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Abstract

Social networking sites (SNSs), combined with the rapid growth trajectory of mobile devices, and widespread deployment of mobile data services, have evolved as a primary platform for daily social interaction. While the majority of users enjoy frequent interactions with their friends and family members, some users suffer from incessant urges to check up on the lives of others on their social networks. In the last decade, the use of SNSs has received much attention in the IS literature. Not until recently, researchers have begun to examine the dark side of using SNSs. In this study, we attempt to advance existing literature by exploring the role of urges in the context of SNSs. Particularly, we propose a research model that examines the antecedents and consequences of the urge to check SNSs. We will test the model with SNS users using structural equation modeling. We believe that current work will enrich the existing literature on the dark side of SNS use, and raise the awareness in the community regarding this emerging phenomenon.

Keywords: Social Networking Sites (SNSs), Excessive Use, Urge to Check, Facebook, Addiction.

1   INTRODUCTION

Social networking sites (SNSs) combined with the rapid growth trajectory of mobile devices, and widespread deployment of mobile data services, offer a ubiquitous online social space where users can easily connect, communicate, and interact with others (Bolton et al., 2013). For the majority of individuals, the use of SNSs is a normal and routine part of everyday life. However, some people check their peers' social activities throughout the entire day and even the night. The failure to manage this incessant urge to check SNSs may result in various negative consequences, such as spending excessive amount of time on SNSs.

In recent years, we have witnessed an increasing number of studies concerning the addictive use of SNSs in the IS literature. For example, Turel and Serenko (2012) explored the benefits and dangers of using SNSs, and suggested that habit is a salient predictor of SNS addiction. Baek et al. (2013) revealed that user dependency on social and parasocial relationships are positively associated with SNS addiction. Chen and Kim (2013) reported that the three types of gratifications (i.e., diversion, self-presentation, and relationship building) are significant antecedents of problematic SNS use.

The great improvement of mobile technology and public popularity of SNS applications have further facilitated the generation of an endless stream of comments, opinions, and personal stories on SNSs. Recent statistics show that there are over 4.75 billion pieces of content shared on Facebook every day (Libert & Tynski, 2013). The frequent updates on SNSs and the accessibility to real-time information induce individuals' urges to check their SNS accounts. Though the bulk of research on the nature and the role of urges has been conducted in the substance abuse literature (Raylu & Oei, 2004), research on the urge to use SNSs is very limited. In the light of this, we attempt to advance existing literature and examine the role of urges to use SNSs. In this study, we build upon the cognitive model of addictive behavior (Marlatt 1985; Tiffany 1999) and examine the antecedents and consequences of the urge to check SNSs. We also explore the moderating effect of the convenience of access in the research model.

We believe that this study will make important theoretical and practical contributions. On the theoretical side, we apply the cognitive model of addictive behavior to explain the urge to check SNSs, which is believed to advance the theoretical understanding of the development of excessive use of SNSs. On the practical side, the findings will raise public and professional awareness of the dark side of SNSs. The findings will help clinicians, educators, and parents to understand the processes involved in the development of excessive SNS use, and provide them with better insights into how it can be identified and prevented.

The paper is structured as follows. In the next section, we provide a synthesis of extant literature in constructing our theoretical model. Then, we draw upon the cognitive model of addictive behavior, and propose a research model explaining the antecedents and consequences of the urge to check SNSs. Subsequently, we outline the research methodology for validating the research model and hypotheses. Finally, we conclude the paper with a discussion of the potential implications for research and practice.

2   THEORETICAL BACKGROUND

2.1   Use of Social Networking Sites

The proliferation of SNSs has captured the attention of scholars from various disciplines. Early studies mainly focused on the motivation, adoption, and use of SNSs. For instance, Ellison et al. (2006) identified four motives of using SNSs: maintaining offline contacts, meeting new people, seeking information, and having fun. Christofides et al. (2009) reported that users spent about 10 to 60 minutes on Facebook daily. Later, researchers began to examine broader issues, such as adoption and use (e.g., Sabir et al., 2013; Somkiat et al., 2012), posting behavior (e.g., Miller et al., 2010), gender effect in SNSs (e.g., Barker, 2009), and social influences (e.g., Cheung & Lee, 2010). The

existing works are largely built on the theoretical tradition of planned behavior and reasoned action, and the expectation disconfirmation framework.

In recent years, we have witnessed an exponential growth of studies concerning the dark side of SNS use (Andreassen et al., 2012; Chen & Kim, 2013; Thadani & Cheung, 2011; Turel & Serenko, 2012; Wolniczak et al., 2013). These studies mainly focus on the demographic and personality trait of SNS users (e.g., Andreassen et al., 2013; Balakrishnan & Shamim, 2013; Das & Jyoti Shankar, 2011; Guzzo et al., 2013; Koc & Gulyagci, 2013), with little theory-guided investigations (a notable exception being Salehan and Negahban (2013); Turel and Serenko (2012)).

Moreover, different terminologies have been used to describe the dark side of SNS use, such that "excessive use", "addiction", "dependency", or "problematic use" has been often used interchangeably. As addicted users are generally characterized by an increasing amount of time devoted into the platform, we hence adopt the term "excessive use" as the reference point of the wide spectrum of the problematic use of SNSs in this study.

2.2 Urge and Addictive Behavior

In common parlance, urge is described as "a feeling of being impelled to do something" (West & Hardy, 2006, p. 88). It is often characterized by a spontaneous, irresistible and sudden desire to enact a behavior (Beatty & Ferrell, 1998). While realizing an urge could bring pleasant experience to an individual, failure in managing incessant urges could potentially lead to the occurrence of a wide range of problematic behaviors (American Psychiatic Association, 2000), including cigarette craving (Billieux et al., 2007a), binge eating (Fischer et al., 2004), pathological gambling (Smith et al., 2007), and problematic mobile phone use (Billieux et al., 2007b).

With individuals having the disposition to perform the acts that are harmful despite the knowledge of adverse outcomes, scholars began to explore these deemed to be counter-institutive and irrational decisions. For instance, Marlatt (1985) developed a social learning model of addictive behaviors, suggesting that the urge to perform addictive behaviors comes from two distinctive origins: (1) anticipation of euphoria, and (2) anticipation of relief from withdrawal symptom. Similarly, Tiffany & Drobes (1991) proposed a cognitive model of urge, suggesting that the expected pleasure and expected relief from withdrawal symptom of performing certain activities give rise to addictive behaviors. These models commonly agreed that urge and addictive behaviors are highly associated with expectation on pleasure and/or removal of unpleasant feeling.

3 RESEARCH MODEL AND HYPOTHESES DEVELOPMENT

Given the accessibility and availability of SNSs, users may perceive ample opportunities to check their SNS account through their mobile applications. This perceived opportunity to use is highly associated with the feeling of urge (Wertz and Sayette, 2001). In this study, we define the urge to check as the feeling of being impelled to check SNSs (West & Hardy, 2006). We then build upon the cognitive model of addictive behavior to construct our research model and hypotheses (Marlatt, 1985; Tiffany, 1999). Figure 1 depicts our research model and hypotheses.
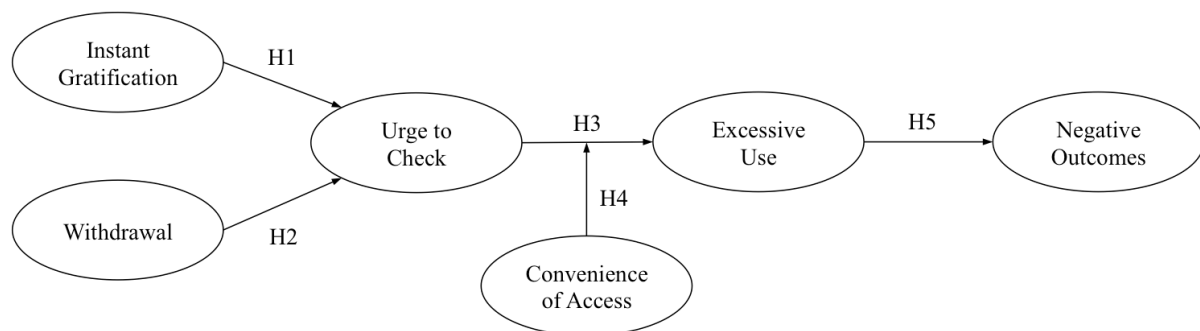

Figure 1.   Research model of the urge to check social networking sites

3.1 Instant Gratification, Withdrawal and the Urge to Check SNSs

According to the cognitive model of addictive behavior, the feeling of urge is highly associated with the expectation on pleasure and/or removal of unpleasant feeling from performing behavior (Marlatt 1985; Tiffany and Drobes 1991). Thus, we believe that instant gratification and withdrawal are important antecedents of the urge to check SNSs.

We define instant gratification as the degree of immediate gratification users experience by checking SNSs (Liu et al., 2013). The capability of mobile phones is becoming more sophisticated and multifunctional, making need fulfilment in different life aspects easy and plausible. The ability of a technology to instantly gratify instrumental needs (e.g., informational seeking or arousal-seeking) or ritualistic needs (e.g., passing time or companionship) creates positive stimulation for users, following by an urge to use the technology (Greenfield, 2010; Stafford et al., 2004). In a recent study conducted by Liu et al. (2013), instant gratification is found to be an important and significant antecedent of the urge to purchase at an e-commerce website.

We define withdrawal as the unpleasant feeling state users experience when the use of SNSs is discontinued (Greenfield, 2010). Psychological distresses arise when users are forced to unplug from their SNSs (Salzburg Academy on Media & Global Change, 2013). In a study by Denti et al. (2012), over 20% of respondents reported that they would feel ill if they were unable to check their SNSs. Young and de Abreu (2011) also revealed that users become obsessive when they do not receive notifications from SNSs. The unpleasant feeling that occurs when the use of SNSs is discontinued or suddenly reduced induces the urge to check SNSs. Taken together, we hypothesize that:

> H1: Instant gratification is positively associated with the urge to check SNSs.

> H2: Withdrawal is positively associated with the urge to check SNSs.

3.2 The Urge to Check and Excessive Use of SNSs

Following prior literature (Caplan, 2002; Griffiths, 2010), we define excessive use of SNSs as the use of SNSs that involves spending considerable amounts of time, and during which users typically lose track and control of time. People have a universal need to connect with others, especially those they care about deeply. Checking SNSs is convenient and almost effortless to many of the users with a smartphone. However, the inability to control the amount of time spent on checking SNSs could eventually lead to excessive use. Recent statistics revealed that SNS users spent a remarkable amount of time on SNSs. Particularly, it is reported that average number of daily session on Facebook is 13.8 for smartphone users. Within the first 15 minutes after wake-up, 80% of the respondents check their phone before doing anything else. 63% of the respondents even check the newsfeed in SNSs constantly throughout the day (IDC, 2013).

In the addiction literature, urge has been considered as an irreplaceable determinant of addictive behavior (Billieux et al., 2010; Tiffany, 1990). Lejoyeux et al. (2000) suggested that failure in resisting an urge constitutes to the formation of behavioral addiction. Cyders and Smith (2008) also revealed that the feeling of urge is an influential predictor of an individual's proneness to engage in various addictive behaviors. In a similar vein, we believe that when users experience a strong urge to check SNSs, they are more likely to develop excessive use of SNSs. Thus, we hypothesize:

> H3: The urge to check SNSs is positively associated with excessive use of SNSs

3.3 The Moderating Role of Convenience of Access

In IS research, convenience of access is defined as "the accessibility level of the portal anytime and anywhere through intranet, Internet, or even mobile devices" (Tojib et al., 2008, p. 654). In this study, we define convenience of access as the level where users can access SNSs anytime and anywhere through the Internet or mobile devices.

Users are constrained to different levels of accessibility to SNSs. For instance, some might experience a lower level of convenience of access as they do not own a smartphone or subscribe to mobile data

services. Consequently, they are not able to check the SNSs frequently. We believe that when users have a higher level of convenience of access, it is easier for them to realize the urge to check SNSs and transform it into actual usage, which in turn increases the likelihood of developing excessive use. Convenience of access has a positive moderating effect on the relationship between the urge to check and excessive use of SNSs. Thus, we hypothesize:

> H4: Convenience of access has a positive moderating effect on the relationship between the urge to check SNSs and excessive use of SNSs.

3.4 Excessive Use and Negative Outcomes

SNSs are the most popular Internet destination for the online population nowadays. In America, social networking takes up the most of Americans' online time, soundly trouncing email, video, surfing and online game (Statista.com, 2013). Mobile users spent half of their mobile communication time in SNSs for social and communication activities (IDC, 2013). For those users who spend significant amount of time on SNSs, they are more prone to experience negative outcomes. For instance, spending excessive time on SNSs deprives users' time for other activities, resulting in negative effects on their health, social relationships, and professional/academic performance. In a survey study with 1945 respondents, Porter et al. (2010) reported that video gamers who play excessively are likely to experience various adverse consequences. In the same vein, we believe that users who devote excessive time on SNSs are more likely to experience negative outcomes such as troubles with school works and offline social activities. Thus, we hypothesize:

> H5: Excessive use of SNSs is positively associated with negative outcomes.

4 METHODOLOGY

To validate the proposed relationships in the research model, we will collect our data through an online survey. Survey respondents will be instructed to provide their assessment for each of the constructs. The data collected will be analysed with structural equation modeling (SEM).

4.1 Facebook.com and Hong Kong Smartphone Users

We will gather data from a group of Facebook users from Hong Kong. Facebook is now the most popular and leading social networking site worldwide, with approximately 1.23 billion monthly active users (PewInternet, 2013). Hong Kong has the highest Facebook penetration rate in the world (60.1%), outweighing Taiwan (60.0%), the U.S. (56.8%), the U.K. (51.8) and other European countries (IDC, 2013), with users aged between 25-34 (34.1%), 18-24 (22.1%), 35-44 (18%) being the most popular user groups. With respect to the smartphone penetration, Hong Kong has recorded a 62.8% smartphone penetration rate in the first quarter in 2013 (Facebook, 2013). 96.1% of users aged between 18-24 own a smartphone, and they used it to access social networking sites (69.8%), surf the Internet (69.7%), and play games (67.3%) (Google, 2013).

Characterized by the leading role of Facebook and the high smartphone penetration rate among young adults in Hong Kong, we believe that Facebook users from Hong Kong represent an appropriate sample to investigate the current phenomenon.

4.2 Measures

We derived the measures for current study from prior literature with minor modifications to fit the context of SNSs. Three to four perpetual measurement items were generated for each construct. All items were phrased as seven-point Likert scale statements, from "1 = Strongly Disagree" to "7 = Strongly Agree". Respondents will be asked to indicate to which extent they agree with the statements. The use of self-reported measures is believed to be vital and qualified in the current study, as all of constructs in the research model are the evaluation of users' perception, rather than their actual behavior (Zhou et al., 2012).

4.3 Pre-test

We conducted a pre-test with 10 undergraduate and postgraduate students to solicit feedback on the presentation format of the questionnaire. In particular, we verified the clarity of the survey instructions and consistency of the item wordings. Other than minor formatting modifications, no major problems were surfaced during the pre-test.

4.4 Date Collection

We will conduct an online survey with longitudinal design. To improve response rate and data quality, we will employ a market research firm for data collection. At time t=1, we will recruit 1000 active SNS users to complete the questionnaire, collecting the assessment related to the instant gratification, withdrawal, urge to check, and convenience of access. At time t=2, the same group of respondents will be invited to complete another online questionnaire concerning the excessive use and negative outcomes. Participants will be awarded with monetary incentive upon completion of the studies.

5 CONCLUSION AND EXPECTED OUTCOMES

Social networking sites (SNSs) have become the central platform for daily communication and social interactions. While most of the users enjoy frequent interactions with their friends and family members in SNSs, some suffer from an incessant urge to check their SNS accounts and result in excessive use of SNSs. The dark side of SNS use has received increasing attention from the scientific community in the recent decade. In this study, we aim to advance current literature by building upon the cognitive model of addictive behavior, and exploring the role of urge in the development of excessive use of SNSs. We will continue to test and validate the research model using a longitudinal survey design and structural equation modeling approach.

We expect this study will yield important theoretical and practical contributions. On the theoretical side, our study will add to the IS literature by delineating a framework that draws on the contemporary urge theories to explain excessive use of SNSs. In addition, we will identify the antecedents and consequences of the urge to check SNSs, and reveal the moderating effect of convenience of access on the relationship between urge and excessive use. On the practical side, this empirical investigation is timely to enhance SNS users' and operators' understanding of the urge to check SNSs. The results will provide users and practitioners with insight into the potential threats of excessive use of SNSs. Specifically, we believe that the findings of this study will help to raise public and professional awareness on excessive use SNSs and to create a healthy and enjoyable online social networking space.

Acknowledgement

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