



The bright and dark sides of social cyberloafing: Effects on employee mental health in China

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ABSTRACT

Cyberloafing, the use of the Internet for non-work related activities, is widespread in the workplace. Although most research on cyberloafing concentrates on negative consequences for employees and organizations, studies have begun exploring its potential positive effects. This study contributes to that discussion by examining the impact of employee social cyberloafing on their mental health. We draw from ego-depletion theory and the effort-recovery model to develop a framework that explains social cyberloafing's effects on two facets of employee mental health: fatigue and psychological detachment. Data from 375 Chinese employees were analyzed using a structural equation model and bootstrapping procedure. Results show that while social cyberloafing has a positive relationship with psychological detachment, it leads to employee fatigue. Moreover, psychological detachment positively and fatigue negatively mediate the relationship between social cyberloafing and mental health.

1. Introduction

With the prevalence of Internet-based information and communication technologies in the workplace and employees' homes, managing overlapping work-life boundaries is a challenge for today's employees (Fujimoto, Ferdous, Sekiguchi, & Sugianto, 2016). Employees often use the Internet for non-work activities during working hours, which has created a new form of distraction and a way to malingering. In the workplace, "any voluntary act of employees using their companies' Internet access during office hours to surf non-job-related websites for personal purposes and to check (including receiving and sending) personal e-mail is misuse of the internet" (p. 23). Such activity is commonly known as cyberloafing (Lim, 2002). Investigators have focused on the negative impacts of cyberloafing on organizations and employees, since Lim (2002) coined the term and defined it as a new type of deviant workplace behavior. For example, cyberloafing has been found to cause losses in organizational productivity (Taylor, 2007), and pose potential risks through legal liability and information security breaches (Hu, West, & Smarandescu, 2015). In addition to harmful organizational effects, employees' cyberloafing activities can also lead to psychological stress (Lim & Chen, 2012; Sonnentag, Reinecke, Mata, & Vorderer, 2018), trigger negative emotions (Sonnentag, Venz, & Casper, 2017), and reduce work engagement (O'Neill, Hambley, &

Bercovich, 2014) and job satisfaction (Lim & Chen, 2012).

In recent years, scholars have questioned the prevailing belief that cyberloafing is uniformly harmful, suggesting instead that it may have a "bright side" for employees. Moderate online leisure activities can help employees cope with work stress (Stoddart, 2016), achieve higher levels of recovery (Coker, 2013), and be more committed to subsequent work (Syrek, Kühnel, Vahlehnz, & Bloom, 2017). These studies highlight a fundamental tension existing in current literature that focuses on the effects of cyberloafing on individuals. To our knowledge, an integrated framework that incorporates both the positive and negative effects of cyberloafing does not exist. Thus, this study aims to bridge the gap separating the research on the detrimental and beneficial outcomes of employee cyberloafing by integrating both perspectives into one theoretical model. In so doing, we seek to link these divergent streams of research and demonstrate that cyberloafing is not always positive or negative.

We focus on employee mental health because it is so poor worldwide, particularly in China (Ng & Li, 2010). Poor mental health can reduce organizational efficiency and has broader societal implications by way of reduced physical health, which leads to rising medical costs (Tsui, 2013b). Furthermore, management studies have mainly focused on corporate performance, shareholder interests, and employee work outcomes, while paying scarce attention to non-work outcomes and

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employee well-being, a trend that is particularly acute in Chinese management studies (Tsui & Jia, 2013). Also, research that helps companies maximize shareholder returns at the expense of employee welfare could be considered socially irresponsible (Tsui, 2013a).

We focus on the effects of “social” cyberloafing because engaging in online social activities is one of the most common reasons for using the Internet (Li & Chung, 2006). A total of 74.3% of Internet users worldwide use social media persistently (Social, 2017). Social media platforms like Facebook and WeChat are also becoming increasingly popular in the workplace. Their use is blurring the boundaries between work and non-work time, potentially having far-reaching impacts on employees. Social activities contribute to both resource recovery and resource consumption. Employees’ use of social media for non-work purposes at work can offer a break to achieve resource recovery, but it can also consume individuals’ limited resources (Leikas & Ilmarinen, 2016; Trougakos, Hideg, Cheng, & Beal, 2014). Prior studies have shown the positive effect of both internal and external resources on individual health (Caldwell, 2005; Fritz & Sonnentag, 2005, 2006; Fritz, Yankelevich, Zarubin, & Barger, 2010; Sonnentag & Bayer, 2005). The broader literature suggests that social cyberloafing can contribute to work recovery by supplementing resources (“bright side”) but can also require high-effort and consume resources (“dark side”). Thus, the current study aims to examine the mixed effects of social cyberloafing on employee mental health.

The effort-recovery model (ERM) (Meijman & Mulder, 1998) and ego-depletion theory (EDT) (Baumeister, Bratslavsky, Muraven, & Tice, 1998) are two widely used theories that explain the process of individual resource recovery and depletion respectively. In this study, we construct a theoretical framework that integrates both perspectives to analyze the twofold positive and negative effects of social cyberloafing on employee mental health. From the ERM perspective, social cyberloafing is a “resource recovery” mechanism. It is a way in which employees can take a micro-break from work, stop consuming mental resources, and replenish the mental resources consumed doing their jobs. Social cyberloafing helps employees achieve psychological detachment. Psychological detachment is “the psychological component of disengaging from work during off-job time” (Sonnentag & Bayer, 2005). It is an essential element of effort recovery (Sonnentag & Fritz, 2015) that can positively affect employee mental health. From the EDT perspective, social cyberloafing itself is an emotion-regulating activity that consumes employees’ cognitive and emotional resources (Windeler, Chudoba, & Sundrup, 2017). Thus, it can also be a “resource depletion” mechanism that leads to fatigue, which people may experience after or during prolonged periods of cognitive activity (Boksem, Meijman, & Lorist, 2005). From that perspective, social cyberloafing negatively affects employee mental health by inducing physical and mental fatigue. Studies have shown that social interactions lead to fatigue by consuming employees’ resources, whether through the social activity itself (Rook, 1984), the choice of appropriate social objects (Trougakos et al., 2014), or the expression of emotions during the interactions (Vohs, Baumeister, & Ciarocco, 2005).

This study integrates the ERM with EDT and provides insight into the following two questions: Does social cyberloafing affect employees’ psychological detachment and fatigue? Is the relationship between social cyberloafing and employees’ mental health mediated by psychological detachment and fatigue? In doing so, this study makes several significant contributions. The first is the finding that social cyberloafing is a viable mechanism for resource recovery through psychological detachment, yet it can also deplete resources and cause fatigue. The effects are well documented in non-work settings; this study examines the effects in the workplace. Moreover, we find that psychological detachment and fatigue mediate the relationship between social cyberloafing and mental health. Thus, we develop a more comprehensive framework for analyzing and understanding the complex effects of social cyberloafing on employee outcomes than previously researched. The study of both the positive and negative effects of social

cyberloafing on mental health is critical. Mechanisms that facilitate social cyberloafing, such as social media, are widely used in the workplace and are having a significant impact on the usage of time and resources.

2. Theoretical background and hypotheses development

2.1. Theoretical background

Most job recovery research builds on the ERM (Meijman & Mulder, 1998), which proposes that employees recover from off-job activities by replenishing personal resources (Fritz & Sonnentag, 2006; Sonnentag & Fritz, 2015; ten Brummelhuis & Bakker, 2012). According to the ERM, employees react physically, behaviorally, and emotionally when coping with work stress (Meijman & Mulder, 1998). Under normal circumstances, these “load reactions” are reversible. During a short break, work requirements no longer consume individuals’ resources; therefore, their physical systems can return to their original levels (Meijman & Mulder, 1998). However, if employees do not recover from their workload in time, their physiological and psychological systems may be unable to maintain optimal states. As a result, they may require additional resources to cope with subsequent work. That can lead to a compounding of the load on a person’s faculties (Nixon, Mazzola, Bauer, Krueger, & Spector, 2011) and, ultimately, deplete resources and impair physical and mental health (Brummelhuis, Hoeven, Bakker, & Peper, 2011).

A person’s participation in recovery activities during non-work hours can restore physiological and psychological resources to pre-stress states. Job recovery literature indicates that psychological detachment from work is one particularly powerful recovery experience (Sonnentag & Fritz, 2015; ten Brummelhuis & Bakker, 2012). It has been found to have significant effects on employee outcomes including mental health (Fritz & Sonnentag, 2005, 2006; Sonnentag & Bayer, 2005; Sonnentag & Fritz, 2007). Hence, this study focuses on psychological detachment and its mediating effect on the link between social cyberloafing and mental health.

Baumeister et al. (1998) proposed EDT based on studies of self-control. Ego depletion refers to the process in which individuals consume a limited pool of mental energy to perform self-control activities (Baumeister, Vohs, & Tice, 2007). Individuals require time to recover after consuming mental energy; therefore, the number of times an individual can execute self-control is limited (Baumeister et al., 2007). In recent years, EDT has attracted the attention of researchers in various fields, and the focus has shifted from ego depletion in everyday life to ego depletion in the workplace. Research has found that both stressful experiences and social activities at work can result in resource depletion, triggering feelings of fatigue, and impeding subsequent regulatory efforts (Trougakos et al., 2014). The EDT also indicates that fatigue is a reliable indicator of ego depletion (Muraven, Tice, & Baumeister, 1998; Webb & Sheeran, 2003). The more regulatory resources people consume during opportunities to recover, such as through social cyberloafing at work, the greater their resource depletion, resulting in increased fatigue (Trougakos et al., 2014). Thus, this study focuses on employees’ fatigue and its mediating effect on the relationship between social cyberloafing and mental health.

2.2. Cyberloafing

Cyberloafing is defined by Lim (2002) as “employees’ voluntary use of a company’s Internet resources during working hours to engage in non-work-related Internet activities.” Cyberloafing activities include checking and sending private e-mails, browsing news websites, visiting social networking sites, trading stocks, shopping online, playing online games, and interacting with friends online (Aghaz & Sheikh, 2016; Blau, Yang, & Ward-Cook, 2006; Li & Chung, 2006; Lim, 2002). The mobile Internet has developed, and mobile information technology (IT)

devices (e.g., smartphones and tablets) have become more popular. As a result, employees have begun using their network resources and IT devices to engage in activities unrelated to work. These technological updates have introduced new and convenient means for engaging in cyberloafing. Therefore, we define cyberloafing as employees' engagement in Internet activities unrelated to work using private or organizational IT resources, consistent with Bock and Ho (2009). In recent years, social media platforms such as Facebook, Weibo, and WeChat have penetrated the workplace as employees access those technologies using their smartphones. The use of mobile IT resources to network socially in the workplace has attracted the attention of enterprise managers but not academic researchers at this point (Charoensukmongkol, 2014). Li and Chung (2006) proposed that social networking is now the core function of Internet user behavior. This pervasiveness is another reason for studying social cyberloafing. We define social cyberloafing as employees' voluntary use of private or organizational IT resources in the workplace to engage in social media activities unrelated to work.

2.3. Social cyberloafing as a resource recovery mechanism

Sonnentag and Bayer (2005) proposed the concept of "psychological detachment" to describe the state in which an individual is psychologically removed from work during non-work hours. Psychological detachment emphasizes the individual's physical and psychological disconnection from work (Sonnentag et al., 2017), such that the individual can no longer focus on job requirements. It is a critical dimension of the recovery experience. Previous studies indicate that psychological detachment plays a significant role in directly and indirectly promoting employees' work commitment, health, happiness, vitality, and positive emotions (Bennett, Bakker, & Field, 2017; Shimazu et al., 2016).

At work, employees' use of the Internet during breaks can be considered a recovery activity (Quinones & Griffiths, 2017) that promotes a recovery experience (Sonnentag et al., 2017). Studies have shown that social activities constitute a type of recovery activity because they can effectively increase an individual's psychological detachment (Sonnentag, 2001; ten Brummelhuis & Bakker, 2012). When individuals interact with others, their attention to work-related issues decreases (Cromptley & Purvis, 2003). Like traditional social activities, immersion in online social cyberloafing activities can help employees step away from work and detach, thereby reducing work stress and tension (Hahn, Binnewies, & Haun, 2012). Employees' engagement in social cyberloafing will distract them from their work, consequently increasing their psychological detachment. Based on this discussion, we propose the following hypothesis:

H1: Social cyberloafing positively affects employees' psychological detachment.

Existing literature indicates that psychological detachment positively affects employee mental health (Fritz & Sonnentag, 2005; Shimazu et al., 2016; Sonnentag & Fritz, 2007; Stansfeld & Candy, 2006). A break offers employees an opportunity to detach psychologically from work, and during this time, job requirements do not consume employees' limited resources. They can rest, recover, and restore resources that have been exhausted, improving their mental health (Fritz et al., 2010). Consistent with that research, we propose the following hypothesis:

H2: Psychological detachment positively affects employee mental health.

Job recovery literature suggests that off-job activities lead to recovery through psychological detachment from work during non-work time (Fritz & Sonnentag, 2006) and working time (Troughakos et al., 2014). Recovery has strong associations with employee outcomes such as mental health (Sonnentag & Fritz, 2007) and physical health (de Jonge, Spoor, Sonnentag, Dormann, & van den Tooren, 2012). Research also indicates that leisure time (e.g., social cyberloafing activities in this study) can contribute to physical, social, emotional, and cognitive

health because it serves to offer a means to cope with stress and adverse events (Caldwell, 2005). Their findings show that psychological detachment acts as a mediator between off-job activity and employee health. In line with this stream, this study focuses on the effect of social cyberloafing, a common but poorly understood new type of recovery activity that can take place during working hours. Based on the preceding discussion, we can infer that psychological detachment has a mediating effect on the relationship between social cyberloafing and employee mental health. According to the ERM (Meijman & Mulder, 1998), social cyberloafing in the workplace allows employees the opportunity to take a break, temporarily disengage from work, and attain psychological detachment. Assuming psychological detachment leads to improved mental health, it is reasonable to conjecture that psychological detachment mediates the relationship between social cyberloafing and employee mental health. Thus, we make the following hypothesis:

H3: Psychological detachment has a mediating effect on the relationship between social cyberloafing and employee mental health.

2.4. Social cyberloafing as a resource depletion mechanism

Fatigue is the acute physiological reaction when an individual's resources are insufficient. It is the subjective feeling of tiredness and low energy (Hockey, 2013). Fatigue is a stress response outcome caused by resource depletion (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). According to the EDT, exhibiting self-control consumes mental energy, depletes ego, and results in fatigue (Baumeister et al., 2007). Social activities also cause ego depletion, fatigue, and occupational burnout, amongst other things (Troughakos et al., 2014). Social activities are not always pleasurable. Sometimes, they make individuals feel embarrassed, irritable, jealous, and concerned about their privacy, thereby causing conflicts (Rook, 1984). In many cases, individuals need to speak to people they do not like (Troughakos et al., 2014). That requires mobilizing resources to suppress negative emotions, which makes them feel tired (Vohs et al., 2005). Even if social interaction is pleasant, interpersonal communication requires effort (Leikas & Ilmarinen, 2016; Windeler et al., 2017). In the workplace, employees' resources are impaired when they interact with others and work to manage their image by appearing positive and with a calm demeanor (Vohs et al., 2005). Social cyberloafing is a unique form of social activity in that it is always at one's fingertips. Keeping it in check requires self-regulation (Windeler et al., 2017). The interactive and self-regulatory aspects of social cyberloafing should make it a particularly strong contributor to resource depletion and fatigue. Therefore, we propose that social cyberloafing depletes employees' limited psychological resources and energy, causing fatigue.

H4: Social cyberloafing positively affects employees' fatigue.

Long-term work-related psychological stress is a significant factor affecting employee mental health (Stansfeld & Candy, 2006). Employees experience both mental and physical load reactions when faced with workplace stress (Meijman & Mulder, 1998). Although these load reactions are reversible, under normal circumstances, if the employees cannot recover from their workload in time, mental impairment is amplified. Employees, starting from a suboptimal state, must consume more resources to cope with the requirements of subsequent work. As a result, load responses are constantly building (Nixon et al., 2011), eventually depleting resources and impairing the physical and mental systems (Brummelhuis et al., 2011). Studies have shown that when an individual lacks sufficient resources for an extended period, fatigue can accumulate to an unbearable extent, causing long-term health damage (Geurts & Sonnentag, 2006). Based on this, we propose the following hypothesis:

H5: Fatigue negatively affects employee mental health.

Previous studies suggest that people become strained (e.g., fatigue in this study) if environmental stressors (e.g., high-effort social cyberloafing activities in this study) persist over a long time. The strain can

result in impaired physical and psychological health and well-being (Sonnetag & Fritz, 2015). Further, a recent study finds that interruptions by online messages result in negative affect, an important predictor of mental health (Zhou, Da, Guo, & Zhang, 2018), because of the perception of increased time pressure (Sonnetag et al., 2018). Similarly, using the stressor-strain-outcome framework (Koeske & Koeske, 1993), Dhir, Yossatorn, Kaur, and Chen (2018) suggest that individual fatigue mediates the detrimental effect of compulsive media use on mental health measures such as anxiety and depression. Another study by Brand, Young, Laier, Wölfling, and Potenza (2016) also suggests that uncontrollable Internet use results in negative cognitive states which affect the mental and physical functions. From the preceding discussion, we can infer that fatigue has a mediating effect on the relationship between social cyberloafing and employee mental health. Social cyberloafing ceases to be a resource recovery mechanism and becomes a means of resource depletion. It causes fatigue when an individual engages in it for long periods. Fatigue can damage mental health when it persists.

H6: Fatigue has a mediating effect on the relationship between social cyberloafing and employee mental health.

In summary, we have theoretically established the integrated framework (Fig. 1) that reveals the twofold, positive, and negative effects of social cyberloafing on mental health.

3. Method

3.1. Sample selection and data source

In this study, we collected self-reported data using a questionnaire distributed through one of China's largest online survey platforms, Wenjuanxing (www.wjx.cn). The online platform provides greater anonymity and is more reliable for collecting sensitive information compared with surveys conducted offline (Demerouti et al., 2001; Stewart & Bing, 2009).

We randomly distributed the questionnaire to Chinese workers with Internet users via the Wenjuanxing platform in the form of a quick response (QR) code and hyperlink that could be accessed using both computer and mobile Internet devices. We only allowed one questionnaire for each IP address to prevent the same respondents from repeatedly completing the questionnaire. We collected demographic information for each subject, including age, gender, income, education, and occupation, to allow for testing of the validity of the sample and potential bias. We placed the demographic questions at the beginning of the questionnaire because there is evidence that placing them at the beginning increases their response rate without affecting the response rate on the non-demographic items (Teclaw & Osatuke, 2012). The remainder of the questionnaire included several multi-item scales measuring the variables of interest, social cyberloafing, psychological

detachment, fatigue, and mental health, which are discussed further in Section 3.2.

Four hundred and seventy individuals started the survey, with 375 surveys being fully completed and valid. The valid responses came from individuals in 36 cities in China. The sample comprises 169 male (45.1%) and 206 female employees (54.9%), and more than half (209 or 55.7%) are between 27 and 36. They are primarily middle-income employees, with 50.9% of them making RMB 5001–10000 Yuan per month and 26.7% making between RMB 3001–5000 Yuan (26.7%). Almost all the participants are working at the mid-level manager position and below. Descriptive statistics for the sample are reported in Table 1.

3.2. Measures

We adapted several widely used multi-item scales to measure social cyberloafing, psychological detachment, fatigue, and mental health. Two experts who were bilingual (Chinese and English) translated the original subscales from English to Chinese in parallel, and then another two bilingual scholars made a back-translation. Next, proper adjustments were made accordingly after discussing and identifying inconsistent contents between the original and back-translated versions. Finally, we slightly adjusted the translated subscales to fit the Chinese context. All items were 5-point Likert scaled with respondents asked to indicate how closely their situation matches the item description (1: Never, 5: Always). We tested the reliability of each adapted scale using exploratory factor analysis (EFA) and eliminated items if their factor loadings were below 0.5.

Social cyberloafing. The seven-item scale for social cyberloafing (SC) was adapted from Andreassen, Torsheim, and Pallesen (2014). The following are the seven items: “When I need to take a break from work, I use social media (e.g., WeChat, QQ, and Weibo) during working hours,” “If given a chance, I would use social media during working hours,” “I cannot resist using social media to follow current events during working hours,” “I would use

social media to follow the current situation and update my family members or friends during working hours,” and “I would use social media to ‘post’ pictures, videos, and comments during working hours,” “I would use social media to chat with my family members or friends during working hours,” and “I would ‘like’ or comment on content that my family members or friends post on social media during working hours.” We excluded the first two items because their exploratory factor loadings were low in the EFA. The Cronbach's alpha of the final scale was 0.840.

Psychological detachment. We adapted the four-item subscale for psychological detachment (PD) from the recovery experience scale developed by Sonnetag and Fritz (2007). The items include “I forget about work when I use social media,” “Social media can make me

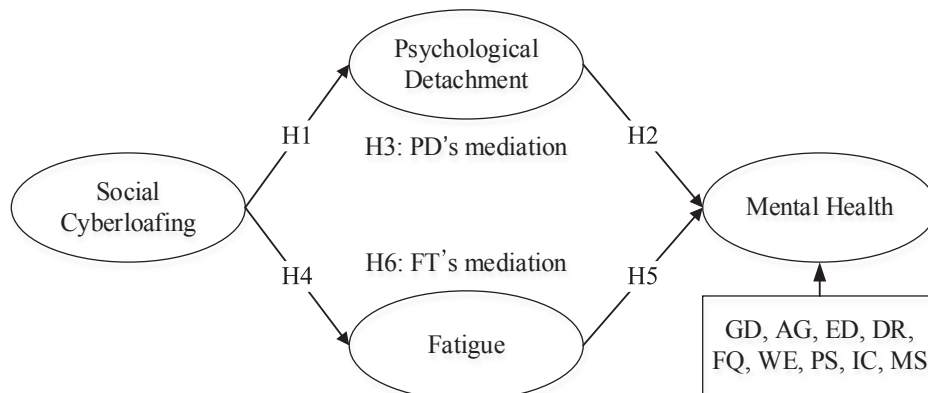


Fig. 1. Proposed research model.

Table 1
Demographic statistics of the sample (N = 375).

Variable	Item	Frequency	Percentage (%)	Variable	Item	Frequency	Percentage (%)
Gender	Male	169	45.1	Marriage	Unmarried	108	28.8
	Female	206	54.9		Married with no child	45	12
Age	< 27	99	26.4	Duration	Married with one child	191	50.9
	27–36	209	55.7		Married with two children or more	31	8.3
	37–46	55	14.7		< 1 h	20	5.3
	≥ 47	12	3.2		1–2 h	106	28.3
Education	High school or below	16	4.3	Frequency	2–3 h	143	38.1
	Junior college degree	55	14.7		3–5 h	81	21.6
	Bachelor degree	270	72		> 5 h	25	6.7
	Master degree or above	34	9.1		None	2	0.5
Income (RMB)	≤ 3000	36	9.6	Position	1–5	98	26.1
	3001–5000	100	26.7		6–10	150	40
	5001–10000	191	50.9		11–20	78	20.8
	> 10000	48	12.8		> 20	47	12.5
Work experience	≤ 3	88	23.5		Non-manager	149	39.7
	4–6	97	25.9		Low-level manager	126	33.6
	7–9	88	23.5		Mid-level manager	87	23.2
	≥ 10	102	27.2		Top-level manager	13	3.5

distance myself from work,” “I do not think about work at all when I use social media,” and “I get a break from work when I use social media.” We deleted the last item because its factor loading was low. The Cronbach’s alpha of the remaining three items was 0.759.

Fatigue. We assessed fatigue (FA) using the four-item scale initially developed by McNair, Loo, and Droppelman (1971) and recently used by Park and Sprung (2015) in a study exploring effort recovery. We assessed participants’ states after leaving work by asking them if they often feel “fatigued,” “tired,” “exhausted,” and “spent” when they leave work. We retained all four items, and the Cronbach’s alpha for the four items was 0.892.

Mental health. We assessed mental health (MH) using the five-item scale developed by McDonald-Miszczak and Wister (2005). The scale asks individuals if they feel “positive,” “emotionally stable,” and “satisfied with life,” if “life had been interesting,” and if they have “everything to look forward to.” We retained all items, and the Cronbach’s alpha for the five-item scale was 0.821.

Control variables. We collected data to control for nine demographic and Internet usage measures commonly controlled in related research, including Gender (GD), Age (AG), Education (ED), Duration (DR) and Frequency (FQ) of daily internet use, Work experience (WE), Position (PS), Monthly income (IC), and Marital status (MS) (de Jonge et al., 2012; Demerouti, Bakker, Sonnentag, & Fullagar, 2012).

4. Results

4.1. Preliminary tests of common method bias, reliability, validity, and correlation

We performed preliminary analyses to test for common method bias, reliability, and validity. Common method bias exists when the variations in participant responses are a function of the instrument rather than the participants’ actual inclination. We used Harman’s one-factor test to assess common method bias, as recommended by Podsakoff, Mackenzie, and Podsakoff (2012). Our analysis generated four principal components (with an eigenvalue greater than 1). The first principal component only explained 25.879% of the variance, which is lower than 50% of the total variance, indicating that the likelihood of common method bias is low. We also used confirmatory factor analysis (CFA) to test for common method bias as recommended by Slater, Olson, and Hult (2006) and Cheng, Wei, and Lin (2019). The CFA results displayed in Table 2 show that the fitting result of the four-factor model ($\chi^2/df = 2.2$, CFI = 0.950, TLI = 0.940, SRMR = 0.048, RMSEA = 0.057) was considerably better ($\Delta\chi^2 = 1716.88$, $\Delta df = 6$, $p < 0.001$) than that of alternative models and the single-factor model

Table 2
Fit indices of the factor models.

Model	χ^2/df	CFI	TLI	SRMR	RMSEA
Four-factor model	2.20	0.950	0.940	0.048	0.057
SC, PD, FA, MH					
Three-factor model 1	5.75	0.798	0.763	0.100	0.113
SC, PD, FA + MH					
Three-factor model 2	3.76	0.883	0.862	0.086	0.071
SC + PD, FA, MH					
Two-factor model	11.64	0.540	0.470	0.177	0.168
SC + PD + FA, MH					
Single-factor	16.53	0.323	0.226	0.211	0.203
SC + PD + FA + MH					

Notes: SC = Social cyberloafing, PD = Psychological detachment, FA = Fatigue, MH = Mental health.

($\chi^2/df = 16.53$, CFI = 0.323, TLI = 0.226, SRMR = 0.211, RMSEA = 0.203). Together, the two tests suggest that the potential for common method bias is minimal.

Moreover, a CFA of the scales, using the retained items, showed that the standardized loadings of each variable were higher than 0.5. The composite reliabilities (CR) of the social cyberloafing, psychological detachment, fatigue, and mental health scales were 0.840, 0.759, 0.892, and 0.821, respectively, and exceeded the threshold of 0.7, showing good convergence validity. We also examined the discriminant validity of the measurement model using CFA. The results are displayed in Table 2 and show that the fit of the four-factor model was optimal and that each indicator was at an acceptable level.

Table 3 reports the means, standard deviation, and correlation coefficients of all variables as well as Cronbach’s alpha coefficients of four latent variables. As expected, social cyberloafing was positively correlated with psychological detachment ($r = .40$, $p < 0.001$) and fatigue ($r = .12$, $p < 0.05$). Psychological detachment was positively correlated with mental health ($r = .19$, $p < 0.001$). However, fatigue was negatively correlated with mental health ($r = -0.47$, $p < 0.001$).

4.2. Hypothesis testing

We used Mplus 7.4 to test the hypotheses. The results are presented in Fig. 2. After accounting for the control variables, social cyberloafing showed a significantly positive effect on fatigue ($r = .176$, $p < 0.05$) and psychological detachment ($r = .592$, $p < 0.001$), while fatigue ($r = -0.333$, $p < 0.001$) and psychological detachment ($r = .143$, $p < 0.01$) had significantly negative and positive effects on employee mental health, thus supporting H4, H1, H5, and H2 respectively.

Table 3

Means, standard deviation, and correlation coefficients of all variables.

Variable	M	SD	GD	AG	ED	IC	WE	MS	DR	FQ	PS	SC	PD	FA	MH
GD	1.55	.50													
AG	1.95	.73	-.01												
ED	2.86	.62	.03	-.18***											
IC	2.67	.82	-.107*	.33***	.08										
WE	2.54	1.13	-.04	.78***	-.19***	.43***									
MS	2.39	.99	.02	.57***	-.14**	.30***	.57***								
DR	2.96	.99	.06	-.22***	.05	-.06	-.23***	-.14**							
FQ	3.19	.98	.08	-.30***	.175**	-.12*	-.25***	-.26***	.45***						
PS	1.90	.87	-.08	.33***	.03	.54***	.35***	.38***	-.03	-.19***					
SC	2.93	.81	-.02	-.05	.07	.06	-.06	.03	.26***	.06	.06	(.84)			
PD	3.00	.85	.02	.01	.09	.23***	.07	.16**	.07	-.04	.23***	.40***	(.76)		
FA	2.45	.88	-.09	-.23***	.00	-.13*	-.28***	-.26***	.14**	.10	-.15**	.12*	-.04	(.89)	
MH	3.80	.64	.02	.18***	.03	.32***	.24***	.25***	-.07	-.07	.24***	.11*	.19***	-.47***	(.82)

Note: The Cronbach's alpha coefficients are reported in diagonal.

*** $p < 0.001$.** $p < 0.01$.* $p < 0.05$.

We used a bootstrapping methodology with 2000 iterations; the mediating effect of psychological detachment on the relationship between social cyberloafing and mental health was significant (0.085; 95% CI [0.033, 0.154]) for the 95% confidence interval, which does not include 0, thus supporting H3. The mediating effect of fatigue on the relationship between social cyberloafing and mental health was significant (-0.059 ; 95% CI $[-0.103, -0.012]$), and the CI does not include 0, thus supporting H6. Table 4 presents the results of the mediating effects of psychological detachment and fatigue.

Although our hypothesized model exhibited acceptable model fit indices, we tested three alternative models to rule out plausible alternative interpretations. In the first alternative model, we reversed two mediators and mental health and assumed that mental health mediates the effects of social cyberloafing on psychological detachment and fatigue. In the second alternative model, we reversed social cyberloafing and two mediators to test the possibility that social cyberloafing mediates the effects of psychological detachment and fatigue on mental health. Third, we considered the effect of psychological detachment on fatigue based on the hypothesized model and tested the possibility that psychological detachment and fatigue sequentially mediate the relationship between social cyberloafing and mental health. The results of model comparisons in Table 5 show that the hypothesized model has a better fit than both alternative model 1 and alternative model 2.

Although our hypothesized model was theoretically based, another logical alternative is that psychological detachment predicts fatigue, i.e., alternative model 3 in Table 5. Although this alternative model fit the data well, it did not significantly improve model fit ($\Delta\chi^2(df = 1) = 2, p > 0.1$). Furthermore, besides equal Akaike

information criterion (AIC), the hypothesized model has a smaller Bayesian information criterion (BIC) and adjusted BIC. The results also fail to find a significant relationship between psychological detachment and fatigue in this alternative model. Thus, the hypothesized model has the best fit and provides the most plausible explanation for the observed patterns in our data (Wang & Wang, 2012).

5. Discussion and conclusion

5.1. Findings

This study examined the twofold effect of social cyberloafing on employee mental health through the lens of the ERM and EDT. The results show that social cyberloafing affects mental health by ways of psychological detachment and fatigue. Social cyberloafing can lead to psychological detachment and serve as a resource recovery mechanism, but it can also cause fatigue and resource depletion. The results also indicate that psychological detachment and fatigue have a mediating effect on the relationship between social cyberloafing and mental health.

5.2. Implications for research and practice

This study makes three key contributions that have implications for research and practice. First, it contributes to the cyberloafing literature by simultaneously examining the resource recovery and depletion effects of social cyberloafing. This approach establishes a comprehensive framework that illustrates the complex effects of social cyberloafing on

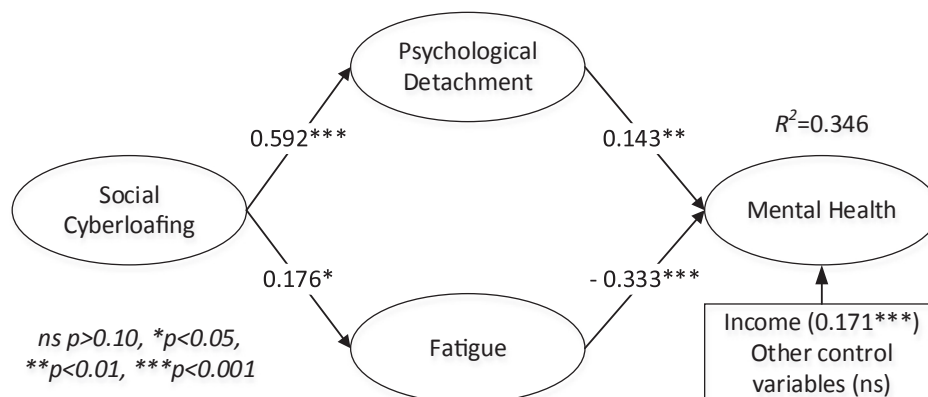
**Fig. 2.** Results of the hypothesized model.

Table 4
Results of the mediating effect.

Mediating effect	Estimate	SE	p	BC 95% CI	
				Lower	Upper
Social cyberloafing → Psychological detachment → Mental health	0.085	0.036	0.017	0.033	0.154
Social cyberloafing → Fatigue → Mental health	−0.059	0.028	0.034	−0.103	−0.012

outcomes like employee mental health. This research also diverges from the mainstream literature that overlooks the potential positive impacts of cyberloafing as a recovery mechanism. Existing research assumes cyberloafing is inherently harmful. It focuses on cyberloafing antecedents and organizational interventions for reducing it. Our findings show that cyberloafing is not always harmful. Social cyberloafing during working hours can serve as an effective mechanism for taking a break, improve employees' psychological detachment level, and thus replenish their resources and improve their mental health. However, limiting social cyberloafing requires self-control, which consumes mental resources. Thus, social cyberloafing has the potential to deplete the employees' mental resources, which can increase fatigue and impair mental health if the individuals find controlling it difficult.

Second, this study expands research on resource recovery activities from non-work to work situations. As work-life boundaries disappear, scholars have begun investigating how to achieve recovery during work breaks (Bosch, Sonnentag, & Pinck, 2017; Sianoja, Kinnunen, Bloom, Korpela, & Geurts, 2016; Througakos, Beal, Green, & Weiss, 2008; Trougakos et al., 2014). Specifically, Sonnentag and Fritz (2015) called for studies to examine the effects of psychological detachment during breaks at work and pay attention to the social and technological contexts. As a response, this is one of the first studies to investigate the effect of personal use of social media at work on psychological detachment. It transcends what we typically perceive as a break. Social cyberloafing is an alternative type of break that offers immediate recovery, and it is fluid and unscheduled. Studying social cyberloafing as an alternative type of break offers a more thorough understanding of breaks as a recovery mechanism.

Third, this study has deepened our understanding of the possible mediating role of psychological detachment in the relationship between online social activities and mental health. Although research has started exploring the mediational process of psychological detachment in the job stressors and strain outcomes link, related research is very limited to date (Sonnentag & Fritz, 2015). This study demonstrates that psychological detachment can effectively mediate the relationship between social cyberloafing and mental health. It extends what we know about employees' psychological detachment in an integrative framework.

Given the increasing number of employees suffering from fatigue and burnout, this study has several important practical implications for organizations and employees. As our model suggests, social cyberloafing is a double-edged sword that has both positive and negative effects on employee mental health. There are potential detriments to engaging in social cyberloafing (Lim & Chen, 2012; O'Neill et al., 2014; Sonnentag et al., 2017, 2018), but our findings suggest that it can also result in psychological detachment leading to recovery from workplace stress. From a practical perspective, the perception that cyberloafing is a harmful behavior has led many companies to monitor or restrict

employees' cyberloafing activities. Restriction, however, may lead to negative morale (Whitty, 2004) and potentially missing out on the positive effects of cyberloafing. Managers and policymakers should holistically consider the effects of cyberloafing when deciding if social cyberloafing should be restricted or if behavior should be left to employee discretion (Ivarsson, 2011). When used effectively, social cyberloafing can be a mechanism for micro-breaks, which are useful for satisfying individuals' recovery needs at work (Kim, Park, & Niu, 2016; Trougakos et al., 2014). On the other hand, our findings show that social cyberloafing has a dark side as it is positively associated with employee fatigue. We recommend that organizations caution employees about the negative consequences associated with excessive social interaction in cyberspace, particularly interactions across Internet sites that consume mental resources and energy or are addictive and demand self-control.

5.3. Limitations and future research

This study has several limitations. First, this study uses employees' self-reported data to measure social cyberloafing. The participating employees may have concealed their actual feelings. Moreover, the data is cross-sectional, which only offers one point of view and may not accurately reflect dynamic connections. Future research can use other data collection methods to improve accuracy, such as self-assessment, peer evaluation, diary observation, and sampling actual Internet usage, to acquire a rich set of data and deepen the explanatory power of the research results. Second, the study focused on psychological detachment as the core dimension of the recovery experience. Follow-up studies should seek to expand on the current findings by examining the effect of other dimensions of the recovery experience (e.g., relaxation and mastery experiences) on the relationship between different recovery activities and employee mental health. Third, according to EDT, resource depletion is the underlying factor through which social cyberloafing causes employee fatigue. However, we did not directly measure resource depletion. Future research could measure actual resources, their depletion, and how they are consumed or depleted when employees engage in social cyberloafing activities at work. In addition, this study examined the positive and negative effects of employee social cyberloafing. It did not specifically examine “when” social cyberloafing is harmful to mental health. Future research could test the boundaries of social cyberloafing and identify the point at which good turns to bad. Finally, we examined social cyberloafing in the Chinese context. Future research should extend this research to other countries and work cultures and identify and test other contextual factors that might influence how social cyberloafing activities relate to mental health; this is a needed progression within the job recovery literature.

Table 5
Model fit comparisons among the hypothesized and alternative models.

Models	χ^2	df	p-value	SRMR	CFI	AIC	BIC	ABIC
Hypothesized model (separate mediations by psychological detachment and fatigue)	521.5	259	< 0.001	0.079	0.909	15,139	15,390	15,187
Alternative Model 1 (reverse two mediators and mental health)	561.0	259	< 0.001	0.082	0.895	15,179	15,430	15,227
Alternative Model 2 (reverse two mediators and social cyberloafing)	592.7	259	< 0.001	0.103	0.884	15,210	15,462	15,258
Alternative Model 3 (add the effect of psychological detachment on fatigue to hypothesized model)	519.5	258	< 0.001	0.078	0.909	15,139	15,394	15,188

6. Conclusion

In this study, we build a comprehensive framework that furthers our understanding of the twofold effect of employees' social cyberloafing. In doing so, we have shown that social cyberloafing affects employees through a complex set of relationships. On the one hand, social cyberloafing can serve as a break that leads to psychological detachment, less fatigue, and improved mental health. On the other hand, social cyberloafing can lead to fatigue and reduced mental health if it depletes resources. Employers should consider the delicate balance between the positive and negative effects of social cyberloafing at work.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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