The Empirical Study on Acceptance Behavior Of Shared Community APP Users Based On UTAUT

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Abstract. With the rapid development of Internet and smart phone technology, community e-commerce is impacting our life with irresistible trends and widely concerned. Based on the in-depth analysis of the existing problems in the development of E-commerce on Social Network, this thesis constructed a model of influencing factors of user acceptance behavior of shared community APP users. An empirical test was carried out on 757 valid questionnaires. The results showed that performance expectations, contributing factors, perceived risk and trust tendency had a significant impact on community residents' acceptance of APP products in shared communities. based on this, the countermeasures and suggestions for the development of community e-commerce are put forward.

Introduction

With the rapid development of Internet technology, the traditional community is facing with unprecedented challenges. The Internet era has made the mobile APP market become one of the fastest growing segments of software applications. Under the circumstances, the transition of traditional community pattern to mobile sharing community has become an inevitable trend. This article believes that the Shared community is a pattern that fully integrates various resources within the community. Users in the community don't have to have "possession" in the neighborhood, they have "access" when they need it. The model caters to the concept of environmental protection and conservation, and reduces the waste of resources, and can promote emotional communication among community residents. According to the 41th Statistical report on Internet development in China released by China Internet Information Center, as of Dec. 2017, the number of net citizens in China has reached 772million, At the same time, China’s Internet penetration rate was 55.8 percent, which is 4.1 percentage points above the global average. This shows that compared with the development scale of European and American countries, the potential of China's development in the field of community e-commerce will be huge.

Shared community APP has some certain advantages: (1) The product information of Shared Community APP is efficient; (2) The business model of community resource integration improves the participation of the community; (3) Complete service function: it integrates property services, information notifications, property payment, neighborhood shops, community activities and community circles into a small phone. However, compared with the traditional way of community management, Community APP also has its disadvantages, first and foremost, the practicability of community APP is not high, and it has a poor product operability. The second is that APP’s design features are not concise, functional characteristics are not obvious, and individual innovation is not strong, causing the user stickiness is not high. Thirdly, Community APP products as emerging things are not perfect for the protection of users' rights and interests. Thus, under the rapid development of Internet and community e-commerce, the community e-commerce faces strong pressure to compete with traditional community management before the Internet regulatory system is perfected. How to
promote the development of community APP and improve the acceptance rate of community APP products to community residents has become the significance of this research.

Literature Review

Community E-commerce

There is no clear definition of community O2O now, this paper argues that Community e-commerce is in the era of mobile Internet and e-commerce popularization, community service as the service unit, serve residents' life and consumption for the purpose of online service transactions, and community offline businesses to provide services or experience. However, in terms of its core elements and basic attributes, the current definitions are generally accepted as follows: Binji-Feng, Hang-Cui scholars (2017) argues that the community sharing economy is on the premise of e-commerce platform based on the rational allocation of community idle resources with high quality service to build the core of the community - addressing pension, enhancing value.[1] Overall, “community sharing economy = consumption + service + community core”, is community sharing economic model built under the new normal goals. In this paper, we study ”community + O2O” -- the model of e-commerce transactions in offline communities.

Related Research on Shared Community APP Products

Tang Tianbo and other scholars believed that (2015) shared economy has three main characteristics: one is the support of modern information technology, the second is the transaction of the right to use resources, and the third is the goal of efficient utilization of resources[2]. Xirong-Cheng, Pengbo-Li, Han-Liang thought (2016) shared economic model of the three main body were respectively provided resource provider of idle resource, resource consumption demand for the idle resources, and the resource providers and resource sharing platform of consumer docking. Only effective docking can form the new ecology of shared economy [3].

Dr. Dong Jincai (2015) thought APP has been widely used. As a cell phone extension program, it is very important to research the product factors of APP and to analyze which factors have greater impact on consumer behavior[4].

This paper reviews the literature on community e-commerce research, and its research perspective is divided into property management, virtual network community and trust mechanism. However, the authoritative literature based on UTAUT model to study the influencing factors of user acceptance behavior of community APP users is not much or in-depth. Different from the existing literatures, this paper first put forward the concept of "sharing community", introducing the UTAUT theory analysis framework, adding the perceived risk and trust theory, using SEM model analysis method, based on the survey data of four cities, to explore the influence factors of community residents acceptance behavior of shared community APP.

Model Structure

Hypothesis Based on Integrated Technology Acceptance and Use Model

In 2003, Venkatesh and his team proposed a more comprehensive and integrated technology acceptance model (UTAUT) called "authority model".

Four core dimensions are: performance expectancy (refers to the level of personal feeling improved by the use of the system) Effort expectations (the amount of effort required by a person to use the system), Social impact (refers to the level of the individual affected by the surrounding population), contributing factors (refers to the personal feeling in the relevant organization technical equipment used in the system to help level).[5]

Summing up the objective of the study, this paper selected performance expectation, effort expectation, social influence and contributing factor as latent variables.
H1: Performance expectations have a positive impact on the willingness of community residents to use shared community APP products.
H2: Performance expectations have a positive impact on the consumption experience of community residents using shared community APP products.
H3: Efforts expectations have a negative impact on the willingness of community residents to use shared community APP products.
H4: Efforts expectations have a negative impact on the consumption experience of community residents using shared community APP products.
H5: Social impact has a positive impact on the willingness of community residents to use shared community APP products.
H6: Contributing factors have a positive impact on the consumption experience of community residents using shared community APP products.

The Impact of Perceived Risk Theory

According to the concept attributes of community e-commerce, this paper put forward the influence of perceived risk and trust tendency on community residents' acceptance of community APP products based on the UTAUT model.

Bauer first introduced the meaning of "perceived risk" and then introduced it to the marketing category [6]. Zhen-Gong believes that perceived risk refers to the psychological feelings and subjective awareness of the user about the possible loss when using a shared community APP product [7]. Similarly, if community residents think that shared community APP products are less risky, their demand may be higher. Therefore, in this thesis, we put forward hypothesis 7.

H7: Perceived risk has a negative impact on the willingness of community residents to use shared community APP products.

The Influence of the Theory of Trust Tendencies

Marsh first introduced the meaning of trust in the field of sociology to the computer category in 1994[8]. Trust means the trustworthiness of a person who is trusting in the other part if community residents trust the shared community APP products, the demand may be higher. Therefore, in this thesis, we put forward the hypothesis 8:

H8: Trust tendencies have a positive impact on the willingness of community residents to use shared community APP products.

According to the proposed research hypothesis, the research model of this paper is shown in Fig.1 below.

Figure 1. Research Model.
Research Design

Research Object and Locations

The research object of the study were determined to be the mainstream consumer group of the community residents aged between 25 and 65. In order to comply with the research purpose of this study, the survey touched on all community groups including college students and retirees who have more leisure time. Survey site selection in Hangzhou, Huzhou, Hefei, and Shanghai, the four cities, in the more developed eastern region to a certain extent to ensure the scientific subject investigation questionnaire.

Design of Questionnaire

The questionnaire of this article was in the literature and the research model on the basis of design, and tested the effectiveness of all questions in the questionnaire items, the results were obtained in previous literature. This research use questionnaire mainly divided into two parts, the first part of questionnaire is the basic information, It mainly investigates the gender, age, monthly income and the basic conditions of Shared community APP products used by the community residents. In the second part, Performance expectations, efforts of expectation, social influences and contributing factors of 14 topics from Venkatesh, Morris. Meanwhile, perceived risk of the three topics from Bauer, the trust tendency of three topics from the Marsh All the questions covered in the questionnaire were based on the five-point likert scale, with a value of 1 (very disagree) to 5 (very agreeable). At the same time, in order to ensure the effectiveness scale of the questionnaire, experienced experts were invited to help with the deletion of the questionnaire. Prior to the initiation of a large-scale formal investigation, the target sample group was pre-investigated and some subjects were modified according to the survey results.

Sampling Method and Sample Characteristics

This paper was conducted by means of random sampling survey, and the survey time was from 2016 to 2017. In total, 800 questionnaires were distributed, 43 invalid questionnaires were excluded, and 757 valid questionnaires were obtained, with an effective rate of 94.6%. Among them, 421 were women and 336 were men, respectively, accounting for 55.7% and 44.3% respectively. Female was slightly higher than male, The sample age group was between 22 and 50 years old, and the respondents were mainly middle-aged and young people, accounting for 87.9 percent of the total sample, and the monthly income was 71.5 percent from 2500 to 4000 ¥.

The sample characteristics are shown in Table 1 below:

<table>
<thead>
<tr>
<th>topic</th>
<th>options</th>
<th>Number of frequency</th>
<th>The percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>gender</td>
<td>male</td>
<td>358</td>
<td>42.2</td>
</tr>
<tr>
<td></td>
<td>female</td>
<td>490</td>
<td>57.8</td>
</tr>
<tr>
<td>age</td>
<td>25-35 years old</td>
<td>571</td>
<td>78.4</td>
</tr>
<tr>
<td></td>
<td>36-45 years old</td>
<td>129</td>
<td>12.5</td>
</tr>
<tr>
<td></td>
<td>46 years old and above</td>
<td>57</td>
<td>9.1</td>
</tr>
<tr>
<td>Use experience</td>
<td>yes</td>
<td>223</td>
<td>35.4</td>
</tr>
<tr>
<td></td>
<td>no</td>
<td>534</td>
<td>64.6</td>
</tr>
<tr>
<td>Monthly income</td>
<td>Below 1000 ¥</td>
<td>58</td>
<td>7.8</td>
</tr>
<tr>
<td></td>
<td>1000—2500 ¥</td>
<td>148</td>
<td>8.5</td>
</tr>
<tr>
<td></td>
<td>2500—4000 ¥</td>
<td>126</td>
<td>46.9</td>
</tr>
<tr>
<td></td>
<td>4000—5500 ¥</td>
<td>318</td>
<td>11.5</td>
</tr>
<tr>
<td></td>
<td>Above 5500 ¥</td>
<td>144</td>
<td>25.4</td>
</tr>
</tbody>
</table>
Data Processing

Analysis of Reliability and Validity

The characteristics of the test scores or the results of the measurement are reliability. The "Cornbach's alpha" coefficient is often used in the reliability test of the Likert scale method. The study was based on the 0.7 value recommended by the scholar Nunnally.

<table>
<thead>
<tr>
<th>Table 2. Cornbach's Alpha Valuet.</th>
</tr>
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<tbody>
<tr>
<td>Cornbach’sα</td>
</tr>
<tr>
<td>823</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Influencing factors</th>
<th>Measurable variable number</th>
<th>Alpha reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance expectation</td>
<td>3</td>
<td>0.879</td>
</tr>
<tr>
<td>Endeavor to expect</td>
<td>3</td>
<td>0.672</td>
</tr>
<tr>
<td>social influence</td>
<td>3</td>
<td>0.796</td>
</tr>
<tr>
<td>Contributing factors</td>
<td>5</td>
<td>0.855</td>
</tr>
<tr>
<td>Perceived risk</td>
<td>3</td>
<td>0.983</td>
</tr>
<tr>
<td>Trust factors</td>
<td>3</td>
<td>0.704</td>
</tr>
</tbody>
</table>

It can be seen from Table 2 that the overall reliability coefficient of the questionnaire is 0.823, which indicates that the questionnaire has good internal consistency and strong reliability. Reliability coefficient alpha of each part is higher than 0.6, indicating that the stability and reliability of the parts are good, so the design of the questionnaire is reliable.

This research uses SPSS21.0 software to analyze the construction validity. It is advocated by Oliver, Lundstrom and other scholars to measure the validity of the correlation analysis of manipulating the individual and the whole. According to KAISER’s study, the value of KMO above 0.9 is very good, more than 0.8 is good, and less than 0.5 cannot accept factor analysis. The validity of 5 variables, performance expectancy, effort expectancy, contributing factors, perceived risk and validity test results of trust factors are all consistent with the validity of the relevant criteria, indicating that the validity of the questionnaire is qualified. In conclusion, this questionnaire has reached the standard and has a good overall validity.

Model Fit Analysis

The more reliable the results of data analysis are, the higher the fitting degree of the model must be. Yi and BAGOZZIRP believe that the conservative index is 0.9, if more than 0.8 of the fitting is also good. In this study, the fitting degree of the model is analyzed by the accepted measurement indexes, such as the chi square value and the degree of freedom, the Correction of goodness of fit index. The measurement results show that, the main evaluation indexes of chi-square/d.f, GFI, the CFI and NFI have reached an acceptable level and above, the model and data fitting degree is good, but the AGFI and RMESA indexes are not up to the standard. So we must carry out the next step of hypothesis test and modify model.

Model Verification

The factors affecting community residents' acceptance of shared community APP products in this paper, which have the basic characteristics that are difficult to be measured directly and avoid subjective measurement errors. In this paper, structural equation modeling (SEM) is used to analyze the main factors that affect community residents’ acceptance of APP products in shared communities. The characteristic of SEM is to provide a diagnostic tool which can observe and dispose for the latent variables that are difficult to be observed directly. This study used confirmatory hypothesis, to investigate the relationship between exogenous and potential endogenous variables, using SEM to
test the research model and using the AMOS21.0 software to process the data. the results of the operation are shown in Fig. 2 below:

![Figure 2. Model Test Results.](image)

According to the analysis results, the experimental results, the real line represents a significant influence among the factors, and the dotted lines represent no significant influence among the factors. In the case of significant level of 0.05, it can be seen that community residents' performance expectancy, contributing factors, perceived risk and trust tendency directly or indirectly have a significant impact on their willingness to use community like APP products, hypothesis 1, 2, 4, 6, 7, 8 have been supported. However, the impact of effort expectation and contributing factors on the behavior of community residents using shared community APP products is not significant, this shows that hypothesis 3 and 5 are not supported.

**Management Inspiration**

Based on the above analysis, this paper puts forward the opinions to promote community residents opinions on sharing community APP products from five aspects: (1) Efforts should be made to enhance the manipulability and ease of use of community APP. meanwhile, APP appearance design should conform to the aesthetic preferences and usage habits of most users in the community, so as to reduce community residents' efforts and expectations. And pay attention to the innovation model of community e-commerce products, improve the service function of the product and improve the performance expectation of the community residents. Create a good consumer experience, strengthen the marketing and promotion of word-of-mouth, and improve the social impact of e-commerce products in the community, boosting the management level of APP operating platform to improve the contributing factors of community e-commerce services. We should improve community APP user rights and interests protection measures, reduce users' sensitivity to information and finance and other possible threats during APP application, improve their trust tendency and enhance user stickiness.

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