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Effects of social and technology overload on psychological well-being in young South Korean adults: The mediatory role of social network service addiction



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ABSTRACT

This study examined the effects of social and information technology overload on psychological well-being. It also explored the mediating role of social network service (SNS) addiction in the hypothe-sized relationships between these variables. A sample of 419 college students and employees in their 20s and 30s, who were SNS users in South Korea, participated in the study. The results showed that social and information technology overload did not exert a direct impact on psychological well-being. SNS addiction served as a mediator in the relationships between these variables. The theoretical contributions and useful managerial implications of the study, with respect to reducing SNS users' addiction and improving their psychological well-being, were described.

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1. Introduction

Supported by the technological advancement of the Internet, which people are able to access at any time and from most locations, Social Network Services (SNSs) have penetrated our daily lives (LaRose, Connolly, Lee, Li, & Hales, 2014, p. 88). The positive aspects of SNSs, such as social support, perceived usefulness, and perceived enjoyment, have been found to increase user satisfaction (Turel & Serenko, 2012; Xu & Tan, 2012). Individuals expect the use of SNSs to result in improvements in their relationships and productivity with respect to communication and technology. Accordingly, users invest a considerable amount of time in SNSs. However, recent research has shown that users become depressed (Sagioglou & Greitemeyer, 2014), and their productivity at work is affected due to increases in the time spent using SNSs. New communication technologies, including SNSs, offer benefits but also create new problems and ultimately lead to a dilemma regarding the extent of technology usage (Karr-Wisniewski & Lu, 2010).

The aim of this study was to perform an empirical analysis, from a theoretical perspective, of the results of previous research

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indicating that the effects of social support provided via SNSs and technology on the well-being of users, which are deemed to be positive, could be negative. This study is similar to previous Internet paradox studies conducted in the context of SNSs (Bessiere, Kiesler, Kraut, & Boneva, 2008; Kraut et al., 1998, 2002) and extends the research exploring the negative consequences of Internet usage (Byun et al., 2009; LaRose et al., 2014; Tokunaga & Rains, 2010). The researchers expected social and technology overload resulting from SNS use to lead to SNS addiction and ultimately exert a negative impact on users' psychological well-being, and that the effects of this situation would be counterproductive and cause problems as SNS usage increases. This claim can also be predicted by the theoretical models described below (Karr-Wisniewski & Lu, 2010, pp. 1062–1063):

First, cognitive load theory, which posits that people experience cognitive limitations, could be used to explain this phenomenon. According to cognitive load theory, this phenomenon occurs when users seek capability beyond usability prior to using software. The addition of new features increases marginal utility to a certain extent but reduces it thereafter. Ultimately, a complex collection of factors causes "feature fatigue" (Thompson, Hamilton, & Rust, 2005).

Second, there is a limit to human rationality. This is referred to as bounded rationality theory. Overload occurs when input

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demands exceed information processing ability (Eppler & Mengis, 2004; Farhoomand & Drury, 2002; Ho & Tang, 2001).

Third, human interruption theory suggests that communication overload occurs when too many messages disrupt routine tasks (Cohen, 1980). As a result, the individual is unable to maintain current tasks. This theory posits that there is an adequate level of arousal for a given task; however, beyond this level, the effectiveness of attention enhanced by arousal deteriorates, and stimuli are processed poorly (Yerkes & Dodson, 1908). For example, if current work is interrupted by an unplanned task, the original work cannot be completed properly (Rennecker & Godwin, 2005).

Given these theories, social support, even as a positive stimulus for SNS users, and technologies that are accessible at any time and location could lead to psychological or behavioral side effects if they exceed the users' capability.

In this study, an empirical analysis involving young adults in their 20s and 30s was performed to achieve the research aims described above and provide practical suggestions. We had two reasons for choosing young people for this study:

First, examination of the effects of SNS use in young people is particularly important, as they are at a critical stage in the development of social skills. During adolescence, people need social skills, particularly those related to self-dependence, career orientation, and relationship maintenance, more than ever (Arnett, 2000). Because adolescence is the stage at which the initial step toward long-term well-being, identity formation, and the development and maintenance of friendships and family relationships is taken, SNS use is most important during this period (Connolly, Furman, & Konarski, 2000; Montgomery, 2005).

Second, as young people use SNSs on a daily basis (Quan-Haase, 2007), they are more susceptible to the issues surrounding excessive SNS use (Koc & Gulyagci, 2013). In addition, their responses to technological advances, such as SNSs, are more sensitive (Agarwal, Animesh, & Prasad, 2009). For these reasons, the inclusion of the younger generation, as a major SNS user group, their psychological and behavioral reactions, and the consequences of cognitive overload resulting from SNS usage should provide practical suggestions and contribute to theoretical perspectives.

This study involved three objectives intended to make both theoretical and practical contributions to the field. The first was to determine whether SNS-related overload would exert a negative impact on users' psychological well-being. The second was to examine the mediating role of SNS addiction in the relationship between SNS overload and psychological well-being. The third was to provide information that could have implications for managerial policy makers and affect SNS providers and users.

2. Theoretical background and hypotheses

2.1. Social overload and SNS addiction

The first reference to social overload was made in a theory that accounted for the social crowding phenomenon in social psychology in the 1980s (Baum, Calesnick, Davis, & Gatchel, 1982; Evans & Lepore, 1993; McCarthy & Saegert, 1978). This phenomenon is known as social overload. McCarthy and Saegert (1978) suggest that "high densities contribute to social and cognitive overload by increasing the number of other people with which an individual may have to deal and ... that some experience of them is difficult for the individual to avoid" (McCarthy & Saegert, 1978, p. 254). This concept also applies to virtual space. For example, social overload in the SNS environment means that users bear the burden of caring about other users' existence and issues and occasionally provide entertainment for them (Maier, Laumer, Eckhardt, & Weitzel, 2012). In studies examining SNS, this burden can also be defined as social

interaction overload and indicates that the individual is engaged in social exchange beyond his or her communicative and cooperative capability (Ljungberg & Sorensen, 1998).

Social overload occurs in SNSs due to individual limitations on SNS users' resources. Cognitive ability and emotional capital must be limited. Emotional effort is required to maintain close relationships (Dunbar, 2010); however, the quality of relationships deteriorates, due to the limitation of cognitive ability and sentimental capital, as the number of relationships increases. SNS users try to relieve excessive relationship burdens that exceed their capability, to compensate for deterioration. However, individual burdens increase considerably as the size of the network expands (Wang, 2013). As a result, the frequency and duration of users' access increase constantly due to social overload, leading to SNS addiction.

The concept of SNS addiction has been the focus of recent studies. One such study was conducted by Turel and Serenko (2012) but involved little theory-guided investigation. Terms such as "excessive use," "addiction," "dependency," and "problematic use" have often been used interchangeably to refer to the negative aspects of SNS usage. In particular, SNS addiction refers to spending too much time on SNSs. This is diagnosed as addiction because it is categorized as cyber-relationship addiction (i.e., an addiction to online relationships; Young, 1999), and users display behavioral addiction symptoms. In a similar manner to that of materialassociation addictions, some users demonstrate typical addiction symptoms. SNSs are used to modify feelings (favorably), which can lead to signs of addiction such as salience (behavioral, cognitive, and emotional concentration), generosity (SNS usage continues to increase), withdrawal (unpleasant feelings with suspension of SNS) usage), conflict (between people or internally), and regression (rapid return to SNS usage once the period of abstinence is over; (Griffiths, Kuss, & Demetrovics, 2014).

Some researchers have claimed that social overload can exert an impact on SNS addiction according to the conceptual research model used in this study, for the following reasons:

First, SNSs are no longer separable from our daily lives, and daily access leads to social overload; however, SNS usage cannot be terminated, due to its connection to people's lives. For this reason, continuous usage ultimately leads to addiction. SNSs are a form of media to which the intention to form a society, which previously existed in individual communities, applies. Although the number of small, traditional communities has declined, and new types of society are pursed due to increased mobility, the demand for communities remains. For this reason, the activities of small communities are maintained, and from this perspective, SNSs perform similar functions to those of traditional communities (Griffiths et al., 2014). Therefore, SNSs serve as an effective means of both managing offline networks and strengthening personal relationships. It is difficult to terminate the addiction process, even when social overload is recognized, because SNSs are ultimately grounded in social relationships and connected to employment and leisure (Kuss & Griffiths, 2011), and complete cessation is technically infeasible due to their connectivity to the Internet. Daily use of SNSs causes social overload but cannot be terminated, indicating that it does not differ from addiction.

Second, the growth of networks encourages users to invest more energy and time therein. SNSs are of merit, as they provide social support including advice, information, and companionship (Hampton, Sessions, & Her, 2011). However, size also plays a negative role, demanding more time and energy to sustain relationships (Sacks & Graves, 2012). Consequently, individuals must endeavor to maintain good-quality information and relationships on the network (Burt, 2009). Connection overload occurs within this process, in association with technological changes in social media, when use exceeds users' ability to cope, leading to

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