

Users' Acceptance Willingness Model and Empirical Study of We Chat Marketing

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Abstract—Taking mobile WeChat users as the study objects, this paper builds the users' acceptance model of WeChat marketing and proposes hypotheses affecting users' acceptance intension of WeChat marketing. Reliability and validity analysis of the questionnaires has been done by using SPSS software, surveys on 196 samples have been carried out by questionnaires with guarantee of both reliability and validity and hypotheses have been verified by AMOS. The fitting indexes in relation to this model are: GFI=0.913, AGFI=0.911, CFI=0.956, NFI=0.962 and RMSEA=0.054, respectively. All these indexes fall within the range of recommended values, indicating good fittings. And then this paper calculates the specific path coefficients and constructs the concrete path diagram. The study result shows that the performance expectancy($\beta=0.625$), interactivity($\beta=0.554$), social influence ($\beta=0.337$) and individual innovativeness($\beta=0.129$) have significant impacts on users' acceptance intension of WeChat marketing, while the impacts exerted by perceived risk ($\beta=-0.074$) and dedicative performance($\beta=0.056$) are less significant.

Keywords-WeChat; WeChatmarketing; acceptance willingness ;performance expectancy; effort expectancy

I. INTRODUCTION

As the mobile instant messaging software with the largest user group in Asia, WeChat has had over 600 million registered users as of November 2013. By the end of July 2014, there are nearly 400 million active WeChat users; 5.8 million public accounts with 15 thousand increased accounts per day; the total number of access APP reaches 67,000 with 400 newly created mobile APP per day; WeChat self-advertising platform has owned over 10000 advertising users and more than 1000 traffic users. Individuals and enterprises have increasingly tried to use WeChat for marketing. However, compared to other media marketing channels, WeChat marketing has unique characteristics, so it is necessary to conduct a study on the influence of users' acceptance willingness exerted by the WeChat marketing. The author carries out an empirical study on the influence of users' acceptance willingness exerted by the WeChat marketing through the questionnaire survey. This study puts forward relevant hypotheses at first from the perspective of factors affecting acceptance willingness of the WeChat

marketing, builds users' acceptance model of WeChat marketing, carries out the verification analysis and finally draws the corresponding conclusions and gives some suggestions.

II. BASIC HYPOTHESIS

In 1989, Davis proposed the Technology Acceptance Model (TAM) on the basis of Theory of Reasoned Action (TRA), which largely accelerated the studies on users' behaviors. Since that, relational theoretical researches including model extensions as well as empirical studies in various areas were developed quite widely. Through assorting and analyzing the related historical research literatures, Venkatesh and et al have found that those researches made a sense in different distinguished categories. Furthermore, they tried to recognize and identify the features of those empirical models, and then proposed the Unified Theory of Acceptance and Use of Technology (UTAUT) with an integration of all models. Specifically, UTAUT involves four major factors that play significant roles in affecting usage willingness and behaviors, i.e., performance expectancy, effort expectancy, social influence, convenient condition as well as four controlled variables (including gender, age, experience and willingness). Here, performance expectancy, effort expectancy and social influence have crucial impacts on usage willingness, while the convenient conditions are linked closely with the usage behaviors of information technologies. This paper mainly studies three factors affecting acceptance willingness: performance expectancy, effort expectancy and social influence. In addition to that, other relational affecting factors are also added to it on the basis of the unique features of Wechat marketing.

A. Performance Expectancy

Performance expectancy is the extent a person believes that use a certain information technology could be conducive to enhance the performance. Venkatesh defied the expected utility as the belief held by individuals that the use of information technology can help them improve the job performance with the influencing factors of perceived usefulness, job fitness, relative interests and outcome expectancy. By using the information system, users will be able to spend less time to find the desired contents

(GHaubl&Trifts2000; Math wick 2001) and less effort to accomplish the best purchase decision (Davis 1992; Campeau 1999; Moore&Benbasat1991). Through the study conducted by Venkatesh and his colleagues (2003), it has been found that the more users feel their work efficiency improved by using the information system, the stronger their motivations to use the information system will be. Hence, hypothesis H1 is proposed in this paper.

H1: performance expectancy has significant influence users' acceptance willingness of WeChat marketing

B. *Effort Expectancy*

Venkatesh believes that the use of willingness would be affected by operational difficulties. Factors affecting the effort expectancy are concluded as follows: usefulness, complexity and the ease of use. The effort expectancy integrates the perceived ease of use in TAM/TAM2, the complexity in MPCU and the ease of use in IDT. In the past, perceived ease of use was regarded as an important determiner in the information technology acceptance. Effort expectancy, however, is considered as a direct determiner of the use of willingness in the UTAUT model. According to the research results of China Mobile communication market, Yan (2003) pointed out that the Chinese users are easier to accept user-friendly technologies, such as text messages, rather than advanced technology lacking of user-friendly properties, such as WAP. As a result, compared with users in developed countries, Chinese users lay more emphases on factor of effort expectancy.

Hence, hypothesis H2 is proposed in this paper.

H2: effort expectancy has significant influence users' acceptance willingness of WeChat marketing

C. *Social Influence*

Individual acceptance and use of information would be influenced by others. Venkatesh defines the social influence as below: individuals perceive others think he should or should not use the new information system, and divide the social factors into subjective norm, social factor and public image.

As shown by Nysveenetal (2005)'s research, in s public environment, an individual will inevitably observe the behaviors of others in the surroundings first and be affected thereby while using a certain mobile service. According to Mao and Palvia(2006)'s research, which is conducted in the background of Chinese culture, the subjective norm with a concept of compliance or obedience is confirmed to have a significant influence on the usage willingness of the system in a compulsive and inexperienced systemic environment. Cao Yuanyuan (2009) research under the Chinese mobile payment background has shown that social influence exerts the most significant positive influence on the willingness to use mobile payment.

Hence, hypothesis H3 is proposed in this paper.

H3: social influence has significant influence users' acceptance willingness of WeChat marketing

D. *Individual Innovation*

Individual innovation's earliest involving in information technology was proposed by Agarwaletal (1998) for using to measure the new information technologies individuals trying to. Huang Jia sheng (1994) gives the following definition after integrating definitions on consumer innovation by many scholars: "the consumer innovation is a kind of personalized concept to be used to explain the extent to which individuals willing to accept the change." UTAUT has measured many variables with neglecting studies of individual characteristics, such as individual innovation. Therefore, individual innovation by adding UTAUT will help to explain the process of technology acceptance and use. Rogers (1995) argued that innovators can take on more risks and uncertainties, that is to say that individuals with higher innovation tend to use an innovative technology. Eastlick and Lotz (1999) proposed a theoretical model taking the electronic shopping as the research object that connects the individual innovation with the acceptance intention through attitude. The results showed that those who have higher innovation are more willing to purchasing in the electronic environment. Through the empirical study, Cheng Xiaolu (2010) pointed out that the stronger extent the individual innovation is, the stronger acceptance ability on new ideas and technologies is, the stronger extent of doing transformational decisions independently is and the easier to show an interest in the emerging mobile commerce is. It will help to stimulate the use of mobile commerce.

Hence, hypothesis H4 is proposed in this paper.

H4: individual creativity has significant influence users' acceptance willingness of WeChat marketing

E. *Interactivity*

Interaction means the continuous exchange of views and marketers can interact with users by using a mobile device. The interactive advertising is more attractive than the one-way advertising. Mutual exchange of mobile advertising is more interactive than general mobile advertising. Besides, CHO and other studies have shown that interaction has positive influence on the acceptance and users' attitude to the advertising. Fan Xiaoping (2007) suggested that the higher extents of net interaction among virtual community members are, the greater obtained interactive profits and utilities are. In this way, the understandings of products or brands are deepened, the merchant's integrities and abilities are perceived and thus the online purchasing willingness is produced. Through an empirical study, Xiao Shuang (2014) pointed out that the interaction is the most important factors affecting the attitude towards the mobile advertising and this suggested that users value the interaction of advertising. The higher interaction of the mobile advertising is, the better attitude by consumers toward mobile advertising itself is. Wang Qiping, Yu Mingyang (2014) conducted the empirical research and reached a conclusion as below: the information accuracy and one-on-one interaction in enterprise WeChat are significant factors influencing the attitude towards brands. Since the brand attitude is a significant factor affecting the purchasing willingness, the latter will further affect the

purchasing behaviors of users. Based on this, hypothesis H5 is put forward as below:

H5: Interaction has significant influence users' acceptance willingness of WeChat marketing

F. Perceived Risk

Perceived risk is negative consequence may produced during the assessment when users receiving the WeChat marketing information or difference between the expected results and the actual results. According to the theory of perceived risk, the risks perceived by users are mainly the uncertainty of decision results and the seriousness of error decision consequences. The relational risks are mainly privacy risk, financial risk, technical risk, functional risk and time risk. Liu Bing (2010)'s study found that the lower risk the consumers perceived on mobile commerce users is, the more positive attitude to the use of mobile commerce would be. From the perspective of privacy concerns, Zhou Tao, Lu Yaobin (2010) conducted the empirical analysis on the acceptance behaviors for mobile commerce users and came to the conclusion that privacy concerns indirectly affect the behavioral motivation by factors of perceived risk and trust. Liu Hongyan, Fu Shenglan (2014) found that perceived risk has significant negative influence on users' trust in mobile advertising through survey and research. The higher the perceived risk is, the less trust users in mobile advertising is. Therefore, this paper puts forward Hypothesis H6:

H6: perceived risk has significant influence users' acceptance willingness of WeChat marketing

The acceptance willingness hypothesis model for wechat marketing is shown in Fig .1:

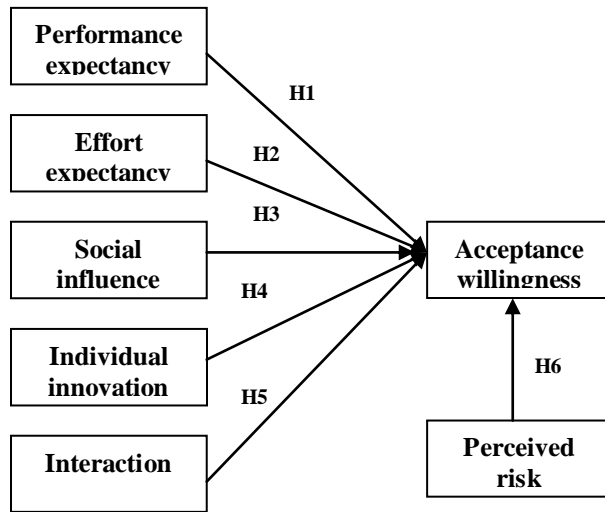


Figure 1. Acceptance Willingness Hypothesis Model for WeChat Marketing

III. QUESTIONNAIRE DESIGN AND QUESTIONNAIRE SURVEY

The research data are collected by the questionnaire survey and the measurements of variables are from authority

literatures. The names of variables, measurements and literature sources are as shown in Table 1.

There are mainly two parts in this survey questionnaire: the first part is survey on status quo of WeChat and the second part is a measurement scale of factors affecting the acceptance willingness of WeChat marketing. 305 questionnaires are given out to respondents of sophomore and junior students in a Wuhan university and 196 effective questionnaires are returned. In these 196 questionnaires, boy students account for 39.8%, while girl students account for 60.2%. There are 81.6% who use the WeChat for less than 2 hours, 8.7% for 2-3 hours, 4.6% for 3-4 hours and 5.1% for 4 hours. As for reception of WeChat marketing information, 73.4% said they received, while 26.6% said they haven't received any WeChat marketing information; 54.6% has WeChat account with merchants in it, while 44.4% are on the contrary; 24.5% have had behaviors of shopping and consumption by the influence of WeChat marketing information, while 75.5% haven't, this shows that people still have certain doubts for shopping via WeChat.

TABLE I. RESULTS OF MEASUREMENTS AND CREDITABILITY ANALYSIS OF VARIABLES

Variable	Measurement items	Source	Cronbach α if Item Deleted
Performance expectancy (PEE) Cronbach $\alpha=0.713$	PEE1	Literature [3] [6] [9]	0.585
	PEE2		0.690
	PEE3		0.766
Effort expectancy (EFE) Cronbach $\alpha=0.725$	EFE1	Literature [3] [6] [9]	0.621
	EFE2		0.547
	EFE3		0.612
	EFE4		0.672
	EFE5		0.681
Social influence (SOI) Cronbach $\alpha=0.784$	SOI1	Literature [1] [3] [8]	0.692
	SOI2		0.688
	SOI3		0.766
Individual Innovation (INN) Cronbach $\alpha=0.800$	INN1	Literature [2] [7]	0.764
	INN2		0.743
	INN3		0.759
	INN4		0.768
	INN5		0.774
Interaction (INT) Cronbach $\alpha=0.761$	INT1	Literature [1] [4] [5]	0.810
	INT2		0.641
	INT3		0.630
	INT4		0.630
Perceived risk (RISK) Cronbach $\alpha=0.831$	RISK1	Literature [1] [2] [9]	0.790
	RISK2		0.828
	RISK3		0.795
	RISK4		0.810
	RISK5		0.789
	RISK6		0.806
Acceptance willingness (WILL) Cronbach $\alpha=0.743$	WILL1	Literature [6] [7] [9]	0.629
	WILL2		0.628
	WILL3		0.713

IV. STATISTICAL ANALYSIS

A. Validity Analysis on Creditability

Creditability defines how much reliability, stability and uniformity is achieved in terms of measurement. It indicates whether measurement tools are capable of stable

measurement. It is indispensable to the investigation of effectiveness. This paper, by means of SPSS software, adopts the Cronbach α creditability index method to test the creditability of the scale. The test results refer to Table 1. As shown in the result, the Cronbach α values of all variables are above 0.7, which suggests relatively high creditability. However, after deleting INT1, the creditability of interactivity rises from 0.761 to 0.810, meaning that INT1 does not do a good job in measuring interactivity and needs to be deleted. Besides, after conducting confirmatory factors analysis on various scales, the factors of all items in the scales all exceed 0.6, which shows relatively good convergent validity. The specific data are shown in table 1

B. Hypothesis Testing

The author tested the structure model by software named PLS-Graph3.0. Fig .2 is the hypothesis testing results. The

statistic results show that four hypotheses out of six are significant when $P=0.05$, while another two are not significant. The performance expectancy, social influence, individual innovation, and interaction have significant influence on user's attitudes, while the influence exerted by perceived risk and effort performance is not significant. Recommended values of some common fitting indexes for the model are presented as below: AGFI>0.9, GFI>0.9, CFI>0.9, NFI>0.9, RMSEA<0.08. The fitting indexes in relation to this model are: GFI=0.913, AGFI=0.911, CFI=0.956, NFI=0.962 and RMSEA=0.054, respectively. All these indexes fall within the range of recommended values, indicating good fittings. The specific path coefficients are shown in Fig .2

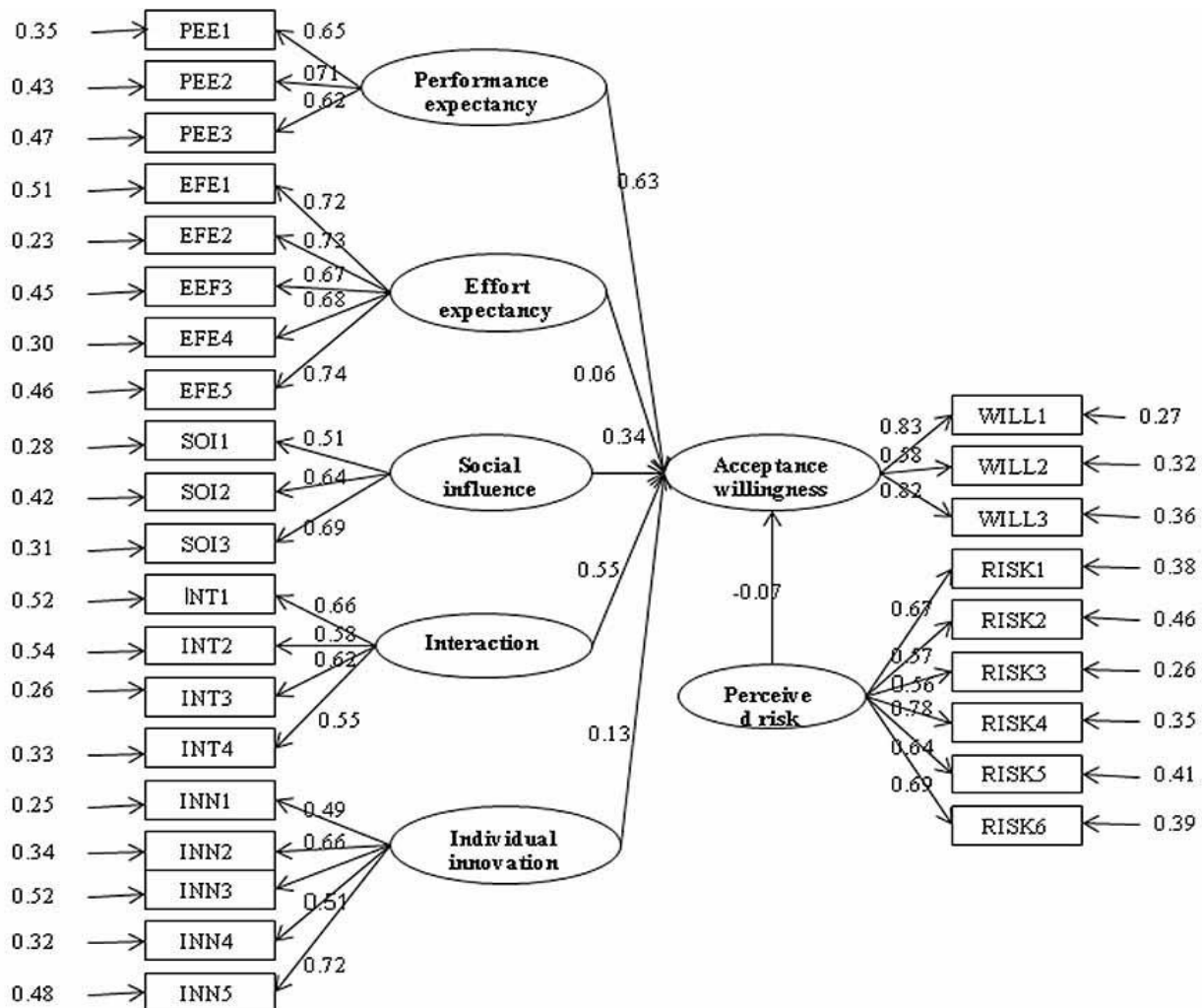


Figure 2 Hypothesis Testing Results

Figure 2. Hypothesis Resting Results

V. RESEARCH RESULTS

(1) Performance expectancy ($\beta = 0.625$) is the most important factor affecting the users' acceptance willingness of WeChat marketing. The relational information of WeChat marketing can help users understand the real time information of products or services. The application of WeChat payment also simplifies users' purchasing process, in this way, better purchasing decisions shall be made by using less efforts and thus to improve users' shopping efficiency and experience. This shows that the degree of users' acceptance willingness in a certain way of marketing is determined by the performance brought by this marketing way.

(2) Interaction ($\beta = 0.554$) is the second important factor affecting the users' acceptance willingness of WeChat marketing. It indicates that users lay emphasis on the interaction of WeChat marketing. The interactive Wechat marketing allows users to select their favorite and interested information. Besides, they are given the right of controlling to order certain marketing information and participate in the entire process of the Wechat marketing. The author has found that the more prosperous the inter-activeness of the WeChat marketing is, the higher the customers' acceptance will be. On one hand, it requires the Wechat marketing suppliers to give rights of selection and control to users; on the other hand, various forms can be used for improving the interaction of the Wechat marketing, such as sketch and guess, lottery-attached question and answer, the collection of micro-photos, etc. All these forms will be of great help in attracting the participation of more users.

(3) Social influence ($\beta = 0.337$) is the third important factor affecting the users' acceptance willingness of WeChat marketing. Users use or not use the WeChat software as well as their attitudes and willingness on WeChat marketing are vulnerable to be affected by others in the surroundings and stress of social groups. WeChat marketing suppliers in this way can create a certain social fashion, exert positive influence on social opinions by using willingness references such as stars and thus give play to positive social influence.

(4) Individual innovation ($\beta = 0.129$) has positive influence on the acceptance willingness of WeChat marketing, however, the degree of such influence by comparing with the former three factors. The higher the individual innovation is, the higher the willingness of use, content and method acceptance is. With this clarification, other than objective factors, there exists a certain individual difference in the acceptance willingness of WeChat marketing.

(5) Perceived risk ($\beta = -0.074$) has non-significant influence on the acceptance willingness of WeChat

marketing. The negative influence on the acceptance willingness of WeChat marketing exerted by the perceived risk is identical to the author's hypothesis.

(6) Effort performance ($\beta = 0.056$) has non-significant influence on the acceptance willingness of WeChat marketing and the reason therein may from the easy operation of WeChat user interface. Since the young societies dominate this survey, who are skilled in mobile operation and software application. Hence, the influence exerted by the effort performance is relatively lower.

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