Addiction to Social Network Site Use: An Information Technology Identity Perspective

Research in Progress

Layla Boroon
Faculty of Engineering & IT
University of Technology Sydney
81 Broadway, Ultimo NSW 2007, Australia
Email: Layla.boroon-1@student.uts.edu.au

Babak Abedin
Faculty of Engineering & IT
University of Technology Sydney
81 Broadway, Ultimo NSW 2007, Australia
Email: babak.abedin@uts.edu.au

Seyedezahra Shadi Erfani
Faculty of Engineering & IT
University of Technology Sydney
81 Broadway, Ultimo NSW 2007, Australia
Email: shadi.erfani@uts.edu.au

Abstract

As the popularity of social network sites (SNSs) has grown substantially over the past years, several negative effects of using SNSs have been experienced by users and reported by Information Systems (IS) researchers. Addiction to SNSs is one of such negative experiences, which has widely been considered from a psychopathology perspective. While increasingly there is more studies in IS on this phenomenon, it is still unclear what characterises addiction to SNSs and what may influence it. This in-progress study adopts an information technology (IT) identity perspective and applies Dual Systems Theory as well as Protection Motivation Theory to provide an initial understanding of what impacts SNS addiction and how to combat it from an IT/SNS identity perspective. To achieve these objectives, we reviewed the literature and proposed a preliminary framework of addiction to SNSs use. We then offer discuss research implications and propose ideas for future studies.

Keywords Information technology, social networking sites, addiction, information technology identity

1   Introduction

The dark side of using information technology (IT) is a broad concept that refers to several negative phenomena (Tarafdar et al. 2015) such as technology overload, technostress, interruptions, low performance, addiction, privacy concerns and security threats (Boroon et al. 2018a; Boroon et al. 2018b; Tarafdar et al. 2015; Wang et al. 2019; Yin et al. 2018). These phenomena negatively affect aspects of a user's life (Erfani et al., 2013). Of the negative phenomena listed above, addiction is one of the most important because it may have detrimental effects on the wellbeing, mental and physical health of users at the levels of individuals, organisations and societies (Brooks et al. 2017; Vaghefi et al. 2017; Vaghefi and Qahri-Saremi 2017; Vaghefi and Qahri-Saremi 2018).

This research focuses on social network site (SNS) addiction as a widespread issue. Psychological research on this topic focuses on the harmful effects that addiction can have on individuals (Vaghefi et al. 2017). In general, *addiction* can be defined as "a repetitive habit pattern that increases the risk of disease and/or is associated with personal and social problems which are often experienced subjectively as 'loss of control' and continues despite volitional attempts to abstain or moderate use" (Marlatt et al. 1988), p. 224).

Most studies of SNSs addiction have been based on a psychopathology perspective to be predicted or identified (Jafarkarimi et al. 2016; Polites et al. 2018; Erfani et al., 2013a). For example, researchers have found that using SNSs can lead to inappropriate expectations, social pressure (Fox and Moreland 2015), jealousy (Fox and Moreland 2015; James et al. 2017), stress (Fox and Moreland 2015; Meier et al. 2016), loneliness (Matook et al. 2015), anxiety (Oldmeadow et al. 2013), panic and addiction (James et al. 2017). The claim of this growing body of research is that the negative effects of maladaptive SNSs use are associated with psychopathologies and that these problems should be treated, controlled or managed in the same manner as other mental health disorders (Polites et al. 2018).

The dark side of using SNSs should also be studied from perspectives other than the psychopathology perspective (Carter 2015; Polites et al. 2018). Understanding the causes of SNS addiction from an IT/SNS identity perspective is as important as the psychopathology perspective because this helps to identify different interventions, and therefore effective solutions to treat or prevent SNS addiction could be found (Carter 2015; Polites et al. 2018). This opens opportunities for information systems scholars rather than psychologists. Accordingly, the main objectives of this study are to design a theoretical model that leads future research to (i) propose a novel view of SNS addiction as a fundamental step in better understanding the characteristics of this problem, (ii) identify and measure the extent of the influencers of SNS addiction from an IT/SNS identity perspective and (iii) identify mitigation and moderation strategies for combating SNS addiction.

2   Research Background

While the research and interest in SNSs is on the rise (Beydoun et al., 2019; Abedin & Jafarzadeh, 2015; Erfani et al., 2013b), there is no comprehensive, uniform and consistent definition of SNS addiction in the information systems literature. According to some scholars (Moqbel and Kock 2018; Serenko and Turel 2015), SNS addiction is a subcategory of IT addiction (Turel et al. 2011) and has not yet been integrated into a comprehensive classification or definition. For example, different terms such as problematic or pathological internet use (Bayraktar and Gün 2006), compulsive internet use or obsessive behaviour (Meerkerk et al. 2010) have been used to describe IT or SNS addiction. This gap can be filled by unifying these terms to provide a holistic and meaningful picture of SNS addiction.

Recent studies and observations on IT use have identified different levels of the severity of the detrimental effects on the health or wellbeing of individuals, organisations and societies (Turel et al. 2018). The few studies that have characterised the dark side of IT use have been based on four salient themes: context of occurrence (e.g. SNS, online auction, internet of things and artificial intelligence), negative outcomes (e.g. technostress, interruption and IT addiction), mitigation mechanisms (e.g. interventions that mitigate, reduce or control the possibility a particular negative phenomenon occurring), and level of analysis (e.g. individuals, organisations and societies) (Tarafdar et al. 2015). According to the explanations above, there is no comprehensive framework for any negative effects of IT use such as SNS addiction.

Growing concern about SNS addiction and identified gaps in the literature are compelling reasons to encourage scholars to explore this problem. Accordingly, we have been motivated to identify the causes and consequences of SNS addiction and propose efficient mitigation strategies for combating this problem. The following sub-sections provide brief descriptions of the literature on SNSs addiction and describe our theoretical research background, which leads us to design a theoretical research model.

2.1 Social Network Site Addiction

Some researchers have suggested that SNSs have high potential to be addictive (Kanat-Maymon et al. 2018) because (i) they can fill social voids and create ongoing thrills in a users' life, specifically for who are vulnerable (Enrique 2010) and (ii) a virtual world has replaced real family members and friends (Jafarkarimi et al. 2016). The literature shows that SNS addiction may lead to negative outcomes (Li et al. 2018) because, in general, addicted users engage in risky behaviors and neglect their obligations and responsibilities (Helmuth 2001).

Facebook, for example, has high potential to be addictive (Kanat-Maymon et al. 2018). Some studies argue that low self-esteem (Błachnio et al. 2016) and contingent self-worth (Kanat-Maymon et al. 2018) are the key roles in the emergence and sustainment of Facebook addiction and excessive use of SNSs in general (Valkenburg et al. 2017). Research shows that addicted users of Facebook use tend to compare their lives with the lives of others and think that others are better than him or her (Moqbel and Kock 2018).

2.2 IT Identity as a Part of Self-Identity

The term *identity* generally refers to "who a person is, or the qualities of a person or group that make them different from others" (Cambridge-dictionary 2019). According to organisational literature, the concept of identity is very important because it positively influences the extent of individuals' perceptions about their work environments (Panyasorn et al. 2006). Similar to organisational and management studies, this concept needs to be considered in the IT literature because it helps everybody who interacts with technology to (i) make sense of the purpose of IT use, (ii) understand what the scope of their expectations of IT use is and (iii) know how they develop their knowledge of IT (Orlikowski and Gash 1994). Consequently, IT users are able to reinforce or modify their perception of IT and IT identity (Panyasorn et al. 2006). Therefore, IT identity becomes part of one's identity when an individual expands his/her self-identity to include IT (Carter 2015). In this sense, when IT becomes an important part of an individual's identity, if they lose that IT then they would feel like losing a part of themself.

2.3 Dual System Theory

Dual system theory is one of the most efficient and effective theories in the field of IT addiction in identifying both the influencers of addiction and mitigation mechanisms (Polites et al. 2018; Soror et al. 2015; Turel and Qahri-Saremi 2016). Dual system theory states that individuals process incoming information through two structurally different systems called reflective (intentional, conscious and controlled activities) and reflexive (processes that are automatic, unintentional, unconscious and difficult to control) (Bargh and Chartrand 1999). Most of the time, these two systems work in harmony, but when they come into conflict, each one deeply influences an individuals' behaviour and causes problematic behaviors (Soror et al. 2015).The refelective system normally governs reasoned actions, faith and beliefs, and the reflexive system drives habits (Kruglanski and Orehek 2007).

Both systems influence the processes underlying self-identity (Vignoles et al. 2011) and cause problematic behaviours when they conflict (Soror et al. 2015). Our conceptual model (Figure 1) suggests that both the reflective and the reflexive systems may lead to addiction in the context of SNS use.

Studies have shown that while the self can be helpful in guiding useful and rational behaviours, it can also drive irrational thinking and lead to unpleasant consequences (Guay et al. 2015). Thus, the influences of self-identity in general, and IT identity in particular, as two interrelated self-processes is explored on SNS addiction.

2.4 Protection Motivation Theory

Protection motivation heory is grounded in the theories of planned behavior and reasoned action and was developed by Rogers (1975). This theory was originally created to help clarify fear appeals. This means that protection motivation theory focuses on how individuals cope with and make decisions in times of harmful or stressful events in their lives (Shi et al. 2017). These decisions are a way of protection once an individual perceives the existing threats. In addition, protection motivation theory attempts to discover what motivates people to change maladaptive behavior (Shi et al. 2017). In line with this purpose, this theory states that people can protect themselves based on four factors: (i) the perceived severity of a threatening event, (ii) the perceived probability of the occurrence or vulnerability, (iii) the efficacy of the recommended preventive behaviour and (iv) the perceived self-efficacy (Rogers 1975).

Protection motivation theory explains that once an individual is faced with a situation that causes them to fear for their wellbeing, they consider two processes: threat appraisal and coping appraisal (Shi et al.

2017). Studies that have adopted protection motivation theory suggest that individuals who perceive threats as their personal-relevant issue show higher levels of protective behaviours (Dinoff and Kowalski 1999).

3   Research Model and Hypotheses

Given the theories discussed above, we propose the following research model that depicts the influencers of SNS addiction and the factors that might moderate the relationship between influencers and SNS addiction and consequently mitigate SNS addiction.
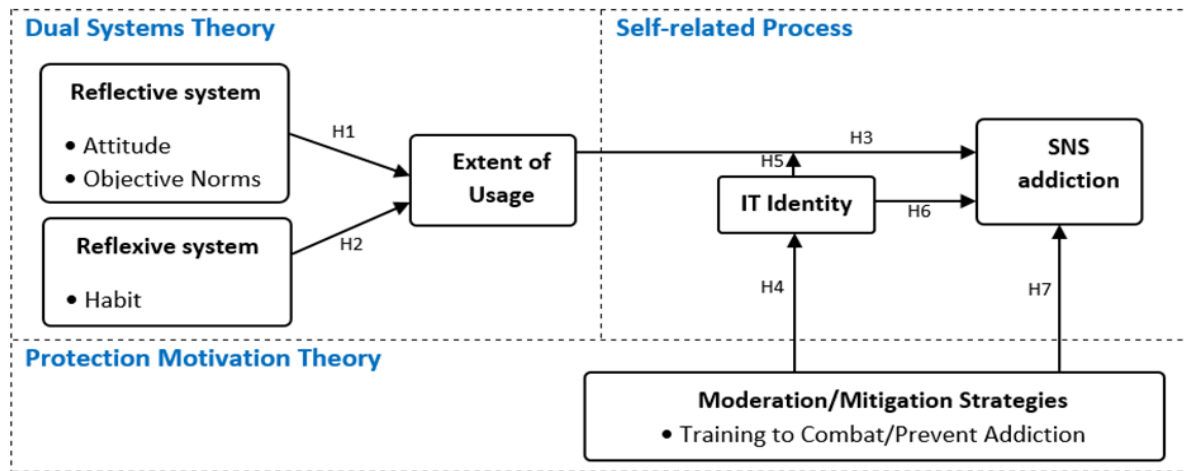

Figure 1: The theoretical research model

As shown in Figure 1, the model comprises three sections: (i) the dual systems framework integrated as both a reflective system (represented by objective norms and attitude) and a reflexive system (represented by habit); (ii) training process, which has been informed from the lens of protection motivation theory as a moderating or mitigation mechanism; and (iii) self-related processes and consequences, which illustrates the influences of the dual system framework, SNS identity and training process on SNS addiction. According to the characteristics of the influencers of SNS addiction described in sections 2, the following hypotheses have been formed.

Reflective System: Attitude as an element of reflective systems with two components (strength of behaviour and evaluation) highlights several options for trying to persuade someone to do something (Ajzen 1991; Ajzen and Fishbein 1980):
- Strengthening the behaviour strength of an attitude supports the persuasive goal.
- Strengthening the evaluation of an attitude supports the persuasive goal.
- Weakening the belief strength of an attitude opposes the persuasive goal.
- Weakening the evaluation of an attitude supports the persuasive goal.
- Creating a new attitude with a belief strength and evaluation supports the persuasive goal.

Similar to attitude, subjective norms creates several other options:
- Strengthening a normative belief that supports the persuasive goal.
- Increasing the motivation to comply with a norm supports the persuasive goal.
- Reducing a normative belief opposes the persuasive goal.
- Reducing the motivation to comply with a norm opposes the persuasive goal.
- Creating a new subjective norm supports the persuasive goal.

Consequently, this research posits that reflective system (i.e. attitude and objective norms) positively influences extent of SNS usage (H1).

Reflexive System: When habits as automatic and unintentional actions to some behaviours that have already been reinforced by constant repetitions (Verplanken and Aarts, 1999) conflict with conscious behaviours, negative and problematic behaviours such as deficient self-regulation are caused (Polites et al., 2018). Accordingly, many daily activities and decisions occur automatically, outside of an individuals' conscious awareness (Bargh and Chartrand 1999). Hence, we posit that the reflexive system (i.e. habit) positively influences extent of SNS usage (H2).

The Influences of the Dual System Framework on Self-related Processes: Carter (2015) argues that IT usage behaviours are core influencers of IT identity development and maintenance because they are

deeply embedded in users' daily activities. Individuals who engage with different types of IT artefacts (e.g. a Samsung smartphone and WhatsApp) can form and maintain multiple IT identities (e.g. a Samsung smartphone identity and WhatsApp identity). This study assumes that extensive conscious and unconscious use of an SNS application increases the extent of SNS usage and subsequently enhances the likelihood SNS addiction.

SNS applications provide immediate positive reinforcement through their attractive services. An individual may prefer a short-term desirable feeling over their other important tasks or goals, and subsequently spend lots of time using SNSs (Polites et al. 2018). Active users who deeply engage in SNSs use find it hard to control themselves to ignore distracting stimuli and concentrate on their target tasks. Therefore, frequency and the extent of SNS use is enhanced as SNSs become the most important and primary communication channels for active users (Turel et al. 2014). Hence, the third hypothesis is posited that extent of SNS usage positively influences SNS addiction (H3).

SNS Identity and Moderating or Mitigating Strategies: SNS addiction can be moderated by SNS identity. This hypothesis has been inspired by the findings of two studies (Polites et al. 2018; Shi et al. 2017) that explored the role of IT identity on decreasing the negative consequences of IT use. These studies not only showed that strong SNS identity positively influences perceived deficient self-regulation of time and increases security behavioural intention but also recommended this identity as a moderator for another negative effect of IT and SNSs use.

Studies that adopted protection motivation theory have found that individuals who perceive threats as their personal-relevant issue show higher levels of protective behaviours (Dinoff and Kowalski 1999). In the SNS addiction context, this theory assumes that individuals with a strong SNS identity (i.e. those who see SNSs as a part of themselves) will perceive threats to their SNS systems as more personally relevant than individuals with a low SNS identity who do not feel such a personal attachment to their SNS systems. Therefore, the next hypotheses are posited:
Training to combat or prevent SNSs addiction increases SNS identity levels (H4)
High level or strong SNS identity positively influences the extent of SNS usage (H5)
SNS identity positively moderates or mitigates SNS addiction (H6)
Training to combat or prevent SNSs addiction directly moderates or mitigates SNS addiction (H7).

4 Conclusion and Directions for Future Studies

Based on the gaps identified from the reviewed literature on SNS addiction, we have proposed a theoretical research model to explore the causes of SNS addiction from an IT/SNS identity perspective rather than psychological perspective and subsequently provide mitigation strategies to control, reduce or combat this problem and its deleterious effects. This research not only has a theoretical contribution by considering all four salient themes in the same study for characterising SNSs addiction but also has a theoretical and practical implication through paving a way for future research in this area.

Future research should examine the flexibility of the IT identity construct and its susceptibility to moderate or mitigate SNS addiction through training. Identifying the level of an individual's IT identity may allow advance determination of which individuals are likely to be involved with IT addiction. A mixed-method approach is recommended for future research to use a sequential process for collecting, analysing and integrating both quantitative and qualitative data within a single study to obtain a better understanding of the research objectives will be applied (Creswell et al. 2003). Using both qualitative and quantitative data can improve a study's validity by ensuring that the limitations of one type of data are balanced by the strengths of another.

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