

# GET TIRED OF SOCIALIZING AS SOCIAL ANIMAL? AN EMPIRICAL EXPLANATION ON DISCONTINUOUS USAGE BEHAVIOR IN SOCIAL NETWORK SERVICES

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## Abstract

*This research aims to explain users' discontinuous usage behavior in social network context. With system features increasing, information flooding and personal network expanding of SNSs, users begin to emerge social network fatigue, and ultimately express discontinuous usage intention. To explain this phenomenon, we develop a research model based on a cognition-affection-conation framework. This study examines the role of perceived overload (in terms of system feature overload, information overload and social overload) in influencing users' negative affections of SNSs including social network fatigue and dissatisfaction, and the effects of such emotions on users' discontinuous usage intention, which are validated through an empirical study. The findings of this study contribute to a better understanding of the relationship among perceived overload, social network fatigue and users' discontinuous usage behavior, and give some implications to SNSs providers to improve this situation.*

*Keywords: System Feature Overload, Information Overload, Social Overload, Social Network Fatigue, Discontinuous Usage Behavior, Cognition-Affection-Conation*

# 1 INTRODUCTION

In the last decade, social networking services (SNSs) had a flourishing growth, such as Facebook, MySpace, or Google+, expanded like an infectious disease and sweep all of the world. However, SNSs then confronted challenges after these great success. For instance, after the peak in 2012, the users' fever towards Facebook began to cool down (Cannarella & Spechler 2014) and faced a decrease in the number of active users. MySpace, which once was the second largest SNS in the world but failed down in 2011 (Gehl 2012). Even Qzone in China, which is the SNS provided by Tencent with the third global largest user base (Cooper 2014), has also faced a loss of users and a decrease in use. Addressing this phenomenon, from the theoretical aspect, many researchers paid great attention to continuous use of SNSs (Al-Debei et al. 2013; Lin et al. 2014; Zhou & Li 2014). From the other side, SNS providers also realize this phenomenon and try to improve service quality by sticking to the "more is better" principle, such as adding new and fresh functions, or encouraging more interaction among users to improve this situation.

But it seems that these strategies are not always effective as expected. Though Facebook added many new features since 2012, such as mention tagging, privacy concern, trending and so on, and users still shrank 20% of its maximum size by December 2014, expressed low interest and participation, and began to abandon this platform (Cannarella & Spechler 2014). Recently some scholars noticed that SNS users' discontinuous usage behavior of Facebook might partially arise from social network fatigue (Ravindran et al. 2014). However, there is no empirical research about the effects of such negative emotional response, and what factors will lead to such fatigue feelings. Our study will examine users' social network fatigue and discontinuous behavior in SNSs from the perspective of perceived overload. Two research questions are addressed in this research:

*How does perceived overload lead to users' social network fatigue and dissatisfaction while using social network?*

*How do social network fatigue and dissatisfaction influence discontinuous usage intention in social network context?*

The paper is organized as follows. In the next section, we provide a review of relevant literature and introduce research model and hypotheses of this study. Then, we present the research methodology and results analysis. Finally, we have a discussion of theoretical contributions for future research and practical implications for service providers of this study.

## 2 LITERATURE REVIEW AND HYPOTHESES

### 2.1 Perceived Overload on SNS

Overload has been described in objective and subjective ways in previous research. From a subjective perspective, overload refers to the individual's subject evaluation and perception of the amount of objects or people that exceed one's ability to deal with (Saegert 1973). Many researchers have applied this concept to different research areas to describe the perception of kinds of things that exceed individuals' ability to handle, such as "technology overload" (Karr-Wisniewski & Lu 2010; Thatcher et al. 2003), "information overload" (Chen et al. 2009; Jacoby et al. 1974; O'Reilly 1980),

“communication overload” (Meier 1963), “knowledge overload” (Hunt & Newman 1997), “work overload” (Yano & Rachamadugu 1991) and so on.

There are no existing studies that directly define the overload on SNS. In the research of Koroleva et al. (2010), they proposed the concept of technology overload at workplace and presented three salient dimensions: system feature overload, information overload and communication overload. We adopted the first two types of overload, which are system feature overload and information overload, from Koroleva et al. (2010)’s study. System feature overload occurs when “the addition of new features is outweighed by the impacts on technical resources and the complexity of use” (Koroleva et al. 2010). Information overload was defined as the condition induced by the volume of information exceeding the capacity an individual can process in a certain unit of time (Jacoby et al. 1974). The third dimension of overload on SNSs is social overload. Social overload was initially proposed as a sociological concept by McCarthy and Saegert (1978) to describe the negative effects of population crowding. It indicated that individuals have to enhance social contacts and interactions, and invest more time and attention to maintain social relationships with the increase of regional population, which sequentially leads to residents’ mental and psychological distress. SNS is like a virtual society, and social overload also exists in social network context. For example, Joinson et al. (2011) proposed “digital crowding theory” to describe online personal network expanding and defined it as excessive self-disclosure, socialization and contact. Maier et al. (2012) defined social overload as feelings of too high social demands as being responsible to take care of friends, to address their problems, or to amuse them with increasing members of SNSs.

We didn’t adopt the communication overload here due to two reasons. Firstly, Koroleva et al. (2010)’s study was conducted under the context of workplace, which is different with the context of SNSs. For instance, under the workplace context, the aim of communication is to improve work efficiency and efficacy, while the communication in SNS is used to socializing. Secondly, according to the study of Junglas et al. (2013), there are several factors summarized from three dimensions affected the adoption of information system: system dimension, information dimension and social dimension. Though communication is an essential component of social interaction for SNSs, we believe it could not fully represent the social aspect of SNS. Thus, as a type of information technology, our study proposed that users of SNS perceived three kinds of overload: system feature overload, information overload and social overload.

## **2.2 Social Network Fatigue**

The phenomenon of fatigue had been studied in previous clinical and occupational research (Åhsberg 1998; Bartley 1965; Bills 1934; Piper et al. 1987). There was not unified definition on the concept of fatigue. Piper et al. (1987) described fatigue as a subjective, unpleasant feeling of tiredness that has multiple dimensions varying in duration, unpleasantness and intensity. Lewis and Wessely (1992) defined fatigue as lassitude or exhaustion of mental and physical strength resulting from bodily labor or mental exertion.

Previous studies about fatigue could be concluded in three aspects: physical fatigue, psychological fatigue and behavioral fatigue. Physical fatigue refers to a reduction on physiological capacity (Eidelman 1980), which will lead to imbalance on the individual’s physical state, such as muscle fatigue and eyes fatigue. Psychological fatigue refers negative perception, such as tiredness (Piper et al. 1987), exhaustion (Wessely et al. 1998), stress (Bartley 1965), burnout (Hallsten 1993), boredom

(Fisherl 1993), and anxiety (Wendt & Palmerton 1976). Behavioral fatigue supposed to a decrease in one's performance (Hemingway 1953), which will not only lead to a decrease in one's work efficiency (Mital et al. 1994) and activity (Smets et al. 1995) but also have a negative impact on one's continuous behavior (Bartlett 1953).

Bernstein (2009) used social network fatigue to describe the feelings of upset and burnout, and low participation intention towards SNSs. Bright et al. (2015) defined social network fatigue from the perspective of information overload. Ravindran et al. (2014) divided social network fatigue into five emotional dimensions: social dynamics, content, immersion, platform and life cycle. Fatigue in social dynamics dimension refers to users' weariness, overwhelmed feelings and low interest about information on SNSs. Fatigue in content dimension refers to disappointment and frustration of posts on SNSs. Fatigue in immersion dimension is defined as addiction. Fatigue in platform dimension refers to dissatisfaction of platform design features. And Fatigue in life cycle dimension expresses as a high-low-high activity life cycle use on SNS. Based upon these studies, this research regarded social network fatigue as a psychological concept and defined it as negative emotional reactions about social network activities, such as tiredness, boredom, burnout, indifference and low interest (Åhsberg 1998; Bright et al. 2015; Ravindran et al. 2014).

Though there are some studies examined the antecedents and outcomes of perceived fatigue in occupational area (De Croon et al. 2002; Shen et al. 2006; Tiesinga et al. 1999), few ones studied perceived fatigue in social network context. Bright et al. (2015) conducted a empirical research on antecedents of social network fatigue based on TAM, UTAUT, and LCM theory, and ascribed social network fatigue to four factors, including social media confidence, social media self-efficacy, privacy concern and social media helpfulness. They found privacy concern showed a positive effect on social network fatigue. We believe that the social network fatigue is usually caused by excessive activities on SNS, such as dealing with dozens of invitations, following news feeds, keeping interactions to maintain relationship with friends, or adapting to new added system features. In sum, overload of system features, information and socialization on SNS could lead to users' social network fatigue. As to the outcomes of fatigue, some studies indicated that when suffer from fatigue, individuals would act as low performance and participation (Hemingway 1953; Ream & Richardson 1996; Shen et al. 2006; Smets et al. 1995), and have a short break or suspension of social network activities (Ravindran et al. 2014).

### **2.3 Research Model and Hypotheses**

Based on the above literature review, we developed a research model as shown in Figure 1. The model follows the cognition-affection-conation framework, which has been applied in many previous ecommerce research (Fornell 1992; Gotlieb et al. 1994; Zhao et al. 2012). Cognition refers to the individuals' perceptions of people or objects, affection refers to the individuals' feelings, emotions and moods towards people or objects, and conation refers to the individuals' motivation and volition, such as behavior intention (Gotlieb et al. 1994). In this study, we adopted this framework into a social network context. Our research model hypothesizes that cognitive judgments (i.e., system feature overload, information overload and social overload) lead to users' affective responses (i.e., social network fatigue and dissatisfaction), and finally drive behavior intention (i.e., discontinuous usage intention).

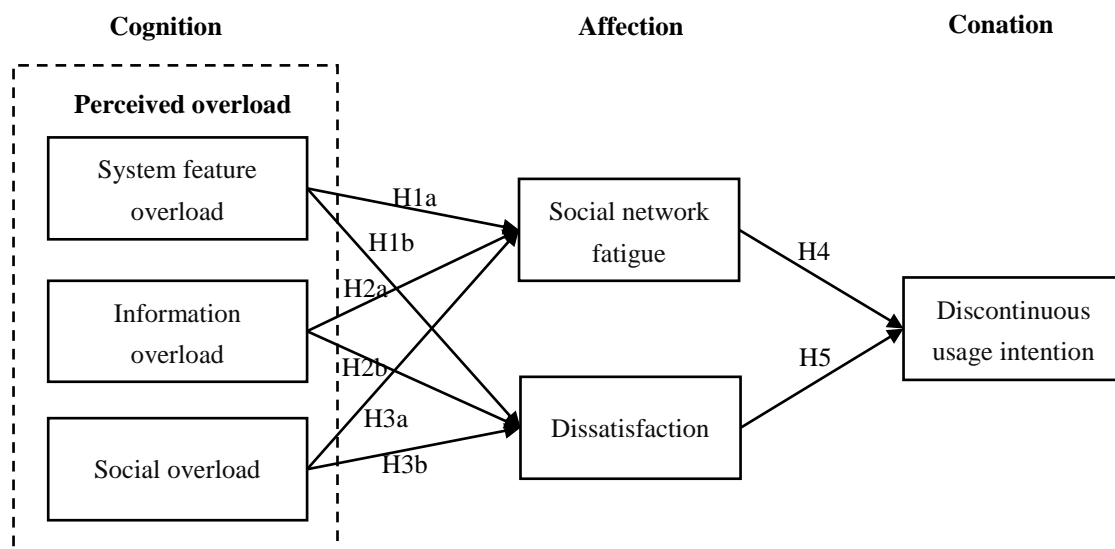


Figure 1. The research model.

### 2.3.1 Perceived Overload, Social Network Fatigue and Dissatisfaction

System feature overload is defined as individuals' perception of too many given features of a product (Karr-Wisniewski & Lu 2010). For SNSs, adding new features is usually used by service providers to enhance system capacity, and users encounter system updates and modifications frequently. These features could attract users and enhance their positive experience on SNS to some extent, but users would also experience "system feature overload" when then have to make great efforts to learn or get used to new features or updates.

Our study presents system feature overload will lead to social network fatigue due to several reasons. First, adding too many features to a system not only increases product variety but also product complexity. System feature overload can be treated as the misfit between features and users' needs. According to cognitive fit theory, unnecessary features would distract users' attention and increase individuals' cognitive load, which would induce poorer individual performance (Oviatt 2006). Second, as the limited capacity model indicated, there is a capacity limitation for human to process added features (Lang 2000). People might get frustrated and bored when new features added to software package get to a certain point, where the marginal utility of new features starts to be negative (Hsi & Potts 2000). Finally, the "feature fatigue theory" described the phenomenon of customers' inconsistent attitude to products with many features before and after use, which indicated that users chose high-capacity products with many features before use, but finally become upset and frustrated with rich features they desires at the beginning (Li et al. 2014; Thompson et al. 2005). Thus, when confronting system feature overload, SNS users may have fatigue feelings, such as anxiety (Mick & Fournier 1998), stress (Mick & Fournier 1998), burnout (Zhang & Padmanabhan 2011), and emotional exhaustion (Thompson et al. 2005), and further decrease individuals' performance. Thus, we proposed the following hypothesis:

*H1a: System feature overload is positively related to social network fatigue.*

Studies on product features have revealed a positive relationship between product feature overload and dissatisfaction. For instance, Thompson et al. (2005) found that consumers prefer to products with

many features, but during their use process, they began to be upset by the number of product features, along with a decrease of satisfaction. Stock (2011) also proposed an inverted U-shaped relationship between the innovativeness of the offered goods and customer satisfaction. For digital products, such as software, Hsi and Potts (2000) indicated that too many features of software may push users feel overwhelmed and bored, which will lead to a low level of satisfaction. System feature overload usually implies features that are hard to use or useless, thus it is expected that it would induce dissatisfaction as usefulness and ease of use are two important antecedents of satisfaction toward information technology. The study of Li et al. (2014) also found that system feature overload will increase users' cognitive difficulties and decrease ease of use, which will lead to users' dissatisfaction. Thus, we proposed the following hypothesis:

*H1b: System feature overload is positively related to dissatisfaction.*

With the dramatic expansion of social network, large amount of information are generated on SNSs every day, which often exceeds users' information processing ability (Leskovec 2011). Information overload was defined as the condition induced by the amount of information exceeding the capacity an individual can process in a certain unit of time (Jacoby et al. 1974).

Previous studies on information overload in the context of workplace and virtual community context, have already found information overload would decrease overall performance (Jones et al. 2004; Leskovec 2011; O'Reilly 1980). Meanwhile, the relationship between information overload and fatigue were validated in prior research (Bright et al. 2015; Join et al. 1998; Oppenheim 1997; Ravindran et al. 2014). With the negative effect of information overload, Oppenheim (1997) proposed the concept of information fatigue syndrome, which indicated that when people encountered information overload, they would emerge syndromes of fatigue, including anxiety and sleepiness. Join et al. (1998) examined the effect of information overload on 264 school students through interviews, and found students turned to the syndrome of fatigue, such as stress and depression. Ravindran et al. (2014) and Bright et al. (2015) analyzed the antecedents of social network fatigue, and attributed fatigue to information overload in social network context. Thus, we proposed the following hypothesis:

*H2a: Information overload is positively related to social network fatigue.*

Information are required to make decisions, but the decision quality might decrease when people are confronting too much information, which has revealed in the study of Jacoby et al. (1974) on information overload in shopping context. The positive relationship between information overload and job dissatisfaction had also been found in many studies conducted in workplace context (Eppler & Mengis 2004; Hunter & Goebel 2008). For SNS users, dealing with great amount of information everyday would also increase the feeling of frustration especially when these information are irrelevant to their interest. Koroleva et al. (2010) investigated information overload on Facebook and found it lead to dissatisfaction and further reduced activity on Facebook. Thus, we proposed the following hypothesis:

*H2b: Information overload is positively related to dissatisfaction.*

Social overload in this study is described as perceptions of crowding in online space, too many demands that one have to process, too much time and attention have to put into SNSs to maintain online relationship with the increasing members of individual's network (Hidalgo 2012; Joinson et al. 2011; Maier et al. 2012; McCarthy & Saegert 1978). According to Dunbar (1992), there is a cognitive

limit to the number of individuals with whom one can maintain stable social relationships, and the number is about 150 which is called Dunbar's number. However, study on Facebook revealed that the number of friends for many users has prominently exceeded Dunbar's number (Walther et al. 2008).

Research from sociology have already found that social overload related to large amount of unwanted social demands would induce psychological distress (Evans & Lepore 1993; Gomez-Jacinto & Hombrados-Mendieta 2002). We believe this relationship would also support under the virtual context. Actually, Maier et al. (2012) have also found that users felt exhausted when faced social overload on SNSs. Thus, we proposed the following hypothesis:

*H3a: Social overload is positively related to social network fatigue.*

Studies in sociology had found that after a certain point, the increase of the number and density of regional population would decrease residential satisfaction (Bonnes et al. 1991; Machleit et al. 2000). We believe this is the case under social network context. SNSs users have social requirements for social network service, when their requirements are not well satisfied (e.g., too many people to deal with, or the complexity of privacy manage on SNS), it is expected that they will have lower level of satisfaction toward SNSs. Thus, we proposed the following hypothesis:

*H3b: Social overload is positively related to dissatisfaction.*

### 2.3.2 *Social Network Fatigue, Dissatisfaction and Discontinuous Behavior*

In IS behavioral research, discontinuance behavior is defined as a cessation of use (Furneaux & Wade 2011; Recker 2014). Ravindran et al. (2014) classified three types of discontinuous behaviors: short breaks, control activities and suspend behavior. Thus, in the social network context, the discontinuous usage intention could be defined as an individual's intention to decrease SNSs use intensity, take short breaks, stop SNSs use or cancel SNSs accounts (Maier et al. 2014; Ravindran et al. 2014).

The study from psychology area had already found that psychological fatigue would have a deteriorated impact on one's continue activities (Bartlett 1953). Maier et al. (2012) indicated individuals experience fatigue towards Facebook, such as emotional exhausted, which would induce discontinuous usage intention. Based on in-depth qualitative interviews, Ravindran et al. (2014) found individuals who were experiencing social network fatigue tended to reduce the intensity of use, have short breaks or totally abandon SNS. Thus, we proposed the following hypothesis:

*H4. Social network fatigue is positively related to discontinuous usage intention.*

There are many studies have found the positive relationship between satisfaction and continuance intention in social network context (Laumer et al. 2013; Lin et al. 2014; Zhao et al. 2012). From the other side, we could also expect the positive association between dissatisfaction and discontinuous usage intention. Some studies have validated such proposition. For example, the empirical study of Maier et al. (2012) found that the higher one's satisfaction toward SNS, the lower discontinuous usage intention. Thus, we proposed the following hypothesis:

*H5. Dissatisfaction is positively related to discontinuous usage intention.*

### 3 METHODOLOGY

#### 3.1 Measurement

To ensure validity, we adapted most of the items from previous studies according to the context of this research. Items for discontinuous usage intention were adapted from Maier et al. (2014) and Ravindran et al. (2014). Items for dissatisfaction were adapted from Chang et al. (2014). Items for system feature overload were adapted from Karr-Wisniewski and Lu (2010). Items for information overload were adapted from Karr-Wisniewski and Lu (2010) and Chen et al. (2009). Items for social overload were adapted from Maier et al. (2014). As there was no scale to directly measure social network fatigue, the scale to measure work-related fatigue from Åhsberg (1998, 2000) was adapted. Six items were developed to measure social network fatigue. All items were measured by seven-point Likert scales ranging from strongly disagree to strongly agree. Eleven scholars were asked to evaluate content validity and assess the suitability, readability, and ambiguity of the scales by personal interviews. Modification was done on the questionnaire based on the feedback received from the interviews. A pretest of 78 subjects were conducted prior to the main research in order to ensure the reliability and validity. The final scales are presented in Appendix.

#### 3.2 Data Collection

Users of Qzone were selected as the subjects of this study. Qzone as the third largest social network site in the world after Facebook and YouTube, launched in April 2005 and owned by Tencent. Users of Qzone were recruited to participate in this survey by providing promised a small monetary award for this survey. We provided an online hyperlink to the survey web page, and the respondents would be directed to the online version of the questionnaire when they clicked on the hyperlink. As a result, we collected 274 valid responses. Non-response bias was examined by comparing the means of all variables and demographics for early and late respondents. No significant differences were found from the results of t-test indicating that non-response bias was not salient in our study. Table 1 shows the sample demographics.

Characteristics	Options	%	Characteristic	Options	%
Gender	Male	43.43	Occupation	Student	50.36
	Female	56.57		Working	44.17
Age	<18	2.92		Unemployed	0.73
	>18 and ≤24	51.46		Others	4.74
	>24 and ≤30	35.04	Length of use	<1 years	1.09
	>30 and ≤35	8.76		>1 and ≤3	14.96
	>35	1.82		>3 and ≤6	35.77
Education	High school or below	10.95		>6 and ≤9	29.93
	Associate's or bachelor's degree	81.02		>9 years	18.25
	Master's degree or higher	8.03			

Table 1. Demographics of the research sample.



## 4 RESULTS ANALYSIS

Structural equation modeling (SEM) was used to test both the measurement model and the structural model using SmartPLS 2.0.

### 4.1 Measurement Model Test

**Convergent validity.** All Cronbach's alpha values were above the 0.70 threshold, indicating that the scales had high reliability (Nunnany 1978). The results of confirmatory factor analysis revealed that the standardized loading of items was mostly above 0.7 (see Table 2 and Appendix). The average variance extracted (AVE) for every construct was above 0.5, which means that the scales had good convergent validity (Bagozzi & Yi 1988). Table 2 shows that internal consistency of the measurement model was evaluated by composite reliabilities (CRs), and they were all above 0.7, indicating that the scales had good reliability (Nunnany 1978).

**Discriminant Validity.** The square roots of the AVEs are the diagonal elements, and they are all greater than their corresponding correlation coefficients with the constructs. This suggests that the scales have good discriminant validity. Table 2 contains the square root of AVE on the diagonal of latent variable correlation, and are all greater than the corresponding construct correlations, indicating the measurement model is valid.

**Common Method Bias.** In order to assess the influence of common method bias, we conducted Harmon's one factor test. The results reveal that there are more than one factors are extracted and no single factor explains most variance of the data. Thus we may predict that the common method bias is not severe enough to threaten our results.

Construct	Alpha	CR	AVE	SFO	IO	SO	SNF	DIS	DUI
SFO	0.843	0.895	0.680	0.825					
IO	0.846	0.896	0.683	0.694	0.826				
SO	0.923	0.946	0.814	0.551	0.603	0.902			
SNF	0.949	0.959	0.796	0.623	0.644	0.707	0.892		
DIS	0.906	0.934	0.780	0.585	0.594	0.594	0.690	0.883	
DUI	0.858	0.903	0.700	0.610	0.579	0.609	0.739	0.698	0.837

SFO=System feature fatigue; IO=Information overload; SO=Social overload; SNF=social network fatigue; DIS=Dissatisfaction; DUI=Discontinuous usage intention.

Table 2. Convergent and discriminant validity.

### 4.2 Structural Model Test

As shown in Figure 2, all path coefficients in our research model are significant. The three dimensions of perceived overload (system feature overload, information overload and social overload) jointly explained 59.9% of the variance of social network fatigue and 48.9% of dissatisfaction. These three dimensions were found to have significant effects on social network fatigue and dissatisfaction, thus H1, H2, H3 were supported. Social network fatigue and dissatisfaction together explain 61.3% of the variance of users' discontinuous usage intention. Thus, H4 and H5 were supported.

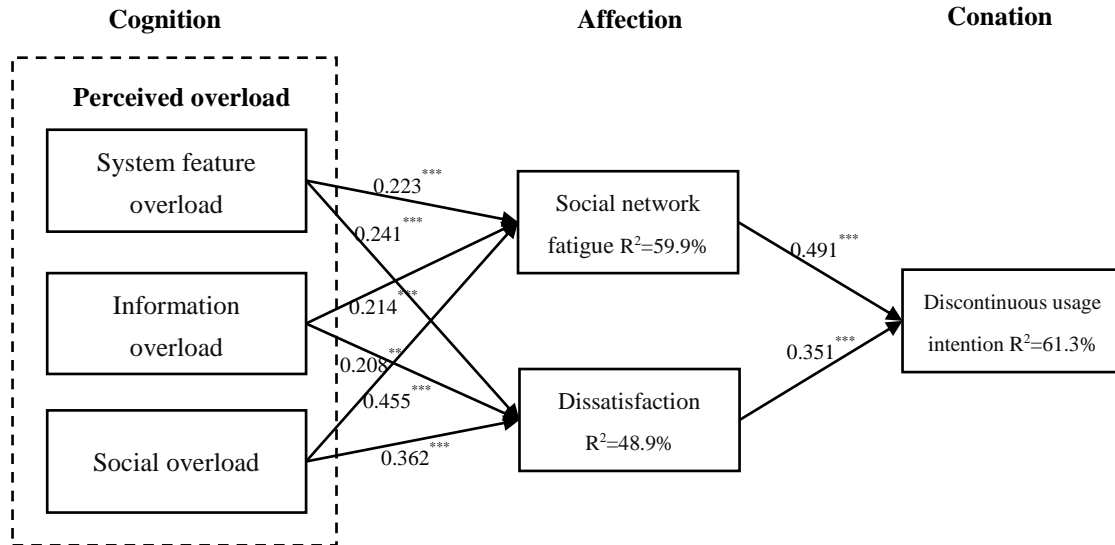


Figure 2. Model testing results. Note: \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

## 5 CONCLUSION AND DISCUSSION

Our work studied users' discontinuous behavior of social network services from the perspective of perceived overload. Three types of overload on SNSs were examined, including system feature overload, information overload, and social overload. Our study found that perceived overload on SNSs exerted positive impacts on users' discontinuous intention through social network fatigue and dissatisfaction. This research also has several theoretical contributions and practical implications.

As to theoretical area, this study makes some important contributions. First, our study extends the research on discontinuous usage of SNSs. Although lots of studies were trying to interpret users' continuous use of SNSs, few studied focus on the discontinuous usage behavior (Maier et al. 2014; Ravindran et al. 2014), and what factors that induce such behavior. Instead of focusing on the positive side of technology, our study is trying to reveal the negative effects that information technology might exert on users. Second, our study also provides a new perspective to understand discontinuous usage behavior in SNS by summarizing three types of perceived overload and examining their effects. Previous research often focus on the information overload on SNS, while our study gives a more comprehensive classification of overload on SNS from the technological, information and social aspects. We also extend the research on work overload by applying such concept to social network context and confirm that perception of overload has positive effects on feeling of fatigue and dissatisfaction toward SNSs. Moreover, according to above analysis, social overload exerts more strong effects on negative affections, which further presents the dark side of SNSs. Third, to our best knowledge, there is no empirical study on social network fatigue yet though some research has proposed such concept. Our study adapts the scale of work-related fatigue and empirically reveals the positive link between social network fatigue and discontinuous usage intention.

From the practical perspective, the results of our study also provide some implications for SNS providers. First, though previous research on continuous use of SNS might suggest adding more astonishing features or enhancing interaction among users to keep the appeal of SNS, our study reminds the service providers of careful consideration before implementing such strategies. For

example, adding features can enhance the innovativeness and attraction of SNSs, but excessive features will make users get upset and dissatisfied. Keep the necessary and useful features for users would be more optimal choice for service providers. Thus, “More is better” might not always hold true as SNS users could have negative emotional and behavioral response to the increase of system features, flooding information and rapid expansion of individual social network in SNSs. Second, as revealed above, social overload shows more significant influences on negative emotions compared to other two types of overload. Thus, SNSs providers should keep it in mind and build better SNSs management or filtering tools to reduce social network complexity and help users manage social relationship and requests. Third, we also provide a new explanation to the life cycle of SNSs’ usage. No matter how much attraction of one SNS is at the beginning, it will confront social network fatigue as time goes by and various overload emerges. One the one hand, socializing requirements of people always exists; on the other hand, people will get tired of accumulated social relationship and rich features of SNSs. This is why users will seek for new SNSs with simple platform and private virtual space though they have fancy and high-capacity SNSs, so SNS providers should balance the simplication and abundance of the platform.

Though all of the hypotheses are supported yet, we still decide to collect more data to reinforce our propositions. Moreover, we are going to include some control variables in the research model for future analysis, such as gender, age or occupation type and so on. We expect that we could get more interesting and comprehensive conclusion from future work.

## Acknowledgement

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## Appendix

Construct		Items	Loading
System feature overload (Karr-Wisniewski & Lu 2010)	SFO1	I am often distracted by features that are included in Qzone but are not related to my main use purpose of Qzone.	0.804
	SFO2	I find that most features of Qzone contain too many sub-features poorly instead of too few sub-features very well.	0.861
	SFO3	Qzone tend to try to be too helpful by adding features which makes social performance even harder.	0.830
	SFO4	The features of Qzone I use often more complex than the tasks I have to complete using these features.	0.801
Information overload (Chen et al. 2009; Karr-Wisniewski	IO1	I am often distracted by the excessive amount of information available to me on Qzone.	0.834
	IO2	I find that I am overwhelmed by the amount of information I have to process on a daily basis on Qzone.	0.830
	IO3	There is too much information about my friends on Qzone so that I am	0.835

& Lu 2010),		burdened in handling it.	
	IO4	I find that only a small part of information on Qzone is relevant to my needs.	0.807
Social overload (Maier et al. 2014)	SO1	I take too much care of my friends' well-being on Qzone.	0.899
	SO2	I deal too much with my friends' problems on Qzone.	0.937
	SO3	I am too often caring for my friends on Qzone.	0.923
	SO4	I pay too much attention to posts of my friends on Qzone.	0.846
Social network fatigue (Åhsberg 1998, 2000)	SNF1	I feel tired by too many features of Qzone.	0.909
	SNF2	I feel bored by too many features of Qzone.	0.919
	SNF3	I feel drained by too many features of Qzone.	0.895
	SNF4	I feel worn out by too many features of Qzone.	0.895
	SNF5	I feel uninterested about new features of Qzone.	0.875
	SNF6	I feel indifferent about new features of Qzone.	0.859
Dissatisfaction (Chang et al. 2014)	DIS1	I feel dissatisfied about my overall experience using Qzone.	0.889
	DIS1	I feel unpleased about my overall experience using Qzone.	0.886
	DIS1	I feel discontented about my overall experience using Qzone.	0.896
	DIS4	I feel not delighted about my overall experience using Qzone.	0.860
Discontinuous usage intention (Maier et al. 2014; Ravindran et al. 2014)	DUI1	In the future, I will use Qzone far less than today.	0.895
	DUI2	In the future, I will use another social network service.	0.825
	DUI3	I will sometimes take a short break from Qzone and return back later.	0.809
	DUI4	If I could, I will discontinue the use of Qzone.	0.817

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