

Summer 5-26-2017

# Research on the Willingness to Accept Mobile Internet Advertising Based on Customer Perception---A Case of College Students

Guoping Chen

*College of Management, Wuhan University of Science and Technology, Wuhan, 430081, China, cgp1717@163.com*

Fang Mei

*College of Management, Wuhan University of Science and Technology, Wuhan, 430081, China, 956246114@qq.com*

Follow this and additional works at: <http://aisel.aisnet.org/whiceb2017>

---

## Recommended Citation

Chen, Guoping and Mei, Fang, "Research on the Willingness to Accept Mobile Internet Advertising Based on Customer Perception---A Case of College Students" (2017). *WHICEB 2017 Proceedings*. 12.

<http://aisel.aisnet.org/whiceb2017/12>

This material is brought to you by the Wuhan International Conference on e-Business at AIS Electronic Library (AISeL). It has been accepted for inclusion in WHICEB 2017 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

# Research on the Willingness to Accept Mobile Internet Advertising Based on Customer Perception---A Case of College Students

*Guoping Chen<sup>1</sup>, Fang Mei<sup>2</sup>*

<sup>1</sup>College of Management, Wuhan University of Science and Technology, Wuhan, 430081, China

<sup>2</sup>College of Management, Wuhan University of Science and Technology, Wuhan, 430081, China

**Abstract:** The role of the mobile terminal in advertising and marketing has attracted increasing attention, but the traditional advertising acceptance model does not consider how the characteristics of mobile Internet advertising affect consumer attitudes and decision-making. Based on the technology acceptance model (TAM) and the characteristics of groups of college students, a research model of college students' willingness to accept mobile Internet advertising is established. The data of college students' perception and evaluation of mobile Internet advertising are collected by means of questionnaire, and the data are analyzed by SPSS. The results show that the perceived entertainment of mobile Internet advertising and social influence have a significant positive impact on college students' willingness to accept mobile Internet advertising, and the impact of perceived usefulness is not significant. According to the research conclusions, some useful inspirations are put forward for the design and promotion of mobile Internet advertising.

**Keywords:** Mobile Internet Advertising; Technology Acceptance Model; Influencing Factors; Advertising Accept Level

With the rapid development of Internet communication technology, the mobile advertising market has become a new field where Internet giants and entrepreneurs compete to enter. As the main force of using mobile Internet, college students are the potential audience of mobile internet advertising. Compared with traditional advertising, mobile Internet advertising has the advantages of spreading accuracy, real-time interactivity, extensive coverage and other prominent advantages. Although there is a theoretical model based on traditional advertising, traditional advertising acceptance model does not consider how the characteristics of mobile Internet advertising affect consumer attitudes and decision-making<sup>[1]</sup>.

In recent years, the study of mobile Internet advertising has received increasing attention from academia, but empirical research is slightly less, and the research on the college student groups' attitudes and behavior on mobile Internet advertising is especially less. This paper conduct an empirical study on the influencing factors of college students' willingness to accept mobile Internet advertising, hoping that this research can enrich the research on mobile Internet advertising to a certain extent, and on the other hand, it can give advertisers and related operators some inspirations to achieve better advertising results and promote the rapid development of mobile Internet advertising.

## 1 LITERATURE REVIEW

### 1.1 Technology acceptance model and related research

The theories about explaining the individual's attitude and behavior towards the use of innovative technology mainly include the theory of reasoned action, the theory of planned behavior and the technology acceptance model and so on. All of these theories are based on the attitude - behavior paradigm, and made appropriate additions. It is concluded that the use attitude determines the behavior intention, and the behavior intention determines the final actual behavior.

#### 1.1.1 Theory of planned behavior

---

<sup>1</sup> Corresponding author. Email: 956246114@qq.com (Fang Mei) , cgp1717@163.com (Guoping Chen).

Based on the Vroom expectation model, Ajzen introduces the subjective norm (SN) and behavioral intention (BI), and puts forward the theory of reasoned action (TRA)<sup>[2]</sup>. According to the theory, the individual behavior is determined by the behavior intention, and the behavior intention is determined by the individual's attitude towards the behavior and the subjective norm. The basic assumption of this theory is that the individual behavior is rational, and the individual behavior is under the control of the individual willingness, but the person is a social person whose behavior will inevitably be affected by irrational factors such as opportunity and technical ability. The theory does not have strong persuasiveness for individual behavior. Then, in order to explain the performance of individual behavior in irrational circumstances, Ajzen introduces the control variables of perceptual behavior based on the theory of rational behavior and puts forward the theory of planned behavior (TPB).

According to the theory of planned behavior, in the interpretation of personal behavior, not only should the subjective norm and attitude of managers be considered but also personal control of behavior should be considered too, that is to say, perceived behavior control not only affects behavioral intentions but also determines behavior along with behavioral intentions. Behavior is determined by perceived behavior control and behavior intention, and behavior intention is determined by attitude, subjective norm and perceived behavior control. The theoretical framework of theory of planned behavior is shown in Figure 1:

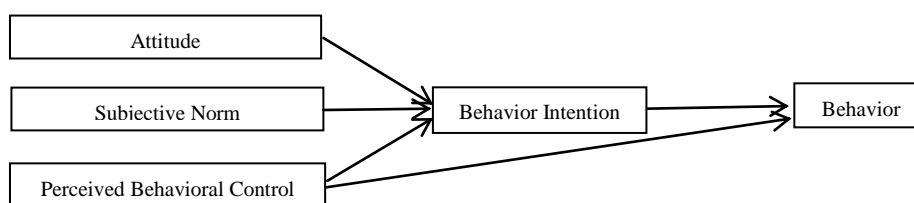


Figure 1. Theory of planned behavior.

### 1.1.2 Technology acceptance model

In the context of online banking self-service, the most widely used technology in the study of customer acceptance and willingness to use IT is the technology acceptance model (TAM) proposed by Davis<sup>[3]</sup>. Its theoretical framework is shown in Figure 2. The theoretical basis of the technology acceptance model is the theory of reasoned action and the theory of planned behavior. The model suggests that the actual behavior of using an information technology is determined by the behavior intention on the information technology, and the behavior intention is determined by the individual's attitude toward using and perceived usefulness of the information technology, perceived usefulness and perceived ease of use together determine the attitude toward using, while perceived ease of use determines the perceived usefulness, and external variables have an impact on perceived usefulness and perceived ease of use. Perceived usefulness and perceived ease of use variables play a decisive role in explaining individual attitudes and behaviors in the use of information technology.

Since the establishment of the technology acceptance model, the use of different sample tests under different scenarios has been widely confirmed<sup>[4]</sup>.

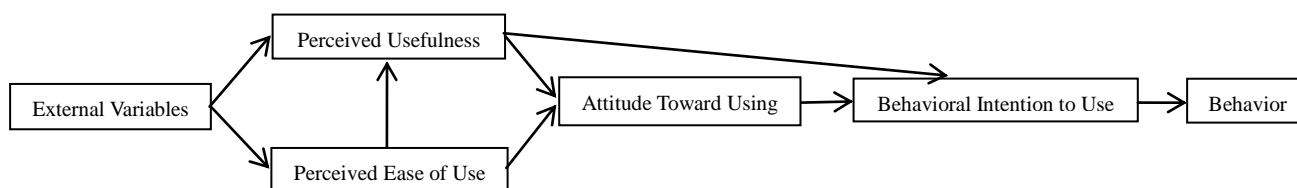


Figure 2. Technology acceptance model.

## 1.2 Research on mobile internet advertisement

Foreign research on Internet advertising started earlier. Whether consumers accept mobile Internet publishing forms of advertising are investigated by Marko et al.<sup>[5]</sup> (2007), some related driving factors are analyzed, and the conceptual model of consumer acceptance of mobile advertising are constructed, and empirical research are carried out. Iosif<sup>[6]</sup> (2008) conducts a systematic analysis of the mobile Internet advertising in the Greek market by means of questionnaires. The results of the survey show that the rewards of material reward and the popularity of the communicators have a great influence on the effectiveness of the actual advertising. Domestic research on mobile Internet advertising starts later, the relevant research results are less. Liu Hongyan et al.<sup>[7]</sup> (2014) constructs a theoretical model of mobile advertising accepting willingness based on the theory of planned behavior. The empirical results show that perceived control, advertising incentives and social influence have a significantly positive effect on user's intention. The impact of trust and perceived risk on user's intention is not significant. Through the interview result of mobile phone users' attitude towards the APP advertising and data analysis of valid questionnaires, Duan Gang and Jiang Shanshan<sup>[8]</sup> (2014) discuss the factors influencing users' willingness to click on mobile APP ads, and made recommendations to how to better promote the development of domestic mobile APP advertising industry.

## 2 CONCEPTUAL MODEL AND RESEARCH HYPOTHESIS

### 2.1 Theoretical model

Based on the above literature review on technology acceptance model and Internet advertisement, this study draws a theoretical model of college students' willingness to accept advertising on mobile Internet by using technology acceptance model, taking college students as the research object, introducing perceived entertainment and social influence variables, as shown in Figure 3.

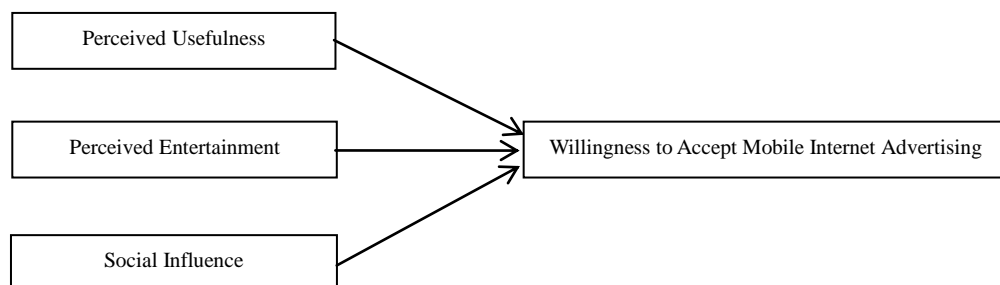


Figure 3. Theoretical model.

### 2.2 Hypothesis

#### 2.2.1 The influence of perceived usefulness on willingness to accept mobile Internet advertising.

Perceived usefulness refers to the perception that the user can use the technology to increase productivity, which has the same effect as external motivation, job suitability, comparative advantage, and output expectation. Perceived usefulness has been proven to be a very important factor in influencing user acceptance of technology<sup>[9]</sup>. Shen X and Chen H's<sup>[10]</sup> (2008) study shows that the perceived usefulness of mobile Internet users will significantly affect their satisfaction, and thus positively affect their willingness to use. It can be seen, the higher of the user's perceived usefulness to mobile Internet advertising is, the higher the degree of acceptance will be. Hence the hypothesis:

H1: Perceived usefulness has positively impact on college students' willingness to accept mobile Internet advertising.

### **2.2.2 The influence of perceived entertainment on willingness to accept mobile Internet advertising.**

Perceived entertainment refers to the degree to which a user feels pleasure in interacting with the Internet, removing predictable performance results. The existing literature mainly studies the evaluation and acceptance of information technology from the cognitive perspective, and the emotion has been proved to have far-reaching influence on consumer preference and job satisfaction in psychology, marketing, behavior organization and other fields. Lin Hongyan et al.<sup>[11]</sup> (2014) take the university student group as the object of study. In the study of the impact of consumer mobile advertising attitude, it is found that the customer's perception of mobile advertisement information has a significant positive impact on customer's mobile advertising attitude and willingness to accept. From the above research, it can be seen that the advertising that people are liking and interested in will increase the acceptance of mobile advertising customers, and the higher the perceived entertainment customers is, the higher the degree of accepting mobile Internet advertising will be. Hence the hypothesis:

H2: Perceived entertainment has positively impact on college students' willingness to accept mobile Internet advertising.

### **2.2.3 The influence of social influence on willingness to accept mobile Internet advertising.**

According to the theory of informational social influence in social psychology, when people are in a vague situation or in crisis, due to uncertainty about what is the right response, appropriate behavior and correct view, they often regard other people around as the source of information and believe that the interpretation of the situation may be more accurate than their own, so as to take herd behavior<sup>[12-14]</sup>. Customer's normative beliefs will affect their subjective evaluation of mobile Internet advertising, and normative beliefs are mostly from the work environment, colleagues, friends and family. Mobile Internet advertising experience will be passed through social relations whether positive or negative. If the customer's friends' and relatives' attitude towards the mobile Internet advertising is positive, the customer's attitude towards Internet advertising will be changed; the contrary is the opposite. Therefore, the subjective norms will have an impact on customer behavior intentions, such as the norms of the outside world, friends or family beliefs, etc. The more positive the customer's social impact is, the stronger the user's behavioral intention will be. Hence the hypothesis:

H3: Social influence has positively impact on college students' willingness to accept mobile Internet advertising.

## **3 RESEARCH DESIGN AND DATA COLLECTION**

### **3.1 Measuring tool**

In this study, questionnaire survey method is used to collect the perception and evaluation data of mobile internet advertisement. The scale of the variables is compiled by the former scholars, and it is modified according to the specific situation of Chinese college students, as shown in Table 1. Measurements are made using Likert scale 1-5 to measure respondents' agreement on the various statements. "1" is on behalf of strongly disagreed and "5" is on behalf of strongly agreed.

**Table 1. The measurement items and the source of the variable.**

| Variable  | Question   | Source                            |
|---|--|-----------------------------------|
| Perceived Usefulness                              | PU1: Through the use of mobile Internet advertising, my ability to obtain information is improved.<br>PU2: Through the use of mobile Internet advertising, my ability in the information acquisition has become easier.<br>PU3: Mobile Internet advertising helps me keep track of changes in my favorite merchandise. | Davis <sup>[3]</sup><br>(1989)    |
| Perceived Entertainment                           | PE1: A lot of mobile Internet advertising is interesting, watching these ads make me feel entertaining.<br>PE2: Watching mobile internet ads can make me feel good.<br>PE3: By receiving mobile Internet advertising, I can always pay attention to the latest fashion information.                                    | Moon&Kim<br>(2001)                |
| Social Influence                                  | SI1: My friends' views of mobile internet ads (like or complaining) can affect my choices.<br>SI2: If someone from my friend or family suggests using a mobile internet ad, I'll try to use it.<br>SI3: I will accept the sharing of the mobile Internet ads from my family or friends.                                | Deutsch&Gerard<br>(1955)          |
| Willingness to accept mobile Internet advertising | Will1: I will automatically click or browse my interested products advertising.<br>Will2: I focus on mobile Internet advertising about my favorite products.<br>Will3: If I receive more interesting or valuable mobile Internet advertising, I will share with friends or family.                                     | Hsu&Lin <sup>[15]</sup><br>(2008) |

### 3.2 Data collection process and sample characteristics

After completing the questionnaire, 40 questionnaires were dispatched randomly in the surrounding schools, and the final 40 samples were collected. Through the reliability and validity analysis, the pre-survey questionnaire was revised slightly to form a formal questionnaire. Formal investigation was carried out in the major college students in the group, one was using QQ, WeChat and other chat tools to collect data in a snowball way, two was conducting field intercept access in the major colleges and universities in Wuhan. Finally, 280 questionnaires were sent out, and then 246 valid questionnaires were obtained after rejecting invalid questionnaires. The effective rate was 88%. Among the effective samples, 50.3% are male and 49.7% are female. The sample distribution is more uniform. The sample with monthly income above 700 RMB account for 69.7%. 82.7% of the students have received advertisements, which are mainly status bar push advertising and APP embedded advertising accounting for 33.5%, respectively, 26.2%. While 59.2% of the respondents are directly deleted before reading and 27.2% will read it occasionally, indicating that college students' acceptance of mobile Internet advertising is low.

## 4 DATA ANALYSIS AND HYPOTHESIS TESTING

### 4.1 Reliability and validity analysis

After testing, the reliability and validity of the variables in the questionnaire are shown in Table 2. In this study, the  $\alpha$  coefficient of all variables are above 0.8, indicating that the study has a good reliability of the questionnaire. The KMO values of all variables are above 0.6 and Bartlett's spherical test is significant, indicating that the questionnaire is suitable for factor analysis. All the measurement items of the factor load in 0.6 or more, indicating that the data convergence efficiency is very good.

**Table 2. Reliability and validity analysis results. (n=246)**

| variables                  | measurements | $\alpha$<br>coefficient | KMO and<br>Bartlett's spherical test | factor load | Interpretation<br>of variation |
|----------------------------|--------------|-------------------------|--------------------------------------|-------------|--------------------------------|
| Perceived<br>Usefulness    | PU1          | 0.809                   | 0.703/0.000                          | 0.672       | 72.480%                        |
|                            | PU2          |                         |                                      | 0.768       |                                |
|                            | PU3          |                         |                                      | 0.735       |                                |
| Perceived<br>Entertainment | PE1          | 0.835                   | 0.685/0.000                          | 0.809       | 75.669%                        |
|                            | PE2          |                         |                                      | 0.823       |                                |
|                            | PE3          |                         |                                      | 0.639       |                                |
| Social<br>Influence        | SI1          | 0.801                   | 0.619/0.000                          | 0.628       | 65.133%                        |
|                            | SI2          |                         |                                      | 0.774       |                                |
|                            | SI3          |                         |                                      | 0.552       |                                |
| Willingness<br>to Accept   | Will1        | 0.812                   | 0.712/0.000                          | 0.700       | 72.651%                        |
|                            | Will2        |                         |                                      | 0.754       |                                |
|                            | Will3        |                         |                                      | 0.726       |                                |

#### 4.2 Correlation analysis between variables

As can be seen in Table 3, perceived usefulness, perceived entertainment and social influence are positively correlated with the willingness to accept mobile Internet advertising.

**Table 3. Correlation test results. (n=246)**

|                       |                                   | Perceive<br>Usefulness | Perceived<br>Entertainment | Social Influence |
|-----------------------|-----------------------------------|------------------------|----------------------------|------------------|
| Willingness to Accept | Person Correlation<br>coefficient | 0.497                  | 0.616                      | 0.613            |
|                       | sig.                              | 0.000                  | 0.000                      | 0.000            |

#### 4.3 Hypothetical test

In order to test the effect of pre-variables on the acceptance intention of college students 'mobile internet advertising, this study used perceived usefulness, perceived entertainment and social influence as independent variables, and college students' willingness to accept mobile Internet ads as the dependent variable to made regression analysis. The data were analyzed by SPSS20.0 software and the stepwise regression method was used for multiple regression analysis. The results are shown in Table 4.

**Table 4. Regression coefficient table. (n=246)**

| dependent variable       | independent variables   | constant | $\beta$ value | T value | sig.  |
|--------------------------|-------------------------|----------|---------------|---------|-------|
| Willingness to<br>Accept | Perceive Usefulness     |          | 0.047         | 0.614   | 0.540 |
|                          | Perceived Entertainment | 1.089E   | 0.353         | 4.390   | 0.000 |
|                          | Social Influence        |          | 0.353         | 4.722   | 0.000 |

Note: Regression coefficients are normalized regression coefficients.

As can be seen from Table 4, the perceived entertainment ( $\beta = 0.353$ ,  $t = 4.390$ ,  $p = 0.000 < 0.001$ ) and social influence ( $\beta = 0.352$ ,  $t = 4.722$ ,  $p = 0.000 < 0.001$ ) both have a significant positive impact on college students' willingness to accept mobile Internet advertising. H2 and H3 are verified. This shows that in today's era of pan-entertainment, young consumer groups are increasingly in pursuit of fun and entertainment, therefore, whether advertising design and promotion can meet their entertainment motivation is one of the important factors whether they accept mobile Internet advertising easily. In addition, they are also vulnerable to the impact of the surrounding environment, with a strong herd mentality.

The perceived usefulness ( $\beta = 0.047$ ,  $t = 0.614$ ,  $p = 0.540 > 0.05$ ) has no significant effect on college students' willingness to accept mobile Internet advertising. H1 is not verified. The possible reason is that there are many types and forms of advertising in the information age, and the college students are insensitive and even resistant to advertisements.

Thus, we can get the standard regression model of college students' willingness to accept mobile Internet advertising:

college students' willingness to accept mobile Internet advertising =  $1.089E + 0.353 * \text{perceived entertainment} + 0.352 * \text{social influence}$

Through the standardized regression coefficient values, it can be seen that, in the factors influencing college students' willingness to accept mobile Internet advertising, the contribution of perceived entertainment is the greatest, and the contribution of social influence is smaller.

## 5 RESEARCH CONCLUSIONS AND MANAGEMENT INSPIRATION

### 5.1 Research conclusions and discussions

Firstly, the results of this study show that perceived entertainment has a significant positive impact on college students' willingness to accept mobile Internet advertising. The traditional technology acceptance model mainly expounds the reason of the customer's acceptance of the information system from the characteristics of the information system, but neglects the emotional motivation and emotional experience as the social person. When watching mobile Internet advertising, users is not just pursuing functional value, but also focusing on emotional value. Therefore, in the delivery of advertising, advertisers should consider not only conveying basic information but also increasing the entertainment and fun at the same time, which will give customers a new advertising experience and help improve customer's willingness to accept mobile Internet advertising.

Secondly, this study also finds that social influence has a significant positive impact on college students' willingness to accept mobile Internet advertising, indicating that college students in deciding whether to accept mobile Internet advertising will be affected by the important people around, such as relatives, friends. The oral recommendation for corresponding product or service from these reference groups will enable college students to have a positive attitude and willingness to use mobile Internet advertising.

Finally, the study unexpectedly finds that perceived usefulness has no significant influence on college students' willingness to accept mobile Internet advertising. This shows that, in the era of rapid development of information technology, mobile Internet advertising that college students receive every day is too numerous to mention. Therefore, the functional and instrumental information perception of college students on mobile Internet advertising delivered is not strong, little attention is paid to the usefulness of the product or service information carried by advertising to their own extent.

### 5.2 Management inspirations and suggestions

Based on the research conclusions, the following suggestions are made for the advertisers and the relevant operators.

Firstly, the pleasant experience should be introduced into the advertising innovation to increase user interest. To this end, in the design of mobile Internet advertising, based on the reasonable transmission of the basic information of products or services, advertisers should strive to create a wide range of entertainment elements to bring customers a new advertising experience; in the mobile Internet advertising stage, they should select the younger consumer groups to use the more widely and generally accepted channels of communication to promote.

Secondly, more attention should be paid to the impact of reference groups on college students and the word of mouth. The results of the acceptance model of mobile Internet advertising show that the social influence has a significant positive impact on the users' willingness to accept. Advertisers and related operators should be on the



mobile Internet market research to determine the target audience, understand the audience preferences, and to form a stable emotional relationship through good communication. At the same time, actively exploring the potential users of the larger user groups is also necessary. On the basis of reasonable transmission of the basic information of products or services, they should make use of a large group of users to promote their products or services.

Finally, the clarity and usefulness to the potential user from the related information about the product or service delivered by advertising should be fully considered and enhanced.

This paper mainly explores the influencing factors of college students' willingness to accept mobile Internet advertising, and the influencing factors can be extended in the future research. Expanding the collection scope of sample data and making group contrast analysis to the individual characteristics can make the conclusion easier to promote, more practical significance and value.

## ACKNOWLEDGEMENT

This research was supported by the National Natural Science Foundation of China under Grant 71072073.

## REFERENCES

- [1] Brackett, L. K., Carr, B. N. (2001). Cyberspace Advertising vs. Other Media: Consumer vs. Mature Student Attitudes, *Journal of Advertising Research*, vol,41(5): 23-32.
- [2] Ajzen I, Fishbein M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall, 110.
- [3] Davis, Ebagozzi, R., Warshaw, P. (1989). User-acceptance of computer technology: a comparison of two theoretical models. *Journal of Management Science*, 35: 982-1002.
- [4] Venkatesh V, Davis F D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Journal of Management Science*, 46(2): 186-204.
- [5] Marko, Merisuvo, Asil M. (2007). Factors affecting the use of mobile advertising. *International Journal of Mobile Marketing*, 2(2): 21-34.
- [6] Androulidakis, Iosif, C. Basios, N. Androulidakis. (2008). "Surveying Users' Opinions and Trends towards Mobile Payment Issues." *Conference on Techniques and Applications for Mobile Commerce: Proceedings of Tamoco IOS Press*, 2008:9-19.
- [7] Hongyan liu, Shenglan fu. (2014). The research on influential factors of willingness to accept mobile AD—Based on undergraduates's experience of mobile AD. *Journal of Soft Science*, 4: 107-111.(in Chinese)
- [8] Gang duan, Shanshan jiang. (2014). The research on influential factors of willingness to click mobile phone App AD. *Journal of university of electronic science and technology (social science edition)*, (3): 65-68.(in Chinese)
- [9] Taylor S P A Todd. (1995). Understanding information technology usage: A test of competing models. *Journal of Information Systems Research*, 6(2): 144-176.
- [10] Shen X, Chen H. (2008). "An Empirical Study of What Drives Consumers to Use Mobile Advertising in China." *The International Conference on Grid and Pervasive Computing Workshops, 2008. Gpc Workshops IEEE*, 2008:158-163.
- [11] Hongyan lin, Xing zhou. (2014). The analysis of consumers' attitudes towards mobile AD in the perspective of perception—with undergraduate as an example. *Journal of Management World*, (2): 182-183.(in Chinese)
- [12] Deutsch, M., Gerard, H. (1955). A study of normative and informational social influences upon individual judgment. *Journal of Abnormal and Social Psychology*, 51(3): 629-636.
- [13] Rosen, D. L., Olshavsky, R. W. (1987). The dual role of informational social influence: Implications for marketing management. *Journal of Business Research*, 15(2): 123-144.
- [14] Baron, R. S., Vandello, J. A., Brunzman, B. (1996). The forgotten variable in conformity research: impact of task importance on social influence. *Journal of Personality and Social Psychology*, 71(5): 915-927.
- [15] Hsu, C. L., Lin, J. C. C. (2008). Acceptance of Blog Usage: The Roles of Technology Acceptance, Social Influence and Knowledge Sharing Motivation. *Journal of Information and Management*, 45(1): 65-74.