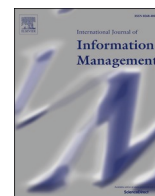




Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



Research Article

Adverse consequences of emotional support seeking through social network sites in coping with stress from a global pandemic

A.K.M. Najmul Islam^a, Matti Mäntymäki^{b,*}, Samuli Laato^c, Ofir Turel^d^a LUT University, Lappeenranta, Finland^b University of Turku, Turku School of Economics, Turku, Finland^c University of Turku, Department of Computing, Turku, Finland^d The University of Melbourne, Parkville, Victoria, Australia

ARTICLE INFO

Keywords:

Stress
 Pandemic
 COVID-19
 Global pandemic
 Social media
 Coping
 Lazarus and Folkman's coping theory
 Social networking site

ABSTRACT

This study explores how using social networking sites (SNSs) to cope with stressors induced by a global pandemic (in this case, COVID-19) can have negative consequences. The pandemic has imposed particular stressors on individuals, such as the threats of contracting the virus and of unemployment. Owing to the lockdowns and confinements implemented to limit the spread of the pandemic, SNS use has surged worldwide. Drawing on Lazarus and Folkman's theory of stress and coping, we consider COVID-19 obsession to be an adverse emotional response to the stressors brought about by the pandemic and emotional support seeking through SNS as a coping strategy. Furthermore, we identify SNS exhaustion as an adverse outcome of this form of coping. Finally, we analyze the intention to reduce SNS use as a corrective behavioral outcome to mitigate the negative effect of SNS-mediated coping. The findings indicate that: 1) the threat of the COVID-19 disease and the threat of unemployment drive COVID-19 obsession; 2) COVID-19 obsession contributes to emotional support seeking through SNS; 3) emotional support seeking through SNS exerts a positive effect on SNS exhaustion; 4) SNS exhaustion contributes to the intention to reduce SNS use. Our results advance Information Systems (IS) research by focusing on the use of Information Technology (IT) to cope with stressors that are essentially not IT-related; such research is largely absent from previous literature. Furthermore, our paper contributes to the increasing amount of literature on IT-mediated coping with stressors and reduced social media use.

1. Introduction

The COVID-19 pandemic has been a major source of stress globally. People's health and well-being have been adversely affected, and governments' preventive measures have had negative consequences on economies (Pan, Cui, & Qian, 2020). One of the most important precautionary measures for curbing the spread of contagious diseases is to reduce human contact; therefore, governments worldwide have issued movement restrictions and implemented lockdowns (Faroq, Laato, & Islam, 2020; Faroq, Laato, Islam, & Isoaho, 2021; Richter, 2020). Beyond the negative impact on consumer markets (Laato, Islam, Faroq et al., 2020), the measures to fight the pandemic have been suggested to have transformational organizational and societal impacts (Barnes, 2020; Dwivedi et al., 2020; Iivari, Sharma, & Ventä-Olkkonen, 2020; Kodama, 2020).

Furthermore, unemployment rates and layoffs have increased significantly in many countries (Kawohl & Nordt, 2020) due to business disruptions and the forced reallocation of resources (Barrero, Bloom, & Davis, 2020). Together, these changes imposed stress on individuals, particularly the threat of contracting the COVID-19 disease and repercussions of the pandemic on employment. Understanding how people cope with these stressors constitutes an important step in minimizing the side effects of the responses to global pandemics (Venkatesh, 2020).

The lockdowns and recommended isolation measures have caused an increase in the number of people using social media technologies, such as social networking sites (SNSs) (Nabity-Grover, Cheung, & Thatcher, 2020). This was evidenced by the sharp increase in SNS service use during the early stages of the pandemic.¹ One reason for this surge in SNS usage is the stress caused by the pandemic and its resultant ramifications on everyday life (De, Pandey, & Pal, 2020; Pahayahay &

* Correspondence to: University of Turku, FI 20014, Finland.

E-mail address: matti.mantymaki@utu.fi (M. Mäntymäki).¹ <https://www.theverge.com/2020/3/24/21193094/facebook-coronavirus-covid-19-messaging-service-reliable-strain-outages>

Khalili-Mahani, 2020; Singh, Dixit, & Joshi, 2020). Given that SNSs are widely used worldwide, it is important for information systems (IS) academia and practice to examine their psychosocial impact in relation to coping with stressors (see Sein, 2020).

Emotional support seeking is an important coping mechanism and particularly relevant with respect to SNSs. Through SNSs, people produce and consume social information (e.g., Islam, Mäntymäki, & Benbasat, 2019; Mäntymäki & Islam, 2016), enabling emotional support seeking. However, the literature suggests that large volumes of social information may create social overload and SNS exhaustion (see Sun et al., 2021). Moreover, in the context of pandemics, recent studies have indicated that SNSs contribute to information overload related to COVID-19 (Islam, Laato, Talukder, & Sutinen, 2020; Laato, Islam, & Islam, 2020) and mental health problems (Gao et al., 2020). Therefore, a high level of emotional support seeking through SNS can result in adverse psychological consequences, such as SNS exhaustion. People may decrease their SNS use to mitigate these negative consequences, which can serve as a gateway for SNS discontinuance (Osatuyi & Turel, 2020). However, according to Chiu and Huang (2017), service providers lose their key assets when people stop using SNSs because users are the basis of their financial profitability.

As a result, the aim of the current study is to fill three gaps in the IS literature. First, previous IS research has focused on coping with IS artifacts and on the stress related to their use (e.g., Gaudio, Turel, & Galimberti, 2017; Turel & Gaudio, 2018). However, research focused on the use of information technology (IT) (specifically SNSs) to cope with stressors that are essentially not IT-related has been largely absent. Second, while previous research on coping has explored strategies that have negative consequences (e.g., Joormann, Dkane, & Gotlib, 2006), these coping strategies and their consequences are not well understood in the context of IT-mediated coping with stressors (Turel, Cavagnaro, & Meshi, 2018). Third, although there is a body of research on individual-level IT discontinuance (e.g., Lin, Lin, Turel, & Xu, 2020; Vaghefi, Qahri-Saremi, & Turel, 2020), there is less research on the nuanced ways of discontinuing IT use, such as usage reduction (Osatuyi & Turel, 2020; Soliman & Rinta-Kahila, 2020). In the case of SNSs, suddenly terminating use without a replacement (Soliman & Rinta-Kahila, 2020) can cause the user's social life to be temporarily impaired. This is particularly true during a global pandemic, when there are limited opportunities to meet people face-to-face. Accordingly, the aim of the current research is to address the following question:

Does coping with the stressors brought about by a global pandemic via emotional support seeking through SNS use have adverse consequences?

Building on the coping theory formulated by Lazarus and Folkman (Folkman & Lazarus, 1980; Lazarus, 1966), we examine two stressors that are pertinent to the COVID-19 pandemic: personal threats to health and employment. We consider COVID-19 obsession to be the adverse emotional response to these two threats. We also scrutinize emotional support seeking through SNS as a strategy for coping with both threats. We elucidate the negative consequence of SNS-mediated coping by illustrating that it can result in SNS exhaustion. Finally, we demonstrate that reducing SNS usage can act as a corrective behavior that can help to mitigate the negative consequences of IT-mediated coping. Our findings contribute to the discussions regarding the dark side of IT (Salo, Mäntymäki, & Islam, 2018; D'Arcy, Gupta, Tarafdar, & Turel, 2014; Turel et al., 2019; Turel, Qahri-Saremi, & Vaghefi, 2021), the use of IT to cope with stressors (Salo, Mykkänen, & Hekkala, 2020; Stein et al., 2015; Turel, 2017, 2019; Turel & Bechara, 2016), reduced IT use (Osatuyi & Turel, 2020), and SNS use in the context of a global pandemic (Cauberghe, Van Wesenbeeck, De Jans, Hudders, & Ponnet, 2021; Islam et al., 2020).

The remainder of this paper is structured as follows. First, we review the literature on human coping mechanisms and technology-assisted coping in the background section. The third section contains the hypotheses development, followed by empirical research in the fourth

section. In the fifth section, we outline the key findings, the contributions to research and practice, discuss the limitations of the current study, and suggest avenues for future research.

2. Theoretical background

Previous literature investigating the impact of COVID-19-related stressors on human behavior has employed theoretical lenses such as cognitive load theory (Laato, Islam, & Islam, 2020), the appraisal theory of stress (Pahayahay & Khalili-Mahani, 2020), and protection motivation theory (Farooq et al., 2020). While these studies and their underlying theories can provide important insights into stress and its individual-level consequences, they do not focus on coping mechanisms. In contrast, our theoretical lens, Lazarus and Folkman's coping theory, focuses specifically on humans coping with stressors (Folkman & Lazarus, 1980; Lazarus, 1993). This theoretical approach has been applied in a wide variety of contexts, including medicine (Suzuki et al., 2019), psychiatry (Gieselmann, Elberich, Mathes, & Pietrowsky, 2020) and in IS research on technostress (Tarafdar et al., 2020). As a result, in order to theorize how people coped with stressors brought about by the COVID-19 pandemic, we employed Lazarus and Folkman's coping theory (Folkman & Lazarus, 1980; Lazarus, 1966, 1993) as our theoretical bedrock. The theoretical approach of the study is outlined in the following subsections.

2.1. Global Pandemic as a Stressor

Stress is generated when individuals perceive that their environment is problematic. Berg, Grant, and Johnson (2010) defined stress as "adverse feelings, such as anxiety, fear, irritation, pressure, and sadness that are caused by an imbalance between the individual's motivations and abilities, and the environment's requirements and supports" (p. 988). Further, based on the work of Lazarus and Folkman (1984), Jaidka et al. (2021) noted that "stress is regarded as self-appraisal that leads to a negative cognitive and emotional state when the demands placed on an individual by their environment exceed their ability to cope."

As described above, the COVID-19 pandemic has brought about two major stressors: the threat of contracting the virus and the associated disease and the threat of unemployment due to the pandemic. The health threat has motivated individuals to adopt various protective measures (such as voluntary confinement), while governments have imposed lockdowns, travel restrictions, and safety regulations (Farooq et al., 2020). At the same time, the measures implemented to fight the COVID-19 pandemic have also had detrimental economic effects, resulting in, for example, large-scale layoffs and increased unemployment (Coibion, Gorodnichenko, & Weber, 2020; Papanikolaou & Schmidt, 2020).

2.2. COVID-19 obsession as an emotional response to stressors

The pioneering work of Lazarus (1966, 1993) and the recent work of Barlette, Jaouen, and Baillette (2021) on human coping responses to stress divide coping into three stages: (1) primary appraisal (of the threat), (2) secondary appraisal (i.e., plan for responding to the threat), and (3) coping response (i.e., actual behavioral response). While these three processes are typically modeled as sequential, coping responses can evoke a reappraisal of the situation (Carver, Scheier, & Weintraub, 1989). This means that there is a complex relationship between threat appraisal, coping appraisal, and coping response, whereby humans attempt to understand the situation iteratively and focus their actions and coping responses for optimal behavior.

Perrewé and Zellars (1999) argued that research studies developed using the Lazarus model failed to consider the potential mediating effects of emotional responses. Therefore, they extended Lazarus' model by incorporating the works on attribution theory and emotional responses (Kelley & Michela, 1980; Weiner, 1979, 1985). In particular,

Perrewé and Zellars (1999) argued that emotional responses resulting from the primary appraisal process should mediate the relationship between stress and coping. Stresses result in negative emotional responses such as anger, guilt, frustration, and shame. Previous literature on the psychological implications of the COVID-19 pandemic has investigated obsession toward COVID-19 as one of the negative emotional responses to the stress caused by the pandemic. Obsession can be clinically measured and is defined as the psychological state of having an unhealthy number of thoughts about a certain topic, which can strongly guide behavior (Lee, 2020). Drawing on this conceptualization of obsession, we define COVID-19 obsession as a psychological state characterized by an unhealthy number of thoughts about the pandemic. Accordingly, COVID-19 obsession causes thoughts to be continuously directed toward the pandemic and can cause people to constantly direct their behavior toward finding more information about the disease.

2.3. Emotional support seeking through SNS as a coping strategy

Folkman and Lazarus (1980) identified two general types of coping: problem-focused and emotion-focused. The problem-focused approach attempts to alter the source of the stress (Carver et al., 1989). For example, if people are stressed about losing their jobs, the problem-focused coping approach can direct them toward formulating a backup plan in case they are affected by unemployment in the future. In contrast, emotion-focused coping centers on dealing with the emotions that follow a stressful situation (Carver et al., 1989). For example, in the case of losing a dear friend or relative, emotion-focused coping deals with managing the feelings of sadness and sorrow. Emotion-focused coping can also result in corrective actions. For example, anxiety resulting from privacy concerns can restrict the intention to use IS (Jung & Park, 2018). The two forms of coping can coexist, as both are needed in stressful situations (Folkman & Lazarus, 1980).

Due to the threat that COVID-19 posed on people's health and the ensuing government-level responses to the pandemic, the number of viable coping strategies has been limited. Previous research has emphasized the importance of emotional intelligence and emotional support as key coping strategies (Rezvani & Khosravi, 2019). However, owing to restrictions on movement and group activities during the pandemic (Pan et al., 2020), people have been deprived of meeting with friends and seeking support. This underscores the role of emotion-focused coping in dealing with the stress caused by pandemics. The increased use of SNSs during the pandemic (Nabity-Grover et al., 2020; Statista, 2020) has highlighted them as venues for emotion-focused coping, such as emotional support seeking (Shensa et al., 2020).

Emotional support seeking is typically regarded as an example of an adaptive coping strategy (Liang, Xue, Pinsonneault, & Wu, 2019); however, in an SNS environment, emotional support-seeking can have negative consequences due to the extensive opportunities it provides for rumination (Thompson et al., 2010), the lack of social affordances, the volume of social information confronting the user, and feelings of having to give too much social support (Maier, Laumer, Eckhardt et al., 2015). This aligns with the findings of studies examining the usage of social media during the COVID-19 pandemic. For example, Gao et al. (2020) linked SNS use during the pandemic to mental health problems. Moreover, studies have found that SNSs were used to share misinformation pertaining to COVID-19 during the pandemic (Islam et al., 2020; Laato, Islam, & Islam, 2020), which might have contributed to COVID-19-related information overload and increased levels of COVID-19-induced stress among SNS users. Accordingly, we adopted SNS exhaustion, defined as the feeling of being tired of activities related to the use of SNSs (Maier, Laumer, Eckhardt et al., 2015), as the outcome of emotional support seeking through SNSs.

Finally, we postulate that, because of the negative consequences of coping, people adopt corrective behaviors (such as reducing their SNS use). Our conceptualization of the intention to reduce SNS use originates

from the extant literature on discontinued SNS use (Maier, Laumer, Eckhardt et al., 2015; Turel, 2015), and was adapted from Bhattacharjee (2001) work on continuous use intention and user resistance (Kim & Kankanhalli, 2009). Accordingly, the intention of reducing SNS use refers to a change in SNS usage patterns, whereby individuals are less willing to use SNSs (Osatuyi & Turel, 2020). In the following subsection, we describe this behavior in more detail.

2.4. Reduced SNS use as a corrective behavior

In addition to reduced IT use (Osatuyi & Turel, 2020), previous IS research has reported a range of corrective behaviors that people can adopt when faced with stress from SNSs. These include quitting (Maier, Laumer, Eckhardt et al., 2015; Turel, 2015, 2016), switching to another SNS (Maier, Laumer, & Weinert, 2015), vacillating (Stein et al., 2015), and taking a temporary break (known as "vacationing") (Perri, Richards, & Schultheis, 1977; York & Turcotte, 2015). Most previous IS literature has investigated quitting/discontinuance and switching (Maier, Laumer, & Weinert, 2015; Maier, Laumer, Eckhardt et al., 2015; Turel, 2016), as well as, to a lesser extent, vacillation (Stein et al., 2015). Use reduction can often represent the first step toward discontinuance (Osatuyi & Turel, 2020); however, it is distinct from discontinuance as a corrective behavior (Hitchman, Fong, Zanna, Thrasher, & Laux, 2014), as use reduction can lead to an acceptable level of use rather than to discontinuance.

The aim of having an intention to reduce the use of an IS is to change usage patterns so that future usage levels are lower (Osatuyi & Turel, 2020). The focus of intending to quit/discontinue is to avoid using IS completely (Cho, 2015; Recker, 2016), whereas use reduction is less extreme and potentially easier to implement as it does not require total disengagement from the target IS (Osatuyi & Turel, 2020). Thus, use reduction can be a more acceptable step for many users who experience issues with IS use but perceive that they have a strong need to use this particular form of IS (Turel, 2015, 2016). Use reduction is also different from vacillation (switching between using and not using an IS) because the initial intent is not to avoid using the IS temporarily or to take a calculated temporary break (e.g., during exam periods; Osatuyi & Turel, 2020). Rather, the aim of usage reduction behavior is to use the IS at relatively constant but reduced levels.

To summarize, it is plausible to assume that stressors caused by the global pandemic (e.g., the threat of COVID-19 on one's health and unemployment) may lead to negative emotional responses, such as COVID-19 obsession, as an outcome of the primary appraisal process. As a result, in order to cope with the situation, people have engaged in SNSs for emotional support seeking, however, this can create SNS exhaustion. As a corrective behavior, people may reduce their SNS use.

3. Hypotheses

Fig. 1 outlines the research model. The research model has been developed based on the Lazarus' model by incorporating attribution theory and emotional responses to stress (Kelley & Michela, 1980; Weiner, 1979, 1985). Our model seeks to explain how global pandemic stressors may result in adverse emotional response of COVID-19 obsession, which in turn lead individuals to seek emotional support through SNS as a coping mechanism. However, emotional support seeking through SNS as a coping mechanism may have adverse consequences such as SNS exhaustion (Maier, Laumer, Eckhardt et al., 2015), which in turn may lead people to reduce their SNS use. In the following subsections, we will develop the research hypotheses.

3.1. The Effects of COVID-19 stressors on COVID-19 obsession

People react emotionally to stressful events and these affective responses direct them in choosing coping mechanisms (Perrewé & Zellars, 1999). In particular, the COVID-19 stressors may evoke negative

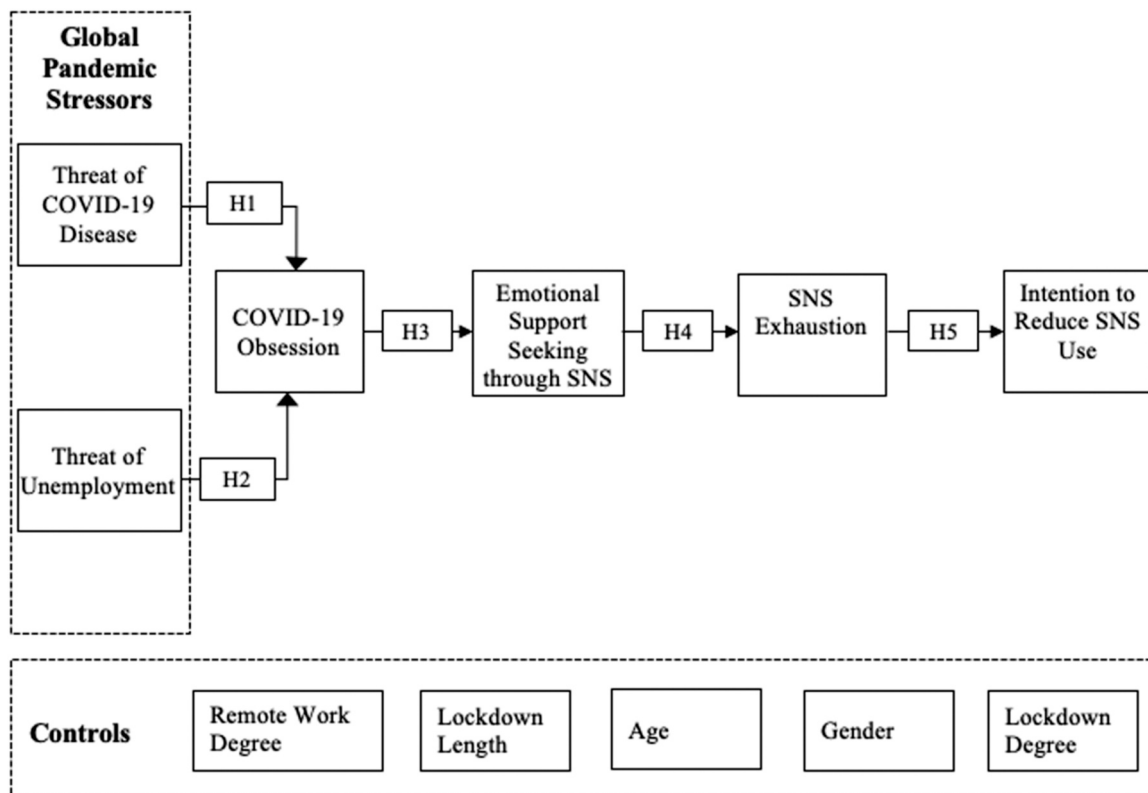


Fig. 1. The research model.

reactions because of the uncertainty about what one should do to remove the stressors. In this paper, we propose that the two COVID-19 stressors, threat of contracting the disease and threat of unemployment, will evoke the negative emotional response, namely COVID-19 obsession. This implies that people may worry about COVID-19 due to the felt stress, leading to an unhealthy amount of thinking about the disease associated with the virus (Lee, 2020). The relationships between stressors and negative emotional responses are supported by the work of Perrewé and Zellars (1999), who extended the Lazarus model by including emotional responses as mediating factors between the primary appraisal of felt stress and the secondary appraisal of coping choices. In Lazarus' terms, COVID-19 obsession can be viewed as the outcome of one's primary appraisal process. The relationship between stressors and emotional responses has also been validated in the prior studies (see Spector & Fox, 2005; Yang & Diefendorff, 2009).

As discussed above, the threat of the COVID-19 disease can be considered a major stressor associated with the pandemic. The media coverage together with the measures to fight the pandemic, such as social isolation, have likely further fuelled people's perceptions of the threat related to the COVID-19 disease. This in turn may have evoked dysfunctional emotional responses such as COVID-19 obsession. Consequently, we propose the following hypothesis.

H1. : The threat of the COVID-19 disease increases COVID-19 obsession.

Another adverse consequence of the COVID-19 pandemic was the economic downturn and the resulting increased risk of unemployment. Due to the transformational organizational and societal impacts (Barnes, 2020; Dwivedi et al., 2020; Iivari et al., 2020; Kodama, 2020) as well as the uncertainty arising from the complexity and unpredictability of the measures taken to fight the COVID-19 pandemic, people in various industry sectors had a reason to worry about the future of their employment. According to Perrewé and Zellars (1999), the stress related to unemployment can result in negative emotional responses (i.e.,

COVID-19 obsession). Consequently, we propose the following hypothesis.

H2. : The threat of unemployment increases COVID-19 obsession.

3.2. The effect of COVID-19 obsession on emotional support seeking through SNS

There has been a surge in the use of digital technologies (e.g., social media, audio/video conferencing tools) during the COVID-19 pandemic (De et al., 2020; Kodama, 2020). This increase can be partially attributed to the lockdowns, quarantines and other isolation measures that have forced people to spend an increased amount of time at home (see Wiederhold, 2020; De et al., 2020).

Recent literature has also suggested that COVID-19 may have contributed to increased SNS use (Nabity-Grover et al., 2020). Following Lazarus and Folkman's coping theory, increased SNS use can be viewed as a coping strategy (Folkman & Lazarus, 1980; Lazarus, 1993) to alleviate the threats and the resultant negative emotional response, namely COVID-19 obsession. SNS use has been proved to be an important method for obtaining information related to COVID-19 (Cauberghe et al., 2021; Islam et al., 2020) and seeking social support during the pandemic (Nabity-Grover et al., 2020). Owing to restrictions on movement and lockdown measures (Parmet & Sinha, 2020), people have been deprived of face-to-face interactions and opportunities for seeking support from others. Accordingly, people have turned to digital alternatives such as SNSs to satisfy their need for social support (Cauberghe et al., 2021; Litt, Rodriguez, & Stewart, 2021; Nabity-Grover et al., 2020). In particular, people who experience high levels of COVID-19 obsession arguably use the available means to maximize both their engagement with information related to the disease and their social interactions. Thus, we propose the following hypothesis:

H3. : COVID-19 obsession increases emotional support seeking through SNS.

3.3. The effect of emotional support seeking on SNS exhaustion

The content displayed to SNS users is based on algorithms, which are typically based on hybrid content recommendation systems (Yun, Hooshyar, Jo, & Lim, 2018). While users have some control over their newsfeeds, such as having the ability to block certain users or indicate undesirable content, newsfeeds are ultimately curated by machine-learning models based on user data (Yun et al., 2018) and, potentially, other algorithms. Typically, the variability between users concerning the content displayed is considerable, as news feeds are personalized based on the users' characteristics and interests. Further, news feeds can mirror the multiple reasons why people use SNSs; accordingly, they can contain news, opinions, jokes, uplifting stories, pictures, and venting posts. However, SNSs have been inundated with information and misinformation about COVID-19 (Islam et al., 2020; Laato, Islam, & Islam, 2020) and toxic discussions (Chipidza, 2021). This abundance of multi-faceted information has elicited different negative consequences, such as cyberchondria and information overload (Laato, Islam, & Islam, 2020). Furthermore, previous research on SNS usage during the pandemic has suggested that the various use purposes (from entertainment to information-seeking) can interfere with the ability to verify information and can cause social media fatigue (Islam et al., 2020). Maier, Laumer, Eckhardt et al. (2015) empirically shows how SNSs create social overload, which, in turn, impacts SNS exhaustion. Therefore, the coping mechanism of emotional support seeking through SNS can cause SNS exhaustion. Thus, we propose the following hypothesis:

H4. : Emotional support seeking through SNS increases SNS exhaustion.

3.4. The effect of SNS exhaustion on intention to reduce SNS use

Drawing on the self-reactive action framework (see Bandura, 1998), SNS use reduction can be perceived as corrective behavior. However, a prerequisite for engaging in corrective behavior is that individuals realize that their current status quo is problematic and that behavioral changes are needed. For example, users will contemplate methods of reducing SNS use when they realize that their status quo (i.e., SNS use) contributes to SNS fatigue and technostress (Dhir, Yossatorn, Kaur, & Chen, 2018). Our conceptualization of SNS exhaustion pertains to users' negative feelings as a consequence of their SNS usage. Thus, based on the theoretical postulates of the self-reactive action framework (Bandura, 1998) and the empirical evidence from previous studies (Dhir et al., 2018; Osatuyi & Turel, 2020), we hypothesize the following:

H5. : SNS exhaustion increases the intention to reduce SNS use.

We selected remote work degree, lockdown length, age, gender, and lockdown degree as the control variables. Remote work degree refers to the extent to which a person worked from home during the pandemic. Lockdown degree refers to how much freedom the participant retained during lockdown, ranging from full lockdown, that is, staying at home completely, to not limiting social contacts at all. It is important to control the degree of remote work and the length and severity of lockdown, as increased time spent at home in isolation can lead to increased SNS use and issues related to social withdrawal (Zhong, Huang, & Liu, 2021).

4. Methodology

4.1. Instrument development

We established a survey instrument to collect empirical data. We employed validated scales from previous literature with some adaptations to the particular context of this study. To obtain feedback and identify possible errors, we administered a draft version of the survey instrument to a panel of ten working professionals who actively use

Facebook. Based on the comments from the panel, we did minor wording adjustments and corrected typos. The final survey instrument is presented in Appendix 1.

4.2. Data collection

We collected the data from Amazon Mechanical Turk (MTurk), which has proven to be an efficient method of collecting research data and has been utilized in previous IS research (e.g., Walter, Seibert, Goering, & O'Boyle, 2019). Furthermore, compared to using methods such as student or community samples, MTurk provides a unique opportunity to obtain data with a global coverage of the working population. We provided \$1.50 USD as compensation for completing the survey.

We took four measures to maximize the quality of our sampling procedure. First, we used ownership of a Facebook account as a premium sampling criterion in MTurk to identify relevant respondents. Second, we asked survey respondents whether they had used Facebook during the COVID-19 pandemic, been in lockdown, and worked from home during the pandemic. Third, we included several check questions (e.g., Please select "agree" in response to this statement). Fourth, we prevented multiple responses from individual respondents using MTurk ID as an identifier, and informed the respondents that only one response qualified for compensation.

4.3. Data analysis techniques

We used partial least squares (PLS) with SmartPLS 3.0 software to analyze the data. PLS has been proven particularly suitable for testing models in the earlier stages of theory development. Goodhue, Lewis, and Thompson (2012) also demonstrated that PLS performs as effectively as covariance-based structural equation modeling in detecting actual paths, and not falsely detecting non-existent paths. Due to its advantages, the use of PLS has become pervasive in various fields of research, including IS (e.g., Liang et al., 2007; Maier, Laumer, Eckhardt et al., 2015). Since our aim was to further develop and contextualize the coping theory, we considered PLS as the most suitable statistical approach.

5. Results

5.1. Profile of the respondents

We received 510 completed responses. In the data screening stage, we omitted any respondents who did not answer the check questions correctly or did not qualify to be included based on the second criteria described above. This yielded a final sample of 398 responses. Table 1 details the demographic role of the sample.

5.2. Nonresponse bias test

We tested for potential nonresponse bias by comparing the respondent profiles of the first and last 10% of responses using a series of *t*-tests. Since the *t*-test did not reveal any significant differences between the early and late respondents, we concluded that nonresponse bias was unlikely a concern. The means and standard deviations of the measurement items are presented in Appendix 1.

5.3. Common method bias test

After testing for nonresponse bias, we tested the measurement for common method bias (CMB). We employed the full collinearity test (Kock, 2015) to statistically estimate the risk of CMB. According to Kock (2015), variance inflation factor (VIF) values above 3.3 are considered an indication of both pathological collinearity and the model being affected by CMB (Kock, 2015). The VIF values for all our latent

Table 1
Demographic information of the sample.

Age		Country		Gender		Lockdown length	
< 25	7.4%	USA	45.3%	Male	60.3%	< 1 week	1.0%
25–29	24.0%	India	39.0%	Female	39.7%	1–2 weeks	0.5%
30–34	26.5%	Brazil	3.7%			2–4 weeks	4.0%
35–39	14.4%	Canada	2.7%			4–8 weeks	37.4%
40–44	10.6%	UK	1%			> 8 weeks	57.2%
45–49	5.9%	Others	7.3%				
> 49	11.0%						

constructs were clearly below the threshold of 3.3, indicating that the results are unlikely to be distorted by CMB.

5.4. Measurement validity and reliability

We conducted a series of tests to ensure the convergent and discriminant validity and reliability of the measurement. For convergent validity, we examined the item loadings, Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) values of each construct. We adopted item loading of 0.7, Cronbach's alpha of 0.7, CR of 0.7, and AVE of 0.5 as the threshold values (Hair, Black, Barry, & Anderson, 2014). As can be seen from Appendix 2, all item loadings exceeded 0.7 and thus met the respective criterion for convergent validity. Table 2 contains Cronbach's alphas, CRs, and AVEs of the latent constructs. As Table 2 shows, all the constructs clearly fulfill the criteria for convergent validity.

Next, we evaluated the discriminant validity of the measurement. We first compared the inter-construct correlations with the square roots of AVEs (Fornell & Larcker, 1981). As can be seen from the inter-construct correlation matrix presented in Table 3, all square roots of the AVEs were greater than the inter-construct correlation values. Second, we evaluated the discriminant validity at a measurement item level through item loadings and cross-loadings (see Appendix 2). As Appendix 2 shows, all item loadings were clearly higher than the cross-loadings. Third, we examined the heterotrait-monotrait (HTMT) matrix (Appendix 3). The HTMT values were below the 0.85 threshold (Henseler et al., 2015). As a result, all three tests corroborated that the measurement exhibits solid discriminant validity.

As the last step to secure the reliability and validity of the measurement, we evaluated the model fit by calculating the goodness of fit (GoF). We first used the equation for GoF calculation provided by Wetzels, Odekerken-Schröder, and Van Oppen (2009). According to Wetzels et al. (2009), the thresholds for values for GoF are 0.1 (small), 0.25 (medium), and 0.36 (large). The GoF value of our model was 0.45, indicating a good fit with the data. In addition, we examined the standardized root mean square residual value (SRMR). The SRMR of our model was 0.064, also indicating a good fit with the data (Hu & Bentler, 1999).

5.5. Structural model results

After confirming the validity and reliability of the measurement, we moved forward to test the hypotheses with the structural model. Fig. 2 presents the respective results. In brief, the data support all our five

Table 2
Cronbach's alphas, CRs, and AVEs of constructs.

Construct	Cronbach's Alpha	CR	AVE
Threat of COVID-19 Disease	0.821	0.880	0.647
Threat of Unemployment	0.915	0.941	0.799
COVID-19 Obsession	0.877	0.916	0.731
Emotional Support Seeking through SNS	0.909	0.936	0.786
SNS Exhaustion	0.912	0.938	0.791
Intention to Reduce SNS Use	0.948	0.966	0.905

hypotheses. Our model explained 37.9% of the variance in COVID-19 obsession, 29.5% variance in emotional support seeking, 20.2% variance in SNS exhaustion, and 16.9% variance in the intention to reduce SNS use.

With respect to the control variables, age had a negative effect on both SNS exhaustion and COVID-19 obsession. Lockdown length in turn had a negative effect on COVID-19 obsession and a marginal positive effect on the intention to reduce SNS use. Finally, the degree of working remotely from home during the pandemic had a negative effect on emotional support seeking through SNS use.

To further validate the results from testing the structural model, we examined the indirect effects of the latent constructs. We used bootstrapping with 5000 in calculating the effects. This test indicated that all total indirect effects were statistically significant. This observation further supports our hypothesized theoretical mechanisms and the research model at large.

Finally, we conducted a post-hoc test to investigate the direct effects of the latent constructs. With respect to direct effects, the results show that neither the threat of the COVID-19 disease nor the threat of unemployment had statistically significant effects on any other latent construct than COVID-19 obsession. Collectively, these results corroborate our theorizing (H1–H3) that COVID obsession is the mediator through which the two threats influence emotional support seeking. Second, COVID obsession had a positive direct effect on SNS exhaustion (0.229 **). This observation extends the understanding of the role of SNS exhaustion beyond our hypothesis (H4) and calls for future research. Third, emotional support seeking through SNS use exerted a marginally significant, positive direct effect on reduced SNS use intention (0.126 *). This observation provides further support for our respective hypothesis (H5) that theorized that SNS exhaustion was the most important factor driving reduced SNS use intention.

6. Discussion

The prevailing view has been that technology is an effective means to cope with the pandemic, and that as such, people increase their screen time, including social networking sites, during the pandemic. Nevertheless, this may not always be the case, as anecdotal evidence suggests that some people are fatigued by such websites, their content, the social pressures they create and the constant chase after "likes" and attention (Turel, 2021). Thus, not everything is "bright" about SNS use for coping with the pandemic and its countermeasures, and it is also possible that people consumed by COVID-19 related news overly seek and provide emotional support, and are ultimately exhausted. To test this possibility, our study seeks to answer the research question of "does coping with the stressors brought about by a global pandemic via emotional support seeking through SNS use have adverse consequences?" In doing so, our study also answers the call of Venkatesh (2020) to study coping during the COVID-19 pandemic, especially with regard to stressors arising from the threat of unemployment.

The findings of our study show that the threat of the COVID-19 disease and the threat of unemployment both had significant effects on COVID-19 obsession. Moreover, we observed that COVID-19 obsession, in turn, positively impacts emotional support-seeking through SNS. These findings are in line with the prior works on attribution theory and

Table 3
Inter-construct correlations (square roots of AVEs presented in bold).

	1	2	3	4	5	6	7	8	9	10	11
Age (1)	n/a										
Threat of COVID-19 disease (2)	-0.001	0.804									
COVID-19 Obsession (3)	-0.224	0.507	0.855								
Emotional Support Seeking Through SNS (4)	-0.212	0.297	0.518	0.887							
SNS Exhaustion (5)	-0.247	0.245	0.430	0.390	0.889						
Gender (6)	0.170	0.150	0.020	-0.067	-0.001	n/a					
Threat of Unemployment (7)	-0.157	0.467	0.443	0.345	0.276	-0.078	0.894				
Remote Work Degree (8)	0.096	-0.012	-0.151	-0.190	-0.183	0.022	-0.136	n/a			
Lockdown Length (9)	0.046	0.026	-0.129	-0.087	-0.107	0.013	0.025	0.080	n/a		
Lockdown Degree (10)	0.012	0.174	-0.037	-0.082	-0.129	-0.007	0.074	0.154	0.271	n/a	
Intention to Reduce SNS use (11)	-0.164	0.082	0.192	0.258	0.396	0.006	0.184	-0.084	0.040	-0.011	0.952

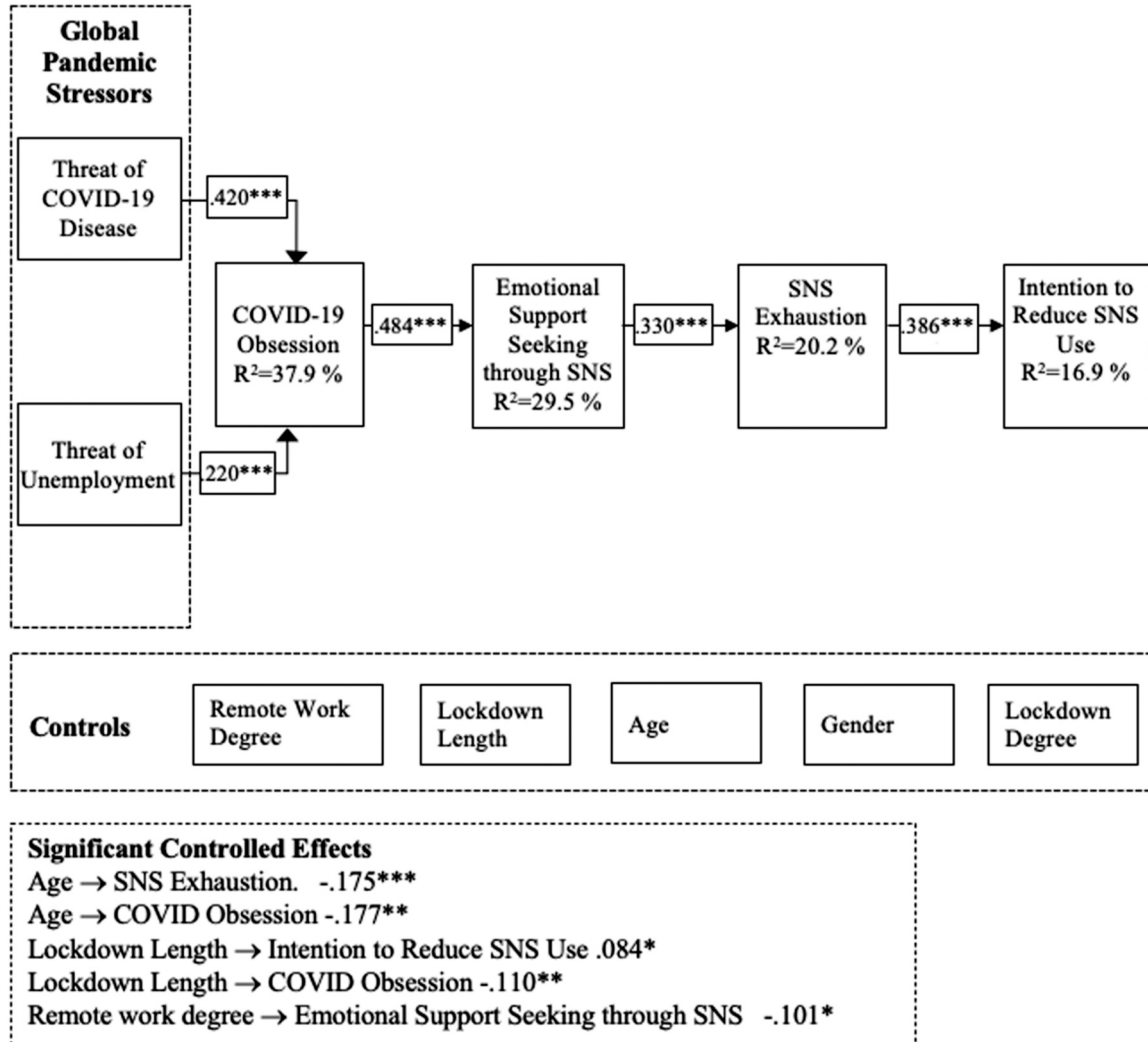


Fig. 2. Structural model results (**p < 0.01; ***p < 0.001; *p < 0.05).

emotional responses (Kelley & Michela, 1980; Weiner, 1979, 1985) as we empirically show that the negative emotional response of COVID-19 obsession mediates the relationships between stressors and coping. Taken together, our findings support Perrewé and Zellars (1999) argument of extending Lazarus’ model by placing emotional responses resulting from the primary appraisal process as a mediator between stress and coping.

Due to the lack of face-to-face social contact during the most severe phases of the COVID-19 pandemic, it was inevitable that people would begin discussing their problems and feelings online (Nabity-Grover

et al., 2020). Using SNSs and maintaining interpersonal connectivity can help restore psychological well-being (see Islam et al., 2019). Therefore, these activities can be viewed as adaptive coping mechanisms (Liang et al., 2019), because they help people cope with threats and restore positive feelings.

However, we observed that this type of SNS-based coping strategy might also have negative consequences, as our findings indicate that emotional support seeking through SNS can create SNS exhaustion. This implies that adaptive coping mechanisms can have negative consequences in technology-mediated social environments. This finding is

indirectly supported and explained by the previous literature. First, prior research on the dark side of social media (e.g., [Maier, Laumer, Eckhardt et al., 2015](#); [Sun et al., 2021](#); [Whelan, Islam, & Brooks, 2020](#)) often linked SNS use with negative consequences such as SNS exhaustion, SNS fatigue, and SNS overload.

Second, SNSs are among the main platforms for circulating information (and misinformation) related to COVID-19 ([Islam et al., 2020](#); [Laato, Islam, & Islam, 2020](#)). Furthermore, when people use SNSs for emotional support seeking, they are inundated with information related to COVID-19, which can result in information overload (and ultimately in SNS exhaustion). Previous literature on social media use during the pandemic has also demonstrated empirically that influx of information on social media related to COVID-19 can create fear and worry (see [Farooq et al., 2020](#)), and contribute to social media fatigue ([Islam et al., 2020](#)). Collectively, this provides an explanation for why emotional support seeking through SNS during the COVID-19 pandemic might have negative consequences.

Our findings also suggest that SNS exhaustion had a positive influence on the intention to reduce SNS use. This supports our theory that reducing SNS use was a corrective response to the negative consequences of coping. This finding is in line with the previous literature. For example, [Osatuyi and Turel \(2020\)](#) found that when people realize the problematic nature of the status quo in terms of SNS use, they try to reduce their SNS use. In particular, they found when addiction symptoms become highly disturbing, people started to reduce their SNS use. In contrast, our results show that when people experience high levels of exhaustion, they start to reduce their SNS use. Furthermore, [Fu, Li, Liu, Pirkkalainen, and Salo \(2020\)](#) empirically showed that social media fatigue impacts discontinued use. Collectively, these findings have a number of theoretical and practical implications, which we describe next.

6.1. Theoretical implications

Our study contributes to discussions regarding the dark side of IT ([Salo et al., 2018](#); [Tafardar et al., 2013a, 2013b; Tafardar et al., 2015](#)), the use of IT to cope with stressors ([Salo et al., 2020](#); [Stein et al., 2015](#); [Tafardar et al., 2020](#)), reduced IT use ([Osatuyi & Turel, 2020](#)), and SNS use during the COVID-19 pandemic ([Cauberghe et al., 2021](#); [Islam et al., 2020](#); [Laato, Islam, & Islam, 2020](#); [Sein, 2020](#)). We next highlight the four main theoretical implications of our study for these research areas.

First, with respect to the dark side of IT, we advance the understanding of SNS exhaustion (e.g., [Maier, Laumer, Eckhardt et al., 2015](#); [Sun et al., 2021](#)). While [Maier and his colleagues \(2015a\)](#) demonstrated how providing too much social support can result in SNS exhaustion, our results imply that also seeking too much emotional support can lead to SNS exhaustion.

Second, with respect to our contribution to research on coping with IT, we examined how IT (SNSs herein) has been used to cope with stressors that are essentially not bound to any short-term incident or situation, and are not related to IT. In doing so, this study expands the literature on the use of IT for coping with stressors (cf., e.g., [Barlette et al., 2021](#); [Salo et al., 2020](#)). In particular, our study demonstrates how attempts to use IT to cope with stressors can have negative consequences. Our results imply that emotional support seeking through SNS, which is an adaptive coping strategy to manage COVID-19 stressors, can lead to negative consequences such as SNS exhaustion.

Third, regarding our contribution to reduced IT use, the current study adds to the previous research ([Osatuyi & Turel, 2020](#)). We show that reducing SNS use can be considered corrective behavior stemming from the essentially negative consequences from the attempt to cope with the COVID-19 stressor through emotional support seeking through SNS. Accordingly, the current study links research on using IT to cope with stressors ([Tafardar et al., 2020](#)) and reduced IT use as a corrective behavior ([Osatuyi & Turel, 2020](#)).

Finally, our findings contribute to the literature on SNS use and its

implications during the COVID-19 pandemic. Previous studies have focused on understanding people's online behavior during the COVID-19 pandemic using measures such as the sharing of misinformation on SNSs ([Islam et al., 2020](#); [Laato, Islam, & Islam, 2020](#)), toxic news sharing ([Chipidza, 2021](#)), SNS use and cyberchondria ([Farooq et al., 2020](#)), and the relationship between SNS use and fatigue ([Islam et al., 2020](#)). These studies suggest that individuals have faced stresses such as information overload due to the COVID-19 pandemic. Furthermore, [Cauberghe et al. \(2021\)](#) investigated whether SNSs can help when coping with anxiety and loneliness. They found that active coping was functional, whereas social relation coping did not address anxiety and loneliness. Our study extends this body of literature by investigating emotional support seeking through SNS as a coping behavior, and how it can help individuals cope with stressors such as the fears of unemployment and of contracting the disease.

6.2. Practical Implications

In the current study, we have investigated reduced SNS use intention in the context of Facebook. There are several alternatives to the platform, including face-to-face interaction, instant messaging apps, and even other SNS platforms (e.g., Twitter, Instagram, Tumblr, and Pinterest). Therefore, during the pandemic, people had alternatives to using Facebook. Accordingly, our findings are important for SNS providers as they help existing platforms retain their users. The increased use of SNSs during the COVID-19 pandemic increased the role of SNSs in people's social interactions. This has amplified their effects on people's wellbeing on a population level. In particular, the notion that adaptive coping mechanisms can have negative consequences in technology-mediated social environments (such as SNSs) has practical implications for individuals, clinical practitioners, and SNS providers.

First, with respect to the individual-level psychosocial implications of a global pandemic, [Lee \(2020\)](#) reported that COVID-19 obsession leads to functional impairment. Our results indicate that COVID-19 obsession leads users to cope with the situation through the use of SNSs. However, as our findings imply, such a coping strategy may also create SNS exhaustion. This invites individuals as well as clinical practitioners to critically consider the role of technology in mental health and well-being during the COVID-19 pandemic. Indeed, our findings suggest that SNS exhaustion can be an adverse side-effect of an SNS-mediated coping strategy.

Second, from the perspective of SNS service providers, our findings imply that they may need to provide tools and features to address the problematic use of SNSs. This could be achieved by providing users with tools to monitor their SNS activities. For example, Facebook provides the "your time on Facebook" feature, which enables users to track their past activities. Obtaining information about the time invested and activities undertaken on social media can induce self-reflection regarding engagement in social media platforms for individuals. Moreover, clinical practitioners might ask patients to manage their SNS activity using a log as the first step toward treating serious anxiety.

Third, due to the possible negative consequences of SNSs particularly during the COVID-19 pandemic, social media literacy has become even more important to be considered by educational institutions, and government and non-government organizations. We suggest the relevant organizations devise strategies for developing social media literacy among citizens to maximize the possible benefits and more importantly avoid the risks surrounding it.

Finally, SNSs have enabled communication and social interactions when alternatives have largely been unavailable due to the pandemic ([Zhong et al., 2021](#)). However, with respect to emotional support seeking, our results imply that SNS use in its current form is not an adequate substitute for face-to-face communication. Our observation that adaptive coping strategies involving SNSs can have negative consequences is an issue that warrants further investigation and should be considered in social media literacy education.

6.3. Limitations and future research directions

This study has several limitations that should be acknowledged. First, with respect to the research design and the choice of research variables, we only employed two COVID-19 stressors: the perceived threat of the COVID-19 disease and threat of employment. While these choices are highly relevant in the COVID-19 context, it is evident that other potentially relevant stressors exist. Thus, future studies could extend the scope of this study by exploring additional stressors.

Second, we employed a cross-sectional research design, which essentially inhibited measuring the behavioral outcomes of the intention to reduce SNS use. To overcome this limitation, future research with a longitudinal research design could capture the extent to which the intention of reducing SNS use translates into reduced SNS use. Moreover, as we collected our empirical data during the most difficult periods of the COVID-19 pandemic, the results reflect the situation of that particular period. Thus, conducting a follow-up study after the pandemic would enable an examination of the consequences of stress and coping during the pandemic.

Third, we deliberately adopted a general perspective instead of focusing on the implications of the pandemic for certain demographic groups or on making comparisons (such as differences between countries). Accordingly, we focused on the most widely used social media platform (Facebook) and employed MTurk to obtain a data set that was not bound to any particular geographical area or culture. However, it is clear that the impact of COVID-19 has differed considerably between countries, regions, and demographic groups. Hence, there is a need for research investigating the differential effects of the pandemic across geographical, cultural, and socioeconomic contexts. For example, recent IS research has highlighted that the younger generation suffered substantially as a result of the isolation measures (Iivari et al., 2020). Thus, future research could examine coping with the stressors caused by the pandemic across different demographic and sociographic sub-populations and between countries.

Beyond the future research avenues stemming directly from the limitations of this study, we outline three main directions for future research. First, future studies could explore other emotion- and problem-focused coping strategies in the social media context. Second, future research could expand the contextual scope to other areas of technology-mediated coping. For example, previous research has reported that

people play video games as a coping mechanism (Blasi et al., 2019). People increasingly utilize smart assistants in various daily activities; hence, future research could examine how these technologies can be used to help when coping with stressful situations. Third, this study has outlined the potential negative side effects of adaptive coping. Future research could continue this line of inquiry and undertake a detailed analysis of the circumstances in which adaptive coping strategies become maladaptive.

7. Conclusions

This research employed Lazarus' theory of coping and work on attribution theory and emotional responses to develop a model to investigate if coping with COVID-19 stressors via emotional support seeking through SNS use have adverse consequences. Our findings suggest that two stressors, namely the threat of the COVID-19 disease and the threat of unemployment impact the negative emotional response, in our case, COVID-19 obsession. According to the results, in order to cope with the situation, people can adopt the coping strategy of emotional support seeking through SNS. Emotional support seeking in general is an adaptive coping strategy, however, as we find in this paper, while seeking emotional support through SNS, it may bring negative consequences such as SNS exhaustion. Finally, to cope with SNS exhaustion, people can take corrective action and reduce their SNS use.

CRedit authorship contribution statement

Islam: Conceptualization, Investigation, Project administration, Methodology, Supervision, Writing – original draft, Writing – review & editing, Visualization, **Mäntymäki:** Conceptualization, Investigation, Data curation, Formal analysis, Funding acquisition, Methodology, Supervision, Writing – original draft, Writing – review & editing, Visualization, **Laato:** Conceptualization, Writing – original draft, Writing – review & editing, **Turel:** Conceptualization, Investigation, Writing – review & editing.

Declarations of interest

None.

Appendix 1. Construct items and loadings

Construct	Items	Mean	S.D.
Threat of COVID-19 Disease (Laato et al., 2020; Liang et al., 2019)	COVID-19 has made me anxious about my health.	5.188	1.586
	The negative impact of COVID-19 on my health is very high.	4.995	1.580
	COVID-19 can be life-threatening for me.	4.663	1.734
	COVID-19 is a serious threat for my health.	4.520	1.714
Threat of Unemployment (contextualized from Liang et al., 2019)	I am fearful about losing my job.	4.065	1.988
	I am anxious about my employment situation.	4.334	1.922
	I am very concerned about my employment situation.	4.377	1.940
	Losing a job is a serious threat for someone like me.	4.603	1.907
Emotional Support Seeking through SNS (Carver et al., 1989; Liang et al., 2019)	During the COVID-19 lockdown...	2.872	1.189
	I have talked to someone on Facebook about how I feel.		
	I have tried to get emotional support from friends or relatives on Facebook.	2.583	1.281
	I have discussed my feelings with someone on Facebook.	2.698	1.252
SNS Exhaustion (Maier, Laumer, Eckhardt et al., 2015)	I have gotten sympathy and understanding from someone on Facebook.	2.673	1.244
	Please answer the following questions based on your experiences with Facebook use during the COVID-19 pandemic.	2.447	1.154
	I have felt drained from my activities on Facebook.		
	I have felt tired from my Facebook activities.	2.344	1.169
COVID-19 Obsession (Lee, 2020)	Using Facebook has been a strain for me.	2.168	1.158
	I have felt burned out from my Facebook activities.	2.178	1.195
	How often have you experienced the following over the last two weeks?	2.296	1.241
	I have had disturbing thoughts that I may have caught the coronavirus.		
	I have had disturbing thoughts that certain people I saw may have the coronavirus.	2.312	1.179
	I cannot stop thinking about the coronavirus.	2.487	1.293

(continued on next page)

(continued)

Construct	Items	Mean	S.D.
Intention to Reduce SNS Use (Osatuyi & Turel, 2020)	I have had dreams about the coronavirus.	1.977	1.222
	I intend to cut back on my use of Facebook in the next three months.	4.349	1.741
	I intend to decrease my use of Facebook in the next three months.	4.256	1.766
	I intend to reduce the time I spend on Facebook in the next three months.	4.384	1.762

Appendix 2. Item loadings and cross-loadings

	1	2	3	4	5	6	7	8	9	10	11
Age	1.000	-0.001	-0.224	-0.212	-0.247	0.170	-0.157	0.096	0.046	0.012	-0.164
Threat of COVID-19 Disease1	0.018	0.773	0.314	0.134	0.068	0.090	0.232	0.007	0.097	0.184	0.035
Threat of COVID-19 Disease2	-0.023	0.824	0.391	0.232	0.203	0.163	0.355	-0.003	0.025	0.163	0.080
Threat of COVID-19 Disease3	-0.074	0.834	0.453	0.316	0.297	0.098	0.521	-0.092	-0.011	0.098	0.104
Threat of COVID-19 Disease4	0.088	0.784	0.443	0.234	0.173	0.128	0.335	0.065	0.003	0.137	0.032
COVID-19 Obsession1	-0.193	0.451	0.888	0.431	0.412	0.001	0.368	-0.138	-0.151	-0.032	0.184
COVID-19 Obsession2	-0.208	0.463	0.880	0.423	0.333	-0.009	0.431	-0.127	-0.095	-0.038	0.147
COVID-19 Obsession3	-0.185	0.457	0.842	0.445	0.331	0.044	0.397	-0.133	-0.079	-0.004	0.162
COVID-19 Obsession4	-0.179	0.359	0.810	0.475	0.399	0.035	0.315	-0.118	-0.119	-0.055	0.164
Emotional Support Seeking1	-0.198	0.254	0.463	0.892	0.314	-0.060	0.261	-0.202	-0.078	-0.064	0.249
Emotional Support Seeking2	-0.204	0.287	0.485	0.891	0.387	-0.030	0.331	-0.156	-0.107	-0.106	0.232
Emotional Support Seeking3	-0.174	0.285	0.453	0.901	0.311	-0.077	0.312	-0.191	-0.044	-0.069	0.225
Emotional Support Seeking4	-0.173	0.226	0.433	0.863	0.367	-0.074	0.318	-0.126	-0.078	-0.047	0.209
SNS Exhaustion1	-0.239	0.249	0.424	0.420	0.916	0.004	0.281	-0.185	-0.110	-0.093	0.380
SNS Exhaustion2	-0.253	0.189	0.398	0.359	0.888	-0.057	0.250	-0.150	-0.081	-0.156	0.363
SNS Exhaustion3	-0.177	0.208	0.327	0.266	0.880	0.017	0.223	-0.157	-0.116	-0.092	0.325
SNS Exhaustion4	-0.199	0.225	0.370	0.322	0.872	0.039	0.219	-0.158	-0.075	-0.119	0.335
Gender	0.170	0.150	0.020	-0.067	-0.001	1.000	-0.078	0.022	0.013	-0.007	0.006
Threat of Unemployment1	-0.139	0.465	0.428	0.321	0.281	-0.071	0.908	-0.131	-0.009	0.088	0.145
Threat of Unemployment2	-0.140	0.407	0.382	0.281	0.250	-0.067	0.930	-0.088	0.078	0.097	0.199
Threat of Unemployment3	-0.176	0.377	0.418	0.338	0.267	-0.094	0.926	-0.156	0.019	0.048	0.180
Threat of Unemployment4	-0.102	0.421	0.348	0.289	0.178	-0.044	0.806	-0.108	0.006	0.030	0.133
Remote Work Degree	0.096	-0.012	-0.151	-0.190	-0.183	0.022	-0.136	1.000	0.080	0.154	-0.084
Lockdown Length	0.046	0.026	-0.129	-0.087	-0.107	0.013	0.025	0.080	1.000	0.271	0.040
Lockdown Degree	0.012	0.174	-0.037	-0.082	-0.129	-0.007	0.074	0.154	0.271	1.000	-0.011
Intention to Reduce SNS Use1	-0.130	0.076	0.207	0.276	0.391	0.019	0.188	-0.105	0.021	-0.032	0.942
Intention to Reduce SNS Use2	-0.149	0.080	0.148	0.201	0.354	0.002	0.169	-0.056	0.055	-0.003	0.954
Intention to Reduce SNS Use3	-0.187	0.079	0.190	0.256	0.384	-0.005	0.167	-0.076	0.039	0.005	0.959

Appendix 3. HTMT matrix

	1	2	3	4	5	6	7	8	9	10	11
Age											
Threat of COVID-19 Disease	0.069										
COVID-19 Obsession	0.239	0.583									
Emotional Support Seeking through SNS	0.221	0.328	0.580								
SNS Exhaustion	0.256	0.265	0.478	0.421							
Gender	0.170	0.164	0.028	0.071	0.034						
Threat of Unemployment	0.163	0.518	0.492	0.377	0.297	0.081					
Remote Work Degree	0.096	0.057	0.161	0.199	0.191	0.022	0.141				
Lockdown Length	0.046	0.046	0.138	0.091	0.112	0.013	0.033	0.080			
Lockdown Degree	0.012	0.199	0.041	0.085	0.135	0.007	0.077	0.154	0.271		
Intention to Reduce SNS Use	0.168	0.089	0.210	0.276	0.423	0.010	0.197	0.085	0.041	0.014	

References

Bandura, A. (1998). Health promotion from the perspective of social cognitive theory. *Psychology & Health, 13*(4), 623–649.

Barlette, Y., Jaouen, A., & Baillette, P. (2021). Bring Your Own Device (BYOD) as reversed IT adoption: insights into managers' coping strategies. *International Journal of Information Management, 56*, Article 102212.

Barnes, S. J. (2020). Information management research and practice in the post-COVID-19 world. *International Journal of Information Management, 55*, Article 102175.

Barrero, J. M., Bloom, N., & Davis, S. J. (2020). *COVID-19 is also a reallocation shock*. National Bureau of Economic Research.

Berg, J. M., Grant, A. M., & Johnson, V. (2010). When callings are calling: Crafting work and leisure in pursuit of unanswered occupational callings. *Organization Science, 21* (5), 973–994.

Bhattacharjee, A. (2001). Understanding information systems continuance: an expectation-confirmation model. *MIS Quarterly, 25*, 351–370.

Blasi, M. D., Giardina, A., Giordano, C., Coco, G. L., Tosto, C., Billieux, J., & Schimmenti, A. (2019). Problematic video game use as an emotional coping strategy: Evidence from a sample of MMORPG gamers. *Journal of Behavioral Addictions, 8*(1), 25–34.

Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: a theoretically based approach. *Journal of Personality and Social Psychology, 56*(2), 267–283. <https://doi.org/10.1037/0022-3514.56.2.267>

Cauberghe, V., Van Wesenbeeck, I., De Jans, S., Hudders, L., & Ponnet, K. (2021). How adolescents use social media to cope with feelings of loneliness and anxiety during COVID-19 lockdown. *Cyberpsychology Behavior and Social Networking, 24*, 250–257.

Chipidza, W. (2021). The effect of toxicity on COVID-19 news network formation in political subcommunities on Reddit: An affiliation network approach. *International Journal of Information Management, 61*, Article 102397.

- Chiu, C.-M., & Huang, H.-Y. (2017). Examining the antecedents of user gratification and its effects on individuals' social network services usage: the moderating role of habit. *European Journal of Information Systems*, 24, 411–430. <https://doi.org/10.1057/ejis.2014.9>
- Cho, I. (2015). Facebook discontinuance: Discontinuance as a temporal settlement of the constant interplay between disturbance and coping. *Quality & Quantity*, 49(4), 1531–1548.
- Coibion, O., Gorodnichenko, Y., & Weber, M. (2020). *Labor markets during the COVID-19 crisis: a preliminary view*. National Bureau of Economic Research.
- D'Arcy, J., Gupta, A., Tarafdar, M., & Turel, O. (2014). Reflecting on the "Dark Side" of information technology use. *Communications of the Association for Information Systems*, 35, 109–118.
- De, R., Pandey, N., & Pal, A. (2020). Impact of digital surge during Covid-19 pandemic: a viewpoint on research and practice. *International Journal of Information Management*, 55, Article 102171.
- Dhir, A., Yossatorn, Y., Kaur, P., & Chen, S. (2018). Online social media fatigue and psychological wellbeing: a study of compulsive use, fear of missing out, fatigue, anxiety and depression. *International Journal of Information Management*, 40(1), 141–152.
- Dwivedi, Y. K., Hughes, D. L., Coombs, C., Constantiou, I., Duan, Y., Edwards, J. S., & Raman, R. (2020). Impact of COVID-19 pandemic on information management research and practice: transforming education, work and life. *International Journal of Information Management*, 55, Article 102211.
- Farooq, A., Laato, S., & Islam, A. K. M. N. (2020). Impact of online information on self-isolation intention during the COVID-19 pandemic: cross-sectional study. *Journal of Medical Internet Research*, 22(5), 19128.
- Farooq, A., Laato, S., Islam, A. N., & Isoaho, J. (2021). Understanding the impact of information sources on COVID-19 related preventive measures in Finland. *Technology in Society*, 65, Article 101573.
- Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior*, 21, 219–239.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, 18(1), 39–50.
- Fu, S., Li, H., Liu, Y., Pirkkalainen, H., & Salo, M. (2020). Social media overload, exhaustion, and use discontinuance: examining the effects of information overload, system feature overload, and social overload. *Information Processing & Management*, 57(6), Article 102307.
- Gao, J., Zheng, P., Jia, Y., Chen, H., Mao, Y., Chen, S., & Dai, J. (2020). Mental health problems and social media exposure during COVID-19 outbreak. *PLoS One*, 15(4), Article 0231924.
- Gaudioso, F., Turel, O., & Galimberti, C. (2017). The mediating roles of strain facets and coping strategies in translating techno-stressors into adverse job outcomes. *Computers in Human Behavior*, 69, 189–196. <https://doi.org/10.1016/j.chb.2016.12.041>
- Gieselmann, A., Elberich, N., Mathes, J., & Pietrowsky, R. (2020). Nightmare distress revisited: cognitive appraisal of nightmares according to Lazarus' transactional model of stress. *Journal of Behavior Therapy and Experimental Psychiatry*, 68, Article 101517.
- Goodhue, D. L., Lewis, W., & Thompson, R. L. (2012). Does PLS have advantages for small sample size or non-normal data? *MIS Quarterly*, 36(3), 891–1001.
- Hair, J. F., Black, W. C., Barry, J. B., & Anderson, R. E. (2014). *Multivariate Data Analysis*. Pearson.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science*, 43(1), 115–135.
- Hitchman, S. C., Fong, G. T., Zanna, M. P., Thrasher, J. F., & Laux, F. L. (2014). The relation between number of smoking friends, and quit intentions, attempts, and success: Findings from the International Tobacco Control (ITC) four country survey. *Psychology of Addictive Behaviors: Journal of the Society of Psychologists in Addictive Behaviors*, 28(4), 1144–1152.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling A Multidisciplinary Journal*, 6(1), 1–55.
- Iivari, N., Sharma, S., & Ventä-Olkkonen, L. (2020). Digital transformation of everyday life—How COVID-19 pandemic transformed the basic education of the young generation and why information management research should care? *International Journal of Information Management*, 55, Article 102183.
- Islam, A. N., Laato, S., Talukder, S., & Sutinen, E. (2020). Misinformation sharing and social media fatigue during COVID-19: an affordance and cognitive load perspective. *Technological Forecasting and Social Change*, 159, Article 120201.
- Islam, A. N., Mäntymäki, M., & Benbasat, I. (2019). Duality of self-promotion on social networking sites. *Information Technology & People*, 32(2), 269–296.
- Jaidka, K., Guntuku, S. C., Lee, J. H., Luo, Z., Buffone, A., & Ungar, L. H. (2021). The rural–urban stress divide: obtaining geographical insights through Twitter. *Computers in Human Behavior*, 114, Article 106544.
- Joomann, J., Dkane, M., & Gotlib, I. H. (2006). Adaptive and maladaptive components of rumination? Diagnostic specificity and relation to depressive biases. *Behavior Therapy*, 37(3), 269–280.
- Jung, Y., & Park, J. (2018). An investigation of relationships among privacy concerns, affective responses, and coping behaviors in location-based services. *International Journal of Information Management*, 43, 15–24.
- Kawohl, W., & Nordt, C. (2020). COVID-19, unemployment, and suicide. *The Lancet Psychiatry*, 7(5), 389–390.
- Kelley, H. H., & Michela, J. L. (1980). Attribution theory and research. *Annual Review of Psychology*, 31, 457–501.
- Kim, H. W., & Kankanhalli, A. (2009). Investigating user resistance to information systems implementation: a status quo bias perspective. *MIS Quarterly*, 33, 567–582.
- Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration (IJeC)*, 11(4), 1–10.
- Kodama, M. (2020). Digitally transforming work styles in an era of infectious disease. *International Journal of Information Management*, 55, Article 102172.
- Laato, S., Islam, A. N., Farooq, A., & Dhir, A. (2020a). Unusual purchasing behavior during the early stages of the COVID-19 pandemic: The stimulus–organism–response approach. *Journal of Retailing and Consumer Services*, 57, Article 102224.
- Laato, S., Islam, A. N., Islam, M. N., & Whelan, E. (2020b). What drives unverified information sharing and cyberchondria during the COVID-19 pandemic? *European Journal of Information Systems*, 29, 288–305.
- Lazarus, R. S. (1966). *Psychological stress and the coping process*. McGraw-Hill.
- Lazarus, R. S. (1993). Coping theory and research: past, present, and future. *Psychosomatic Medicine*, 55, 234–247.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer Publishing Company.
- Lee, S. A. (2020). How much "thinking" about COVID-19 is clinically dysfunctional? *Brain Behavior and Immunity*, 87, 97–98.
- Liang, H., Xue, Y., Pinsonneault, A., & Wu, Y. (2019). What users do besides problem-focused coping when facing IT security threats: an emotion-focused coping perspective. *MIS Quarterly*, 43(2), 373–394.
- Lin, J., Lin, S., Turel, O., & Xu, F. (2020). The buffering effect of flow experience on the relationship between overload and social media users' discontinuance intentions. *Telematics and Informatics*, 49, Article 101374. <https://doi.org/10.1016/j.tele.2020.101374>
- Litt, D. M., Rodriguez, L. M., & Stewart, S. H. (2021). Examining associations between social networking site alcohol-specific social norms, posting behavior, and drinking to cope during the COVID-19 pandemic. *Cyberpsychology Behavior and Social Networking*.
- Maier, C., Laumer, S., Eckhardt, A., & Weitzel, T. (2015a). Giving too much social support: Social overload on social networking sites. *European Journal of Information Systems*, 24(5), 447–464.
- Maier, C., Laumer, S., Weinert, C., & Weitzel, T. (2015b). The effects of technostress and switching stress on discontinued use of social networking services: a study of Facebook use. *Information Systems Journal*, 25(3), 275–308.
- Mäntymäki, M., & Islam, A. K. M. N. (2016). The Janus face of Facebook: Positive and negative sides of social networking site use. *Computers in Human Behavior*, 61, 14–26.
- Nabity-Grover, T., Cheung, C. M., & Thatcher, J. B. (2020). Inside out and outside. In *How the COVID-19 Pandemic Affects Self-Disclosure on Social Media*, 55 International Journal of Information Management.
- Osatuyi, B., & Turel, O. (2020). Conceptualisation and validation of system use reduction as a self-regulatory IS use behaviour. *European Journal of Information Systems*, 29(1), 44–64.
- Pahayahay, A., & Khalili-Mahani, N. (2020). What media helps, what media hurts: a mixed methods survey study of coping with COVID-19 using the media repertoire framework and the appraisal theory of stress. *Journal of Medical Internet Research*, 22(8), 20186.
- Pan, S. L., Cui, M., & Qian, J. (2020). Information resource orchestration during the COVID-19 pandemic: a study of community lockdowns in China. *International Journal of Information Management*, 54, Article 102143.
- Papanikolaou, D., & Schmidt, L. D. (2020). *Working Remotely and the Supply-Side Impact of COVID-19*. National Bureau of Economic Research.
- Parmet, W. E., & Sinha, M. S. (2020). Covid-19 - the law and limits of quarantine. *The New England Journal of Medicine*, 382(15), 28.
- Perrewé, P. L., & Zellars, K. L. (1999). An examination of attributions and emotions in the transactional approach to the organizational stress process. *Journal of Organizational Behavior*, 20(5), 739–752.
- Perri, M. G., Richards, C. S., & Schultheis, K. R. (1977). Behavioral self-control and smoking reduction: a study of self-initiated attempts to reduce smoking. *Behavior Therapy*, 8(3), 360–365.
- Recker, J. (2016). Reasoning about discontinuance of information system use. *JITTA: Journal of Information Technology Theory and Application*, 17(1), 41–66.
- Rezvani, A., & Khosravi, P. (2019). Emotional intelligence: The key to mitigating stress and fostering trust among software developers working on information system projects. *International Journal of Information Management*, 48, 139–150.
- Richter, A. (2020). Locked-down digital work. *International Journal of Information Management*, 55, Article 102157.
- Salo, J., Mäntymäki, M., & Islam, A. N. (2018). The dark side of social media—and Fifty Shades of Grey introduction to the special issue: the dark side of social media. *Internet Research*, 28, 1166–1168.
- Salo, M., Mykkänen, M., & Hekkala, R. (2020). The interplay of IT users' coping strategies: uncovering momentary emotional load, routes, and sequences. *MIS Quarterly*, 44, 1143–1175.
- Sein, M. K. (2020). The serendipitous impact of COVID-19 pandemic: a rare opportunity for research and practice. *International Journal of Information Management*, 55, Article 102164.
- Shensa, A., Sidani, J. E., Escobar-Viera, C. G., Switzer, G. E., Primack, B. A., & Choukas-Bradley, S. (2020). Emotional support from social media and face-to-face relationships: associations with depression risk among young adults. *Journal of Affective Disorders*, 260, 38–44.
- Singh, S., Dixit, A., & Joshi, G. (2020). Is compulsive social media use amid COVID-19 pandemic addictive behavior or coping mechanism? *Asian Journal of Psychiatry*, 54, Article 102290.

- Soliman, W., & Rinta-Kahila, T. (2020). Toward a refined conceptualization of IS discontinuance: reflection on the past and a way forward. *Information & Management*, 57(2), Article 103167.
- Spector, P. E., & Fox, S. (2005). The Stressor-Emotion Model of Counterproductive Work Behavior. In S. Fox, & P. E. Spector (Eds.), *Counterproductive work behavior: Investigations of actors and targets* (pp. 151–174). American Psychological Association. <https://doi.org/10.1037/10893-007>.
- Statista (2020). Share of social media users in the United States who believe they will use Facebook more if confined at home due to the coronavirus as of March 2020. <https://www.statista.com/statistics/1106338/facebook-usage-increase-due-to-coronavirus-home-usa/>.
- Stein, M. K., Newell, S., Wagner, E. L., & Galliers, R. D. (2015). Coping with information technology: mixed emotions, vacillation, and nonconforming use patterns. *MIS Quarterly*, 39(2), 367–392.
- Sun, Y., Liu, Y., Zhang, J. Z., Fu, J., Hu, F., Xiang, Y., & Sun, Q. (2021). Dark side of enterprise social media usage: A literature review from the conflict-based perspective. *International Journal of Information Management*, Article 102393.
- Suzuki, R., Nakamiya, Y., Watanabe, M., Ando, E., Tanichi, M., Koga, M., & Yuzawa, K. (2019). Relationship between stress coping mechanisms and depression in kidney transplant recipients. In *In Transplantation proceedings* (Vol. 51, pp. 761–767). Elsevier.
- Tarafdar, M., Maier, C., Laumer, S., & Weitzel, T. (2020). Explaining the link between technostress and technology addiction for social networking sites: a study of distraction as a coping behavior. *Information Systems Journal*, 30(1), 96–124.
- Turel, O. (2015). Quitting the use of a habituated hedonic information system: A theoretical model and empirical examination of Facebook users. *European Journal of Information Systems*, 24(4), 431–446.
- Turel, O. (2016). Untangling the complex role of guilt in rational decisions to discontinue the use of a hedonic information system. *European Journal of Information Systems*, 25(5), 432–447.
- Turel, O. (2017). Organizational deviance via social networking site use: The roles of inhibition, stress and sex differences. *Personality and Individual Differences*, 119, 311–316. <https://doi.org/10.1016/j.paid.2017.08.002>
- Turel, O. (2019). Potential “dark sides” of leisure technology use in youth. *Communications of the ACM*, 62, 24–27. <https://doi.org/10.1145/3306615>
- Turel, O. (2021). Technology-Mediated Dangerous Behaviors as Foraging for Social-Hedonic Rewards: The Role of Implied Inequality. *MIS Quarterly*, 45(3), 1249–1286. <https://doi.org/10.25300/MISQ/2021/16352>
- Turel, O., & Bechara, A. (2016). Social Networking Site use while driving: ADHD and the mediating roles of stress, self-esteem and craving. *Frontiers in Psychology*, 7, Article 455. <https://doi.org/10.3389/fpsyg.2016.00455>
- Turel, O., Cavagnaro, D. R., & Meshi, D. (2018). Short abstinence from online social networking sites reduces perceived stress, especially in excessive users. *Psychiatry Research*, 270, 947–953. <https://doi.org/10.1016/j.psychres.2018.11.017>
- Turel, O., & Gaudioso, F. (2018). Techno-stressors, distress and strain: The roles of leadership and competitive climates. *Cognition, Technology & Work*, 20, 309–324. <https://doi.org/10.1007/s10111-018-0461-7>
- Turel, O., Matt, C., Trenz, M., Cheung, C. M., D’Arcy, J., Qahri-Saremi, H., & Tarafdar, M. (2019). Panel report: the dark side of the digitization of the individual. *Internet Research*, 29(2), 274–288. <https://doi.org/10.1108/INTR-04-2019-541>
- Turel, O., Qahri-Saremi, H., & Vaghefi, I. (2021). Special Issue: Dark Sides of Digitalization. *International Journal of Electronic Commerce*, 25, 127–135.
- Vaghefi, I., Qahri-Saremi, H., & Turel, O. (2020). Dealing with Social Networking Site Addiction: A Cognitive-Affective Model of Discontinuance Decisions. *Internet Research*, 30(5), 1427–1453. <https://doi.org/10.1108/INTR-10-2019-041>
- Venkatesh, V. (2020). Impacts of COVID-19: a research agenda to support people in their fight. *International Journal of Information Management*, 55, Article 102197.
- Walter, S. L., Seibert, S. E., Goering, D., & O’Boyle, E. H. (2019). A tale of two sample sources: do results from online panel data and conventional data converge? *Journal of Business and Psychology*, 34(4), 425–452.
- Weiner, B. (1979). A theory of motivation for some classroom experiences. *Journal of Educational Psychology*, 71, 3–25.
- Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review*, 92, 548–573.
- Wetzels, M., Odekerken-Schröder, G., & Van Oppen, C. (2009). Using PLS path modeling for assessing hierarchical construct models: guidelines and empirical illustration. *MIS Quarterly*, 33, 177–195.
- Whelan, E., Islam, A. N., & Brooks, S. (2020). Is boredom proneness related to social media overload and fatigue? A stress-strain-outcome approach. *Internet Research*, 30, 869–887.
- Wiederhold, B. K. (2020). Social media use during social distancing. *Cyberpsychology Behavior and Social Networking*, 23(5), 275–276. <https://doi.org/10.1089/cyber.2020.29181.bkw>
- Yang, J., & Diefendorff, J. M. (2009). The relations of daily counterproductive workplace behavior with emotions, situational antecedents, and personality moderators: a diary study in Hong Kong. *Personnel Psychology*, 62(2), 259–295.
- York, C., & Turcotte, J. (2015). Vacationing from Facebook: adoption, temporary discontinuance, and re-adoption of an innovation. *Communication Research Reports*, 32(1), 54–62.
- Yun, Y., Hooshyar, D., Jo, J., & Lim, H. (2018). Developing a hybrid collaborative filtering recommendation system with opinion mining on purchase review. *Journal of Information Science*, 44(3), 331–344.
- Zhong, B., Huang, Y., & Liu, Q. (2021). Mental health toll from the coronavirus: Social media usage reveals Wuhan residents’ depression and secondary trauma in the COVID-19 outbreak. *Computers in Human Behavior*, 114, Article 106524.