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Examine the Effects of Habit and Gratifications

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Abstract: By integrating the uses and gratifications theory and habit theory, this study develops a theoretical model to explore factors affecting continuance intention of mobile social networking service. 218 valid data were collected in China. The empirical results show that, cognitive need and affective need have significant impacts on continuance intention. In addition, habit is significantly determined by affective need, tension-release need and prior use, which further significantly influences continuance intention.

1. INTRODUCTION

In recent years, mobile social networking service (SNS) has been growing in a quick and rapid speed, and has become an important part of individuals' daily life [1]. Mobile SNS, such as WeChat, enables users to easily and conveniently communicate with others, share with others and maintain their relationships. The report issued by Tencent shows that the number of monthly active WeChat users has reached 846 million by the end of the third quarter of 2016[2]. Despite of this trend, it is critical to maintain the users for continuance use. As Bhattacherjee pointed out that continuance plays a vital role in driving the sustained development of information system and its success [3]. Thus, understanding the factors motivating users' continuance to use mobile SNS calls for more attention.

Extant research has adopted different theories to explain user behavior, such as expectation-confirmation theory, motivation theory and information success model. Factors such as satisfaction, confirmation, flow, information quality and system quality are found to be important motives to affect user behavior [4] [5] [6] [7] [8]. Also, a growing number of studies attempt to employ the uses and gratifications theory to explore how different gratifications influence user behavior [9] [10] [11] [12]. Prior studies have revealed that various needs, such as social need and cognitive need, are key factors driving user behavior in social media. In addition, previous literature has proven that habit plays a vital role in affecting user behavior [13]. Although some researchers have pointed out the relationships between satisfaction and habit, less attention has been paid on the effects of various needs (gratifications) on habit. Also, mobile context is different from that of non-mobile [14], for example, mobile context is more convenient and users can use mobile SNS whenever and wherever they need. Therefore, the needs (gratifications) driving mobile users for sustained use may differ.

To address these research gaps, by integrating the uses and gratification theory and habit theory, this study attempts to explore how gratifications affect habit and continuance intention to use mobile SNS. A theoretical model was developed and empirically tested via 218 valid data. In doing so, this study offers insights into the role of gratifications and habit in impacting mobile user behavior. Also, this study makes practical contributions on how to retain users for sustained use.

This paper is structured as follows. Section two presents the theoretical background. Then section three puts forward the research model and hypotheses, followed by research methods in section four. And section five describes data analysis. This paper concludes with discussion in section six, and also points out the implications and limitations.

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2. THEORETICAL BACKGROUND

2.1 Uses and gratifications and user behavior

Since its development in radio communication area, the uses and gratification theory (UGT) has been widely used to explain various user behavior in different contexts. UGT argues that individuals are active to choose particular media that can fulfill their different requirements [15]. According to UGT, individuals' social and psychological factors are identified to foster user behavior to use media [16]. UGT is suitable to explain user motivations to user different media and reveal the relationships, thus exploring how individuals meet their various needs through the media use [17].

Prior studies have employed UGT to explain user behavior in a variety of contexts, such as Internet [18], instant messaging service [19], microblogging [17], Facebook [20], social networking service [9] [10]. The findings from previous literature have shown that different gratifications have significant effects on user behavior.

Also, researchers have put forward different gratifications in explaining user behavior. For example, Stafford et al. argued that Internet use is motivated by the following gratifications: process gratification (e.g., searching and surfing) [18], content gratification (e.g., information) and social gratification (e.g., chatting and interactions). Venkatesh and Brown noted that hedonic gratification (fun), social gratification (status) and utilitarian gratification (utility) significantly affect personal computer adoption at home [21]. In the context of SNS, such gratifications as hedonic, utilitarian and social are also revealed to be significantly influence user behavior [10] [22]. In consideration of the context of mobile (e.g., convenience, easy to access), users may find it more easily to get information, emotional experience and leisure. On the basis of SNS, we raise four kind of gratifications: cognitive need, affective need, social need, tension-release need.

2.2 Habit and user behavior

Habit is defined as "learned sequences of acts that have become automatic responses to specific situations, which may be functional in obtaining certain goals or end states" [23]. Habit thus represents the extent to which users tend to perform behaviors automatically [24]. The performance of habitual behavior essentially requires little conscious attention and minimal mental effort [25]. In other words, users perform the particular behavior automatically without consciousness [26] [27]. When an individual repeats an action regularly and he/she is satisfied with the outcome, the action then become habitual [28].

In terms of the development of habit, there are two main perspectives: the instant activation perspective (IAP) and the habit/automaticity perspective (HAP). The IAP has been regarded as a reason-oriented framework in which user evaluations determine user behavior, while the HAP is regarded as a habitual goal-directed framework in which behavior can occur without the process of establishing associated goals [29]. In this research, we proposed that various needs influence habit through the IAP and prior use influence habit through the HAP.

With respect to the relationship between habit and user continued behavior, there are different opinions. Some scholars argued that habit acts as a moderator in the relationship between continuance intention and usage, for example, Limayem et al. revealed that habit acts as a moderating variable of the relationship between intentions and continued WWW usage [24]. Some found that habit significantly influences continuance intention and then indirectly affected continuance usage [29] [30]. For example, Huang et al. found that habit is the important predictor of continuance use intention of data mining tools [30].

3. RESEARCH MODEL AND HYPOTHESES

3.1 Cognitive need

Cognitive need is related to acquiring or strengthening information, knowledge and understanding of users' environment, or satisfying their curiosity or exploratory desires [31]. Prior studies have shown that cognitive need has a significant effect on user behavior. Gan and Wang found that information gratification is one of the main

motivations for users to use WeChat [17]. Shi et al proved the indirect effect of cognitive need on continuance intention in the context of Facebook [32]. Users can share and discuss hot topics, new trends, interesting news, useful information and many other things on mobile social networking sites [33]. Also, users can get much information on mobile SNS and satisfy their cognitive need. The fulfillment of cognitive need may foster users to form habitual behavior and to continue using the service. Thus, the following hypotheses are developed.

H1a: Cognitive need significantly affects habit.

H1b: Cognitive need significantly affects continuance intention.

3.2 Affective need

Affective need reflects users' emotions, pleasures, feelings or aesthetic experiences [31]. Previous literature has proven that affective need significantly impacts user behavior [17] [34] [35]. The findings of Yin and Zhu revealed that enjoyment included in affective need is the most silent factor for the development of habit [35]. Gan and Wang argued that affection need has a significant influence on WeChat use [17]. Hsu et al found that pleasure is positively related to continuance intention [34]. Users can satisfy their affection need through a variety of features that social media offers, such as real-time voice intercom, group chat in live chat session and video calls [17]. When the use of mobile SNS can satisfy users' affective need, users may regard it as a positive activation and then develop habit easily and continue using it. Otherwise, if users' affective need cannot be fulfilled, they may discard to use it. Therefore, the following hypotheses are formed.

H2a: Affective need significantly affects habit.

H2b: Affective need significantly affects continuance intention.

3.3 Social need

Social need is based on users' desire for affiliation and relate to strengthening contact with family, friends, and the world [31]. Kuss and Griffiths argued that social motivation is the main reason for users using SNS [36]. Through mobile SNS, users can communicate and connect with each other wherever and whenever they are and they can easily build social connection. Hsiao et al. found that social tie has a significant effect on continuance intention [13]. When users use mobile SNS for social purpose, they will regard it as a positive outcome from SNS, which will finally help activate the habitual behavior and continuance intention. Hence, the following hypotheses are put forward.

H3a: Social need significantly affects habit.

H3b: Social need significantly affects continuance intention.

3.4 Tension-release need

Tension-release need reflects users' desires of escape and diversion [31]. Xu et al. found that leisure significantly influences SNS usage [22]. Giannakos et al. argued that wasting time tends to be the most important motivation to use Facebook [33]. Mobile SNS provides lots of features for users to release their tension, such as interesting posts and games. When users use mobile SNSs for tension-release successfully, they may catch a habitual behavior and promote their continuance intention. Thus, the following hypotheses are developed.

H4a: tension-release need significantly affects habit.

H4b: tension-release need significantly affects habit.

3.5 Prior use

Prior use refers to the frequency and duration of using mobile SNS over a period of time, representing the repetition of the usage in past experience [24] [37]. According to HAP, habit is reinforced with more use and this replaces conscious evaluation [29]. The definition of habit itself reveals repetition of the previous usage as "an important precondition for the development of habit." [24]. The formation of habit requires a certain amount of repetition under stable context [26]. The more frequently users visit the mobile SNS, and the longer they spend their time on mobile SNS, the more likely users build up an automatic processing towards the service [35].

Therefore, the following hypothesis is formed.

H5: Prior use significantly affects habit.

3.6 Habit

Habit is defined as "the extent to which people tend to perform behaviors automatically because of learning" [24]. When users repeat an action regularly and they are satisfied with the outcome, the action then becomes habitual [28]. As a repeated behavioral pattern, habit can unconsciously trigger continuance intention [25]. Hsiao et al. showed that habit has a significant effect on continuance intention of using mobile social Apps [13]. In the context of mobile SNS, when users develop habitual behavior, they may use the service without conscious decision making and the use becomes routine, thus increasing continuance intention of future behavior. Therefore, the following hypothesis is put forward.

H6: Habit significantly affects continuance intention.
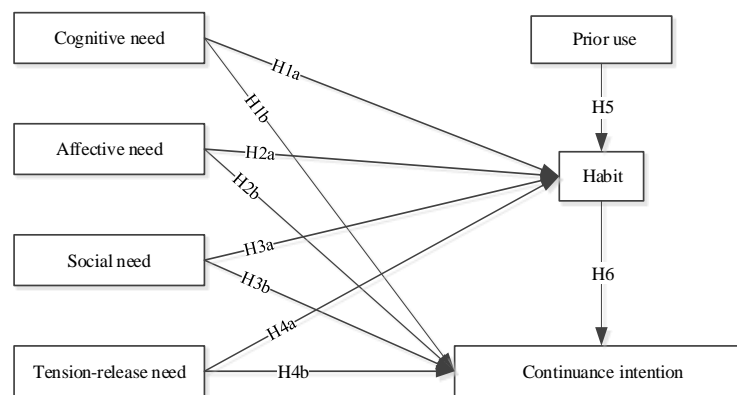
Figure 1 shows the research model.

Figure 1.   The research model

4. RESEARCH MODELS

4.1 Construct measurement

All the measurement items were adapted from previous literature to ensure the validity and were modified to fit the mobile SNS context. The items were originally created in English; thus, the back-translation technique was conducted to ensure translation validity. First, it was translated into Chinese by a researcher. Then the items were translated back into English by another researcher and further compared by two researchers to ensure the consistency of the content.

Items of cognitive need were adapted from Ku et al. [38]. Items of social need were adapted from Trammell et al. [39]. Items of Tension-release need were drawn from Cocosila and Igonor [40]. Items of affective need were drawn from Quan-Haase and Young [41]. Items of habit and prior use were both modified from Limayem et al. [24]. Items of continuance intention came from Bhattacherjee [3]. All items were measured with a seven-point Likert scale, ranging from 'strongly disagree (1)' to 'strongly agree (7).' When the questionnaire had been constructed, 15 users were selected for a pilot survey. Based on their comments, some items were modified to improve understandability and clarity. The final items are presented in the Appendix.

4.2 Data collection

All research participants were WeChat users in China. According to a report from China Internet Network Information Center, WeChat' using rate was 78.7%, which represented that WeChat was the most used social media of China [42]. Therefore, WeChat was selected as the research subject in this study. Empirical data for this study were collected through online questionnaires. We post the questionnaire on Moments of WeChat which is

a popular function of WeChat for two weeks. A total of 266 people responded. After removing invalid responses (those had the same values for all questions or short answer time), a total of 218 questionnaires were collected for further data analysis. 44.5 per cent of the respondents were men and 55.5% were woman. Most respondents (88.1 percent) were 18-22 years of age and nearly half of the respondents (46.8%) used WeChat over three years. Table 1 shows the detailed sample demographics.

Table 1. Demographic information of respondents

Measure	Item	Frequency	Percentage
Gender	Male	97	44.5
	Female	121	55.5
Age	Less than 18	8	3.7
	18-22	192	88.1
	23-27	11	5.0
	More than 27	7	3.2
Time period for the usage	Less than 6 months	10	4.6
	6-12 months	6	2.8
	1-2 years	24	11.0
	2-3 years	76	34.9
	More than 3 years	102	46.8

5. DATA ANALYSIS

5.1 Measurement model

Smart-PLS 3.0 was used to assess validity and reliability of the data and convergent and discriminant validity tests were conducted to evaluate the measurement model. Convergent validity measures whether items can effectively reflect their corresponding factor, and can be assessed by examining composite reliability(CR), item reliability and average variance extracted(AVE). The recommend reliable value for CR is 0.7[43]; and generally acceptable threshold of AVE is 0.50[44]. Item reliability can be satisfied when values of the standardized outer loading scores are higher than 0.70[43]. In this research, the item loadings are all over 0.70. As shown in table 2, the values of CR all exceed 0.70, the values of AVE all exceed 0.50 and α values are all larger than 0.70. The test results in the current research indicate good reliability and convergent validity of the measurement model [44].

Discriminant validity measures whether two factors are statistically different. When the square root of each construct's AVEs is greater than the correlations among other variables, adequate discriminant validity is achieved [44]. As also shown in Table 2, for each construct, the square root of the AVE (all diagonal values in italics) is significantly larger than its correlations with other constructs. This verifies the good discriminant validity of the measurement model.

Table 2. Research validity and reliability

	AVE	CR	α	AN	CI	PU	HAB	CN	SN	TN
AN	0.769	0.943	0.925	*0.877*						
CI	0.847	0.944	0.911	0.455	*0.921*					
PU	0.820	0.901	0.787	0.047	0.218	*0.906*				
HAB	0.843	0.941	0.906	0.391	0.686	0.283	*0.918*			
CN	0.797	0.922	0.873	0.378	0.415	0.060	0.251	*0.893*		
SN	0.683	0.865	0.781	0.238	0.248	0.064	0.180	0.187	*0.826*	
TN	0.792	0.884	0.740	0.345	0.420	0.201	0.530	0.260	0.157	*0.890*

Moreover, we tested the cross-loading of all the items included in this research. The results show that each within-construct item loading is higher on the measured construct than the cross-loadings on the other items, supporting the discriminant validity of this research instrument [45].

Finally, we also conducted Harman's single-factor test to examine whether the common method effect was present [46]. The result from the exploratory factor analysis showed that the first factor accounted for 18.8% while the seven factors were extracted explained 80.3 percent of the total variance. Hence, none of the factors can explain the majority of the variance, indicating that common method bias is not an issue in this research.

5.2 Structural model

Figure 2 depicts the results of the path coefficients and the corresponding levels of significance. The explained variance of habit and continuance intention is 36.8 and 55.6 percent, respectively. Habit is significantly affected by affective need, tension-release need and prior use, therefore supporting H2a, H4a and H5. Continuance intention is significantly affected by habit, cognitive need and affective need, therefore supporting H1b, H2b and H6. Cognitive need ($\beta=0.046$, $t=0.801$), social need ($\beta=0.045$, $t=0.909$) were found to have no significant effects on habit, thus H1a and H3a are not supported. Social need ($\beta=0.075$, $t=1.456$) and tension-release need ($\beta=0.009$, $t=0.148$) were also shown to have no significant effects on continuance intention, thus H3b and H4b are not supported.
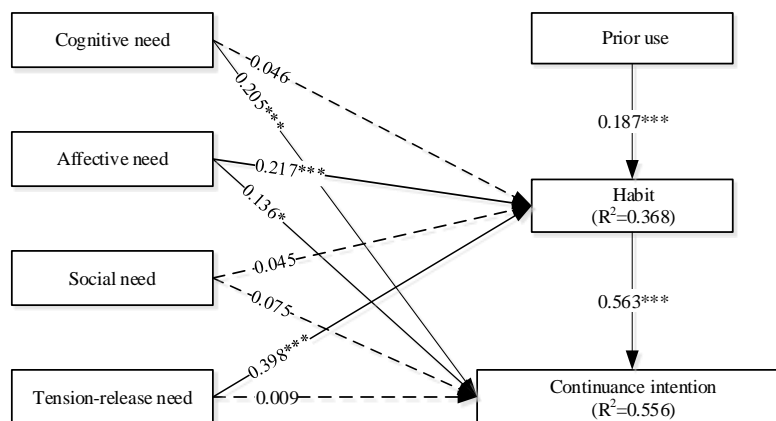

Figure 2. The structural model (Note: *p<0.05, **p<0.01, ***p<0.001)

6. DISCUSSION, IMPLICATIONS AND LIMITATIONS

In order to understand the determinants of habit and continuance intention of mobile SNS, this study proposes a theoretical model by integrating uses and gratifications theory and habit theory. As shown in Figure 2, prior use, affective need and tension-release need significantly affect habit, while habit, cognitive need and affective need significantly affect continuance intention.

Affective need and tension-release need have significant effects on habits. Affective need was regarded as the main reason for users to use WeChat, and now it also seems to have an important role in the development of habit [17]. That is because we all can have affective experience during using mobile SNS due to the various functions of mobile SNS. Tension-release need has been regarded as the main factor for using Facebook and it has been tested to help develop habit [33]. This may because users would use mobile SNS during the breaks of study or work and then mobile SNS can help them get rid of pressure. The cognitive need is found to have no significant effect on habit. This may due to the fact that the development of habit needs a lot of repetitive and effective uses and mobile SNS cannot be a great information source that can fulfill users' cognitive need every time. The social need is also found to do not affect habit significantly. That is because maybe in the early usage of mobile SNS, users might adopt mobile SNS for searching new friends or maintaining relationship, but when

relationships are going to be stable, users may not have to check mobile SNS frequently. Furthermore, prior use positively affects habit, which is consistent with prior research [29] [35]. The high frequency of checking mobile SNS means that users can have positive outcome from mobile SNS, which will also help reinforce the development of habitual behavior. The more frequently does a user visit a mobile SNS, the firmer automatic behavior will the users build.

Regarding the factors affecting continuance intention, habit has the strongest effect. The significant relationship between habit and continuance intention is consistent with Hsiao et al. [13]. When users establish habitual behavior in using mobile SNS, it indicates that they use the services with a higher frequency and get satisfaction, thus promoting continuance intention. In addition, cognitive need has a significant effect on continuance intention, which is consistent with Giannakos et al. [33]. When users get new or useful information from mobile SNS, they regard mobile SNS as useful, which help promote continuance intention. Affective need also significantly affects continuance intention, which is consistent with Hsu et al [34]. Mobile SNS provide lots of features for users to experience affective feeling and users may regard mobile SNS as a great way for them to experience emotions and pleasure, which may finally help promote their continuance intention. However, social need has no significant effect on continuance intention. It is different from Hsiao et al but is consistent with Shi et al [13] [32]. That's because maybe social need was the main factor for users' adoption but its function fade when users' online relationships tend to be steady. Tension-release need also doesn't affect continuance intention significantly. This may due to the fact that users have many other ways for tension-release and mobile SNS may not be the unique way.

This study makes contributions for academia and practitioners. From the theoretical perspective, this study contributes to the current information system literature by revealing the important role of habit in affecting continuance intention in mobile context. With the excessive use of different media, users become automatic to use the media without consciousness. Also, this study deepens our understanding on how various needs and prior use affect habit, which is meaningful to help reveal the development process of habit. And this study noted that only cognitive and affective needs affect continuance intention, which is different from that of non-mobile context. The findings of this study also provide suggestions for service provider on how to attract users to continue using the service. Service providers should offer helpful and valuable information so as to fulfill users' cognitive need. Also, they should design more features so that users can easily express their affection, such as thanks or caring about others. Furthermore, to attract users to develop habit toward using the service, service providers should investigate users' requirement on killing time, such as interesting posts or the latest games.

There are several limitations that should be born in mind. First, the sample from this study was mainly young users. Although the majority of mobile SNS users are young [42], it is still important to reveal users at different age group. Future research should consider conducting empirical study on other groups, such as aged users. Second, this study only collected cross-sectional data. Future studies should also collect longitudinal data so as to fully reveal the effect of habit in affecting user behavior. Finally, there are other needs that may affect mobile user behavior, such as technology need, thus further studies could conduct exploratory study to reveal different needs in the mobile context.

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Appendix: Measurement items

Construct	Measurement items	Source
Cognitive need	To find out new information	Ku et al.[38]
	To obtain valuable information	
	To obtain helpful information	
Social need	To make new acquaintances	Trammell et al.[39]
	To allow people to find me easily	
	To enable me to find others with same interests	
Tension-release need	To kill time	Cocosila, Igonor[40]
	To get away from what I am doing	
Affective need	To let people know I care about them	Quan-Haase, Young [41]
	To show others encouragement	
	To thank people	
	To help others	
	To show others that I am concerned about them	
Habit	I use WeChat as a matter of habit	Limayem et al. [24]
	Using WeChat has become automatic to me	
	Using WeChat is natural to me	
prior use	In the last 7 days, how much time would you say youspent using WeChat	Limayem et al. [24]
	In the last 7 days, how many times did you use WeChat	
Continuance intention	I intended to continue using WeChat rather than use any alternative technology	Bhattacherjee [3]
	My intentions are to continue using WeChat rather than use any alternative technology	
	If I could, I would continue my use of WeChat	