09-20.

# 2 LITERATURE REVIEW AND HYPOTHESIS

## 2.1 Continuous use intention

E-commerce platforms must be designed with the concept of "people-oriented" in mind from the start, and it is expected that harmony and satisfaction will have a significant impact on peasant households' intention to continue using the platform. Based on the theory of expectation confirmation, Almarzouqi A used the PLS algorithm and bootstrapping to test the continuous use intention of an online education platform based on the path coefficient and significance level between factors, and discovered that user satisfaction and expectation confirmation had a positive impact on the continuous use intention [1]. Park S demonstrated, using the technology acceptance and use model, that improving users' perception and using interesting performance can effectively increase users' continuous use intention to bike-sharing [2]. Bhattacherjee discovered that the key elements are developing a mature information system and retaining users' continuous use [3]. Peasant homes of various ages and stages are confronted with an e-commerce platform for agricultural products. Accurate design will meet the needs of various applicable people, which is also essential for the long-term use of peasant homes.

## 2.2 Satisfaction

Satisfaction is the most fundamental factor influencing the actual platform experience, as well as the most direct factor influencing the intention to continue using the platform. Purohit S empirically tested, using the expected confirmation theory and the use intention model that perceived satisfaction is positively correlated with users' intention to continue participating in mobile libraries [4]. Thanomsing C used a questionnaire survey to examine the positive influence of user experience satisfaction on the continuation participation intention of the WeChat official account platform using the TAM model [5]. Kwangsawad A discovered that the higher the level of user satisfaction, the higher the intention of community users to continue using the service [6]. Using the technology acceptance model (TAM) and the expected confirmation theory, Bhattacherjee empirically tested whether satisfaction has a significant positive effect on continuous use intention [7]. On this basis, the following assumptions are advanced:

*H1: Satisfaction has a significant positive impact on the continuous use of e-commerce platform.*

## 2.3 Trust

Kao, W. K believes that the intermediary effect of trust has a significant negative impact on consumers' mobile business behavior [8]. Laksamana P thinks that the risk perception ability of users is negatively correlated with trust and further draws the conclusion that trust will affect the use intention of e-commerce [9]. Based on this, the following assumptions are put forward:

*H2: Trust has a significant positive impact on the continuous use of e-commerce platform.*

## 2.4 Platform environment

Sadaa A. M. use a structural equation model to investigate how users' perceived usefulness and service quality of online platforms affect their satisfaction and use intention [10]. The SERVQUAL model, combined with the personalized recommendation evaluation scale of an e-commerce platform, is used by Villi, Fan W to test whether bad recommendation overload in the platform environment causes compulsive online control for users and even has a negative impact on the platform's continuation participation intention [11]. The following assumptions are advanced in this paper:

*H3: Platform environment has a significant positive impact on the sustainable use of e-commerce platform.*
*H4: Platform Environment has a significant positive impact on trust.*
*H5: Platform Environment has a significant positive impact on satisfaction.*

## 2.5 Multifunctionality

Zhao X explored the use of "Season" big data intelligent push technology on the green plant e-commerce platform and recommended the green plants planted in season by using the basic information and planting preferences of peasant household users, so as to realize the humanized design of the app and improve users' satisfaction [12]. Based on the platform perspective, Wu F. S. combined with previous studies and concluded that we should not only pay attention to the scale of the platform but also pay attention to the complementary role between platform enterprises and participants so as to realize more functional development [13]. Based on this, the following assumptions are put forward:

*H6: Polyfunctionality has a significant positive impact on the sustainable use of e-commerce platform.*
*H7: Multifunctional has a significant positive impact on trust.*
*H8: polyfunctionality has a significant positive impact on satisfaction.*

## 2.6 Operation cost

When studying tourists' sustained willingness to use travel apps, Lin S. Y. used a structural equation model to empirically test that switching cost plays a positive role in regulating perceived usefulness and sustained willingness [14]. Rezaei R. used the TAM research method to empirically demonstrate that operation cost, as a regulating variable, positively and significantly affected the user's usage stickiness [15]. On this basis, the following assumptions are advanced:

*H9: operation cost plays a positive regulatory role between platform environment and continuity participation intention.*
*H10: operation cost plays a positive regulatory role between trust and continuity participation intention.*
*H11: operation cost plays a positive regulatory role between satisfaction and continuity participation intention.*
*H12: operation cost plays a positive regulatory role between polyfunctionality and continuity participation intention.*

# 3 QUESTIONNAIRE DESIGN AND DATA COLLECTION

In this section, a questionnaire survey is mainly used to explore the model relationship. By designing the questionnaire and determining the model relationship, the relationship between variables is demonstrated. After the questionnaire was collected, data analysis software and analysis language were used to explain the results.

## 3.1 Questionnaire design

Based on previous research, the independent variables of the questionnaire in this paper are platform environment and polyfunctionality, with satisfaction and trust degree serving as intermediary variables. The regulating variable is operation cost, and the dependent variable is using intention. Satisfactoriness and trust degree are introduced as novel intermediary variables in the model.

## 3.2 Data collection

This questionnaire mainly investigates peasant households, and the questionnaire mainly uses an online collection platform to ask questions to investigate peasant households. The group is mainly collected through the official platform of the township and the recommendations of the circle of friends. The sampling method used in questionnaire sampling is the snowball sampling method. At the beginning of this collection, the number of respondents was set at 600, and the number of valid questionnaires was 575 after eliminating the waste papers, with an effective rate of 95.83%.

# 4 VARIABLE MEASUREMENT

This section depicts the dimension's items and categorizes them as platform environment, trust degree, polyfunctionality, operation cost, satisfaction, and use intention. The platform environment is subdivided into four categories: information acquisition cost, e-commerce training, information drainage and development, and transaction volume (see Table 1).

**Table 1.** Variable measurement

| Variable Name | Number | Item |
|---|---|---|
| Platform environment | PE1 | The platform has low cost for peasant household to obtain information. |
| | PE2 | The platform regularly provides professional e-commerce training for peasant household. |
| | PE3 | The platform gives peasant household good information drainage. |
| | PE4 | The platform attaches importance to the development and turnover of the agricultural sector. |
| Trust degree | TR1 | The operation of this platform protects the interests of peasant household. |
| | TR2 | The platform gives peasant household appropriate benefits. |
| | TR3 | The platform operator will ensure the quality and standards of operation. |
| | TR4 | The platform line has high payment trust. |

*(Continued)*

**Table 1.** Variable measurement *(Continued)*

| Variable Name | Number | Item |
|---|---|---|
| Polyfunctionality | MF1 | This platform provides peasant household with information about other similar products. |
| | MF2 | This platform provides agricultural contract collaboration for Little peasant household. |
| | MF3 | The platform provides certain agricultural subsidies for peasant household. |
| | MF4 | The platform provides logistics service support for peasant household. |
| Operation cost | UC1 | Using other platforms will cause short-term inadaptability of peasant household. |
| | UC2 | Other platform services are highly uncertain. |
| | UC3 | Replacing other e-commerce platform may make me lose the subsidies and benefits of this platform. |
| | UC4 | Using other platforms requires more cost. |
| Satisfaction | CSI1 | You are satisfied with the convenience and sexy operation of this e-commerce platform. |
| | CSI2 | You are satisfied with the service provided by this e-commerce platform. |
| | CSI3 | You are satisfied with your operating experience in this e-commerce platform. |
| | CSI4 | You are satisfied with the income of this e-commerce operation platform. |
| | CSI5 | You are satisfied with the overall e-commerce platform. |
| Use intention | CI1 | You are willing to continue to use the e-commerce platform. |
| | CI2 | You would recommend other peasant household to use the platform together. |
| | CI3 | You will continue to update your products on the platform. |
| | CI4 | If you have the chance, you will use other sections of the platform. |
| | CI5 | You have a high positive evaluation of the e-commerce platform. |

## 5 DATA ANALYSIS AND RESULTS

SPSS26.0 and AMOS23.0 were used to analyze the data, and the SEM was used in AMOS26.0 to analyze the entire variable path relationship. It is necessary to verify the data reconciliation relationship with the help of a process plug-in during the verification of the reconciliation relationship.

### 5.1 Descriptive analysis

There are 310 men in this survey, accounting for 53.91 percent, and 265 women, accounting for 46.09 percent. In terms of age distribution, 195 people are between the ages of 36 and 45, accounting for 33.91 percent, and 188 people are between the ages of 26 and 35, accounting for 32.70 percent. The age group 46–55 accounts

for 16.87 percent of the population. There are 402 people with junior high school education or less, accounting for 69.91 percent of those with the highest education, and 138 people with senior high school or higher vocational education, accounting for 24 percent. There are 17 junior college students, accounting for 2.96 percent; 13 undergraduate students, accounting for 2.26 percent; and 5 graduate students and above, accounting for 0.87 percent. In terms of regional logistics convenience, 194 people are very convenient, accounting for 33.74 percent; 231 people are convenient, accounting for 40.17 percent; 78 people think logistics is general, accounting for 13.57 percent; 50 people think logistics is inconvenient, accounting for 8.7 percent; and 22 people are very inconvenient, accounting for 3 percent (see Table 2).

**Table 2.** Frequency analysis results

| Name | Option | Frequency | Percentage (%) | Cumulative Percentage (%) |
|---|---|---|---|---|
| Gender | Male | 310 | 53.91 | 53.91 |
| | Female | 265 | 46.09 | 100.00 |
| Age | Under 25 years old | 56 | 9.74 | 9.74 |
| | Between the ages of 26 and 35 | 188 | 32.70 | 42.43 |
| | Between 36 and 45 years old | 195 | 33.91 | 76.35 |
| | Between 46 and 55 years old | 97 | 16.87 | 93.22 |
| | Over 56 years old | 39 | 6.78 | 100.00 |
| Official academic credentials | Junior school | 402 | 69.91 | 69.91 |
| | High school/higher vocational school | 138 | 24.00 | 93.91 |
| | Universities and colleges | 17 | 2.96 | 96.87 |
| | Undergraduate course | 13 | 2.26 | 99.13 |
| | Graduate students and above | 5 | 0.87 | 100.00 |
| How convenient is the logistics in your area? | Very convenient | 194 | 33.74 | 33.74 |
| | Convenient | 231 | 40.17 | 73.91 |
| | Common | 78 | 13.57 | 87.48 |
| | Inconvenient | 50 | 8.70 | 96.17 |
| | Very inconvenient | 22 | 3.83 | 100.00 |
| Total | | 575 | 100.0 | 100.0 |

## 5.2 Reliability analysis

The reliability values of platform environment, trust degree, polyfunctionality, operation cost, satisfaction, and use intention are 0.933, 0.920, 0.929, 0.915, 0.939, and 0.945, respectively, which is based on an analysis of the reliability of different dimensions. The reliability values of the questionnaire's sub-dimensions are all greater than 0.9, and the reliability test results are satisfactory (see Table 3).

**Table 3.** Reliability analysis of each scale

| Variable Name | Item | Total Correlation of Correction Items (CCIC Coefficient) | After the Item has been Deleted Cronbach's α Coefficient | Cronbach's α Coefficient |
|---|---|---|---|---|
| Platform environment | PE1 | 0.962 | 0.872 | 0.933 |
| | PE2 | 0.771 | 0.935 | |
| | PE3 | 0.861 | 0.906 | |
| | PE4 | 0.786 | 0.931 | |
| Trust degree | TR1 | 0.955 | 0.847 | 0.920 |
| | TR2 | 0.742 | 0.920 | |
| | TR3 | 0.770 | 0.911 | |
| | TR4 | 0.803 | 0.900 | |
| Polyfunctionality | MF1 | 0.956 | 0.865 | 0.929 |
| | MF2 | 0.865 | 0.897 | |
| | MF3 | 0.762 | 0.930 | |
| | MF4 | 0.761 | 0.930 | |
| Operation cost | UC1 | 0.966 | 0.831 | 0.915 |
| | UC2 | 0.750 | 0.908 | |
| | UC3 | 0.785 | 0.896 | |
| | UC4 | 0.733 | 0.916 | |
| Satisfaction | CSI1 | 0.979 | 0.898 | 0.939 |
| | CSI2 | 0.854 | 0.921 | |
| | CSI3 | 0.794 | 0.933 | |
| | CSI4 | 0.776 | 0.935 | |
| | CSI5 | 0.785 | 0.934 | |
| Use intention | CI1 | 0.978 | 0.910 | 0.945 |
| | CI2 | 0.859 | 0.932 | |
| | CI3 | 0.807 | 0.940 | |
| | CI4 | 0.814 | 0.939 | |
| | CI5 | 0.806 | 0.941 | |

## 5.3 Validity analysis

According to the validity table (see Table 4), the research item information can be effectively extracted. Furthermore, the KMO value is 0.816, which is greater than 0.6, indicating that the data can be effectively extracted. Furthermore, the variance interpretation rates of the six factors are 16.396 percent, 13.765 percent, 13.502 percent, 13.476 percent, 13.358 percent, and 12.539 percent, and the cumulative variance interpretation rate after rotation is 83.035 percent > 50 percent. It means that the research item's information content can be effectively extracted.

Platform environment, trust degree, polyfunctionality, operation cost, satisfaction, and use intention are all factors. Qualified validity indicates that this model's relationship is reasonable and that the results of subsequent analysis can be fully explained.

**Table 4.** Validity analysis

| Name | Factor Load Factor | | | | | |
|---|---|---|---|---|---|---|
| | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 |
| PE1 | 0.212 | 0.161 | 0.255 | 0.140 | 0.898 | 0.029 |
| PE2 | 0.186 | 0.196 | 0.060 | 0.027 | 0.851 | 0.075 |
| PE3 | 0.141 | 0.194 | 0.234 | 0.067 | 0.861 | 0.005 |
| PE4 | 0.143 | –0.007 | 0.226 | 0.250 | 0.807 | 0.054 |
| TR1 | 0.099 | 0.917 | 0.250 | 0.095 | 0.171 | –0.055 |
| TR2 | –0.068 | 0.860 | 0.217 | –0.023 | –0.007 | 0.010 |
| TR3 | 0.230 | 0.781 | 0.239 | 0.154 | 0.132 | 0.014 |
| TR4 | 0.092 | 0.820 | 0.198 | 0.121 | 0.271 | –0.106 |
| MF1 | 0.173 | 0.161 | 0.239 | 0.901 | 0.113 | –0.146 |
| MF2 | 0.148 | 0.055 | 0.245 | 0.871 | 0.074 | –0.104 |
| MF3 | 0.198 | 0.150 | 0.218 | 0.795 | 0.055 | –0.070 |
| MF4 | 0.069 | –0.005 | 0.099 | 0.848 | 0.191 | –0.078 |
| UC1 | –0.136 | –0.025 | 0.038 | –0.140 | 0.040 | 0.963 |
| UC2 | –0.093 | 0.102 | –0.040 | 0.052 | 0.053 | 0.873 |
| UC3 | –0.184 | –0.174 | –0.015 | –0.154 | –0.038 | 0.847 |
| UC4 | –0.061 | –0.034 | 0.070 | –0.112 | 0.075 | 0.833 |
| CSI1 | 0.935 | 0.078 | 0.201 | 0.120 | 0.173 | –0.106 |
| CSI2 | 0.864 | 0.133 | 0.146 | 0.117 | 0.157 | –0.121 |
| CSI3 | 0.824 | 0.101 | 0.142 | 0.162 | 0.146 | –0.072 |
| CSI4 | 0.818 | 0.039 | 0.153 | 0.137 | 0.104 | –0.097 |
| CSI5 | 0.777 | 0.013 | 0.296 | 0.091 | 0.144 | –0.196 |
| CI1 | 0.278 | 0.327 | 0.800 | 0.286 | 0.248 | 0.043 |
| CI2 | 0.266 | 0.230 | 0.779 | 0.222 | 0.256 | 0.084 |
| CI3 | 0.272 | 0.270 | 0.729 | 0.239 | 0.206 | 0.008 |
| CI4 | 0.214 | 0.416 | 0.667 | 0.259 | 0.224 | –0.063 |
| CI5 | 0.253 | 0.279 | 0.729 | 0.227 | 0.188 | 0.019 |
| Feature root value (after rotation) | 4.263 | 3.579 | 3.510 | 3.504 | 3.473 | 3.260 |
| Variance interpretation rate% (after rotation) | 16.396% | 13.765% | 13.502% | 13.476% | 13.358% | 12.539% |
| Cumulative variance interpretation rate% (after rotation) | 16.396% | 30.161% | 43.663% | 57.139% | 70.497% | 83.035% |
| KMO value | 0.816 | | | | | |
| Barth spherical value | 18442.788 | | | | | |
| df | 325 | | | | | |
| P value | 0.000 | | | | | |

## 5.4 Model validation

The CMIN/DF value of the confirmatory factor analysis model in this study is 2.568, and the other adaptation indexes are 0.904, 0.915, 0.902, 0.915, 0.814, and 0.082, indicating that the model is well matched with the scale. The fitting index of the model is good, which further verifies that the peasant household use intention model set in this paper is reasonable (see Table 5).

**Table 5.** Model fit test

| CMIN | df | CMIN/DF | NFI | NFI | NFI | TLI | GFI | RMSEA |
|---|---|---|---|---|---|---|---|---|
| 513.563 | 200 | 2.568 | 0.904 | 0.915 | 0.902 | 0.915 | 0.814 | 0.082 |
| Standard | | <3 | >0.8 | >0.9 | >0.9 | >0.9 | >0.8 | <0.1 |

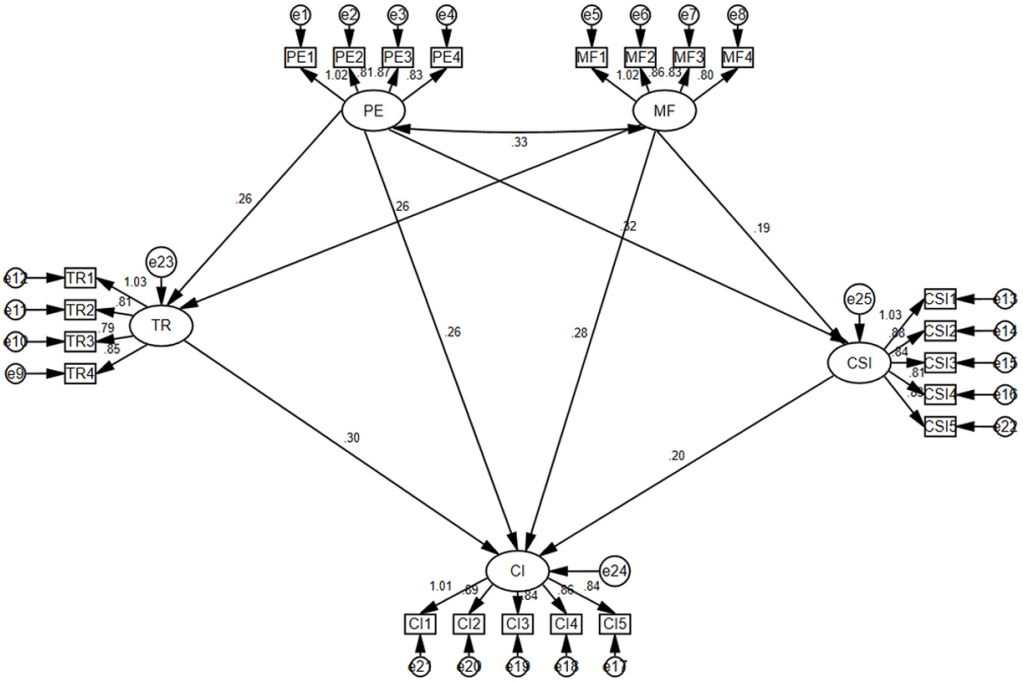


**Fig. 1.** Structural equation modeling diagram

**Table 6.** Path coefficient analysis

| | | | ECSIimate | S.E. | C.R. | P |
|---|---|---|---|---|---|---|
| Trust degree | <— | Platform environment | 0.226 | 0.031 | 7.305 | *** |
| Trust degree | <— | Polyfunctionality | 0.228 | 0.031 | 7.249 | *** |
| Satisfaction | <— | Polyfunctionality | 0.190 | 0.035 | 5.413 | *** |
| Satisfaction | <— | Platform environment | 0.330 | 0.035 | 9.438 | *** |
| Use intention | <— | Platform environment | 0.208 | 0.023 | 8.913 | *** |
| Use intention | <— | Polyfunctionality | 0.224 | 0.023 | 9.678 | *** |
| Use intention | <— | Satisfaction | 0.160 | 0.022 | 7.236 | *** |
| Use intention | <— | Trust degree | 0.279 | 0.028 | 9.861 | *** |

From the description of the path relationship of the model, it can be seen that the path coefficient of platform environment to trust degree is 0.226 (P < 0.05), which indicates that platform environment has a positive impact on trust degree. Among the path coefficients of multifunctionality to trust degree, the path coefficient is 0.228 (P < 0.05), and the path is significant, which indicates that multifunctionality has a positive influence on trust degree. In the influence of polyfunctionality on satisfaction, the path coefficient is 0.190 (P < 0.05), and it is assumed that polyfunctionality can positively influence satisfaction. On the influence of platform environment on satisfaction, the path coefficient is 0.330 (P < 0.05), which shows that the path is significant and the platform environment can positively influence satisfaction. The path coefficients for the four influencing factors of use intention, platform environment, polyfunctionality, satisfaction, and trust degree are 0.208, 0.224, 0.160, and 0.279, respectively, and significance can be achieved. As a result, the platform environment, polyfunctionality, satisfaction, and degree of trust all have a positive effect on use intention. The degree of trust has the greatest influence on use intention (see Table 6).

## 5.5 Moderating effect analysis

When the main path coefficient is affected by the adjustment variable, it means that the change in the adjustment variable can affect the expression of the main path coefficient. Combined with this paper, taking operation cost as a regulating variable, this paper explores what role operation cost plays in a pea house's use intention.

**Table 7.** Analysis results of the regulatory effect of operation cost on platform environment

| | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| Constant | 3.397**<br>(81.699) | 3.397**<br>(81.808) | 3.391**<br>(83.230) |
| Platform environment | 0.541**<br>(15.591) | 0.543**<br>(15.660) | 0.545**<br>(16.034) |
| Operation cost | | 0.056<br>(1.592) | 0.022<br>(0.619) |
| Platform environment * Operation cost | | | 0.126**<br>(4.901) |
| $R^2$ | 0.298 | 0.301 | 0.329 |
| Adjusted $R^2$ | 0.297 | 0.299 | 0.326 |
| Variance ratio | F (1,573) = 243.072,<br>p = 0.000 | F (2,572) = 123.129,<br>p = 0.000 | F (3,571) = 93.395,<br>p = 0.000 |
| Dependent variable: use intention | | | |

* p < 0.05 ** p < 0.01; The value of t is in brackets.

In the moderating effect of operation cost on use intention in a platform environment, the regression coefficient of the interaction term between them is 0.126, and the interaction term is significant, so it can be seen that operation cost has a positive moderating effect on the relationship between platform environment and use intention (see Table 7).

**Table 8.** Regulatory effect analysis results

| | Model 4 | Model 5 | Model 6 |
|---|---|---|---|
| Constant | 3.397** (86.505) | 3.397** (86.450) | 3.405** (86.594) |
| Trust degree | 0.604** (18.491) | 0.606** (18.455) | 0.598** (18.170) |
| Operation cost | | 0.018 (0.531) | 0.024 (0.719) |
| Trust degree * Operation cost | | | 0.059* (2.166) |
| Sample size | 575 | 575 | 575 |
| $R^2$ | 0.374 | 0.374 | 0.374 |
| Adjusted $R^2$ | 0.373 | 0.372 | 0.376 |
| F value | F (1,573) = 341.901, p = 0.000 | F (2,572) = 170.877, p = 0.000 | F (3,571) = 116.217, p = 0.000 |
| Dependent variable: use intention. | | | |
| * p < 0.05 ** p < 0.01; The value of t is in brackets. | | | |

The regression coefficient of the interaction term between them in the moderating effect of operation cost on trust degree to use intention is 0.059. The significance of the interaction term indicates that operation cost exerts a positive moderating effect on the trust degree towards use intention (see Table 8).

**Table 9.** Moderating effect analysis results

| | Model 7 | Model 8 | Model 9 |
|---|---|---|---|
| Constant | 3.397** (81.446) | 3.397** (81.798) | 3.446** (83.263) |
| Polyfunctionality | 0.551** (15.428) | 0.570** (15.653) | 0.531** (14.662) |
| Operation cost | | 0.088* (2.442) (2.442) | 0.080* (2.266) |
| Polyfunctionality * Operation cost | | | 0.162** (5.628) |
| Sample size | 575 | 575 | 575 |
| $R^2$ | 0.293 | 0.301 | 0.338 |
| Adjust $R^2$ | 0.292 | 0.298 | 0.334 |
| Variance ratio | F (1,573) = 238.027, p = 0.000 | F (2,572) = 123.025, p = 0.000 | F (3,571) = 96.973, p = 0.000 |
| Dependent variable: use intention. | | | |
| * p < 0.05 ** p < 0.01; The value of t is in brackets. | | | |

The regression coefficient of the interaction term between them in the moderating effect of operation cost on multifunctionality to use intentionality is 0.162. The significance of the interaction term suggests that operation cost positively moderates the relationship between multifunctionality and use intentionality (see Table 9).

**Table 10.** Moderating effect analysis results

| | Model 10 | Model 11 | Model 12 |
|---|---|---|---|
| Constant | 3.397** (81.262) | 3.397** (81.880) | 3.431** (80.509) |
| Polyfunctionality | 0.517** (15.309) | 0.546** (15.705) | 0.532** (15.303) |
| Operation cost | | 0.113** (3.121) | 0.129** (3.533) |
| Polyfunctionality * Operation cost | | | 0.088** (3.082) |
| Sample size | 575 | 575 | 575 |
| $R^2$ | 0.290 | 0.302 | 0.314 |
| Adjust $R^2$ | 0.289 | 0.300 | 0.310 |
| Variance ratio | F (1,573) = 234.376, p = 0.000 | F (2,572) = 123.845, p = 0.000 | F (3,571) = 86.957, p = 0.000 |
| Dependent variable: use intention. | | | |
| * p < 0.05 ** p < 0.01; The value of t is in brackets. | | | |

In the moderating effect of operation cost on satisfaction for use intention, the regression coefficient of the interaction term between them is 0.088. The significance of the interaction term indicates that operation cost positively moderates the relationship between satisfaction and use intention (see Table 10).

## 6 RESEARCH CONCLUSION AND RECOMMENDATION

1. Platform environment, trust, satisfaction, and polyfunctionality all have significant positive effects on peasant household continuous use intention. The influence of trust is the most significant among them, with satisfaction, polyfunctionality, and platform environment ranging from high to low. Trust is the foundation for peasant households to form long-term relationships with merchants. From the perspective of a peasant household, accumulated experience with merchants gradually forms an emotional bond and generates trust. According to the merchant, only by quickly gaining the trust of peasant households will the willingness to continue using it be generated. Satisfaction, polyfunctionality, platform environment, and other factors will all have a negative impact on their trust. Platform security is a direct source of trust among peasant households. We should consider the display module's privacy when using it interactively. This will have a significant impact on peasant households' trust in the platform and willingness to continue using it.
2. In the relationship between platform environment and use intention, operation cost plays a positive role. As a result, the operating environment should address as many differences in equipment performance as possible, actively improve the operating environment, optimize the data network and server, and ensure system compatibility. Reduce the operation costs of peasant households while maintaining their use intentions.

3. In the relationship between polyfunctionality and use intention, operation cost plays a positive role. The more perfect the platform's functionality, the more beneficial it is to reduce the operation costs of peasant households and thus its use intention. We should pay attention to the principle of universal use when developing multi-functional dimensions, and it is critical to provide information in a simple, clear, and straightforward manner. Furthermore, the development of polyfunctionality makes information more integrated.
4. In the relationship between satisfaction and use intention, operation cost plays a positive role. As a result, while developing the platform and utilizing peasant households, merchants should conduct real-time investigation and monitoring of the experiences of peasant households and provide timely feedback. Departments should work closely together, and market and user feedback should be addressed as soon as possible.

This paper focuses on the e-commerce platform's continued willingness to purchase agricultural products after use. This study still has some limitations. For example, statistics of peasant households with a seriously low level of education or peasant households without contact with electronic devices are not included in the statistical characteristics of the sample, and the final discussion results may differ without all-around crowd coverage. In this context, it's important to note that the factors influencing continuous use intention can be preserved for further investigation by subsequent studies.

## 7 REFERENCES


[1] A. Almarzouqi, A. Aburayya, and S. A. Salloum, "Prediction of user's intention to use metaverse system in medical education: A hybrid SEM-ML learning approach," *IEEE Access*, vol. 10, pp. 43421–43434, 2022. https://doi.org/10.1109/ACCESS.2022.3169285

[2] S. Park, H. Yoon, C. Koo, *et al.*, "Role of the leisure attributes of shared bicycles in promoting leisure benefits and quality of life," *Sustainability*, vol. 13, no. 2, p. 739, 2021. https://doi.org/10.3390/su13020739

[3] A. Bhattacherjee, "Understanding information systems continuance: An expectation-confirmation model," *MIS Quarterly*, vol. 25, no. 3, pp. 351–370, 2001. https://doi.org/10.2307/3250921

[4] S. Purohit, R. Arora, and J. Paul, "The bright side of online consumer behavior: Continuance intention for mobile payments," *Journal of Consumer Behaviour*, vol. 21, no. 3, pp. 523–542, 2022. https://doi.org/10.1002/cb.2017

[5] C. Thanomsing and P. Sharma, "Understanding instructor adoption of social media using the technology acceptance model," *Journal of Research in Innovative Teaching & Learning*, vol. ahead-of-print, no. ahead-of-print, 2022. https://doi.org/10.1108/JRIT-04-2022-0021

[6] A. Kwangsawad and A. Jattamart, "Overcoming customer innovation resistance to the sustainable adoption of chatbot services: A community-enterprise perspective in Thailand," *Journal of Innovation & Knowledge*, vol. 7, no. 3, p. 100211, 2022. https://doi.org/10.1016/j.jik.2022.100211

[7] A. Bhattacherjee, "Understanding information systems continuance: An expectation-confirmation model," *MIS Quarterly*, vol. 25, no. 3, pp. 351–370, 2001. https://doi.org/10.2307/3250921

[8] W. K. L. Kao and E. A. L'Huillier, "The moderating role of social distancing in mobile commerce adoption," *Electronic Commerce Research and Applications*, vol. 52, p. 101116, 2022. https://doi.org/10.1016/j.elerap.2021.101116

[9] P. Laksamana, S. Suharyanto, and Y. F. Cahaya, "Determining factors of continuance intention in mobile payment: Fintech industry perspective," *Asia Pacific Journal of Marketing and Logistics*, vol. 35, no. 7, pp. 1699–1718, 2023. https://doi.org/10.1108/APJML-11-2021-0851

[10] A. M. Sadaa, Y. Ganesan, and K. W. Khaw, *et al.*, "Based on the perception of ethics in social commerce platforms: Adopting SEM and MCDM approaches for benchmarking customers in rural communities," *Current Psychology*, pp. 1–35, 2022. https://doi.org/10.1007/s12144-022-04069-9

[11] W. Fan, B. Shao, and X. Dong, "Effect of e-service quality on customer engagement behavior in community e-commerce," *Frontiers in Psychology*, vol. 13, p. 965998, 2022. https://doi.org/10.3389/fpsyg.2022.965998

[12] X. Zhao, Z. Cui, and F. Zhao, "Does e-commerce participation affect green agrotechnology adoption among reservoir resettlers? The case of China's three gorges reservoir area," *Frontiers in Environmental Science*, vol. 10, p. 1036464, 2022. https://doi.org/10.3389/fenvs.2022.1036464

[13] F. S. Wu and C. C. Tsai, "A framework of the value co-creation cycle in platform businesses: An exploratory case study," *Sustainability*, vol. 14, no. 9, p. 5612, 2022. https://doi.org/10.3390/su14095612

[14] S. Y. Lin, P. J. Juan, and S. W. Lin, "A TAM framework to evaluate the effect of smartphone application on tourism information search behavior of foreign independent travelers, *Sustainability*, vol. 12, no. 22, p. 9366, 2020. https://doi.org/10.3390/su12229366

[15] R. Rezaei, L. Safa, and M. M. Ganjkhanloo, "Understanding farmers' ecological conservation behavior regarding the use of integrated pest management- an application of the technology acceptance model," *Global Ecology and Conservation*, vol. 22, no. e00941, 2020. https://doi.org/10.1016/j.gecco.2020.e00941

## 8 AUTHORS

**Kaiyuan Liu** is a second-year postgraduate student of School of Management, Wuhan Polytechnic University, China (E-mail: 358946514@qq.com).

**Ziru Xue** is a Junior student of Business School, University of Shanghai for Science and Technology, China (E-mail: x13513802156@163.com).

**Yali Zhang** is a research fellow at INWASON, Malaysia (E-mail: editorsci@163.com).