An Empirical Study on the factors affecting the Student's Willingness to Use of Mobile Social E-commerce Based on UTAUT 2

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Abstract. With the rapid development of e-commerce, mobile social e-commerce has been accepted by consumers. College students are the main components of netizens. This study integrates the variables of perceived trust and perceived risk based on the UTAUT2 model, and constructs an influencing factors research model on student users' willingness to use mobile social e-commerce. Moreover, an empirical analysis is conducted aiming at the sample data obtained by users in colleges and universities. SPSS24.0 is used to accomplish the analysis of the descriptive statistical, AMOS24.0 is used to conduct the structural equation model verification. In the study, it is found that the willingness for college student to use mobile social e-commerce is positively affected by perceived trust and negative influence by perceived risk. The hedonic motive affects college student's willingness to use mobile social e-commerce through influencing the perceived trust and the performance expectation.

1. Introduction
The dividend period of traditional e-commerce has disappeared and its development tends to be stable. However, social e-commerce is expected to become the next outbreak point of e-commerce since it effectively combines the e-commerce with the social interaction. Today, the user's shopping behavior gradually transforms from the passive search-type purchase relying on merchants and social media marketing into the active and share-type purchase of communication between users. Of which, the colleges are a wide and closed environment, which is very suitable for the growth of mobile social e-commerce. Based on the UTAUT2 model, this paper discusses the factors influencing the student users' willingness to use of mobile social e-commerce.

2. Theoretical background
In 2012, Venkastesh et al. pointed out unified theory of acceptance and use of technology 2 (UTAUT2) based on the original UTAUT model. Compared with UTAUT, the explanatory power of willingness to use in UTAUT2 increased from 56% to 74%, while that of use behavior increased from 40% to 52% [1]. It is a model with the highest explanatory power for the behavior of individual technology acceptance and use in the existing technology acceptance class models [2]. Bauer, from Harvard University, first put forward the concept of perceived risk in 1960[3]. In a study, SuxiangWeng (2010) demonstrated that the factors that influence consumers' direct attitudes toward mobile products are risky [4]. Perceived trust is an important factor influencing users' willingness to use, DannyT.K (2009) showed by study that
the corresponding willingness to use also increases as consumers increase their confidence in the mobile e-commerce purchase process [5].

3. Research model and hypotheses
This paper builds a research model on the factors influencing the user's willingness to use mobile social e-commerce students based on the UTAUT2 model. However, owing to the rapid growth of Internet information technology, the UTAUT2 model still has some limitations. This paper improves the model on the basis of the object of study and the purpose of the study. First, the support to the system in terms of relevant technology and equipment is sufficiently perfect, so the coordination situation is eliminated. Second, the object of this study is the users of colleges and universities who have received higher education, and therefore, there is no need for them to make extra efforts to learn the technology, so the effort expectation shall be eliminated. At the same time, the college and university environment are relatively closed, the study price value and habit have few significances for this study, so these two factors shall be eliminated. Third, this study aims to explore the willingness to use, there is no need to study the actual behavior. Finally, the factors of performance expectation, social influence, hedonic motive and willingness to use are retained. Depending on the above research, perceived risk and perceived trust have an impact on the users' willingness to use, so we add these factors to our model. Figure 1 shows the model of this study.

![Figure 1. The model of college students’ willingness to use of mobile social e-commerce.](image)

On the basis of the model, this paper proposes the following hypotheses:
H1: Hedonic motive (HE) positively influences willingness to use (WE)
H2: Performance expectation (PE) positively influences willingness to use
H3: Social influence (SE) positively influences willingness to use
H4: Perceived risk (RE) is related to the use of mobile social e-commerce
H5: Perceived trust (TE) positively influences willingness to use
H6: Hedonic motive positively influences perceived trust
H7: Performance expectation positively influences perceived trust
H8: Social influence positively influences perceived trust
H9: Perceived risk is related to perceived trust
H10: Hedonic motive positively influences performance expectation

In this study, hedonic motive means that users are encouraged to use mobile social e-commerce because they have fun while using it. Performance expectation refers to the degree to which users can improve their daily learning, life and work efficiency by using mobile social e-commerce. Social influence refers to a certain extent to which users of mobile social e-commerce are affected by the
surrounding groups, mainly in the direct or indirect influence brought by family members, friends, as well as internet celebrity bloggers. Perceived risk describes the uncertainty of the results of users' purchase decisions in the use of mobile social e-commerce. Perceived trust refers to the user's belief that businesses or platforms will maintain user's interests in the use process of mobile social e-commerce.

4. Research methodology

4.1. Measure

In accordance with the purpose of the paper, the questionnaire divided into two parts. The first part collected the essential information of respondents, such as age, gender, as well as academic qualifications. The second part used Likert's five measures to ask questions. Options "1-5" mean "totally disagreed", "less agreed", "uncertain", "more agreed", as well as "totally agreed" respectively. Table 1 shows the measurement items.

| Research variable | Issue number | Measurement item |
|-------------------|--------------|------------------|
| Performance expectation | PE1 | I think mobile social e-commerce is very helpful to my life |
| | PE2 | I think mobile social e-commerce can improve my shopping efficiency |
| | PE3 | Mobile social e-commerce allows me to share or learn the use of other people's products timely |
| Social influence | SE1 | Friends and family will influence my use of mobile social e-commerce |
| | SE2 | Idol blogger, etc will influence my use of mobile social e-commerce |
| | RE1 | I am concerned that the quality of products recommended by mobile social e-commerce is not reliable |
| Perceived risk | RE2 | I fear that shopping on mobile social e-commerce platforms will reveal privacy |
| | RE3 | I am worried about that the actual situation of the products purchased by using mobile social e-commerce is not in conformity with the description |
| | HE1 | I love to participate in the businesses and platforms activities in mobile social e-commerce process. |
| Hedonic motive | HE2 | I think mobile social e-commerce is more interesting than traditional e-commerce shopping |
| | HE3 | I enjoy the interaction with friends and others in the process of mobile social e-commerce |
| Perceived trust | TE1 | I think sellers on mobile social e-commerce platforms are trustworthy |
| | TE2 | Commodities recommended by bloggers who I like or care about on mobile social e-commerce platforms are trustworthy |
| | TE3 | I think the mobile social e-commerce platform is trustworthy |
| Willingness to use | WE1 | I have a desire to recommend mobile social e-commerce to others |
| | WE2 | I will continue to use mobile social e-commerce in the future |
| | WE3 | I’m willing to use the mobile social e-commerce |

4.2. Data collection

We conducted an online survey at a professional survey website. The questionnaire was only aimed at the college students, who have social e-commerce shopping experience. Finally, 288 effective questionnaires were collected. According to the results of the sample statistics, 24.7% of the respondents were male and 75.3% of the respondents were female. 94.1% of the respondents were between 18 and 26 years old. The percentage of respondents' monthly consumption below 3000 yuan was 85.8%. In terms of education level, 87.2% of the respondents are pursuing a bachelor's degree, and 5.6% of the respondents are pursuing a master's degree.
5. Data analysis

5.1. Measurement model
Reliability testing is a common method to estimate the stability or reliability of questionnaires and the degree of consistency of the results obtained. We used Cronbach's Alpha coefficient as the standard to measure the reliability. The closer to 1, the better the correlation between the items of each dimension will be. McKean (1998) believe that the data is trustworthy when the Cronbach's Alpha coefficient is above 0.7[6]. The overall Cronbach’s Alpha was 0.877, which shows that the reliability was high. The Cronbach's Alpha of social influence was lower than 0.7 which would affect the subsequent structural equation model validation, so we removed the "social influence" variables. Table 2 shows the reliability testing for latent variables.

| Latent variable      | Number of measurable variables | Cronbach’s Alpha | KMO |
|----------------------|--------------------------------|------------------|-----|
| Performance expectation | 3                              | .793             |     |
| Social influence     | 2                              | .612             |     |
| Perceived pleasure   | 3                              | .752             | .848|
| Perceived risk       | 3                              | .791             |     |
| Perceived trust      | 3                              | .819             |     |
| Willingness to use   | 3                              | .831             |     |

The KMO coefficient is 0.848 and the Significance=0.000, indicating that this model is very suitable for factor analysis.

5.2. Structural model
We used AMOS24.0 to validate the structural equation model. According to the recommendations of Zhonglin Wen (2004) [7] and Browne &Cudeck (1993) [8], the reasonable values of each index are determined. After we analyzed the structural equation model by using the maximum likelihood estimation, the fitting degree of the measured model is ideal. But the path coefficient of partial paths is not significant. As a result, the model can still be modified. We carried out model trimming according to the parameter significant result of the initial model and the model correction index provided by AMOS. By extending the model, we increasing the correlation curve between increasing perceived risk and hedonic motive and the path from perceived risk to performance expectation. The final model degree of the measured is shown in Table 3.

| Specification       | χ²/ df | RMSEA  | GFI  | IFI  | TLI  | CFI  |
|---------------------|--------|--------|------|------|------|------|
| Reasonable value    | <3     | <0.08  | >0.9 | >0.9 | >0.9 | >0.9 |
| Actual value        | 2.139  | 0.063  | 0.926| 0.949| 0.934| 0.948|
| Conclusion (whether to support hypothesis) | Yes | Yes | Yes | Yes | Yes | Yes |

Table 2. Reliability testing for Latent Variables

Table 3. Final Model Fitting Indicators
6. Conclusion
The factors influencing the users' willingness to use are perceived trust, perceived risk, performance expectation, and hedonic motive indirectly influences the users' willingness to use through influencing the perceived trust and performance expectation. On the basis of the study conclusion, social e-commerce enterprises need to improve in the following aspects so as to improve college students' willingness to use social e-commerce. Firstly, since the perceived trust has the greatest influence on willingness to use, the platform should set up the good enterprise and brand image to increase the trust of college student users. Secondly, According to the results, the university students' users hope to improve their life efficiency by using mobile social e-commerce. The platform of mobile social e-commerce should target to meet the needs of college student community. Thirdly, the platform of mobile social e-commerce should reduce the risk of use and solve the problem of "worry about the future" of college students. Finally, since college students like entertained, easy, and interesting shopping atmosphere, increasing the user's enjoyment is necessary.

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