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Investigating the Multi-Faceted Nature of Cyberloafing Based on Job Features

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INVESTIGATING THE MUTLTI-FACETED NATURE OF CYBERLOAFING BASED ON JOB FEATURES

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I HEREBY RECOMMEND THAT THE THESIS PREPARED UNDER MY SUPERVISION BY Alexandria Bohn ENTITLED Investigating the Multi-Faceted Nature of Cyberloafing Based on Job Features BE ACCEPTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF Master of Science.

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ABSTRACT

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After COVID-19, organizations have had to shift the nature of the workplace leading to increased access to personal devices and internet with remote and hybrid work environments. Over the past several years, technological advancements have allowed for employees to partake in cyberloafing behaviors. Cyberloafing is a tool in which an employee uses the internet for personal reasons during the workday. There has been a divide in the literature regarding the auspicious versus detrimental effects of cyberloafing on employee outcomes. Primarily, researchers have focused on the harm of cyberloafing, the money it costs organizations, and proper ways to reduce this employee behavior (e.g., Kidwell, 2010; Liberman, 2011). However, more recent literature has examined the role of cyberloafing in beneficial employee outcomes as cyberloafing could be used as a tool for resource replenishment (e.g., Aghaz, 2016; Jandaghi, 2015). Thus, the purpose of my study was to investigate the conditions under which cyberloafing is beneficial or detrimental to employee outcomes (productivity, job engagement, and stress). I found that jobs with high complexity and experience and low sustained attentional demands moderate the relationships between cyberloafing productivity and engagement. My research shows the importance of cyberloafing, when used as a microbreak, serves as a tool for recovery. Cyberloafing mitigates the harmful effects of fatigue and boredom on productivity and engagement. Organizations should seek out strategies to manage cyberloafing, rather than strategies to eliminate it due to the beneficial effects it can have on employees with certain job types.

Keywords: Cyberloafing, Resource replenishment

TABLE OF CONTENTS

LIST OF FIGURES

Figure Page

LIST OF TABLES AND APPENDICES

Introduction

With the continuous increase in internet use and digital workplaces, organizations need to understand the consequences of personal internet use by employees during the workday (Zhong, Chen, & Yan, 2022). Cyberloafing is defined as using the internet for personal reasons during work. Research has documented both beneficial and detrimental effects of cyberloafing on workplace productivity, task performance, employee well-being, and emotions (e.g., Lim & Don 2002). For example, early research on cyberloafing has concentrated on potential detrimental effects and has provided evidence that cyberloafing can cause difficulty focusing, loss of reputation, company security problems, etc. (Jandaghi, 2015; Lara & Mesa, 2010; Ozler, 2012). In contrast, more recent research has suggested that cyberloafing can have positive effects on the organization (Ozler, 2012). Some differences in research results might reflect a lack of understanding conditions in which cyberloafing is auspicious versus harmful to the employee, work, or organization. This issue is complicated by the fact that employees today can use their personal smartphone, work computer, or personal computer to cyberloaf. Multiple mediums used in cyberloafing can complicate organizational monitoring behavior and policies focused on appropriately managing cyberloafing. In sum, more research is needed addressing two issues. First, most research has focused on cyberloafing as detrimental and as a result focused on antecedents of cyberloafing (e.g., Tandon, Kaur, Ruparel, Islam, & Dhir, 2021) that could be used to reduce cyberloafing. Second, there is insufficient research addressing conditions in which cyberloafing is beneficial versus disruptive. Thus, the purpose of my study is to examine conditions affecting potential benefits versus costs of cyberloafing, specifically, by examining how task and individual variables affect relationships between cyberloafing (types and frequency) and outcomes (productivity, job engagement, and stress).

Background

The term cyberloafing first appeared in a news article by Kamins (1995), but Lim (2002) was the first researcher to operationalize cyberloafing. In Kamins' (1995) original news article, cyberloafing was defined as employees intentionally using the internet for personal reasons in the workplace during work hours; activities included web surfing and emailing. Cyberloafing was first examined in research by Lim (2002), who described cyberloafing as an employee using the company's internet for personal use during the work day. This definition has been used most frequently. However, other researchers have defined cyberloafing differently. Weatherbee (2009) defined cyberloafing as an inconsequential behavior using computers that wastes time during work hours. Jandaghi (2016) described cyberloafing as a compound verb that is composed of loafing (i.e., wasting time) and cyber (i.e., computer-based activities/behaviors) during the work day. Koay and Soh (2018) claimed that employees may cyberloaf up to 60% of the time they are supposed to be working. According to Spath (2011), cyberloafing is growing in popularity and accessibility among working individuals, which is why it is important to understand its consequences.

Cyberloafing takes many forms, including communication, web-surfing, and entertainment and leisure activities. Online communication takes the form of chat rooms, forums, and instant messaging (Blanchard, 2008; Jandaghi, 2015; Pindek, 2018) and refers to employees chatting with other known or unknown people. Using personal email is a popular and frequently researched form of cyberloafing (Blanchard, 2008; Doorn, 2011; Jandaghi, 2015; Lim, 2012; Pindek, 2018; Running, 2012; Ugrin, 2013). Instant messaging is a way for employees to communicate with people in and outside the workplace (Lim, 2012; Jandaghi, 2015; Pindek,

2018; Running, 2012). Web surfing is a category of cyberloafing that consists of viewing non-work related websites (Doorn, 2011; Lim, 2012; Pindek, 2018; Running, 2012; Ugrin, 2013). Employees view news websites (Jandaghi, 2015; Lim, 2012; Pindek, 2018; Ugrin, 2013), sports websites (Lim, 2012; Pindek, 2018), and financial websites (Ugrin, 2013). Entertainment and leisure forms of cyberloafing include online games (Lim, 2012; Pindek, 2018), shopping (Blanchard, 2008; Doorn, 2011; Jandaghi, 2015; Lim, 2012; Pindek, 2018; Running, 2012; Ugrin, 2013), music streaming (Blanchard, 2008; Doorn, 2011; Jandaghi, 2015; Running, 2012), video streaming (Doorn, 2011; Ugrin, 2013), social media (Doorn, 2011; Jandaghi, 2015; Pindek, 2018; Ugrin, 2013), and online gambling (Blanchard, 2008). Other forms of cyberloafing include booking vacations and hunting for other jobs or opportunities (Blanchard, 2008; Lim, 2012; Pindek, 2018). Researchers of cyberloafing sometimes have categorized cyberloafing into major (e.g., gambling, adult websites, illegal activity) and minor (e.g., web surfing and browsing) cyberloafing (Hadlington & Parsons, 2017). Typically, security issues are associated with major cyberloafing whereas minor cyberloafing is associated with slacking off from work (Bido et al., 2018; Greengard, 2000). However, research has suggested that the form of cyberloafing is less related to consequences than time spent cyberloafing (e.g., Aghaz, 2016; Askew, 2012; Hadlington, 2017).

Cyberloafing is not the only type of loafing behavior prevalent in the workplace. Loafing is defined as participating in a non-work related behavior and can be classified as cyber and non-cyber loafing behaviors (Rahimnia & Mazidi, 2015). Social loafing is the tendency for an individual to exert less energy or effort when working with other people (Karau & Williams, 1993). Byun, Lee, and Karau (2020) have suggested that employees use social loafing as a coping mechanism for low job engagement. Other individual loafing behaviors can be defined

individuals participating in non-work related behaviors during work such as going on walks, daydreaming, etc., but there is a dearth of research covering the distinction between loafing behaviors in the workplace. According to Tosuntas (2020), social loafing is correlated with cyberloafing. Researchers have identified a link between cyberloafing behaviors as a form of counterproductive work behavior (CWB) and cyber deviance (Mercado, 2017). Charlier (2017) proposed a new typology for CWB, labeling forms of cyberloafing as either interpersonal cyber deviance (CDI) or organizational cyber deviance (CDO).

Urgin and Pearson (2013) found that employees use the internet as a tool when completing work, but detrimental outcomes can arise when these privileges are abused for personal use. Too much cyberloafing is a concern for employers as technology advances and new technologies, e.g., smartphones, make it difficult for companies to monitor cyberloafing behavior (Andel, Kessler, Pindek, Kleinman, & Spector, 2019). Because of the diverse media available, cyberloafing is inevitable, which is why trying to eliminate cyberloafing is not realistic. Indeed, Andel et al. (2019) demonstrated that employees spend up to two hours in an eight-hour work day cyberloafing, which costs businesses and organizations billions of dollars each year. Some researchers have suggested that cyberloafing decreases productivity or results in disciplinary action by an employer (e.g., Liberman, 2011; Ozler, 2012). Urgin (2013) has supported combating, i.e., reducing, cyberloafing by blocking websites, providing workplace internet guidelines, or enforcing deterrence mechanisms.

Employers are motivated to use and have successfully used technology to deter cyberloafing behavior, but deterrence can result in other employee problems. Cyberloafing does not have the same accessibility in every profession. However, employees can find time during the day (e.g., bathroom breaks) to engage in cyberloafing, which is why it is difficult for

employers to completely deter cyberloafing. Employers are motivated to reduce cyberloafing to mitigate threats to company security, reductions in network accessibility, and potential productivity losses (Kay, Johnson, Chern, & Kangas, 2009; Lara & Mesa, 2010). Also, employees can be deterred from cyberloafing because of potential damage to their reputations (Weatherbee & Terrance, 2010) or to be consistent with their co-workers' cyberloafing behavior or their organization's norms (Aghaz & Sheikh, 2016).

Detection software has been previously utilized in cyberloafing research, but it is often impractical and does not account for non-monitored devices (Krishan, Lim, & Teo, 2010). For example, Hensel and Kacprzak (2020) advised curbing cyberloafing using anti-cyberloafing technologies or workplace monitoring. However, Khansa, Barkhi, Ray, and Davis (2018) showed that a strategy of deterrence can backfire. For example, employees might use these deterrence methods to rationalize counterproductive work behaviors, which could ultimately negatively affect employees' work output. For these reasons, employers and employees may have contrasting perspectives about the antecedents and consequences of cyberloafing.

However, more recent literature has shown that cyberloafing may not be as harmful as once thought (Lim, Don, & Chen, 2012). For example, Andel et al. (2019) suggested that cyberloafing can act as a buffer to ease negative effects of workplace aggression or conflict, increase job satisfaction, and reduce turnover. Specifically, Andel et al. (2019) suggested that cyberloafing provides employees with mental breaks that might reduce employee stress levels when tackling day to day tasks, projects, or personal issues. Similarly, Song (2021) showed that employees engage in cyberloafing for a myriad of reasons, such as reducing stress, organizational conflict, burnout, workload, or boredom. Further, research has shown that shown that cyberloafing can function as a coping mechanism to reduce job stress or perceived work

overload (Blau, Yang, & Ward, 2006), to reduce fatigue and perceived stress (Ozler & Polat, 2012), and to relieve boredom (Pindek, Krajcevska, & Spector, 2018). In sum, although employers historically have perceived cyberloafing as a harmful behavior (Mashal, 2020), employees often view cyberloafing as acceptable to a degree (Lim & Chen, 2009).

Cyberloafing Antecedents

Employers need to understand antecedents of cyberloafing to take advantage of potential benefits and reduce potential dysfunctional effects of cyberloafing. Not surprisingly, the majority of cyberloafing research has focused on its antecedents (e.g., Doorn, 2011) rather than its consequences (e.g., Ozler, 2012). The cyberloafing literature has distinguished between personal, work, and organizational antecedents. Personal antecedents have included factors such as personality, efficacy and control, attitudes, boredom, and work-family conflict (e.g., Weissenfeld, 2019). Work antecedents have included job demands, resources, and role conflict (e.g., Kidwell, 2010). Organizational antecedents include organizational policies, organizational justice, OCB, and norms (e.g., Jandaghi, 2015).

Personal Antecedents

Personal antecedents are factors that are unique to an individual employee such as personality, efficacy and control, attitudes, boredom, and work-family conflict. Typically, cyberloafing research has focused on the role of personality traits and the five factor model. For example, Landers and Lounsbury (2006) observed inverse relationships involving conscientiousness, extraversion, and agreeableness with personal internet usage at work. However, Ozler and Polat (2012) showed that whether an employee cyberloafs is contingent on their self-efficacy about concealing cyberloafing behavior, and Shaddiq, Haryono, Muafi, and Isfianadewi (2021) showed that employee familiarity (related to efficacy) with the internet ~~use~~ is

positively related to cyberloafing. Also, Shaddiq et al. (2021) showed that positive attitudes about cyberloafing lead to more cyberloafing behaviors. Boredom reflects another personal antecedent of cyberloafing. Askey (2012) suggested that boredom stems from not having enough work to do or having to perform tedious or uninteresting work and that employees might seek relief from boredom through cyberloafing and other loafing activities. Finally, Doorn (2011) found that work-family conflict was positively related to cyberloafing.

Other research on personal antecedents of cyberloafing has addressed the role of commitment, satisfaction, and locus of control. Hensel et al. (2020) showed that organizational commitment and job satisfaction are associated with cyberloafing. Specifically, Hensel et al. (2020) demonstrated that employees might exert less effort and/or waste time at work, including engaging in cyberloafing, if employees have lower organizational commitment or lower satisfaction with their job, role, or compensation. Finally, Freimark (2012) found that employees who feel as though their locus of control is external tend to cyberloaf more than employees with an internal locus of control.

Workplace Antecedents

Workplace antecedents include job demands, resources, and role conflict. Hensel (2020) defined job demands as requirements, responsibilities, and expectations of an employee and suggested that job overload is negatively related to cyberloafing. Other researchers have addressed relationships between resources and cyberloafing. For example, Doorn (2011) found that when physical resources are abundant, employees cyberloaf for social interaction. Aghaz and Sheikh (2016) showed that employees with greater needs for information acquisition tend to cyberloaf more. In contrast, Liberman et al. (2011) found that managerial support was negatively related with cyberloafing. Finally, some researchers have addressed relationships between role

conflict and cyberloafing. For example, Jandaghi, (2015) described role conflict as roles or responsibilities that are incongruent or incompatible with one another and suggested that role conflict can create confusion, frustration, or stress. Further, Jandaghi (2015) found that role conflict was positively related with cyberloafing.

Organizational Antecedents

Organizational antecedents include organizational policies, organizational justice, OCB, and norms. Weissenfeld, Abramova, and Krasnova (2019) described organizational policies as an influence on the way employees act in order to reap benefits of compliance or avoid costs of deviance. Weissenfeld, Abramova, and Krasnova (2019) observed relationships between organizational policies and employee cyberloafing. Lara (2007) showed that organizational justice is negatively related with cyberloafing. Other research (e.g., Savitha & Akhilesh, 2019) has suggested that employees who perceive that their organization has a pleasant environment might engage in less cyberloafing. More specifically, organizations with higher levels of organizational citizenship behavior tend to have less cyberloafing (Lara, 2007). Finally, Ozler (2012) stated that organizational norms and coworker behavior positively influences whether an employee cyberloafs. For example, an employee is likely to mimic cyberloafing behavior levels of their coworkers. Coworker behavior communications organizational norms to employees.

Cyberloafing Consequences

Although less research has focused on consequences of cyberloafing, that research has addressed personal, work, and organizational consequences, similar to research on antecedents. Personal consequences of cyberloafing relate to how employees are affected by their personal internet usage at work. Work consequences relate to cyberloafing effects on the quality or quantity of work produced. Organizational consequences relate to cyberloafing effects on

organizations. More research is needed addressing consequences to better understand how to increase beneficial and reduce dysfunctional outcomes. However, I review below the research that exists to date.

Personal Consequences

Personal consequences include employee satisfaction, relief, and focusing difficulties. Aghaz (2016) defined job satisfaction as how content an employee is with their job. Research has produced conflicting results, providing evidence that cyberloafing can increase or decrease in job satisfaction (Ozler, 2012; Stanton, 2002). Vitak, Crouse, and LaRose (2011) suggested that cyberloafing can reduce boredom, stress, or fatigue. According to Vitak et al. (2011), using the internet to take a break from work can provide relief from daily hassles of work duties and responsibilities. However, Jandaghi et al. (2015) suggested that excessive levels of cyberloafing can cause increased difficulty in focusing on tasks at work.

Work Consequences

Work consequences of cyberloafing include changes in productivity and task performance. Lim (2009) suggested that cyberloafing has a negative impact on productivity and can be harmful because it distracts employees from responsibilities and duties in the workplace. Similarly, Vitak et al. (2011) showed that when cyberloafing diverts attention from tasks and responsibilities, task performance decreases. In contrast, other research has suggested that cyberloafing can have beneficial effects on productivity because cyberloafing can rejuvenate employees and provide an outlet for workplace stressors (e.g., Weatherbee, 2012).

Organizational Consequences

Organizational consequences of cyberloafing include disciplinary actions in the workplace (e.g., termination) and damage to an employee's reputation. Weatherbee (2010) found

that cyberloafing is commonly perceived as deviant behavior and often leads to disciplinary action. Ozler (2012) showed that another consequence of cyberloafing is a loss of reputation, i.e., an employee becoming less respected in the organization. Such negative organizational consequences might be applied because cyberloafing can expose organizations to potential hacking or bandwidth issues with resulting detrimental effects on information and network security and access to the internet for employees to do their jobs (Lara, Pablo, Arístides, & Mesa, 2010).

Cyberloafing Moderators

Research has examined a number of factors that moderate the effects of antecedents on cyberloafing, but no research has examined moderators of the effects of cyberloafing on outcomes. Factors that strengthen the relationship between antecedents and cyberloafing include personal characteristics, stressors, and norms. Personal characteristics are job satisfaction, personality, self-esteem, and internet experience. Wang, Tian, and Shen (2013) showed that job satisfaction moderates the relationship between electronic monitoring and intentions to cyberloaf. Electronic monitoring is an organizational policy that is implemented to reduce employees visiting websites deemed inappropriate or dangerous for the workplace. Cheng, Zhou, Guo, and Yang (2020) indicated that personality moderates the relationship between perceived overqualification and harmonious passion, which leads to cyberloafing. Harmonious passion as a variable is described as internalized autonomy that gives someone comfort and confidence to behave as they please. Wang, Tian, and Shen (2013) showed that self-esteem moderates the relationship between an organization's internet use policy and cyberloafing. Running (2012) demonstrated that experience and familiarity with the internet moderates the relationship between job stress and cyberloafing. Similarly, Varghese and Barber (2017) demonstrated that

role stressors moderate the relationship between personality traits and cyberloafing. Finally, Aghaz and Sheikh (2016) suggested that perceived norms moderate the relationship between antecedents and minor cyberloafing (e.g., shopping or emailing).

Cyberloafing Mediators

Similarly research has examined a number of factors that mediate the effects of antecedents on cyberloafing, but no research has examined mediators of the effects of cyberloafing on outcomes. Much of this research has focused on mediators of employee-related antecedent effects on cyberloafing. For example, Zhang, Zhao, Liu, Xu, and Lu (2015) showed that self-control mediates the relationship between an employee's future orientation and cyberloafing behavior. Zhang, Akhtar, and Sun (2019) showed that anger and disengagement mediate the relationship between perceived overqualification and cyberloafing. Sarhangpour, Baezzat, and Abbas (2018) demonstrated that an individual's need for fun, conscientiousness, and mastery goal orientation mediates the relationship between need for survival and belonging and cyberloafing. Karabiyik, Baturay, and Özdemir (2021) demonstrated that cyberloafing intentions mediate the relationship between attitudes or subjective norms and cyberloafing. Soral, Arayankalam, and Pandey (2020) suggested that attitudes and work engagement mediate the relationship between ambivalent perceptions of a bureaucratic structure and cyberloafing. Lara and Sharifiatashgah (2021) found that an employee's trust in their organization mediates the relationship between perceived physical crowding and cyberloafing. I found only one example of research examining mediators of cyberloafing effects on outcomes. Wu, Mei, Liu, and Ugrin (2020) found that fatigue and psychological detachment mediate the relationship between social cyberloafing and mental health. Psychological detachment is an individual's capability to mentally disengage or disconnect from the work they do.

Less, but some, research has focused on mediators of employer-related antecedent effects on cyberloafing. This research has focused on supervisor attitudes and normative conflict. Zoghbi, Armas, and García (2019) showed that empathetic concern from a supervisor mediates the relationship between supervisory compassion and cyberloafing. Lara and Sharifiatashgah (2021) demonstrated that supervisory compassion mediates the relationship between perceived physical crowding and cyberloafing. Zoghbi (2009) showed that normative conflict mediates the relationship between procedural justice and cyberloafing. Normative conflict occurs when rules conflict with one another.

Negative versus Positive Effects of Cyberloafing

Research exploring negative effects of cyberloafing is far more extensive than research examining positive or neutral effects of cyberloafing. Thus, the dominant models of cyberloafing have focused on detrimental effects on organizations and employees. For example, Liberman (2011) showed that cyberloafing causes productivity declines, broadband problems, or other cost issues. Jandaghi (2015) found that other negative consequences are difficulty focusing, which can impair completion of workplace tasks and fulfillment of responsibilities. Lim (2012) demonstrated that emailing produces negative effects on task performance. Similarly, Ozler (2012) suggested that once punished or reprimanded for cyberloafing, employees can experience damage to their reputation. Further, Hadlington and Parsons (2017) showed that security problems arise when employees access websites outside of a firewall. Tandon, Kaur, Ruparel, Islam, and Dhir (2021) have defined the dominant models of cyberloafing as having harmful effects on the employee, organization, and work quality. Often, cyberloafing has been regarded as a harmful behavior, and more specifically as a form of counterproductive work behavior. In the counterproductive work behavior (CWB) literature, it is important guarantee anonymity to

ensure participants are accurately reporting their CWB. Anonymity might be similarly important in ensuring that participants accurately report the frequency of their cyberloafing behaviors (Fox & Spector, 1999).

Although less research has focused on positive effects, some research has revealed beneficial effects of cyberloafing on general rejuvenation and recovery. This serves as the opposing model of cyberloafing. For example, Aghaz (2016) found that cyberloafing promotes recovery from stressful work environments or tasks as well as physical or emotional exhaustion. Similarly, Ozler (2012) showed that cyberloafing bolsters well-being, which leads to other advantageous effects in the workplace such as job satisfaction and performance. Further, Lim (2012) found that when an employee takes time to browse the internet or participate in online activities, they experience positive attitudes and emotions. These positive attitudes can translate to work that an employee does and ultimately improve their task performance and job attitudes.

Proposed Study

Prior research has focused primarily on expected negative antecedent effects on cyberloafing and moderators and mediators of those relationships with a primary focus on mitigating negative effects. Although this is important research, it is also important to better understand moderators and mediators of cyberloafing effects on outcomes and conditions in which cyberloafing has potential beneficial effects on employee outcomes. With that in mind, in my proposed study, I focused on perceived cyberloafing effects on three outcomes: perceived productivity, job engagement, and stress. Due to feasibility, I examined self-reported, perceived levels of cyberloafing, rather than objective, actual levels of cyberloafing. Moreover, I explored conditions in which cyberloafing might have beneficial effects, specifically by examining the role of two task-related moderators, i.e., job complexity and sustained attention, and one person-

related moderator, i.e., job experience. This study will link the opposing models of cyberloafing by exploring the conditions under which each model is supported. In the following, I define study outcomes and my reasoning for selecting those outcomes. Then, I use theory addressing cognitive resource demands, fatigue, and boredom to explain potential effects for my three posited moderators.

Outcomes

Perceived productivity. Maarleveld and Been (2011) defined perceived productivity as how efficient and effective employees feel they are in their work. According to Srivastava and Barmola (2012), an employee with high perceived productivity will be motivated to continue their current behavior. Previous research has found that cyberloafing is positively related with perceived productivity (e.g., Vitak, 2011).

Job engagement. Roberts and Davenport (2002) defined job engagement as an employee's enthusiasm and involvement with their job. Employees with high job engagement are motivated by the work that they do and, as a result, tend to work harder. Other researchers have defined job engagement as the degree to which an individual invests themselves in their job (e.g., Rich, 2010). Little research has focused on the relationship between cyberloafing and job engagement, but indirect evidence has indicated that high job engagement is associated with reduced levels of fatigue and boredom (Hwang, Hong, Tai, Chen, & Gouldthorp, 2020; Schaufel & Salanova, 2014).

Stress. Fink (2010) defined stress as a feeling of being overwhelmed or lacking coping skills necessary to deal with a given situation. Among others, Avey, Luthans, and Jensen (2009) showed detrimental effects of stress on employees. Also, research has shown that stress is an outcome of both fatigue and boredom (Kocalevent, Hinz, Brähler, & Klapp, 2011; Thackray,

1981). Finally, research has shown that cyberloafing is negatively related to stress (e.g., Ozler, 2012). Researchers can support organizations by finding ways to mitigate stress.

Moderators

Job complexity. I focused on job complexity as a moderator because of the role it might play in cyberloafing effects as a result of resource demands, fatigue, and boredom. I explored the role of job complexity in relation to three outcomes: perceived productivity, job engagement, and stress. Campbell (1988) defined task complexity as an employee's psychological experience, interaction between person and task attributes, and objective characteristics of the task. Tasks make up roles and responsibilities, which is why the culmination of task complexities can serve as a model for job complexity. Wood (1987) defined task complexity as the difficulty of tasks in a job, and noted that complexity can be a determinant of job performance. Hunter, Schmidt, and Judiesch (1990) measured job complexity by a job's information processing and cognitive resources demands. More cognitive resources are required as job complexity increases, and beneficial effects of cyberloafing are contingent on the availability of cognitive resources. Tanabe (2004) showed that the lower the availability of cognitive resources are, the lower productivity is. Moreover, Ahmed (2014) showed that the more that cognitive resources are depleted, the more fatiguing a job will be for an employee. Caldwell (2019) defined fatigue as a biological process in which an individual feels tired or weary due to a lack of sleep, periods of ongoing stress or anxiety, and/or physical or mental work. Finally, Wu (2020) showed that cyberloafing has the capability to reduce fatigue.

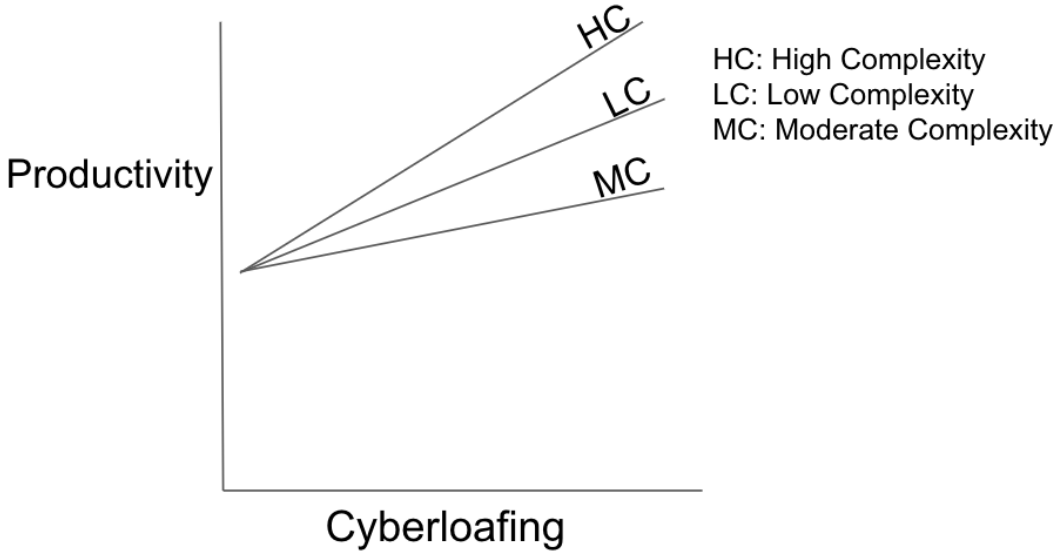
I posited that cyberloafing would have a curvilinear beneficial effect on perceived productivity. Specifically, I posited that cyberloafing would have greater beneficial effects when job complexity is high or low rather than moderate because of the potential of cyberloafing to

reduce fatigue or reduce boredom, respectively. Prior research has shown that cyberloafing can increase productivity and task performance (Jandaghi, 2015; Vitak, 2011; Weatherbee, 2012), and this should be observed in self-reported productivity. High complexity jobs might deplete resources and cause fatigue under which condition cyberloafing might provide the work breaks needed to replenish resources and reduce fatigue. Ahmed, Babski, and Webb (2014) described a theory of fatigue in which employees can spend more time working as long as the workload is not too heavy. However, Ahmed et al. (2014) suggested that employees who work more hours of complex work will experience higher levels of fatigue. In contrast, low complexity jobs might result in boredom under which condition cyberloafing might provide the work breaks needed to relieve boredom. Jobs with low complexity require fewer cognitive resources. However, when too few resources are required by the job, employees might feel bored, which could reduce productivity and self-reported productivity. According to Spector and Fox (2001), employees will engage in non-work related behaviors to cope with job demands. Thus, employees may use cyberloafing as an emotionally driven response to fatigue or boredom.

Hypothesis 1a: Job complexity will moderate the relationship between cyberloafing and perceived productivity such that cyberloafing becomes more beneficial as job complexity deviates from moderate levels.

Figure 1

Hypothesized Effects of Cyberloafing on Productivity for High and Low Job Complexity



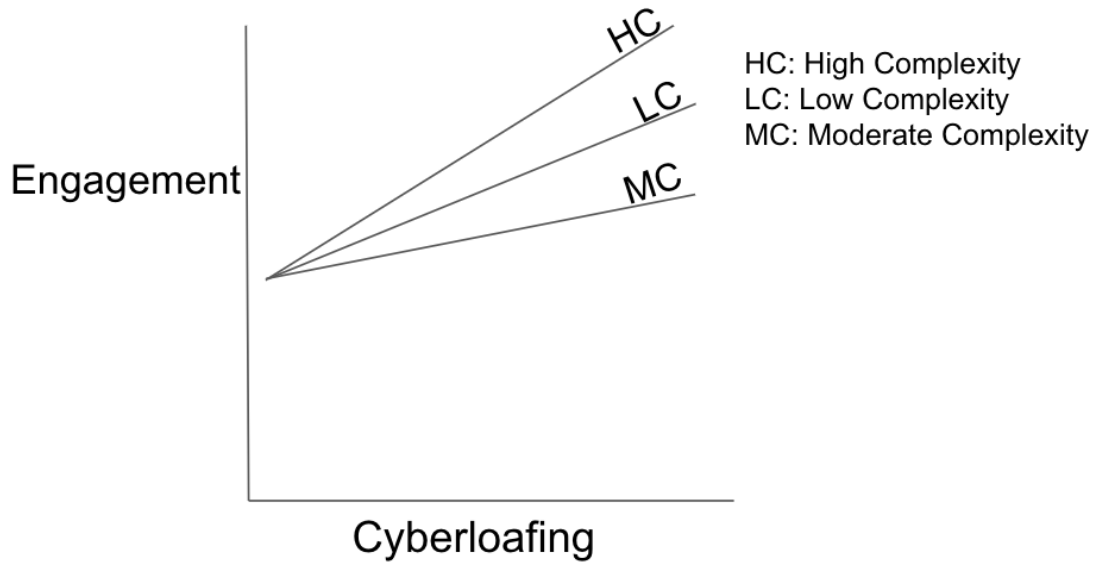
I posited that cyberloafing would have a similar curvilinear beneficial effect on job engagement. Specifically, I posited that cyberloafing would have greater beneficial effects on job engagement when job complexity is high or low rather than moderate because of the potential of cyberloafing to reduce fatigure or reduce boredom, respectively. Prior research has shown that job engagement and cyberloafing are negatively related (e.g., Soral, Arayankalam, & Pandey, 2020). Further, Chan, Chuang, and Neo (2015) found that fatigue is negatively related to job engagement. Yet other research has shown a positive effect of job complexity on job engagement (e.g., Vila, Casal, & Pérez, 2020). Considering job complexity as a moderator of cyberloafing effects might aid in integrating these prior research results. That is, job engagement is contingent on an employee's ability to immerse themselves in their job and that might differ depending on job complexity. Specifically, one might observe a positive relationship between cyberloafing and job engagement when job complexity is high because short breaks resulting from cyberloafing

might reduce fatigue. In the same way, one might observe a positive relationship between cyberloafing and job engagement when job complexity is low because short breaks resulting from cyberloafing might reduce boredom. Enthusiasm for the job is necessary for job engagement (Vila, Casal, & Pérez, 2020), and reducing fatigue or boredom might be beneficial for enthusiasm and in turn job engagement.

Hypothesis 1b: Job complexity will moderate the relationship between cyberloafing and job engagement such that cyberloafing becomes more beneficial as job complexity deviates from moderate levels.

Figure 2

Hypothesized Effects of Cyberloafing on Job Engagement for High and Low Job Complexity

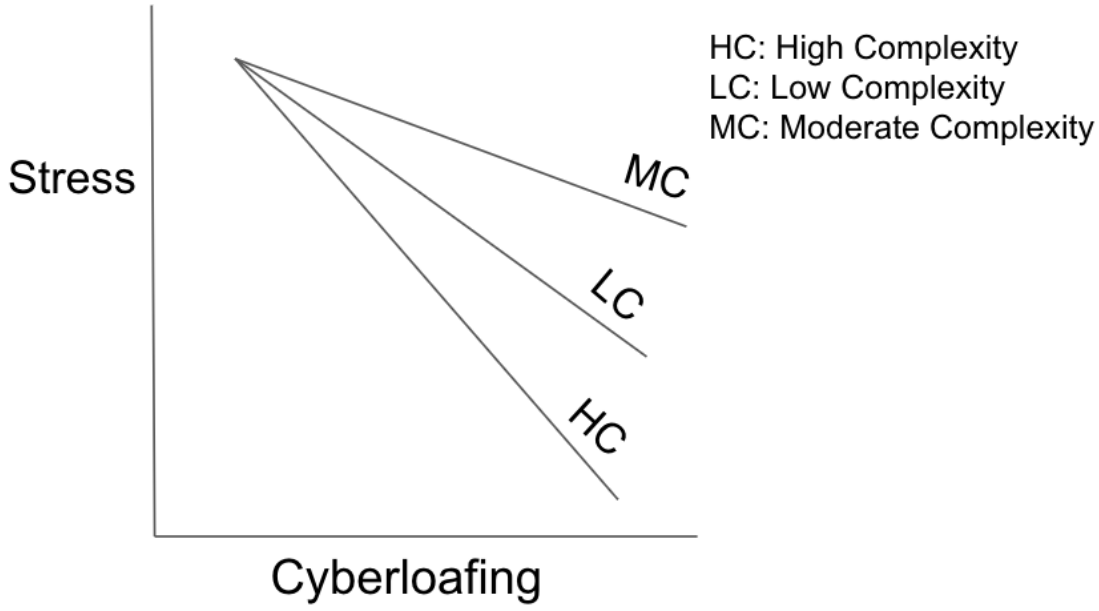


Finally, I posited that cyberloafing would have a curvilinear beneficial effect on stress also. Specifically, I posited that cyberloafing would have greater beneficial effects when job complexity is high or low rather than moderator because of the potential of cyberloafing to reduce fatigue or reduce boredom, respectively. Ahmed (2014) suggested that high complexity jobs demand more cognitive resources from an employee, which might produce fatigue. Low job complexity demands fewer cognitive resources from an employee but might produce boredom. Boredom and fatigue both are antecedents of stress (D'Angiulli & Smith, 2002; Harrie & Yu, 2014). Cyberloafing has a negative, i.e., beneficial, relationship with stress (Ozler, 2012; Vitak, 2011). This beneficial relationship might be stronger when job complexity is either very high or very low although the benefit might be greater for very complex jobs because stress is more strongly correlated with fatigue than with boredom (Palmer, 2014; Lee, 2019).

Hypothesis 1c: Job complexity will moderate the relationship between cyberloafing and stress such that cyberloafing becomes more beneficial as job complexity deviates from moderate levels.

Figure 3

Hypothesized Effects of Cyberloafing on Stress for High and Low Job Complexity



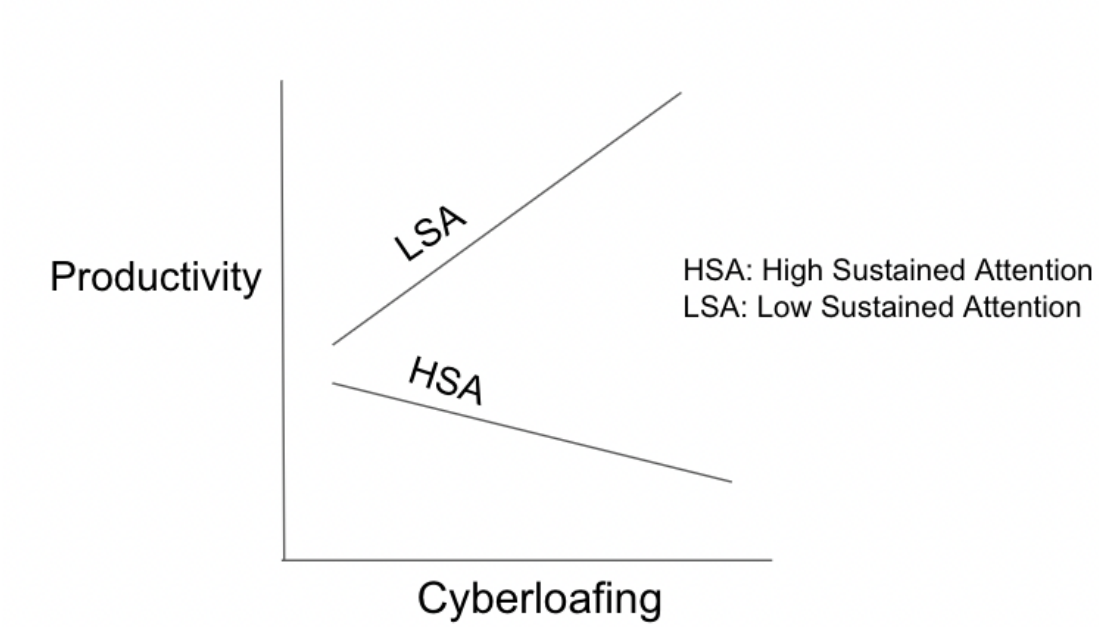
Sustained attention. I focused on sustained attention demands as a moderator because of the role it might play in cyberloafing effects as a result of resource demands, fatigue, and boredom. I explored the role of sustained attention in relation to two of the three outcomes: perceived productivity and stress. I had no basis for positing a moderated relationship on job engagement. Hancock (1989) defined a job's degree of sustained attention as contingent on its demands of focusing on a behavior or stimulus for a prolonged period of time. Other researchers have equated sustained attention to vigilance, i.e., a state of having to maintain close attention on something over time (e.g., Oken & Salinsky, 2006). Examples of jobs with high levels of sustained attention are air traffic controllers or manufacturing workers. Esterman (2019) theorized that high sustained attentional demands deplete cognitive resources more than low sustained attentional demands. Sustaining attention utilizes top-down processing, which is higher level cognitive processing. Sarter (2001) suggested that this type of processing requires an individual to sufficiently respond to modalities of signal through different types of stimuli. Baumeister and Vohs (2007) have defined ego depletion as an individual not having access to their usual available resources. Employees may experience ego depletion with a high sustained attentional demanding job may require them to engage in coping behaviors to replenish their available resources. The ability to sustain attention may be related to factors such as self-regulation and consciousness (Posner & Rothbart, 1998). Self-regulation is a feature of consciousness that refers to an awareness of oneself and voluntary control over behaviors. Consciousness has been debated in the literature, but typically refers to an awareness of the world, behavioral volition, and self-preservation.

I posited that cyberloafing might have more beneficial effects on perceived productivity for jobs which have low sustained attentional demands. That is, beneficial effects of cyberloafing on perceived productivity are contingent on having sufficient cognitive resources to devote to cyberloafing without impairing performance. As suggested by Hobfoll (1989), individuals will seek out behaviors that maximize resource maintenance and gain. Thus, jobs with low sustained attention requirements likely allow for microbreaks without impairing performance, and taking small cyberloafing breaks throughout the day might help employees remain focused on their roles and responsibilities. In sum, employees in jobs with low sustained attention requirements might have cognitive resources available for cyberloafing without reducing perceived productivity, and breaks might reduce fatigue and boredom.

Hypothesis 2a: Sustained attention requirements will moderate the relationship between cyberloafing and perceived productivity such that cyberloafing becomes less beneficial as attention requirements increase.

Figure 4

Hypothesized Effects of Cyberloafing on Productivity for High and Low Sustained Attention

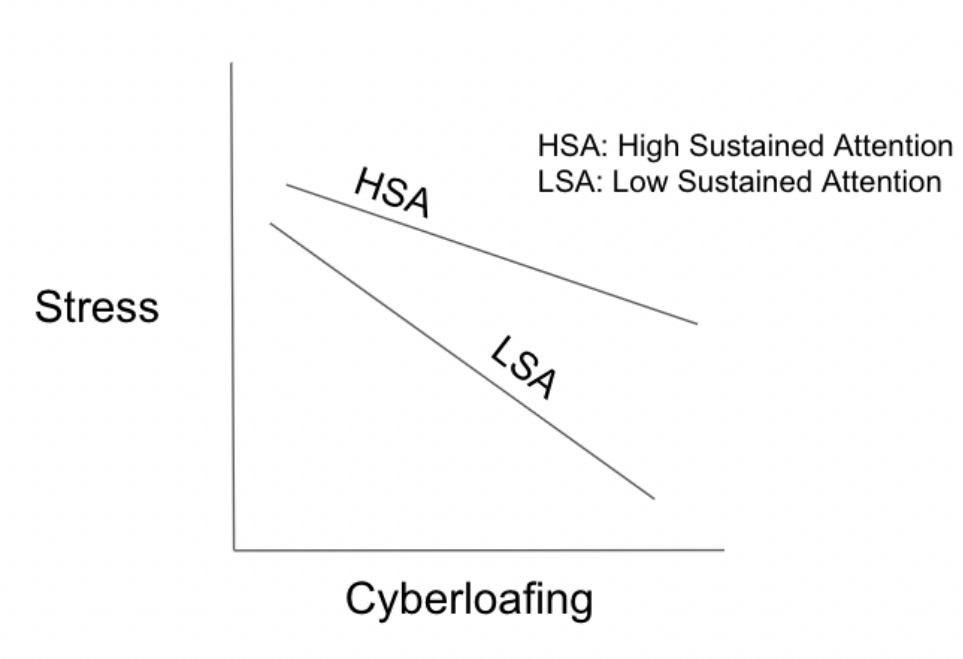


In contrast, I posited that cyberloafing might have more beneficial effects on stress for jobs that have high sustained attentional demands. Prior research has shown that sustained attention can increase fatigue (Krueger, 1989) and stress (Hancock, 1989). However, research has shown that cyberloafing can reduce stress (Ozler, 2012; Vitak, 2011). Thus, one would expect to observe greater beneficial effects of cyberloafing on stress when jobs have higher sustained attention requirements. We note, though, that stress relief in this context is unlikely to benefit productivity.

Hypothesis 2b: Sustained attention requirements will moderate the relationship between cyberloafing and stress such that cyberloafing becomes more beneficial as attention requirements increase.

Figure 5

Hypothesized Effects of Cyberloafing on Stress for High and Low Sustained Attention



Job experience. Similar to job complexity and sustained attention demands, I focused on job experience as a moderator because of the role it might play in cyberloafing effects as a result of resource demands, fatigue, and boredom. I explored the role of job experience in relation to two of the three outcomes: perceived productivity and stress. I had no basis for positing a moderated relationship on job engagement. Maranto and Rodgers (1984) proposed human capital theory and suggested that employees obtain job training through experience with the role itself. Employees with more job experience understand how to get their work done effectively and efficiently. Thus, experienced employees are more likely to have cognitive resources available to devote to non-work tasks without impairing work outcomes, relative to employees with less experience.

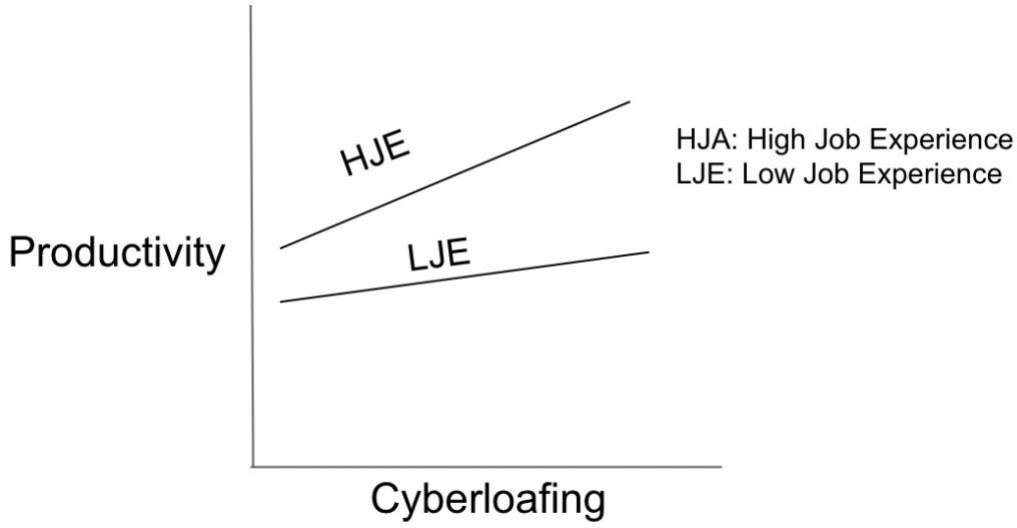
I posited that cyberloafing would have more beneficial effects on perceived productivity for employees with greater job experience. More experienced employees are more likely to have cognitive resources available to devote to non-work tasks without impairing productivity and thus would be more likely to gain benefits from cyberloafing because it can reduce fatigue and boredom. In contrast, employees with less job experience need to devote more cognitive resources to completing their job and thus have fewer cognitive resources to devote to cyberloafing even though it can reduce fatigue. By implication, organizations benefit by encouraging employees with less experience to devote more cognitive resources to building work skills and knowledge, i.e., by encouraging investments in human capital (Becker, 1064). Sweetland (1996) suggested that employees can increase their productivity through training, skill building, and experience. Also, Walberg (1992) showed the importance of using training and education to create a more educated pool of employees. In sum, cyberloafing should have greater

benefits for higher experience employees because employees with less experience need to devote more of their available cognitive resources to the work-related tasks. This would be disrupted by cyberloafing.

Hypothesis 3a: Job experience will moderate the relationship between cyberloafing and perceived productivity such that cyberloafing becomes more beneficial as job experience increases.

Figure 6

Hypothesized Effects of Cyberloafing on Productivity for High and Low Job Experience

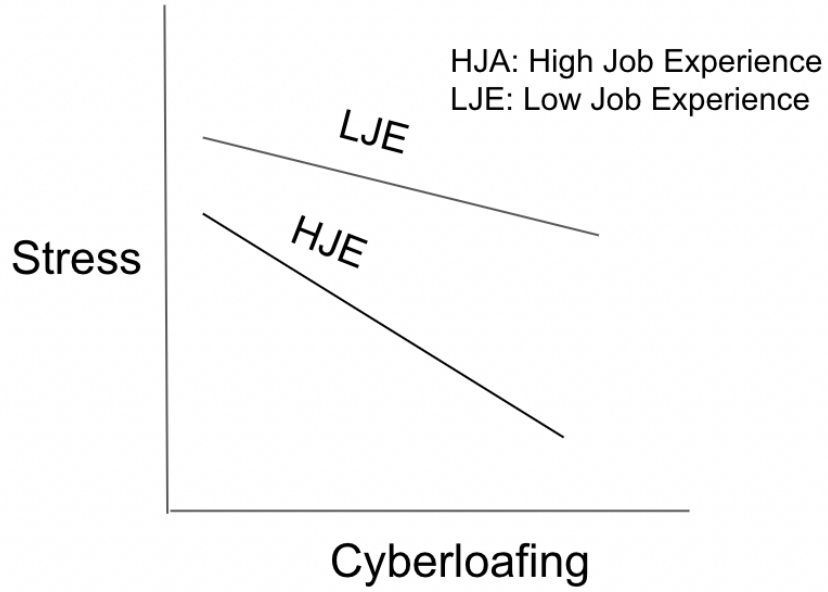


I posited that cyberloafing would have more beneficial effects on stress, i.e., reduce stress most, at moderate levels of job experience. Patterson (1992) found a curvilinear trend between years of employment and job stress with employees feeling the greatest stress at between eight and 11 years of experience. As mentioned above, research has found that stress is positively related with fatigue (Doerr, Ditzen, Strahler, Linnemann, Ziemek, Skoluda, & Nater, 2015). To the extent that cyberloafing can reduce fatigue, it might be most beneficial at moderate levels of job experience. We note also that at moderate levels of job experience, employees are more likely to have cognitive resources available to devote to non-work tasks without impairing productivity than at low levels of job experience.

Hypothesis 3b: Job experience will moderate the relationship between cyberloafing and stress such that cyberloafing will be most beneficial at moderate levels of job experience and less beneficial at high or low levels of job experience.

Figure 7

Hypothesized Effects of Cyberloafing on Stress for High and Low Job Experience

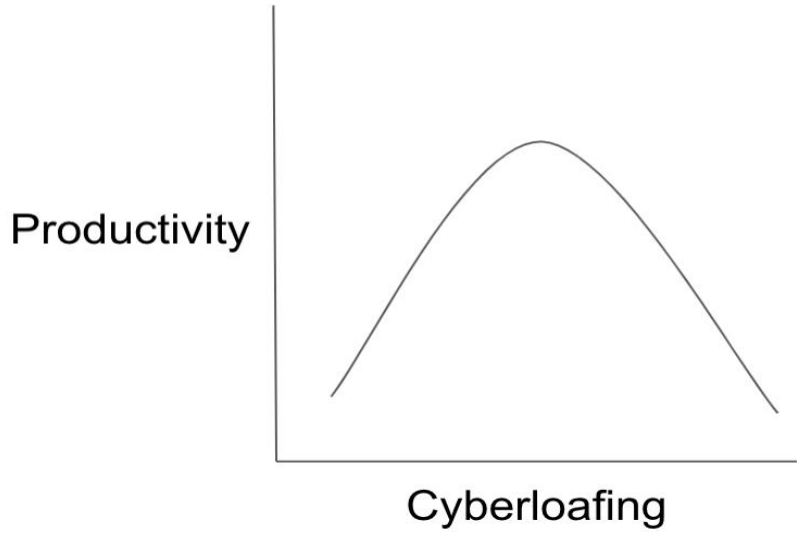


Curvilinear Relationship between Cyberloafing and Outcomes. Although I posited above linear relationships between cyberloafing and outcomes, a competing hypothesis is that cyberloafing has a curvilinear relationship with outcomes. I explore that in this last set of predictions, knowing that if this competing hypothesis is supported, it affects how I test my preceding hypotheses. Cyberloafing can be a way of seeking relief from fatigue and boredom and can be beneficial in some contexts. Cyberloafing can reduce stress, increase job engagement, and when sufficient cognitive resources are available increase productivity. However, cyberloafing can impair employees' productivity when cognitive resources are insufficient to support non-work activities. This context would reflect too much time cyberloafing relative to available cognitive resources. In contrast, too little cyberloafing might miss an opportunity to reduce stress through microbreaks or diversions in attention that can reduce fatigue or boredom. In sum, I suggest that there might be a curvilinear relationship.

Hypothesis 4a: There is an optimal amount, i.e., a curvilinear relationship, between cyberloafing and perceived productivity, such that moderate cyberloafing would have the most beneficial effects relative to high or low levels of cyberloafing.

Figure 8

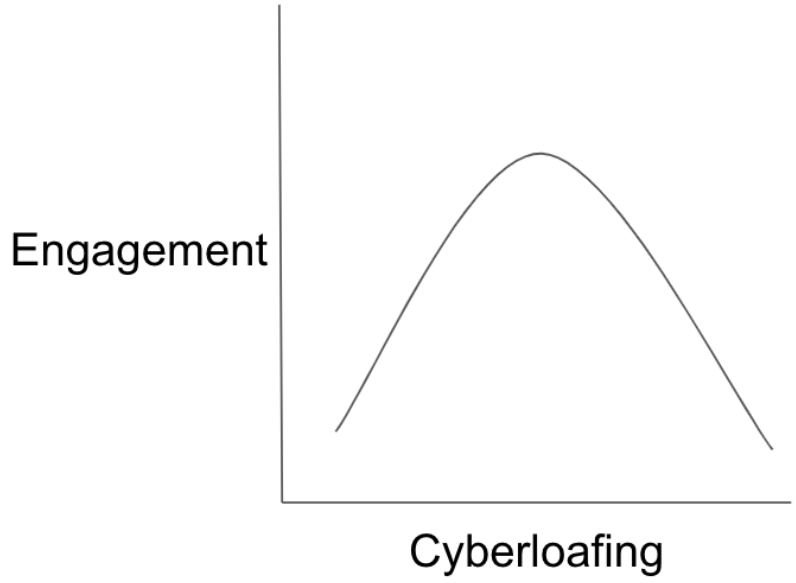
Hypothesized Relationship between Cyberloafing and Productivity



Hypothesis 4b: There is an optimal amount, i.e., a curvilinear relationship, between cyberloafing and job engagement, such that moderate cyberloafing would have the most beneficial effects relative to high or low levels of cyberloafing.

Figure 9

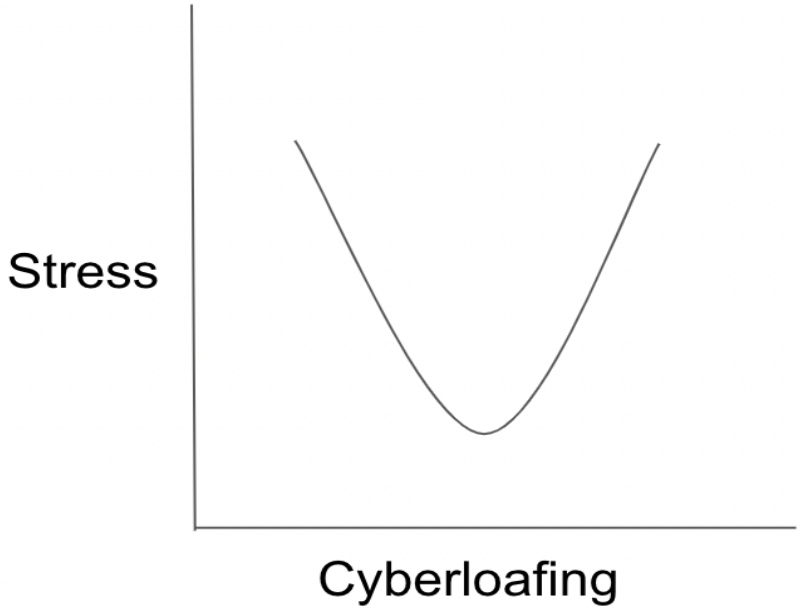
Hypothesized Relationship between Cyberloafing and Job Engagement



Hypothesis 4c: There is an optimal amount, i.e., a curvilinear relationship, between cyberloafing and stress, such that moderate cyberloafing would have the most beneficial effects relative to high or low levels of cyberloafing.

Figure 10

Hypothesized Relationship between Cyberloafing and Stress



Method

Study 1 (Student) Participants

Students were recruited as participants from undergraduate psychology courses from a midwestern university. I solicited participants with full or part time jobs, varying levels of job experience, and different types of jobs. Further, participants had to be at least 18 years of age to be eligible to complete the survey. Participants who work and live in the United States were allowed to participate in the study. Participants who agreed to participate in the study were informed that they would be given course credit for successfully completing the survey. In reality, we provided extra credit to participants even with incomplete data, i.e., credit based on the time they spent on the survey, but we excluded their data from analyses. I conducted a power analysis and determined that I needed 425 participants to detect an effect size of 0.12 with 0.8 power. I defined the expected effect size as the expected predictor correlation with outcomes times the expected moderator correlation with outcomes to obtain an expected effect size for posited interaction terms.

Study 2 (Mturk) Participants

Participants were recruited from Mechanical Turk (MTurk, https://www.mturk.com/). MTurk is an Amazon online survey administration system that enables researchers to obtain survey data from respondents with specific characteristics (see Aguinis, Villamor, Ramani, 2020, for information and issues relating to MTurk). I solicited participants with full or part time jobs, varying levels of job experience, and different types of jobs. Further, participants had to be at least 18 years of age to be eligible to complete the survey. Participants who work and live in the United States were allowed to participate in the study. Participants who agreed to participate in the study were informed that they would be paid $2.25 for successfully completing the survey,

that they had to respond to every item, and that they would be removed from the study and would not be paid if they failed IER checks. I conducted a power analysis and determined that I needed 425 participants to detect an effect size of .12 with 0.8 power. I defined the expected effect size as the expected predictor correlation with outcomes times the expected moderator correlation with outcomes to obtain an expected effect size for posited interaction terms.

Measures

Demographics

For Study 1, I collected demographic information on work modality, number of hours worked per week, salaried versus hourly employment, gender, age, and ethnicity. For Study 2, I collected demographic information on work modality, number of hours they work per week, if salaried versus hourly employment, gender, age, and ethnicity, and year in school (see Appendix A).

Predictor and Moderators

Perceived Cyberloafing. I used Blau, Yang, and Cook's (2006) measure of perceived cyberloafing. This scale was an expanded version of Lim's (2002) cyberloafing scale. Blau et al. (2006) categorized cyberloafing into three factors: browsing related cyberloafing, non work-related email cyberloafing, and interactive cyberloafing. They reported internal consistency reliabilities of .88 for the overall cyberloafing scale, .78 for the browsing related cyberloafing factor, .91 for the non work-related email cyberloafing factor, and .69 for the interactive cyberloafing factor. Browsing related cyberloafing behavior (Factor 1) was represented by Items 1, 2, 4, 6, 11, and 16. Non work related email cyberloafing (Factor 2) was represented by Items 3, 5, and 7. Interactive cyberloafing (Factor 3) was represented by Items 8, 9, 10, 12, 13, 14, and 15. Participants rated how frequently they engaged in each behavior ranging from (1) hardly ever

to (4) frequently, at least once a day. I averaged item scores to obtain subscale scores. Higher subscale scores indicated greater frequency of cyberloafing. An example item for Factor 1 is "Browse sports-related web sites". An example item for Factor 2 is "Check non-work-related e-mail". An example item for Factor 3 is "Chat with other people with instant messenger". See Appendix B.

Blau, Yang, and Cook (2006) performed a CFA to test the fit of the three-factor model on a sample of 232 working adults. They found a significant improvement in fit for the three-factor model, relative to the one factor model. CFA results supported the distinction between three types of cyberloafing. Correlations of the three factors ranged from .22 to .50. The test-retest reliabilities showed that participants' self-reported cyberloafing remained stable over a six-month period.

Job complexity. I used Kubicek, Paškvan, and Korunka's (2015) Intensification of Job Demands scale to assess job complexity. This 19-item measure categorized job demands into five categories: work intensification, intensified job-related planning and decision-making demands, intensified career related planning and decision-making demands, intensified knowledge related learning demands, and intensified skill related learning demands. Coefficient alphas for Study 1 and Study 2 for work intensification were .91/.87, intensified job-related planning and decision-making demands were .90/.87, intensified career related planning and decision-making demands were .82/.79, intensified knowledge related learning demands were .90/.90, and intensified skill related learning demands were .87/.87 respectively. The five categories were intercorrelated (e.g., intercorrelations ranged from .44 to .76).

Participants rated the items on a five-point scale ranging from (1) not at all to (5) very much. I averaged item scores to obtain subscales scores. Higher subscale scores indicated greater

job complexity. An example item from work intensification is “It is increasingly rare to have enough time for work tasks.” An example item from intensified job-related planning and decision-making demands is “One increasingly has to determine by oneself how to do the work.” An example item from intensified career related planning and decision-making demands is “One increasingly has to plan one’s professional career independently.” An example item from intensified knowledge related learning demands is “One has to acquire new expertise for the job more often.” An example item from intensified skill related learning demands is “One increasingly has to familiarize oneself with new work processes.” See Appendix C.

Sustained attention. I developed five items for use in my study to measure attentional demands associated with participants’ jobs. Participants were asked to rate each item on a 6-point scale ranging from (1) strongly disagree to (6) strongly agree. I averaged item scores to obtain scale scores. Higher scores indicated a greater degree of sustained attentional job demands. An example item is “My job requires my full attention." See Appendix D.

Job experience. I developed two items for use in my study to measure each participant's job experience. Participants were instructed to indicate how many years they spent in their position at their current organization and their total years of experience in the same role in all organizations. Participants rated their experience on a 6-point scale ranging from (1) less than 1 year to (6) 10 or more years. I averaged item scores to obtain scale scores. Higher scores indicated higher levels of job experience. See Appendix E.

Outcomes

Perceived productivity. I used Staples, Hulland, and Higgins’ (1999) measure to assess participants’ perceived job productivity. The six-item measure had a coefficient alpha of .82. Participants were instructed to indicate the degree to which they agreed or disagreed with each

item ranging from (1) strongly disagree to (5) strongly agree. I averaged item scores to obtain scale scores. Higher scale scores indicated greater perceived productivity. An example item is "I believe I am an effective employee." See Appendix F.

Job engagement. I used Rich, Lepine, and Crawford's (2010) measure to assess employee levels of job engagement. A major criticism of job engagement measures is that they fail to fully reflect the multifaceted concept of job engagement (Newman & Harrison, 2008). Thus, Rich et al. (2010) adapted other job engagement scales to create a multifaceted measure of job engagement. The 18-item measure had a coefficient alpha of .95. Participants were instructed to rate the degree to which they agreed or disagreed with each item on a five-point scale ranging from (1) strongly disagree to (5) strongly agree. I averaged item scores to obtain scale scores. Higher scale scores indicated greater job engagement. An example item is "I work with intensity on my job." See Appendix G.

Perceived stress. I used a measure of organizational constraints and a measure of job strains to assess stress. I used Liu, Nauta, Li, and Fan's (2010) measure to assess organizational constraints and job strains. To measure organizational constraints, Liu et al. (2010) revised the Occupational Constraints Scale (Spector & Jex, 1998) by separating interpersonal (4 items) and job context (5 items) constraints. Liu et al. (2010) reported coefficient alphas of .80 for interpersonal constraints and .83 for organizational constraints. Participants indicated how often each constraint made it difficult or impossible to perform their job on a five-point scale ranging from (1) less than once a month to (5) several times per day. I averaged item scores to obtain subscales scores. Higher subscale scores indicated greater perceived stress. An example item from the interpersonal constraint subscale was "other employees". An example item from the job context factor was "poor or lack of equipment or supplies". Liu, Nauta, Li, and Fan's (2010)

conducted a CFA and demonstrated significant factor loadings and good fit of the two-factor model as opposed to the single factor model, which had poor fit. See Appendix H.

I used the Job-Affective Well-Being Scale (Van Katwyk, Fox, Spector, & Kelloway, 2000) to measure job strains as suggested by Liu, Nauta, Li, and Fan (2010). They utilized five items that encapsulated negative emotions to assess job strains. I used the same five items to assess job strains to replicate the psychometric properties of Liu, Nauta, Li, and Fan's (2010) scales regarding job strain rather than well-being. The coefficient alpha in their United States sample was .88. Participants were to rate these items on how often they feel these emotions in their job within the last 30 days on a five-point scale ranging from (1) never to (5) extremely often or always. They measured how angry, anxious, disgusted, frightened, and frustrated employees were with their jobs to assess job strains. I averaged item scores to obtain scale scores. Higher scale scores indicated greater job strains. An example item is "My job makes me feel angry." See Appendix H.

Exploratory Measures

I administered numerous measures to facilitate additional and exploratory analyses to more fully understand relationships observed in the data. These measures are categorized into perceptions, theoretical explanations, work behavior, and insufficient effort responding measures.

Perceptions

Attitudes toward Cyberloafing. I used Anandarajan, Simmers, and Igbaria's (2000) measure to assess participants' attitudes towards cyberloafing. Their scale had 10 items and an internal consistency of .74. I omitted Items 5 and 7 from their measure because these two items referred to sexually explicit behavior. I wanted to reduce potential reactivity effects resulting

from this type of item. Participants were instructed to rate the degree to which they agreed or disagreed with each item ranging from (1) strongly disagree to (5) strongly agree. I averaged item scores to obtain scale scores. Higher scores indicated greater acceptance of cyberloafing. An example item is "It seems to be okay to just surf the internet while at work." See Appendix I.

Social desirability. I used Hart, Ritchie, Hepper, and GeBauer's (2015) 16 item measure to assess social desirability. Hart et al.'s measure was a shortened version of the 40 item Balanced Inventory of Desirable Responding (BIDR-40; Paulhus, 1994). They conducted four studies to examine the structure, reliability, and validity of the 16-item measure to ensure it was similar to the 40-item measure. Items 1, 3, 8, 9, 11, 12, and 13 were reverse scored. The scale has two factors: self-deception enhancement and impression management. The coefficient alphas for self-deception enhancement were .66, .69, .67, and .64 for the four studies, respectively. The coefficient alphas for impression management were .72, .71, .66, and .73, respectively. Participants rated the degree to which they agreed or disagreed with each item ranging from (1) strongly disagree to (7) strongly agree. I averaged item scores to obtain subscales scores. Higher subscale scores indicated a greater tendency to answer based on complying with social desirability rather than the truth. An example self-deception enhancement item is "not always honest." An example impression management item is "don't gossip". Hart et al. (2015) reported that their 16-item measure had psychometric properties similar to the original 40 item measure (Paulhus, 1994), including evidence relating to construct validity, test-retest reliability, and cross validation. Further, CFA results indicated that model fit and dimensionality for the 16-item measure was comparable to the extended BIDR (Hart et al., 2015). See Appendix J.

Self-efficacy. I used Rigotti, Schyns, and Mohr's (2008) measure to assess situational self-efficacy. The coefficient alpha for the six items was .90. Participants rated how true each

item was for them ranging from (1) not at all true to (6) completely true. I averaged item scores to obtain scale scores. Higher scale scores indicated greater situational self-efficacy. An example item is "I meet the goals that I set for myself in my job."

I used Chen, Gully, and Eden's (2001) measure to assess dispositional self-efficacy. Chen et al. (2001) reported coefficient alphas for the 8 items of .87, .88, and .85 in three samples. Participants rated the degree to which they agreed or disagreed with each statement on a scale ranging from (1) strongly disagree to (5) strongly agree. I averaged item scores to obtain scale scores. Higher scale scores indicated greater dispositional self-efficacy. An example item is "I can remain calm when facing difficulties in my job because I can rely on my abilities." See Appendix K.

Job Satisfaction. I used Bowling and Hammond (2008) 3 item measure to assess job satisfaction. The coefficient alpha is .84. Participants rated the degree to which they agreed or disagreed with each statement ranging from (1) strongly disagree to (7) strongly agree. I averaged item scores to obtain scale scores. Higher scale scores indicated greater job satisfaction. An example item is "All in all I am satisfied with my job." See Appendix L.

Theoretical explanations

Boredom. I used Bauer and Spector's (2015) 4 item measure to assess boredom. The coefficient alpha is .90. Participants indicated how often they experienced each item ranging from (1) never to (5) always. I averaged item scores to obtain scale scores. Higher scale scores indicated greater boredom. An example item is "Experience feelings of boredom at work". See Appendix M.

Fatigue. I used Winwood, Winefield, Dawson, and Lushington's (2005) Occupational Fatigue Exhaustion/Recovery measure to assess employee fatigue. There are 18 items

representing three factors: chronic fatigue (10 items), acute fatigue (5 items), and intershift recovery (3 items). Winwood et al. (2005) reported coefficient alphas of .93 for chronic fatigue, .82 for acute fatigue, and .75 for intershift recovery. Participants rated their agreement with each item on a seven-point scale ranging from (1) strongly disagree to (6) strongly agree. I averaged item scores to obtain scale scores. Higher scale scores indicated greater fatigue. An example item is "I can't recover my energy completely between work shifts". An example item from chronic fatigue item was "I use a lot of my spare time recovering from work." An example acute fatigue item was "I usually have lots of energy to give my family or friends." An example intershift recovery item was "I fully rested at the start of each workday/shift." Based on results from an EFA, Winwood et al. (2005) found support for three factors (i.e., chronic fatigue, acute fatigue, and intershift recovery) using 18 of the original 30 items. Results from a CFA indicated modest fit for the model (GFI = .872; Winwood et al., 2005). I omitted the chronic fatigue subscale because my study was focused on acute rather than chronic fatigue. See Appendix N.

Workplace Behavior

Organizational citizenship behavior (OCB). I used Lee and Allen (2002) measure to assess OCB. There are 16 items representing two factors: organizational citizenship behavior interpersonal (OCBI) (8 items) and organizational citizenship behavior organization (OCBO) (8 items). The coefficient alpha for OCBI was .83 for OCBI and .88 for OCBO. Participants rated items on a scale ranging from (1) never to (7) always. I averaged item scores to obtain scale scores. Higher scale scores indicated greater OCB. An example item for OCBI is "Helps others who have been absent." An example item of OCBO is "Keep up with developments in the organization." Lee and Allen (2002) conducted a confirmatory factor analysis to demonstrate

that the two-factor model is superior to the one factor model, which supported the empirical distinction between the factors. See Appendix O.

Counterproductive work behavior (CWB). I used Spector, Bauer, and Fox's (2010) 10-item measure to assess CWB. The coefficient alphas for employees and supervisors were .78 and .89 respectively. Participants rated items on a scale ranging from (1) never to (5) every day. I averaged item scores to obtain scale scores. Higher scale scores indicated greater CWB. An example item from theft and related behavior was "Purposely wasted your employer's materials/supplies". See Appendix P.

Insufficient Effort Responding

Insufficient Effort Responding. I used Huang's (2015) insufficient effort responding (IER) measure. IER can degrade the quality of survey data. Thus, it is important to assess the extent to which participants are engaging in IER. To assess IER, I provided a warning about carefully and truthfully responding to items and that the participant would be removed from the survey automatically if they engaged in insufficient effort or automated responding. Further I administered 3 bogus items and 2 directed response items. I interspersed one of these items in each of the following measures: job complexity, perceived productivity, attitudes toward cyberloafing, boredom, and organizational citizenship behavior. Participants rated each item on a scale of (1) strongly disagree to (7) strongly agree. An example bogus item is "I can run 2 miles in 2 min." An example directed response item is "All animals make for great pets (Select "Moderately disagree")" See Appendix Q.

In Study 1, I provided a preliminary warning prior to participants beginning the survey. The warning stated "Please read each question carefully and respond truthfully. The researcher will have the ability to screen out participants based on insufficient effort or attention and

automated responding." Participants were not removed from the survey until after data collection. I Study 1, participants who responded in less than two seconds were excluded from analyses." I included 3 bogus items (i.e., items 1,5, and 6) and two instructed-response items embedded throughout the survey. Two instructed response items instructed participants to select a certain option (Bowling et al., 2016). Participants who failed to answer correctly were removed from the survey. Upon failing the attention check, the survey automatically ended, participants were thanked for their time but not compensated. Participants who responded in less than two seconds were removed during data cleaning. The survey software I utilized did not allow for bot buster extensions, so I did not include them.

In Study 2, I modified the preliminary warning to participants beginning the survey. This warning said "Please read each question carefully and respond truthfully. The researcher will have the ability to screen out participants based on insufficient effort or attention and automated responding. Participants who engage in these behaviors will have their surveys terminated, their data removed, and will NOT be paid."

In Study 2, I collected data through MTurk. MTurk provided a variety of participants who can be targeted by their demographics for data collection. However, bots, careless responding, attrition, MTurk communities, and self-selection are highly prevalent (Aguinis, Villamor, & Ramani, 2020). I used warnings, bogus items, instructed response items, and monitored time spent on each page to alleviate these risks.

Procedure

I created an online survey using Qualtrics, an online survey platform (Molnar, 2019). The resulting survey contained all measures described above as well as the informed consent process, all instructions, and the debriefing. In Study 1 and Study 2, participants completed an informed

consent process prior to starting the survey. Upon successful completion of the survey measures, participants were debriefed. Measures included in the survey were administered in the following order: demographics, primary variable (cyberloafing), moderator variables (job complexity, sustained attentional demands, job experience), primary outcome variables (perceived productivity, stress, job engagement), then exploratory variables (attitudes towards cyberloafing, social desirability, boredom, fatigue, self-efficacy, OCB, CWB).

Study 1 (Student Sample) Procedure

In Study 1, I solicited participants from participants from undergraduate psychology classes. They completed an informed consent form (see Appendix R). If a participant failed the IER measures, then their data would be excluded from data analyses, and this was listed in the consent form. If participants spent too little time answering items (i.e., less than 2 seconds per item), then the participant's survey data was excluded from analyses. Participants were granted 3 course credits upon completion of the survey and were not permitted to skip items. After the survey, they were debriefed on the purpose of the study. See Appendix S.

Study 2 (Mturk Sample) Procedure

In Study 2, I solicited participants from Mturk. They completed an informed consent process. If a participant failed IER measures, then they were removed from the survey and not paid, and this was indicated in the consent form (see Appendix T). If participants spent too little time answering items (i.e., less than 2 seconds per item), then the participant's survey data was excluded from analyses. Participants were not permitted to skip items. Participants were paid $2.25 upon completion of the survey if they passed IER checks. After the survey, they were debriefed on the purpose of the study (see Appendix S).

Study 1 Results and Discussion

Data Cleaning and Sample Characteristics

Out of 245 participants who participated in the study, 20 were removed due to failing two out of the three attention checks or failing to provide complete surveys. Participants worked in the following fields: 34% accommodation and food services, 2% administrative, 4% educational, 2% construction, 6% educational services, 1% finance, 3% government, 16% health care, 2% management, 1% miscellaneous services, 1% professional and scientific, 7% real estate, 1% transportation, 1% wholesale trade, and 19% other services. Within this sample, 50% worked 10-20 hours per week. 28% worked 21-30 hours per week. 13% worked 31-40 hours per week, 2% worked 41-50 hours per week, and 1% worked over 50 hours per week. In this sample, 18% of participants were salaried employees, and 82% were not salaried employees. In this sample, 24% of participants were male, 74% were female, 1% specified 'other', and 1% of participants declined to specify. Relative to age, 82% of participants were 18-22 years old, 12% were 23-27 years old, 2% were 28-32 years old, 3% were 41-49 years old, and 1% were over 50 years old. In this sample, 72% of participants were Caucasian, 14% were African American, 5% were Latino, 5% were Asian, 1% were other, 3% were mixed and 1% declined to answer.

Scale Construction

I conducted exploratory factor analyses on my primary predictors and outcomes to examine whether the measures I used in my study exhibited psychometric properties similar to those reported in prior research. I reverse-coded items as needed. Program code and results output are shown in Appendices T through Y. I used the following criteria to evaluate item fit with factors: loadings of > = .3 and cross-loadings of < .3 (i.e., less than .3 difference in size of loadings on two or more factors).

Cyberloafing. A scree plot provided evidence of three factors (see Appendix T, Figure 27). I used an oblique rotation because I expected the three factors to correlate. Factor loadings are shown (Appendix T). Item 11 did not load on any factor above .3. Also, six of the 16 items (including Item 11) displayed cross-loadings in data from this sample. Thus, I examined a one factor solution. Results for a one-factor solution indicated that all items loaded at .3 or above on the single factor. Based on these results, I examined cyberloafing as a single dimension, using the composite score, in subsequent analyses. For completeness, correlations between the cyberloafing composite score and subscale scores are shown in Table 1 and internal consistency reliabilities are shown on the diagonal.

Table 1

Means, Standard Deviations, and Correlations between Cyberloafing Composite and Subscale Scores in Study 1

Variable	*M*	*SD*	Cyberloafing	Interactive	Email	Browsing
Cyberloafing	2.50	.59	**.86**			
Interactive	2.33	.70	.88***	**.79**		
Email	2.86	.90	.68***	.37***	**.78**	
Browsing	2.51	.63	.88**	.64***	.53***	**.69**

Note. $N = 225$. *$p < .05$; **$p < .01$; ***$p < .001$. Cyberloafing = Cyberloafing composite score, Interactive = Interactive Cyberloafing, Email = Non-Work-Related Email Cyberloafing, Browsing = Browsing Related Cyberloafing.

Job Complexity. A scree plot provided evidence of one factor (see Appendix U) despite the measure being originally designed to address multiple factors. Thus, I analyzed job complexity as a unidimensional measure. Results indicated that all items, except for Item 3, loaded as expected on the single factor. Factor loadings are shown in Appendix U.

Sustained Attention. A scree plot provided evidence of one factor (see Appendix V). Thus, I analyzed sustained attention as a unidimensional measure. Results indicated that all items, except for Item 2, loaded as expected on the single factor.

Job Experience. The job experience measure consisted of two items. The items were correlated ($r = .64$, $p < .001$). I reported this correlation in Table 2 on the diagonal.

Productivity. A scree plot provided evidence of one factor (see Appendix W). Thus, I analyzed productivity as a unidimensional measure. Results indicated that all items loaded as expected on the single factor. Factor loadings are shown in Appendix W.

Job Engagement. A scree plot provided evidence of one factor (see Appendix X). Thus, I analyzed job engagement as a unidimensional measure. Results indicated that all items loaded as expected on the single factor. Factor loadings are shown in Appendix X.

Stress. A scree plot provided evidence of one factor (see Appendix Y). Thus, I analyzed job engagement as a unidimensional measure. Results indicated that all items loaded as expected on the single factor. Factor loadings are shown in Appendix Y.

Descriptive Statistics

To calculate composite scale scores, I averaged item scores for primary and exploratory measures. I calculated coefficient alphas for each measure. I reported means, standard deviations, coefficient alphas, and intercorrelations for primary measures (see Table 2). Cyberloafing was significantly related to job complexity ($r = .19$, $p < .01$) and negatively related to productivity (r

= -.16, $p < .05$). Cyberloafing was not significantly related to other primary measures, which was unexpected. Internal consistency reliabilities were all above .70, except for total sustained attention ($\alpha = .62$).

Table 2

Descriptive Statistics for Primary Predictors and Outcomes in Study 1

Variable	*M*	*SD*	1	2	3	4	5	6	7
1. Cyberloafing	2.50	.59	**.86**						
2. Complexity	2.98	.70	.19**	**.89**					
3. Attention	3.50	.61	-.02	.16*	**.62**				
4. Experience	2.46	.84	.05	.16*	.05	**.64**[1]			
5. Productivity	4.58	.56	-.16*	-.02	.36***	.14*	**.85**		
6. Engagement	3.98	.78	-.10	.01	.52***	.03	.47***	**.95**	
7. Stress	2.43	.87	.09	.47***	-.03	.04	-.09	-.30***	**.92**

Note. $N = 225$. Coefficient alphas appear on the diagonal. *$p < .05$; **$p < .01$; ***$p < .001$. Complexity = Job Complexity, Attention = Sustained Attention, Experience = Job Experience, Engagement = Job Engagement. [1]Job Experience two-item correlation listed on the diagonal.

I reported means, standard deviations, coefficient alphas, and intercorrelations for all primary and exploratory measures in Table 3. Some of these exploratory variables were used in post hoc analyses.

Table 3

Descriptive Statistics for Primary and Exploratory Measures in Study 1

Variable	*M*	*SD*	1	2	3	4	5	6	7	8
1. Cyberloafing	2.50	.59	**.86**							
2. Job Complexity	2.98	.70	.19**	**.89**						
3. Attention	3.50	.61	-.02	.16*	**.62**					
4. Job Experience	2.46	.84	.05	.16*	.05	**.64**[1]				
5. Productivity	4.58	.56	-.16*	-.02	.36***	.14*	**.85**			
6. Job Engagement	3.98	.78	-.10	.01	.52***	.03	.47***	**.95**		
7. Stress	2.43	.87	.09	.47***	-.03	.04	-.09	-.30***	**.92**	
8. CL Attitude	2.84	.67	.14*	.19**	-.02	-.06	-.14*	-.07	.08	**.08**
9. Social Desirability	4.19	.68	-.02	-.07	.18*	.01	.08	.09	-.13	.16*
10. Self-Efficacy	4.06	1.59	-.02	-.18**	.18*	-.13	.28***	.50***	-.41***	-.01
11. Job Satisfaction	4.05	.79	.07	-.00	.10	.13	-.02	-.08	.08	-.02
12. OCB	4.54	1.71	.06	.01	.00	.08	-.03	.03	-.06	.09
13. CWB	2.00	1.30	.08	.08	-.12	-.13	-.03	-.07	.10	-.02
14. Fatigue	3.26	1.21	.09	-.01	.06	.02	-.07	.03	.01	.13
15. Weekly Hours	1.79	.90	.21**	.15*	.06	.22**	-.06	.09	.06	.13
16. Boredom	2.88	1.53	.00	.23***	.24***	-.03	.18**	.18**	.13	.02

Note. N = 225. *p < .05; **p < .01; ***p < .001. Coefficient alphas appear on the diagonal. Complexity = Job Complexity, Attention = Sustained Attention, Experience = Job Experience, Engagement = Job Engagement. [1]Job Experience two item correlation listed on diagonal, CL Attitude = Attitude toward Cyberloafing, OCB = Organizational Citizenship Behavior, CWB = Counterproductive Work Behavior.

Table 3 Continued

Descriptive Statistics for Primary and Exploratory Measures in Study 1

Variable	*M*	*SD*	1	2	3	4	5	6	7	8
9. Social Desirability	4.19	.68	**.61**							
10. Self-Efficacy	4.06	1.59	.07	**.89**						
11. Job Satisfaction	4.05	.79	.07	-.62***	**.70**					
12. OCB	4.54	1.71	-.03	-.36***	.61***	**.92**				
13. CWB	2.00	1.30	-.12	.24***	-.40***	-.43***	**.88**			
14. Fatigue	3.26	1.21	.04	-.20**	.31***	.60***	-.34***	**.88**		
15. Weekly Hours	1.79	.90	-.09	.00	.04	.04	-.06	.08		
16. Boredom	2.88	1.53	-.00	.28***	-.42***	-.45***	.25***	-.26***	.06	**.88**

Note. $N = 225$. *$p < .05$; **$p < .01$; ***$p < .001$. Coefficient alphas appear on the diagonal. Complexity = Job Complexity, Attention = Sustained Attention, Experience = Job Experience, Engagement = Job Engagement. [1]Job Experience two item correlation listed on diagonal, CL Attitude = Attitude toward Cyberloafing, OCB = Organizational Citizenship Behavior, CWB = Counterproductive Work Behavior.

Test of Hypotheses

Job Complexity as a Moderator of Cyberloafing Effects on Outcomes (Hypothesis 1).

I predicted that job complexity would moderate the relationship between cyberloafing and study outcomes (Hypothesis 1). I expected to observe a positive relationship between cyberloafing and productivity or engagement from low to moderate levels of job complexity and a negative relationship for moderate to high levels of job complexity. I expected to observe a negative relationship between cyberloafing and stress from low to moderate levels of job complexity and a positive relationship for moderate to high levels of job complexity. To test Hypothesis 1, for each outcome, I completed the following three analyses: tests of quadratic

complexity effects, tests of full models with quadratic complexity as a moderator as hypothesized, and tests of linear complexity as a moderator.

First, I examined evidence of a quadratic effect for complexity by regressing each outcome on cyberloafing and linear complexity in Step 1 and quadratic (i.e., squared) complexity in Step 2. Results indicated a significant quadratic effect for job complexity only for engagement, but the R^2 of 3% for the full model was not significant (see Table 4).

Table 4

Curvilinear and Linear Job Complexity Effects on Outcomes in Study 1

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Cyberloafing	-.07	.08	-.95	.35		
	Complexity	.06	.06	1.15	.25		.031
	2. Complexity^2	.14	.08	1.74	.08	.015	.046*
Engagement	1. Cyberloafing	-.02	.11	-.23	.82		
	Complexity	-.03	.08	-.33	.75		.011
	2. Complexity^2	.24	.11	2.16	.03	.021	.032
Stress	1. Cyberloafing	-.19	.11	-1.74	.08		
	Complexity	.03	.08	.38	.71		.220***
	2. Complexity^2	-.12	.11	-1.12	.27	.005	.225***

Note. N = 225. *p < .05; **p < .01; ***p < .001. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis.

Second, I examined evidence of the predicted effect that complexity would have a curvilinear moderating effect on the relationship between cyberloafing and outcomes. This was the formal test of Hypothesis 1. I entered the main effects, the Cyberloafing X Complexity

interaction effect, and the complexity squared effect in Step 1. I entered the predicted Cyberloafing X Complexity Squared (quadratic) effect in Step 2. Results indicated that the predicted Cyberloafing X Complexity Squared (quadratic) interaction effect was not significant for any of the study outcomes (see Table 5). Thus, I found no support for Hypothesis 1.

Table 5

Job Complexity as a Curvilinear Moderator of Cyberloafing Effects on Outcomes in Study 1

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Cyberloafing	.13	.08	1.74	.08		
	Complexity	-1.53	1.08	-1.42	.16		
	$Complexity^2$	.22	.19	1.15	.25		
	CL*C Int	.55	.45	1.24	.22		.046*
	2. CL*C^2 Int	-.07	.08	-.95	.35	.003	.049
Engagement	1. Cyberloafing	.24	.11	2.16	.03		
	Complexity	-.53	1.52	-.35	.73		
	$Complexity^2$	.00	.27	.01	.99		
	CL*C Int	.38	.63	.61	.54		.032
	2. CL*C^2 Int	-.02	.11	-.23	.82	.001	.033
Stress	1. Cyberloafing	-.12	.11	-1.12	.27		
	Complexity	-1.89	1.52	-1.25	.21		
	$Complexity^2$	.49	.27	1.83	.07		
	CL*C Int	.95	.63	1.52	.13		.225***
	2. CL*C^2 Int	-.19	.11	-1.74	.08	.011	.236***

Note. $N = 225$. *$p < .05$; **$p < .01$; ***$p < .001$. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis. CL*C Int = Cyberloafing X Complexity Interaction. CL*C^2 Int = Cyberloafing X $Complexity^2$ Interaction.

Third, I conducted a post hoc test to examine whether job complexity acted as a linear moderator of the relationship between cyberloafing and study outcomes. I regressed each outcome on the two main effects (cyberloafing and complexity) in Step 1 and the interaction term in Step 2. Results are shown in Table 6, and simple main effects are displayed for productivity, job engagement, and stress in Figures 1, 2, and 3, respectively. Results indicated that the interaction term was not significant for productivity or stress, indicating that job complexity did not have a linear moderating effect on the relationship between cyberloafing and either productivity or stress. However, results indicated a significant interaction effect for job engagement, indicating that job complexity had a linear moderating effect on the relationship between cyberloafing and job engagement. Specifically, At 1 *SD* above the mean of job complexity, the effect of cyberloafing on job engagement was not significant (b = .02, se = .12, t = .19, p = .85). At 1 *SD* below the mean of job complexity, the effect of cyberloafing on job engagement was significant (b = -.29, se = .12, t = -2.46, p = .01), indicating specifically, that cyberloafing was negatively related to engagement when job complexity as low (see Figure 2).

Table 6

Job Complexity as a Linear Moderator of Cyberloafing Effects on Outcomes in Study 1

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Cyberloafing	-.15	.06	-2.34	.02		
	Complexity	.01	.06	.22	.83		.026
	2. Interaction	.15	.08	1.91	.06	.016	.042*
Engagement	1. Cyberloafing	-.13	.09	-1.41	.16		
	Complexity	.03	.08	.41	.68		.010
	2. Interaction	.23	.11	2.07	.04	.020	.030
Stress	1. Cyberloafing	.14	.10	1.35	.18		
	Complexity	.58	.08	7.54	.00		.220***
	2. Interaction	-.11	.11	-1.04	.30	.004	.224**

Note. $N = 225$. *$p < .05$; **$p < .01$; ***$p < .001$. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis.

Figure 11

Simple Main Effects of Cyberloafing on Productivity for High and Low Job Complexity in Study 1

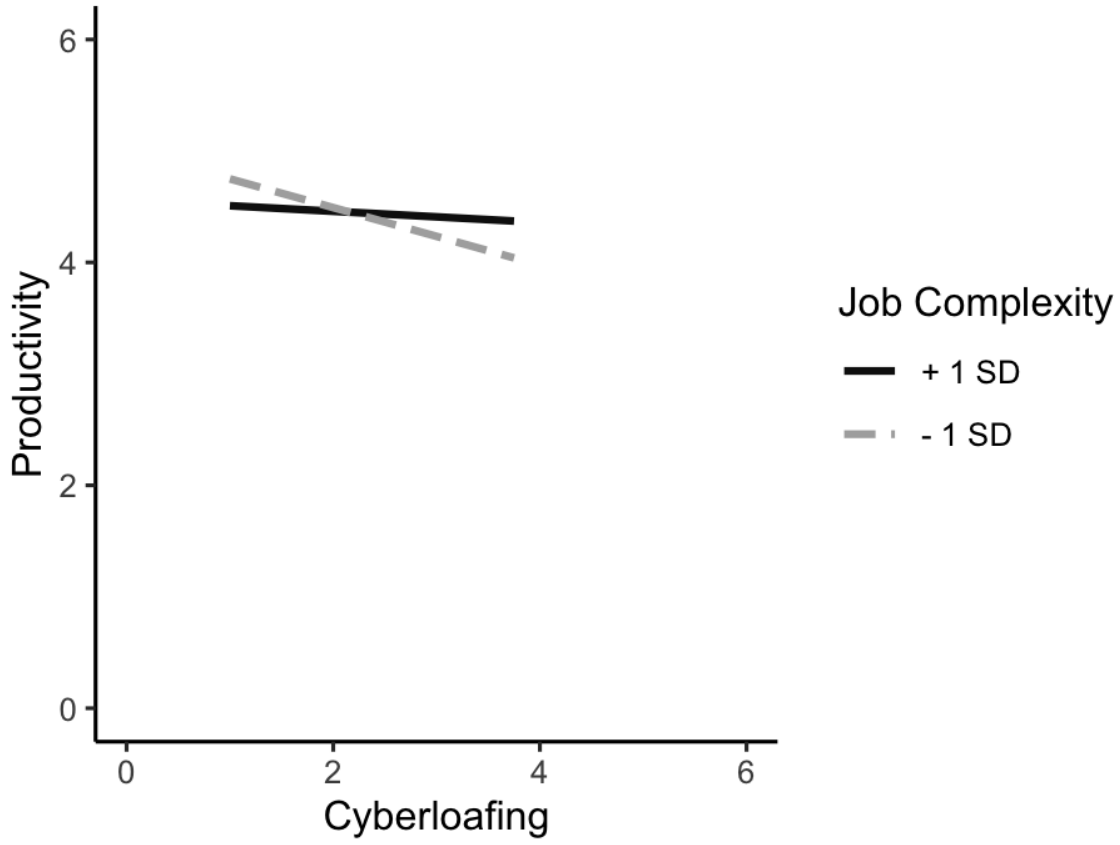


Figure 12

Simple Main Effects of Cyberloafing on Job Engagement for High and Low Job Complexity in Study 1

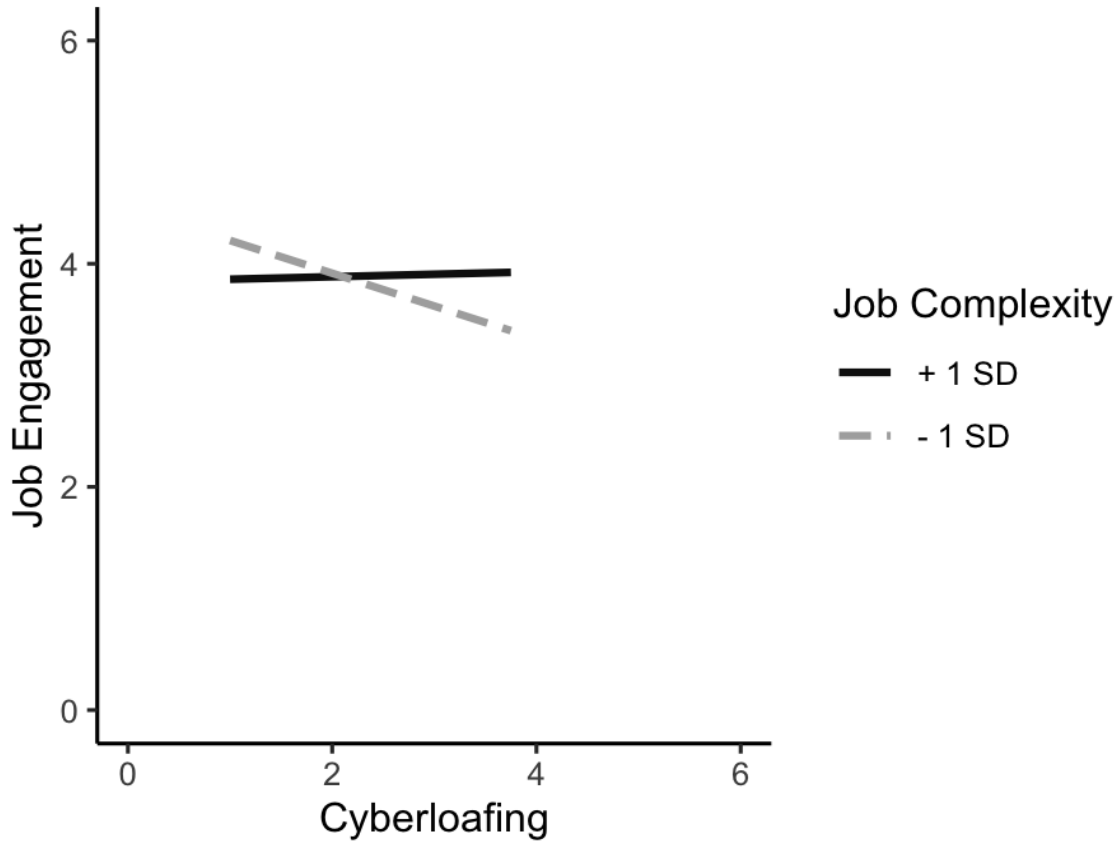
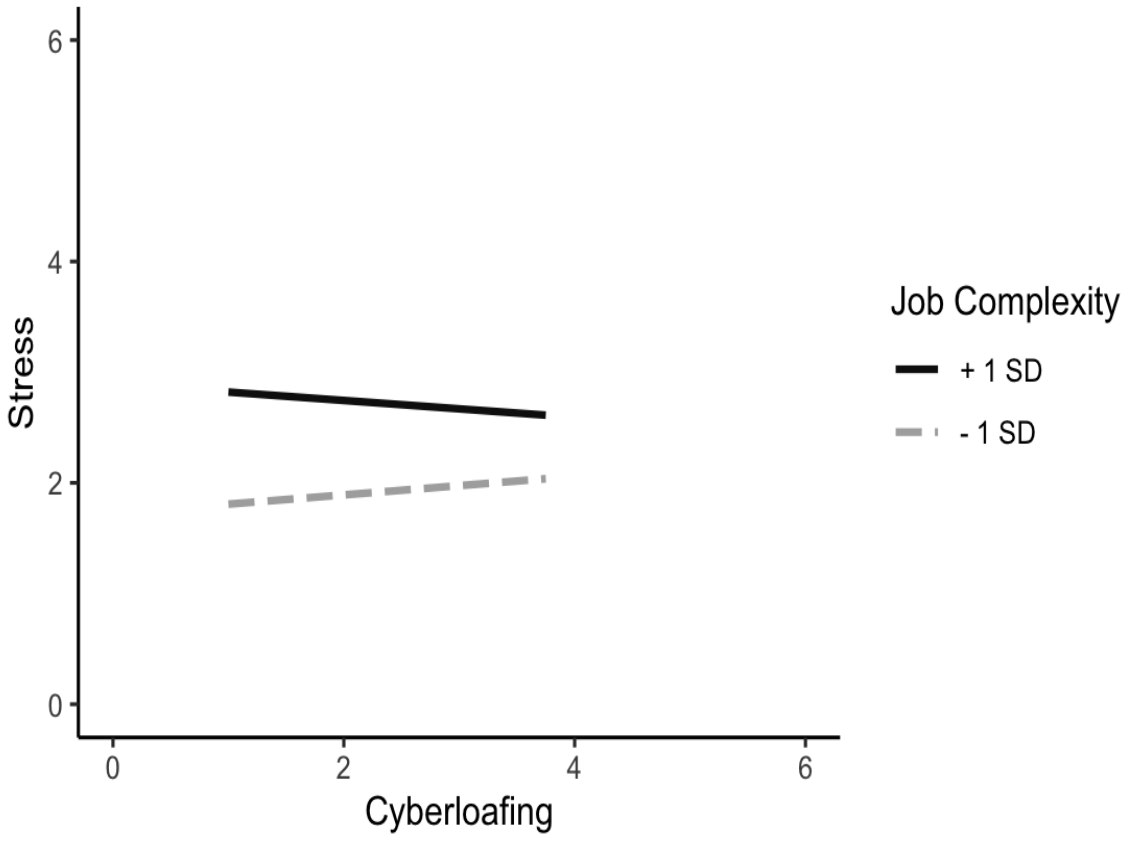


Figure 13

Simple Main Effects of Cyberloafing on Stress for High and Low Job Complexity in Study 1



Sustained Attention as a Moderator of Cyberloafing Effects on Outcomes

(Hypothesis 2). I predicted that sustained attention would moderate the relationship between cyberloafing and two study outcomes, i.e., productivity and stress (Hypothesis 2). Specifically, I predicted that cyberloafing would become less beneficial as attention requirements increased. To test Hypothesis 2, for each outcome, I regressed the outcome on the two main effects in the first step and the interaction term in the second step. Results are shown in Table 7, and simple effects are shown in Figures 4 and 5. For productivity, the interaction term was not significant, indicating that sustained attention did not moderate the relationship between cyberloafing and productivity. For stress, the interaction term was not significant, indicating that sustained attention did not moderate the relationship between cyberloafing and stress. Thus, I found no support for Hypothesis 2.

Table 7

Sustained Attention as a Moderator of Cyberloafing Effects on Outcomes in Study 1

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Cyberloafing	-.15	.06	-2.34	.02		
	Attention	.32	.06	5.34	.00		.15***
	2. Interaction	.06	.09	.61	.54	.00	.15***
Stress	1. Cyberloafing	.14	.10	1.35	.18		
	Attention	-.04	.10	-.37	.71		.01
	2. Interaction	.18	.15	1.15	.25	.00	.01

Note. $N = 225$. *$p < .05$; **$p < .01$; ***$p < .001$. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis.

Figure 14

Simple Main Effects of Cyberloafing on Productivity for High and Low Sustained Attention in Study 1

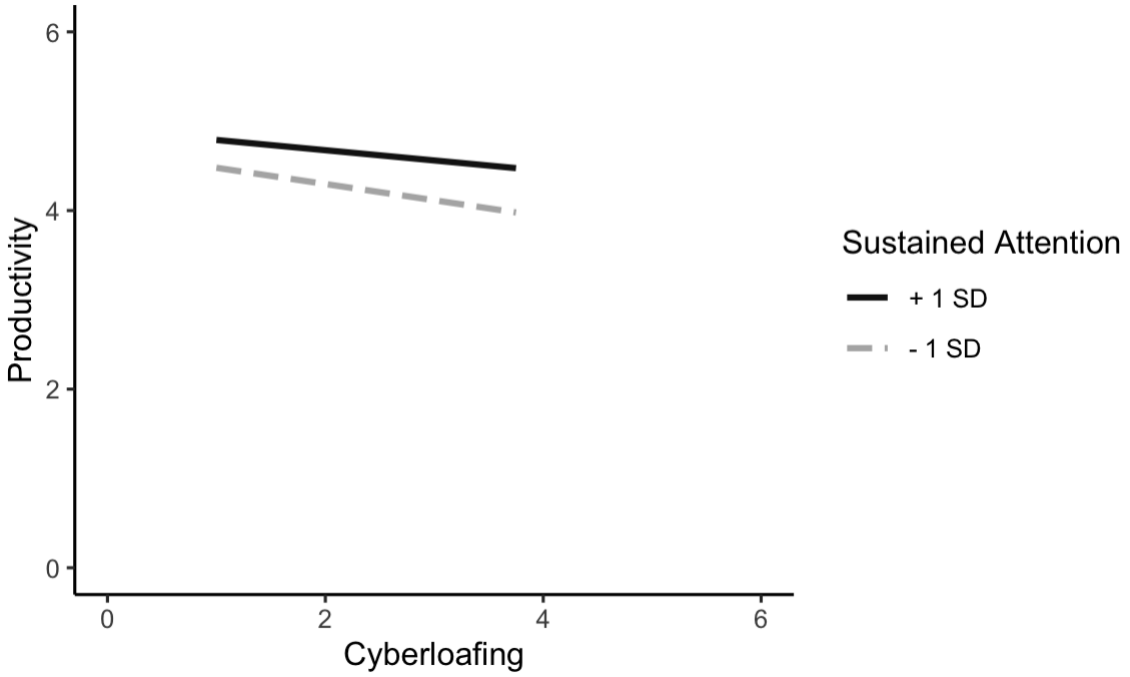
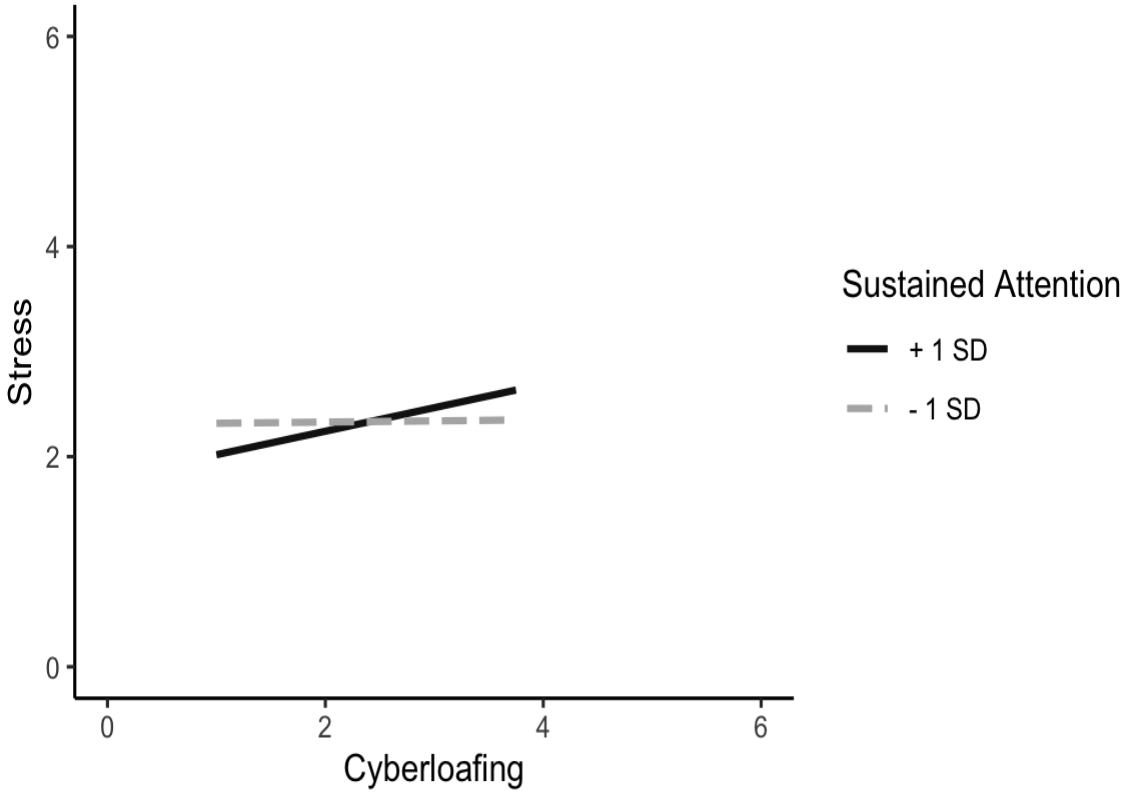


Figure 15

Simple Main Effects of Cyberloafing on Stress for High and Low Sustained Attention in Study 1



Job Experience as a Moderator of Cyberloafing Effects on Outcomes (Hypothesis 3). I predicted that job experience would moderate the relationship between cyberloafing and two study outcomes, i.e., productivity and stress (Hypothesis 3). Specifically, I predicted that cyberloafing would become less beneficial as attention requirements increased. To test Hypothesis 3, for each outcome, I regressed the outcome on the two main effects in the first step and the interaction term in the second step. Results are shown in Table 8, and simple effects are shown in Figures 6 and 7. For productivity, the interaction term was not significant, indicating that job experience did not moderate the relationship between cyberloafing and productivity. For stress, the interaction term was not significant, indicating that sustained attention did not

moderate the relationship between cyberloafing and stress. Thus, I found no support for Hypothesis 3.

Table 8

Job Experience as a Moderator of Cyberloafing Effects on Outcomes in Study 1

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Cyberloafing	-.15	.06	-2.34	.02		
	Experience	.10	.04	2.15	.04		.05*
	2. Interaction	.18	.10	1.83	.06	.01	.06*
Stress	1. Cyberloafing	.14	.10	1.35	.18		
	Experience	.03	.07	.49	.63		.01
	2. Interaction	.13	.16	.84	.40	.01	.00

Note. $N = 225$. *$p < .05$; **$p < .01$; ***$p < .001$. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis.

Figure 16

Simple Main Effect of Job Experience on Cyberloafing and Productivity in Study 1

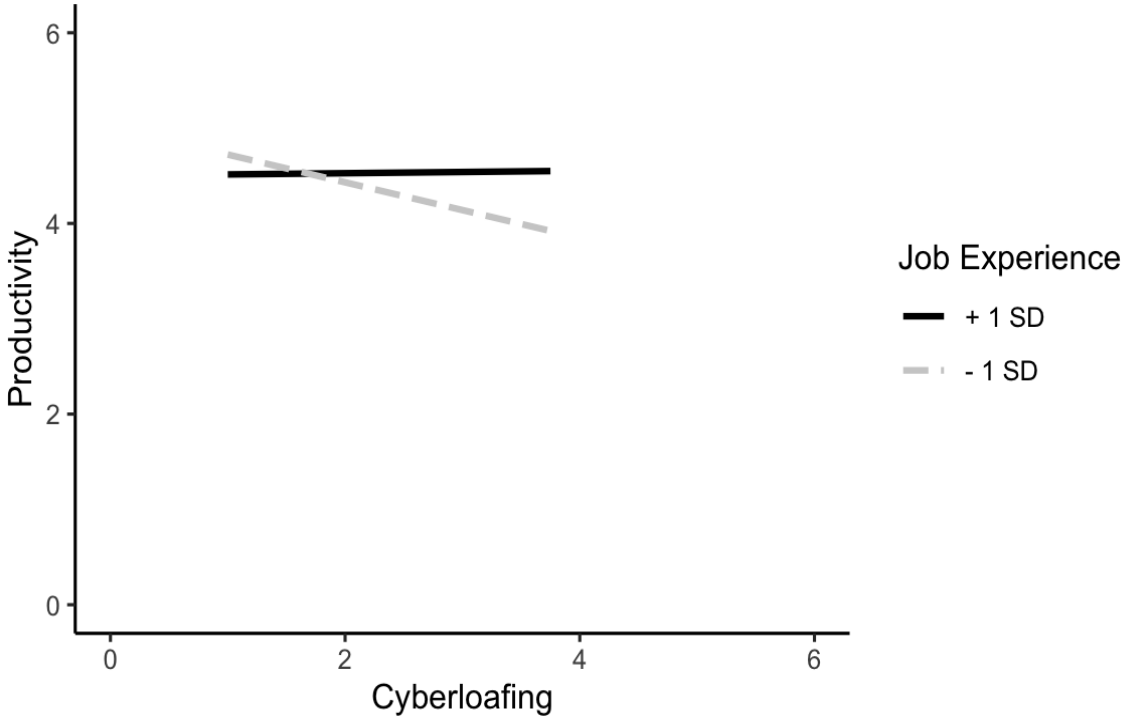
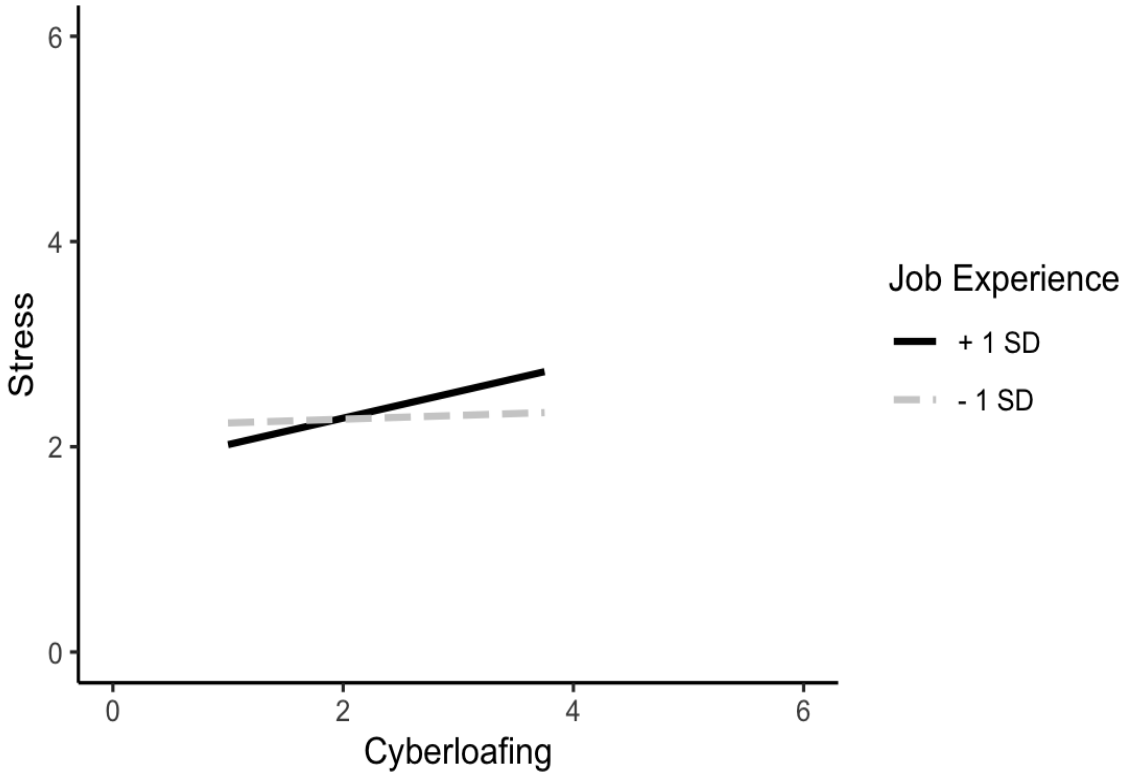


Figure 17

Simple Main Effect of Job Experience on Cyberloafing and Stress in Study 1



Potential Curvilinear Effects of Cyberloafing Effects on Outcomes (Hypothesis 4). I predicted that cyberloafing would have a curvilinear relationship with study outcomes (Hypothesis 4). Specifically, I predicted that moderate cyberloafing would have the most beneficial effects relative to high or low levels of cyberloafing. To test Hypothesis 4, for each outcome, I regressed the outcome on linear and quadratic effects of cyberloafing. Results are shown in Table 9, and curvilinear effects on productivity, engagement, and stress are shown in Figures 8, 9, and 10, respectively. There was a significant quadratic effect of cyberloafing on productivity but opposite the direction predicted. That is, higher and lower cyberloafing had more beneficial effects relative to moderate levels of cyberloafing. There was not a significant

quadratic effect of cyberloafing on job engagement or stress. Thus, I did not have support for Hypothesis 4.

Table 9

Curvilinear Cyberloafing Effects on Outcomes in Study 1

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Cyberloafing	-.15	.06	-2.34	.02		.02*
	2. Cyberloafing^2	.09	.09	1.00	.32	.01	.03*
Job Engagement	1. Cyberloafing	-.13	.09	-1.41	.16		.01
	2. Cyberloafing^2	.08	.12	.65	.52	.00	.01
Stress	1. Cyberloafing	.14	.10	1.35	.18		.01
	2. Cyberloafing^2	-.02	.14	-.16	.88	.00	.01

Note. $N = 225$. *$p < .05$; **$p < .01$; ***$p < .001$. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis.

Figure 18

Relationship between Cyberloafing and Productivity in Study 1

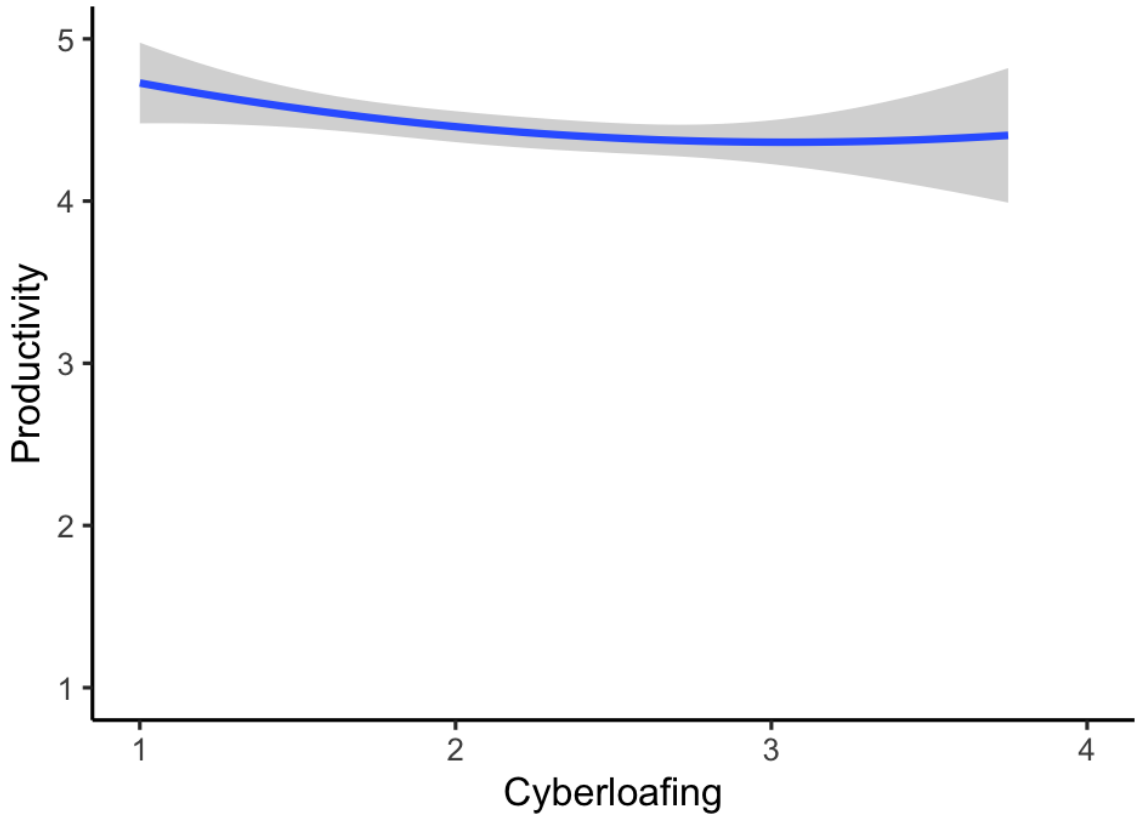


Figure 19

Relationship between Cyberloafing and Job Engagement in Study 1

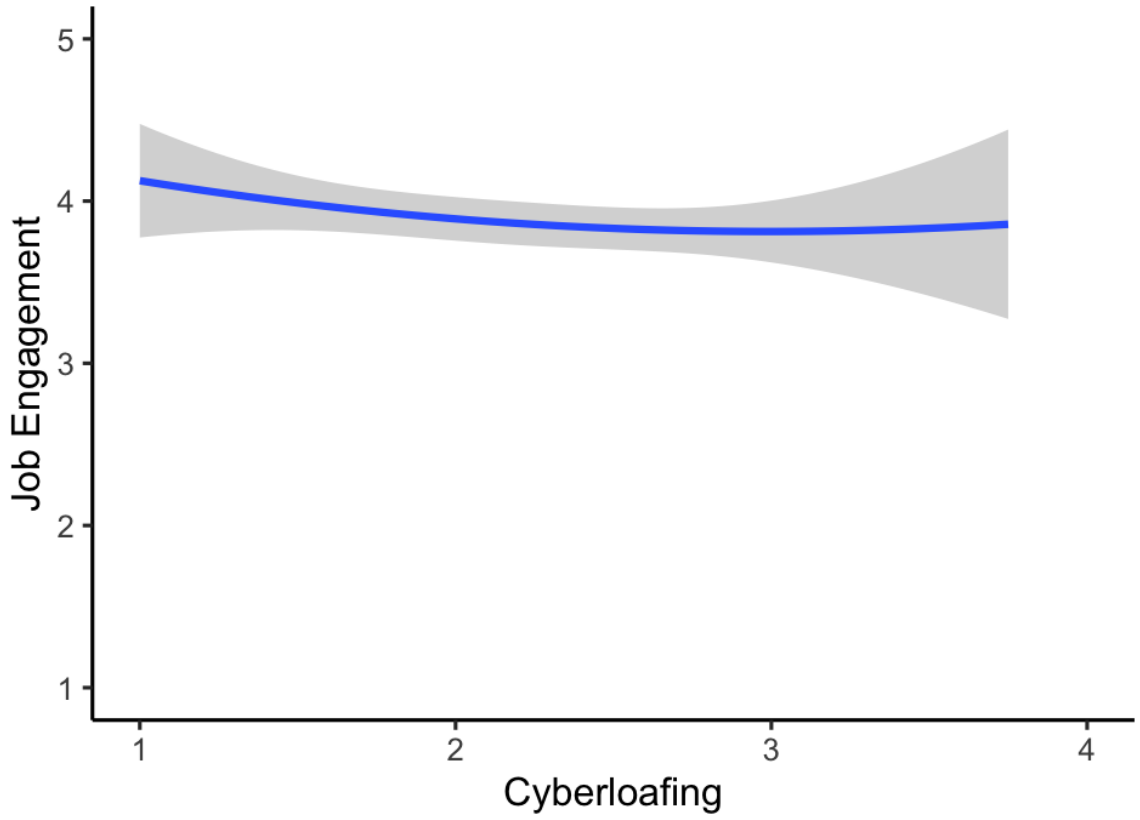
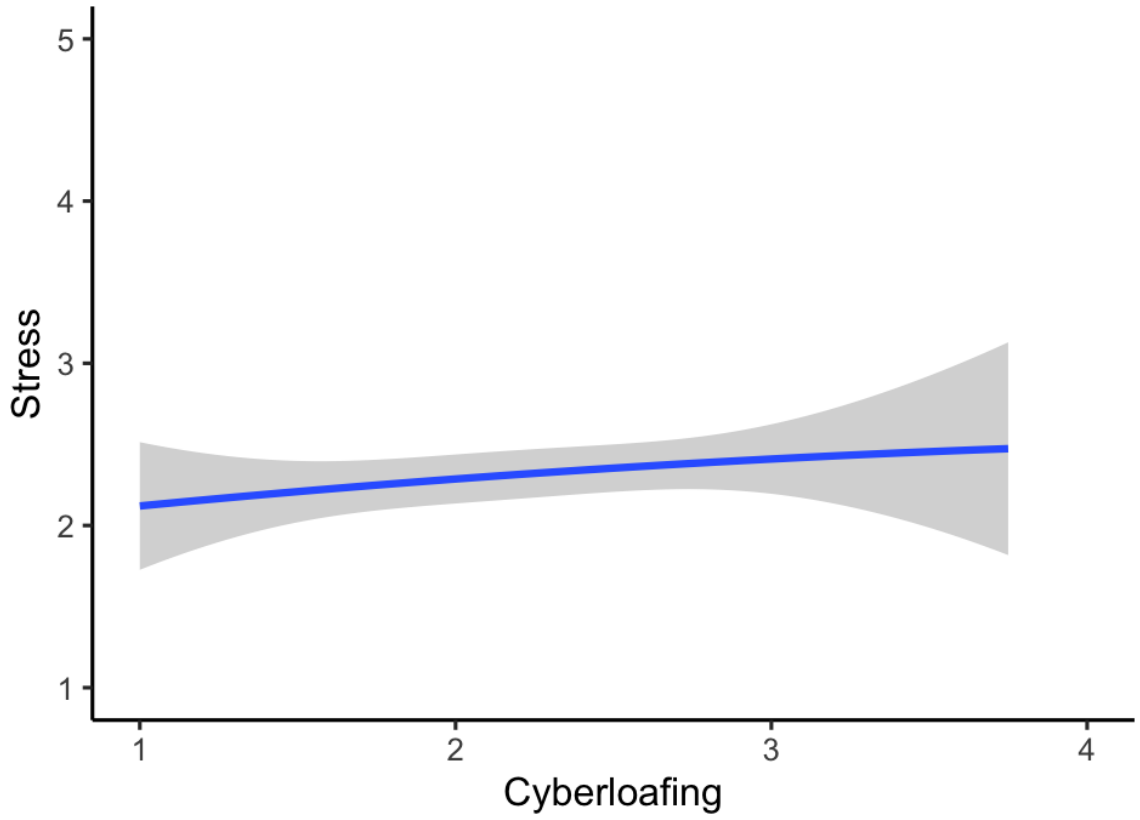


Figure 20

Curvilinear Relationship between Cyberloafing and Stress in Study 1



Study 1 Discussion

The purpose of Study 1 was to examine conditions affecting potential benefits versus costs of cyberloafing, specifically, by examining how task and individual variables (i.e., job complexity, sustained attention demands, and job experience) affect relationships between cyberloafing and outcomes (productivity, job engagement, and stress). Results revealed no support for hypotheses. Rather, results revealed significant correlations for cyberloafing with productivity, complexity, cyberloafing attitudes, and hours worked per week (*rs* = -.16, .19, .14, and .21, respectively). Also, results revealed a significant interaction between cyberloafing and linear complexity on engagement, indicating a nonsignificant relationship for cyberloafing at 1 *SD* below the mean of complexity and a significant negative relationship at 1 *SD* above the mean of complexity. Finally, results indicated a curvilinear effect of cyberloafing on productivity but opposite the direction expected. That is, I expected to observe a positive relationship between cyberloafing and productivity up to moderate levels of cyberloafing, and a negative relationship as cyberloafing increased to high levels. Possible explanations relate to the characteristics of our participants, their perceptions, and the nature of their work.

The majority of participants in Study 1 were young, part-time employees. Participants in this sample reported infrequent cyberloafing, i.e., between once per week and once per month (*M* = 2.5 on a 4-point scale). Further, participants reported moderate job complexity (*M* = 2.98 on a 5-point scale), moderate sustained attention demands (*M* = 3.5 on a 6-point scale), and lower experience (*M* = 2.46, on a 6-point scale). At the same time, participants perceived themselves to be very productive and engaged (*M*s = 4.58 and 3.98, respectively on a 5-point scale) and moderately stressed (*M* = 2.43 on a 5-point scale). I will compare levels on these variables with

levels observed for the full-time employees in the discussion of Study 2 and the general discussion.

My study had some potential limitations that influenced conclusions I drew. For example, Study 1 had a small sample, which might have produced insufficient power to detect predicted effects. However, examination of simple effects displayed in my figures suggested interactive effects were not strong. Also, I used IER and attention checks to ensure data quality, but self-report surveys are susceptible to socially desirable responding. For example, cyberloafing could be perceived as a deviant behavior, and participants engaging in socially desirable responding may have underreported their levels of cyberloafing. However, participants' average social desirability score was 4.19 on a 7-point scale, which fails to provide strong support for a social desirability explanation although I note that participants could also provide socially desirable responses to this measure. In sum, results from Study 1 resulted in more questions than answers.

Study 2 Results and Discussion

Data cleaning and Sample Characteristics

Out of 538 participants who participated in the study, 113 were removed due to incomplete surveys or failing two out of the three attention checks. I reverse-coded items as needed. To calculate composite scale scores, I averaged item scores for each measure. Participants worked in the following fields: 6% accommodation and food services, 8% administrative and support services, 1% agriculture, forestry, fishing, and hunting, 4% arts, entertainment, and recreation, 2% construction, 7% educational services, 12% finance and insurance, 1% government, 8% health care and social assistance, 24% information, 5% management of companies and enterprises, 11% manufacturing, mining, quarrying, and oil and gas extraction, 1% other services (except public administration), 5% professional, scientific, and technical services, 1% real estate and rental and leasing, 1% retail trade, 1% transportation and warehousing, and 2% other services. Within this sample, 9% worked 10-20 hours per week, 14% worked 21-30 hours per week, 43% worked 31-40 hours per week, 28% worked 41-50 hours per week, and 6% worked over 50 hours per week. In this sample, 93% of participants were salaried employees, and 7% were not salaried employees. In this sample, 54% of participants were male, 46% were female. Relative to age, 2% of participants were 18-22 years old, 28% were 23-27 years old, 26% were 28-32 years old, 21% were 33-40 years old, 12% were 41-49 years old, and 11% were over 50 years old. In this sample, 75% of participants were Caucasian, 4% were African American, 7% were Latino, 9% were Asian, 1% were Native American, 1% were mixed.

Descriptive Statistics

I calculated coefficient alphas for each of my measures. I reported means, standard deviations, coefficient alphas, and intercorrelations for all primary measures (see Table 10). Internal consistency reliabilities, i.e., coefficients were all above .70, except for sustained attention ($\alpha = .53$). Similar to Study 1, the data in Study 2 indicated that the cyberloafing subscales were intercorrelated. Browsing related cyberloafing was related to interactive cyberloafing ($r = .74$) and non-work-related email cyberloafing ($r = .54$). Non-work-related email cyberloafing was significantly related to interactive cyberloafing scores ($r = .51$). Cyberloafing was significantly related to job complexity, sustained attention, job experience, productivity, job engagement, and stress scores ($r = .68, .45, -.15, .27, .34, .51$, respectively). The factors of cyberloafing were correlated with the primary measures.

Further, I reported means, standard deviations, coefficient alphas, and intercorrelations for all primary and exploratory measures (see Table 11). Cyberloafing was related to cyberloafing attitude, self-efficacy, OCB, CWB, fatigue, and boredom ($r = .60, .46, .52, .45, .65$, and .44, respectively). Cyberloafing factors were all correlated with each other.

Table 10

Descriptive Statistics for Primary Predictors and Outcomes in Study 2

Variable	*M*	*SD*	1	2	3	4	5	6	7
1. Browsing	3.00	.49	**.67**						
2. Interactive	2.90	.57	.74***	**.78**					
3. Email	2.90	.65	.54***	.51***	**.67**				
4. Cyberloafing	2.90	.48	.90***	.93***	.72***	**.87**			
5. Job Complexity	3.70	.58	.63***	.63***	.47***	.68***	**.92**		
6. Attention	4.00	.53	.41***	.41***	.31***	.45***	.57***	**.53**	
7. Job Experience	3.20	1.10	-.12*	-.21***	.31***	-.15**	-.12*	-.03	**.69**[1]
8. Productivity	4.20	.52	.29***	.20***	.23***	.27***	.36***	.60***	.13*
9. Job Engagement	4.10	.53	.34***	.31***	.21***	.40***	.48***	.70***	.09
10. Stress	3.30	.91	.42***	.52***	.33***	.51***	.62***	.37***	-.28

Note. N = 425. Coefficient alphas appear on the diagonal. *p < .05; **p < .01; ***p < .001. Complexity = Job Complexity, Attention = Sustained Attention, Experience = Job Experience, and Engagement = Job Engagement. [1]This is a correlation because Job Experience is a two-item measure.

Table 10 Continued

Descriptive Statistics for Primary Predictors and Outcomes in Study 2

Variable	*M*	*SD*	8	9	10
8. Productivity	4.20	.52	.**74**		
9. Job Engagement	4.10	.53	.75***.	**91**	
10. Stress	3.30	.91	-.07	.10*	.**94**

Note. N = 425. Coefficient alphas appear on the diagonal. *p < .05; **p < .01; ***p < .001. Complexity = Job Complexity, Attention = Sustained Attention, Experience = Job Experience, and Engagement = Job Engagement. [1]This is a correlation because Job Experience is a two-item measure.

Table 11

Descriptive Statistics for Primary and Exploratory Measures in Study 2

Variable	*M*	*SD*	1	2	3	4	5	6	7	8
1.Cyberloafing	2.90	.48	**.87**							
2. Job Complexity	3.70	.58	.68***	**.92**						
3. Attention	4.00	.53	.45***	.57***	**.53**					
4. Job Experience	3.20	1.10	-.15**	-.12*	-.03	**69**[1]				
5. Productivity	4.20	.52	.27***	.36***	.60***	.13*	**.74**			
6. Job Engagement	4.10	.53	.40***	.48***	.70***	.09	.75***	**.91**		
7. Stress	3.30	.91	.51***	.62***	.37***	-.28***	-.07	.10*	**.94**	
8. CL Attitude	3.80	.57	.60***	.71***	.66***	-.08	.45***	.59***	.56***	**.82**
9. Social Desirability	3.00	1.10	.01	-.09	.09	.21***	.33***	.28***	-.31***	.02
10. Self-Efficacy	3.80	.55	.46***	.58***	.62***	.07	.63***	.67***	.28***	.61***
11. Job Satisfaction	5.10	1.10	-.01	-.03	.28***	.05	.47***	.49***	-.25***	.12*
12. OCB	5.20	.93	.52***	.69***	.60***	.00	.47***	.55***	.50***	.66***
13. CWB	3.20	1.10	.45***	.53***	.30***	-.13**	.04	.82***	.50***	-.30***
14. Fatigue	4.30	.87	.65***	.82***	.72***	-.02	.45***	.60***	.78***	.82***
15. Boredom	3.40	.96	.44***	.54***	.33***	-.24***	-.06	.04	.79***	.47***

Note. $N = 425$. *$p < .05$; **$p < .01$; ***$p < .001$. Coefficient alphas appear on the diagonal. Complexity = Job Complexity, Attention = Sustained Attention, Experience = Job Experience, Engagement = Job Engagement, CL Attitude = Attitude toward Cyberloafing, OCB = Organizational Citizenship Behavior, and CWB = Counterproductive Work Behavior. [1]This is a correlation because Job Experience is a two-item measure.

Table 11 Continued

Descriptive Statistics for Primary and Exploratory Measures in Study 2

Variable	*M*	*SD*	9	10	11	12	13	14	15
9. Social Desirability	3.00	1.10	**.92**						
10. Self-Efficacy	3.80	.55	.28***	**.92**					
11. Job Satisfaction	5.10	1.10	.36***	.20***	**.45**				
12. OCB	5.20	.93	.12*	.74***	.09	**.95**			
13. CWB	3.20	1.10	-.30	.25***	-.40***	.46***	**.95**		
14. Fatigue	4.30	.87	.04	.73***	.07	.78***	.83***	**.93**	
15. Boredom	3.40	.96	-.27***	.27	-.36***	.63	.45***	.66***	**.86**

Note. N = 425. *p < .05; **p < .01; ***p < .001. Coefficient alphas appear on the diagonal. Complexity = Job Complexity, Attention = Sustained Attention, Experience = Job Experience, Engagement = Job Engagement, CL Attitude = Attitude toward Cyberloafing, OCB = Organizational Citizenship Behavior, and CWB = Counterproductive Work Behavior. [1]This is a correlation because Job Experience is a two-item measure.

Scale Construction (Confirmatory Factor Analyses)

I conducted confirmatory factor analyses for my primary measures. Cyberloafing as a three-factor model demonstrated less than adequate fit. The RMSEA was .07, the SRMR was .06, the CFI was .87, and χ^2 was 336.65. Cyberloafing as a one factor model demonstrated less than adequate fit. The RMSEA was .08, the SRMR was .06, the CFI was .83, and χ^2 was 399.78. An ANOVA demonstrated that the three-factor model of cyberloafing fit significantly better than the unidimensional model of cyberloafing, χ^2 difference = 63.13, p < .001. Thus, I provided results for the cyberloafing composite and subscales. To better understand my measures, I conducted confirmatory factor analyses for my moderator and outcome measures. Job complexity as a unidimensional model demonstrated less than adequate fit. The RMSEA was .07, the SRMR was .05, the CFI was .87, and χ^2 was 504.96. Sustained attention as a

unidimensional model demonstrated poor fit. The RMSEA was .16, the SRMR was .09, the CFI was .74, and χ^2 was 63.05. I did not conduct a CFA for job experience because this measure was only two items. Productivity as a unidimensional model demonstrated adequate fit. The RMSEA was .10, the SRMR was .04, the CFI was .96, and χ^2 was 29.81). Job engagement as a unidimensional model demonstrated poor fit. The RMSEA was .20, the SRMR was .13, the CFI was .65, and χ^2 was 1283.82. Stress as a unidimensional model demonstrated poor fit. The RMSEA was .14, the SRMR was .08, the CFI was .78, and χ^2 was 399.25. Regardless of fit, I used composites of these measures in my analyses because each was a well-established measure. Poor fit might have reflected unique characteristics of my sample or possibly future research is needed to develop these measures further.

Blau, Yang, and Cook (2006) conducted a confirmatory factor analysis that demonstrated good fit of the three-factor model of cyberloafing. The scales I used have been used frequently by other researchers and have demonstrated adequate fit in other studies (e.g., Wu et al, 2022). This suggests that unique aspects of my sample might have affected the fit of these models.

Test of Hypotheses

Job Complexity as a Moderator of Cyberloafing Effects on Outcomes (Hypothesis 1). I predicted that job complexity would moderate the relationship between cyberloafing and study outcomes (Hypothesis 1). I expected to observe a positive relationship between cyberloafing and productivity or engagement from low to moderate levels of job complexity and a negative relationship for moderate to high levels of job complexity. I expected to observe a negative relationship between cyberloafing and stress from low to moderate levels of job complexity and a positive relationship for moderate to high levels of job complexity. To test Hypothesis 1, for each outcome, I completed the following three analyses: tests of quadratic

complexity effects, tests of full models with quadratic complexity as a moderator as hypothesized, and tests of linear complexity as a moderator. Results are shown in Tables 12 through 14.

First, I examined evidence of a quadratic effect for complexity by regressing each outcome on cyberloafing and linear complexity in Step 1 and quadratic (i.e., squared) complexity in Step 2. Results indicated that only email-related cyberloafing had a significant quadratic complexity effect on job engagement and stress (see Table 12d). For *email-related* cyberloafing, results indicated a significant quadratic complexity effect for job complexity for stress. However, the results were in the opposite direction to what I predicted.

Table 12a

Curvilinear and Linear Job Complexity Effects on Outcomes in the Presence of Cyberloafing in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Cyberloafing	-.01	.09	-.11	.91		
	Complexity	.19	.05	3.81	.00		.156***
	2. Complexity^2	.10	.11	.95	.34	.002	.158***
Engagement	1. Cyberloafing	-.03	.09	-.31	.76		
	Complexity	.23	.05	4.86	.00		.268***
	2. Complexity^2	.04	.10	.42	.67	.001	.269***
Stress	1. Cyberloafing	.00	.14	.03	.98		
	Complexity	-.04	.07	-.49	.63		.402***
	2. Complexity^2	.19	.16	1.21	.23	.003	.405***

Note. N = 425. *p < .05; **p < .01; ***p < .001. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis.

Table 12b

Curvilinear and Linear Job Complexity Effects on Outcomes in the Presence of Interactive Cyberloafing in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Interactive CL	-.02	.08	-.29	.78		
	Complexity	.20	.05	4.01	.00		.159***
	2. Complexity^2	.15	.09	.54	.12	.005	.164***
Engagement	1. Interactive CL	-.03	.08	-.36	.72		
	Complexity	.23	.05	4.88	.00		.268***
	2. Complexity^2	.04	.89	.62	.61	.001	.269***
Stress	1. Interactive CL	.01	.12	.11	.91		
	Complexity	-.02	.07	-.34	.73		.417***
	2. Complexity^2	.02	.14	.18	.86	.001	.416***

Note. N = 425. *p < .05; **p < .01; ***p < .001. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis. Interactive CL = Interactive Cyberloafing.

Table 12c

Curvilinear and Linear Job Complexity Effects on Outcomes in the Presence of Browsing-related Cyberloafing in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Browsing CL	-.06	.09	-.59	.56		
	Complexity	.18	.05	3.62	.00		.159***
	2. Complexity^2	.18	.10	1.79	.07	.006	.165***
Engagement	1. Browsing CL	-.07	.09	-.83	.41		
	Complexity	.22	.05	4.69	.00		.269***
	2. Complexity^2	.08	.10	.87	.39	.001	.270***
Stress	1. Browsing CL	.10	.14	.69	.49		
	Complexity	.00	.07	.02	.99		.389***
	2. Complexity^2	.04	.15	.25	.81	.001	.390***

Note. N = 425. *p < .05; **p < .01; ***p < .001. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis. Browsing CL = Browsing-related Cyberloafing.

Table 12d

Curvilinear and Linear Job Complexity Effects on Outcomes in the Presence of Email-related Cyberloafing in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Email CL	.08	.08	.94	.35		
	Complexity	.19	.05	3.70	.00		.157***
	2. Complexity^2	-.11	.06	-1.77	.08	.014	.163***
Engagement	1. Email CL	.07	.08	.87	.39		
	Complexity	.24	.05	5.06	.00		.272***
	2. Complexity^2	-.01	.06	-.17	.00	.001	.271***
Stress	1. Email CL	-.08	.12	-.66	.51		
	Complexity	-.00	.08	-.07	.94		.389***
	2. Complexity^2	.24	.09	2.49	.01	.001	.398***

Note. N = 425. *p < .05; **p < .01; ***p < .001. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis. Email CL = Non-Work-related Email Cyberloafing.

Second, I examined evidence of the predicted effect that complexity would have a curvilinear moderating effect on the relationship between cyberloafing and outcomes. This was the formal test of Hypothesis 1. I entered the main effects, the Cyberloafing X Complexity interaction, and the complexity squared effect in Step 1. I entered the predicted Cyberloafing X Complexity Squared (quadratic) effect in Step 2. Results indicated that the predicted Cyberloafing X Complexity Squared (quadratic) interaction effect was not significant for outcomes (see Table 13). Thus, I found no support for Hypothesis 1.

Table 13a

Job Complexity as a Curvilinear Moderator of Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Cyberloafing	.10	.11	.95	.34		
	Complexity	-1.24	1.92	-.65	.52		
	Complexity^2	.17	.28	.63	.53		
	CL*C Int	.18	.69	.26	.91		.160***
	2. CL*C^2 Int	.01	.10	-.11	.91	.002	.158***
Engagement	1. Cyberloafing	.04	.10	.42	.57		
	Complexity	-1.76	1.83	-.97	.34		
	Complexity^2	.29	.26	1.11	.27		
	CL*C Int	.24	.66	.37	.71		.269***
	2. CL*C^2 Int	-.03	.09	-.31	.76	.001	.268***
Stress	1. Cyberloafing	.19	.16	1.21	.23		
	Complexity	1.19	2.80	.42	.67		
	Complexity^2	-.14	.40	-.34	.73		
	CL*C Int	.17	1.01	.16	.87		.405***
	2. CL*C^2 Int	.00	.14	.03	.98	.001	.404***

Note. N = 425. *p < .05; **p < .01; ***p < .001. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis. CL*C Int = Cyberloafing X Complexity Interaction. CL*C^2 Int = Cyberloafing X Complexity^2 Interaction.

Table 13b

Job Complexity as a Curvilinear Moderator of Interactive Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Interactive CL	.14	.09	1.54	.12		
	Complexity	-1.39	1.61	.86	.39		
	Complexity^2	.18	.23	.79	.43		
	CL*C Int	.32	.61	.52	.60		.164***
	2. CL*C^2 Int	-.02	.08	-.29	.78	.001	.163***
Engagement	1. Interactive CL	.05	.89	.52	.61		
	Complexity	-1.70	1.53	-1.11	.27		
	Complexity^2	.28	.22	1.27	.20		
	CL*C Int	.25	.58	.43	.67		.268***
	2. CL*C^2 Int	-.03	.08	-.36	.72	.001	.269***
Stress	1. Interactive CL	.02	.14	.18	.86		
	Complexity	1.20	2.33	.51	.61		
	Complexity^2	-.07	.34	-.22	.83		
	CL*C Int	-.07	.88	-.08	.94		.416***
	2. CL*C^2 Int	.01	.12	.10	.91	.001	.417***

Note. N = 425. *p < .05; **p < .01; ***p < .001. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis. CL*C Int = Interactive Cyberloafing X Complexity Interaction. CL*C^2 Int = Interactive Cyberloafing X Complexity^2 Interaction. Interactive CL = Interactive Cyberloafing.

Table 13c

Job Complexity as a Curvilinear Moderator of Browsing-related Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Browsing CL	.18	.10	1.79	.07		
	Complexity	-2.16	.95	-1.11	.27		
	Complexity^2	.26	.28	.94	.45		
	CL*C Int	.58	.68	.85	.39		.165***
	2. CL*C^2 Int	-.06	.09	-.59	.56	.001	.166**
Engagement	1. Browsing CL	.08	.10	.87	.39		
	Complexity	-2.70	1.86	-1.46	.15		
	Complexity^2	.40	.27	1.51	.13		
	CL*C Int	.61	.65	.95	.34		.269***
	2. CL*C^2 Int	-.07	.09	-.83	.41	.002	.271***
Stress	1. Browsing CL	.04	.15	.45	.81		
	Complexity	2.88	2.89	.99	.32		
	Complexity^2	-.30	.42	-.71	.48		
	CL*C Int	-.65	1.00	-.65	.52		.388***
	2. CL*C^2 Int	.10	.14	.69	.49	.001	.389***

Note. $N = 425$. *$p < .05$; **$p < .01$; ***$p < .001$. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis. CL*C Int = Browsing-related Cyberloafing X Complexity Interaction. Browsing-related CL*C^2 Int = Cyberloafing X Complexity^2 Interaction. Browsing CL = Browsing Cyberloafing.

Table 13d

Job Complexity as a Curvilinear Moderator of Email-related Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Email CL	-.11	.06	-1.77	.08		.163***
	Complexity	.65	1.77	.37	.72		
	CL*C Int	-.00	.25	-.02	.99		
	$Complexity^2$	-.67	.60.	-1.13	.26		
	2. CL*C^2 Int	.08	.08	.94	.35	.002	.165***
Engagement	1. Email CL	-.01	.06	-.17	.87		
	Complexity	.14	1.68	.08	.94		
	$Complexity^2$	.05	.24	.20	.85		
	CL*C Int	-.50	.57	-.88	.38		
	2. CL*C^2 Int	.07	.08	.87	.39	.002	.273***
Stress	1. Email CL	.24	.09	2.49	.01		.398***
	Complexity	-.82	2.60	-.32	.75		
	CL*C Int	.15	.37	.41	.69		
	$Complexity^2$	.81	.88	.92	.36		
	2. CL*C^2 Int	-.08	.12	-.66	.51	.001	.399***

Note. $N = 425$. *$p < .05$; **$p < .01$; ***$p < .001$. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis. CL*C Int = Email-related Cyberloafing X Complexity Interaction. CL*C^2 Int = Email-related Cyberloafing X $Complexity^2$ Interaction. Email CL = Non-Work Email-related Cyberloafing.

Third, I conducted a post hoc test to examine whether job complexity acted as a linear moderator of the relationship between cyberloafing and study outcomes. I regressed each outcome on the two main effects (cyberloafing and complexity) in Step 1 and the interaction term in Step 2. Results are shown in Table 14, and simple main effects are displayed for productivity, job engagement, and stress in Figures 11, 12, and 13, respectively. Because the pattern of effects observed was similar for the composite and cyberloafing subscales, figures are provided for composite cyberloafing only. Results indicated that the interaction term was not significant for stress, indicating that job complexity did not have a linear moderating effect on the relationship between cyberloafing and stress. Results indicated a significant interaction effect for productivity, indicating that job complexity had a linear moderating effect on the relationship between cyberloafing (*composite, interactive*, and *browsing-related*) and productivity. Specifically, at 1 *SD* above the mean of job complexity, the effect of cyberloafing on productivity was positive and significant (b = .24, se = .09, t = 2.79, p = .01). At 1 *SD* below the mean of job complexity, the effect of cyberloafing on productivity was not significant (b = -.06, se = .08, t = -.82, p = .41). At 1 *SD* above the mean of job complexity, the effect of *interactive* cyberloafing on productivity was positive and significant (b = .16, se = .07, t = 2.20, p = .02). At 1 *SD* below the mean of job complexity, the effect of *interactive* cyberloafing on productivity was significant (b = -.15, se = .06, t = -2.41, p = .02). At 1 *SD* above the mean of job complexity, the effect of *browsing-related* cyberloafing on productivity was positive and significant (b = .33, se = .08, t = 3.92, p < .001). At 1 *SD* below the mean of job complexity, the effect of *browsing-related* cyberloafing on productivity was not significant (b = -.00, se = .07, t = -.06, p = .96).

Further, results indicated a significant interaction effect for job engagement, indicating that job complexity had a linear moderating effect on the relationship between cyberloafing

(*composite, interactive,* and *browsing-related*) and job engagement. At 1 *SD* above the mean of job complexity, the effect of cyberloafing on job engagement was significant (b = .23, se = .07, t = 2.73, p < .01). At 1 *SD* below the mean of job complexity, the effect of cyberloafing on job engagement not significant (b = -.09, se = .07, t = -1.31, p = .19). At 1 *SD* above the mean of job complexity, the effect of *interactive* cyberloafing on job engagement was significant (b = .18, se = .07, t = 2.63, p < .01). At 1 *SD* below the mean of job complexity, the effect of *interactive* cyberloafing on job engagement not significant (b = -.10, se =.06, t = -1.73, p = .09). At 1 *SD* above the mean of job complexity, the effect of *browsing-related* cyberloafing on job engagement was significant (b = .29, se = .08, t = 3.50, p < .001). At 1 *SD* below the mean of job complexity, the effect of *browsing-related* cyberloafing on job engagement was significant (b = -.04, se = .07, t = -.53, p = .60).

Further, results indicated a significant interaction effect for stress, indicating that job complexity had a linear moderating effect on the relationship between *email-related* cyberloafing and stress. At 1 *SD* above the mean of job complexity, the effect of *email-related* cyberloafing on stress was significant (b = .19, se = .08, t = 2.37, p = .02). At 1 *SD* below the mean of job complexity, the effect of *email-related* cyberloafing on stress was not significant (b = .04, se = .08, t = -.49, p = .62).

Table 14a

Job Complexity as a Linear Moderator of Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Cyberloafing	.29	.05	5.75	.00		
	Complexity	.29	.06	5.14	.00		.127**
	2. Interaction	.26	.08	3.38	.00	.023	.150**
Engagement	1. Cyberloafing	.37	.05	7.41	.00		
	Complexity	.42	.05	7.82	.00		.227**
	2. Interaction	.27	.07	3.74	.00	.025	.252**
Stress	1. Cyberloafing	.97	.08	12.32	.00		
	Complexity	.79	.08	9.87	.00		.402**
	2. Interaction	.05	.11	.49	.62	.001	.403**

Note. $N = 425$. *$p < .05$; **$p < .01$; ***$p < .001$. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis.

Table 14b

Job Complexity as a Linear Moderator of Interactive Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Interactive CL	.18	.04	4.19	.00		
	Complexity	.34	.05	6.48	.00		.127**
	2. Interaction	.26	.07	3.96	.00	.031	.158***
Engagement	1. Interactive CL	.28	.04	6.48	.00		
	Complexity	.43	.05	8.63	.00		.227***
	2. Interaction	.24	.06	3.83	.00	.026	.253***
Stress	1. Interactive CL	.83	.07	12.65	.00		
	Complexity	.75	.07	10.14	.00		.412***
	2. Interaction	-.01	.09	-.13	.90	.005	.417***

Note. N = 425. *p < .05; **p < .01; ***p < .001. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis. Interactive CL = Interactive Cyberloafing.

Table 14c

Job Complexity as a Linear Moderator of Browsing-related Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Browsing CL	.31	.05	6.20	.00		
	Complexity	.26	.05	4.90	.00		.134 ***
	2. Interaction	.29	.08	3.73	.00	.026	.160 ***
Engagement	1. Browsing CL	.37	.05	7.41	.00		
	Complexity	.39	.05	7.82	.00		.230***
	2. Interaction	.27	.07	3.71	.00	.026	.254***
Stress	1. Browsing CL	.78	.08	9.55	.00		
	Complexity	.92	.08	12.07	.00		.389 ***
	2. Interaction	.02	.11	.20	.85	.002	.391 ***

Note. N = 425. *p < .05; **p < .01; ***p < .001. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis. Browsing CL = Browsing-related Cyberloafing.

Table 14d

Job Complexity as a Linear Moderator of Email-related Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Email CL	.18	.04	4.79	.00		
	Complexity	.28	.05	6.18	.00		.130 ***
	2. Interaction	-.01	.06	-.14	.89	.001	.131 ***
Engagement	1. Email CL	.18	.04	4.50	.00		
	Complexity	.44	.04	9.95	.00		.227***
	2. Interaction	.10	.06	1.84	.06		.233***
Stress	1. Email CL	.47	.06	7.27	.00		
	Complexity	.93	.07	13.86	.00		.389 ***
	2. Interaction	.20	.09	2.25	.03	.004	.397***

Note. $N = 425$. *$p < .05$; **$p < .01$; ***$p < .001$. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis. Email CL = Non-Work Email-related Cyberloafing.

Figure 21

Simple Main Effect of Job Complexity on Cyberloafing and Productivity in Study 2

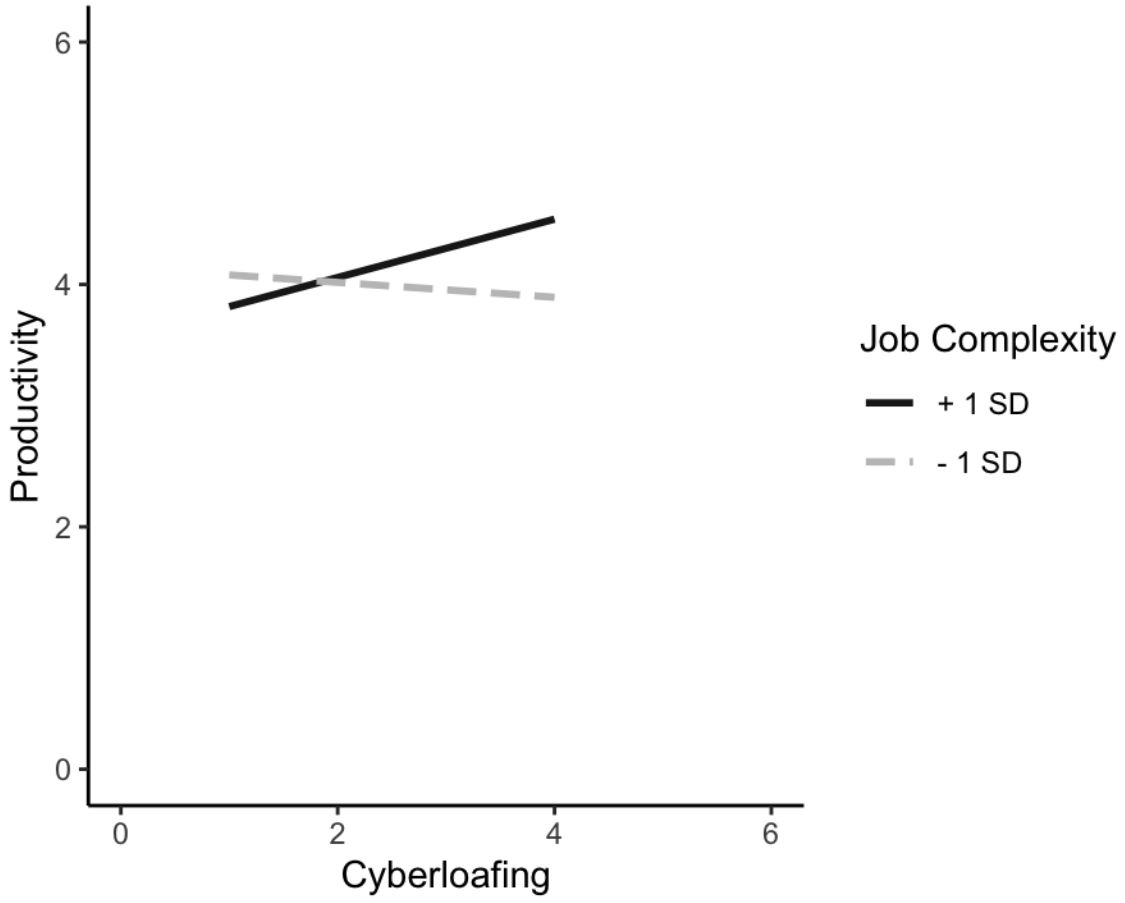


Figure 22

Simple Main Effect of Job Complexity on Cyberloafing and Job Engagement in Study 2

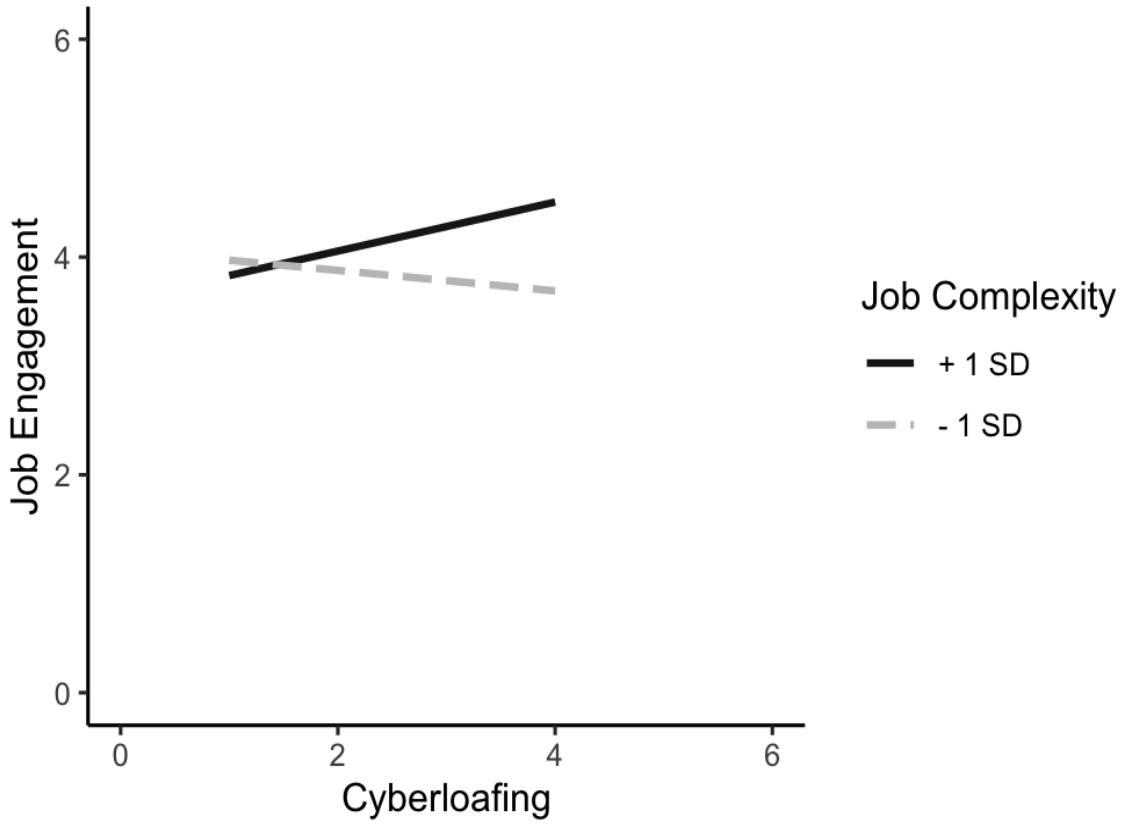
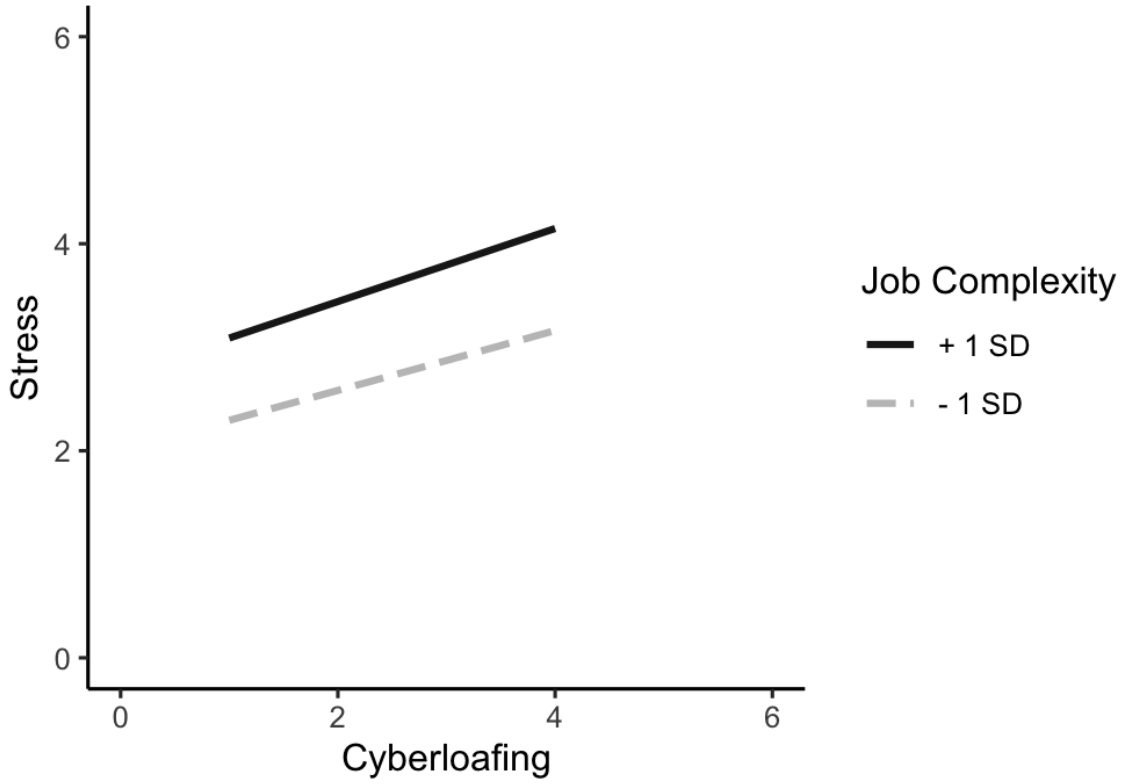


Figure 23

Simple Main Effect of Job Complexity on Cyberloafing and Stress in Study 2



In my test of predictions, I examined the effects of three moderators and found no support for Hypothesis 1. In post hoc analyses, results revealed that job complexity moderated a linear relationship between cyberloafing (*composite, interactive,* and *browsing-related*) and productivity and engagement but not stress. Rather, results showed that job complexity moderated a linear relationship between *email-related* cyberloafing and stress but not productivity or job engagement.

Sustained Attention as a Moderator of Cyberloafing Effects on Outcomes

(Hypothesis 2). I predicted that sustained attention would moderate the relationship between cyberloafing and two study outcomes, i.e., productivity and stress (Hypothesis 2). Specifically, I predicted that cyberloafing would become less beneficial as attention requirements increased. To test Hypothesis 2, for each outcome, I regressed the outcome on the two main effects in the first step and the interaction term in the second step. Results are shown in Table 15 and simple effects are shown in Figures 14 and 15. Figures are shown only for composite cyberloafing because results indicated similar patterns of effects for composite cyberloafing and cyberloafing subscales.

For productivity, the interaction term was significant, indicating that sustained attention moderated the relationship between certain cyberloafing factors (*browsing-related* and *email-related*) and productivity. At 1 *SD* above the mean of sustained attention, the effect of *browsing-related* cyberloafing on productivity was not significant (b = -.01, se = .06, t = -.22, p = .83). At 1 *SD* below the mean of sustained attention, the effect of *browsing-related* cyberloafing on productivity was significant (b = .15, se = .06, t = 2.32, p < .05). At 1 *SD* above the mean of sustained attention, the effect of *email-related* cyberloafing on productivity was not significant (b = -.03, se = .04, t = -.78, p = .43). At 1 *SD* below the mean of sustained attention, the effect of *email-related* cyberloafing on productivity was significant (b = .15, se = .05., t = 2.99, p < .01).

For stress, the interaction term was significant, indicating that sustained attention moderates the relationship between cyberloafing (*composite, interactive, browsing-related, and email-related*) and stress. At 1 *SD* above the mean of sustained attention, the effect of cyberloafing on stress was significant (b = .99, se = .10, t = 9.65, p < .001). At 1 *SD* below the mean of sustained attention, the effect of cyberloafing on stress was significant (b = .58, se = .12,

$t = 4.78$, $p < .001$). However, the pattern of effects was opposite the predicted direction. In addition to the composite cyberloafing score, I examined simple main effects for the factors. At 1 *SD* above the mean of sustained attention, the effect of *interactive* cyberloafing on stress was significant ($b = .87$ *se* =.09, $t = 9.62$, $p < .001$). At 1 *SD* below the mean of sustained attention, the effect of *interactive* cyberloafing on stress was significant ($b = .55$, *se* = .09, $t = 5.83$, $p < .001$). *Interactive* cyberloafing demonstrated similar results to the composite cyberloafing score. At 1 *SD* above the mean of sustained attention, the effect of *browsing-related* cyberloafing on stress was significant ($b = .83$, *se* =.11, $t = 7.76$, $p < .001$). At 1 *SD* below the mean of sustained attention, the effect of *browsing-related* cyberloafing on stress was significant ($b = .32$, *se* = .12, $t = 2.71$, $p < .01$). *Browsing-related* cyberloafing demonstrated similar results to the *composite* cyberloafing score. At 1 *SD* above the mean of sustained attention, the effect of *email-related* cyberloafing on stress was significant ($b = .50$, *se* = .08, $t = 6.48$, $p < .001$). At 1 *SD* below the mean of sustained attention, the effect of *email-related* cyberloafing on stress was not significant ($b = .07$, *se* = .10, $t = .71$, $p = .47$). *Email-related* cyberloafing demonstrated similar results to the *composite* cyberloafing score. In my test of predictions, I examined the effects of two moderators and did not find support for my hypotheses. Thus, I found no support for Hypothesis 2.

Table 15a

Sustained Attention as a Moderator of Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Cyberloafing	.29	.05	5.75	.00		
	Attention	.59	.04	13.67	.00		.357***
	2. Interaction	-.12	.07	-1.65	.10	.011	.366***
Stress	1. Cyberloafing	.97	.08	12.32	.00		
	Attention	.29	.08	3.64	.00		.287***
	2. Interaction	.39	.13	2.87	.00	.013	.300***

Note. N = 425. *p < .05; **p < .01; ***p < .001. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis.

Table 15b

Sustained Attention as a Moderator of Interactive Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Interactive CL	.18	.04	4.19	.00		
	Attention	.62	.04	14.52	.00		.359 ***
	2. Interaction	-.03	.06	-.42	.68	.001	.360 ***
Stress	1. Interactive CL	.83	.07	12.65	.00		
	Attention	.31	.08	4.00	.00		.301 ***
	2. Interaction	.31	.11	2.70	.01	.009	.310 ***

Note. N = 425. *p < .05; **p < .01; ***p < .001. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis. Interactive CL = Interactive Cyberloafing.

Table 15c

Sustained Attention as a Moderator of Browsing-related Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Browsing CL	.31	.05	6.20	.00		
	Attention	.57	.04	13.49	.00		.360***
	2. Interaction	-.15	.07	-2.06	.04	.006	.366***
Stress	1. Browsing CL	.78	.08	9.55	.00		
	Attention	.39	.08	4.86	.00		.221***
	2. Interaction	.49	.14	3.52	.00	.022	.243***

Note. N = 425. *p < .05; **p < .01; ***p < .001. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis. Browsing CL = Browsing-related Cyberloafing.

Table 15d

Sustained Attention as a Moderator of Email-related Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Email CL	.18	.04	4.80	.00		
	Attention	.58	.04	14.22	.00		.359***
	2. Interaction	-.17	.06	-3.02	.01	.014	.373 ***
Stress	1. Email CL	.47	.06	7.27	.00		
	Attention	.49	.08	6.19	.00		.111 ***
	2. Interaction	.41	.11	3.68	.00	.099	.210 ***

Note. N = 425. *p < .05; **p < .01; ***p < .001. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis. Email CL = Non-Work-related Email Cyberloafing.

Figure 24

Simple Main Effect of Sustained Attention on Cyberloafing and Productivity in Study 2

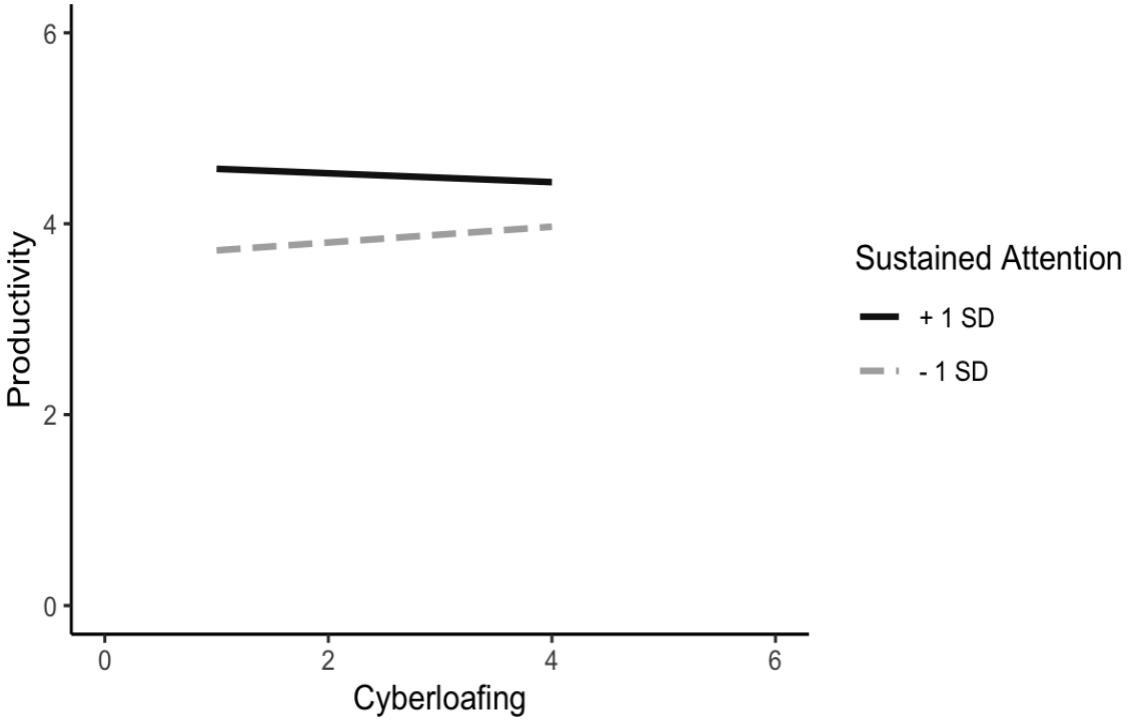
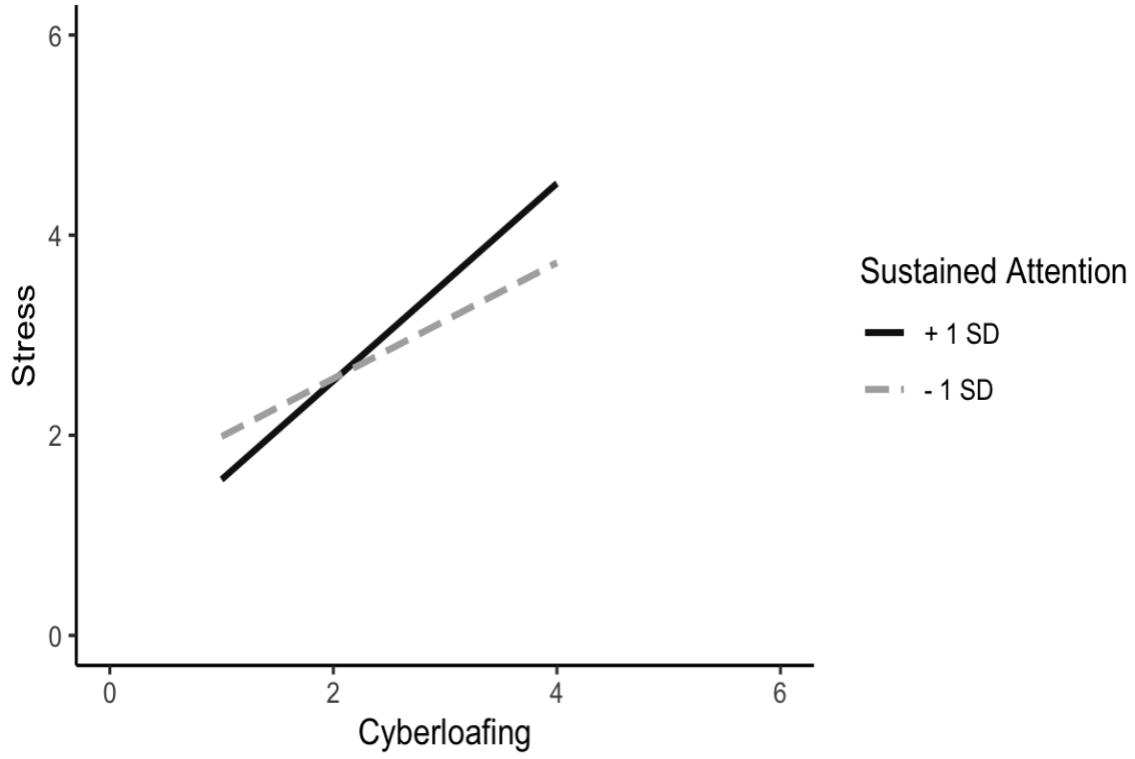


Figure 25

Simple Main Effect of Sustained Attention on Cyberloafing and Stress in Study 2



Job Experience as a Moderator of Cyberloafing Effects on Outcomes (Hypothesis 3). I predicted that job experience would moderate the relationship between cyberloafing and two study outcomes (Hypothesis 3). To test Hypothesis 3, for each outcome, I regressed the outcome on the two main effects in the first step and the interaction term in the second step. Results are shown in Table 16 for each factor of cyberloafing and simple effects are shown in Figures 16 and 17. Because results revealed similar patterns of effects for composite cyberloafing and cyberloafing subscales, figures are provided only for *composite* cyberloafing.

For productivity, the interaction term was significant, indicating that job experience moderated the relationship between cyberloafing (*composite, browsing-related, and email-related*) and productivity. However, the pattern of results was in the opposite direction to what was predicted. At 1 *SD* above the mean of job experience, the effect of *composite* cyberloafing on productivity was significant (b = .18, se = .06, t = 3.08, p < .001). At 1 *SD* below the mean of job experience, the effect of *composite* cyberloafing on productivity was significant (b = .55, se = .07, t = 7.39, p < .001). At 1 *SD* above the mean of job experience, the effect *of browsing-related* cyberloafing on productivity was significant (b = .19, se = .06., t = 3.14, p < .01). At 1 *SD* below the mean of job experience, the effect of *browsing-related* cyberloafing on productivity was significant (b = .56, se = .07, t = 7.51, p < .001). The pattern of effects for *browsing-related* and *email-related* cyberloafing were similar to composite cyberloafing. At 1 *SD* above the mean of job experience, the effect of *email-related* cyberloafing on productivity was not significant (b = -.03, se = .04., t = -.78, p = .43). At 1 *SD* below the mean of job experience, the effect of *email-related* cyberloafing on productivity was significant (b = .15, se = .05, t = 2.99, p < .001). The pattern of effects for *email-related* cyberloafing was similar to *composite* cyberloafing.

For stress, the interaction term was not significant, indicating that job experience did not moderate the relationship between cyberloafing and stress. Thus, results did not support my hypotheses for job experience moderating the relationship between cyberloafing, productivity and stress. Thus, I found no support for Hypothesis 3.

Table 16a

Job Experience as a Moderator of Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Cyberloafing	.29	.05	5.75	.00		
	Experience	.08	.02	3.62	.00		.100 ***
	2. Interaction	-.17	.04	-4.18	.00	.036	.136 ***
Stress	1. Cyberloafing	.97	.08	12.32	.00		
	Experience	-.17	.03	-4.92	.00		.304***
	2. Interaction	-.12	.06	-1.90	.06	.006	.310***

Note. N = 425. *p < .05; **p < .01; ***p < .001. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis. Experience = Job Experience.

Table 16b

Job Experience as a Moderator of Interactive Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Interactive CL	.18	.04	4.19	.00		
	Experience	.08	.02	3.61	.00		.068***
	2. Interaction	-.12	.03	-3.49	.00	.026	.094***
Stress	1. Cyberloafing	.83	.07	12.65	.00		
	Experience	-.14	.03	-4.20	.00		.304***
	2. Interaction	-.06	.05	-1.13	.26	.002	.306***

Note. N = 425. *p < .05; **p < .01; ***p < .001. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis. Interactive CL = Interactive Cyberloafing, Experience = Job Experience.

Table 16c

Job Experience as a Moderator of Browsing-related Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Browsing CL	.31	.05	6.20	.00		
	Experience	.08	.02	3.48	.00		.109 ***
	2. Interaction	-.17	.04	-4.06	.00	.033	.142 ***
Stress	1. Browsing CL	.78	.08	9.55	.00		
	Experience	-.19	.04	-5.30	.00		.229 ***
	2. Interaction	-.10	.07	-1.47	.14	.004	.233 ***

Note. N = 425. *p < .05; **p < .01; ***p < .001. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis. Browsing CL = Browsing-Related Cyberloafing Experience = Job Experience.

Table 16d

Job Experience as a Moderator of Email-related Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Email CL	.18	.04	4.79	.00		
	Experience	.06	.02	2.65	.01		.067 ***
	2. Interaction	-.08	.03	-2.31	.02	.012	.079 ***
Stress	1. Email CL	.47	.06	7.27	.00		
	Experience	-.22	.04	-6.27	.00		.187 ***
	2. Interaction	-.09	.05	-1.73	.08	.014	.193 ***

Note. $N = 425$. *$p < .05$; **$p < .01$; ***$p < .001$. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis. Email CL = Non-Work-Related Email Cyberloafing, Experience = Job Experience.

Figure 26

Simple Main Effect of Job Experience on Cyberloafing and Productivity in Study 2

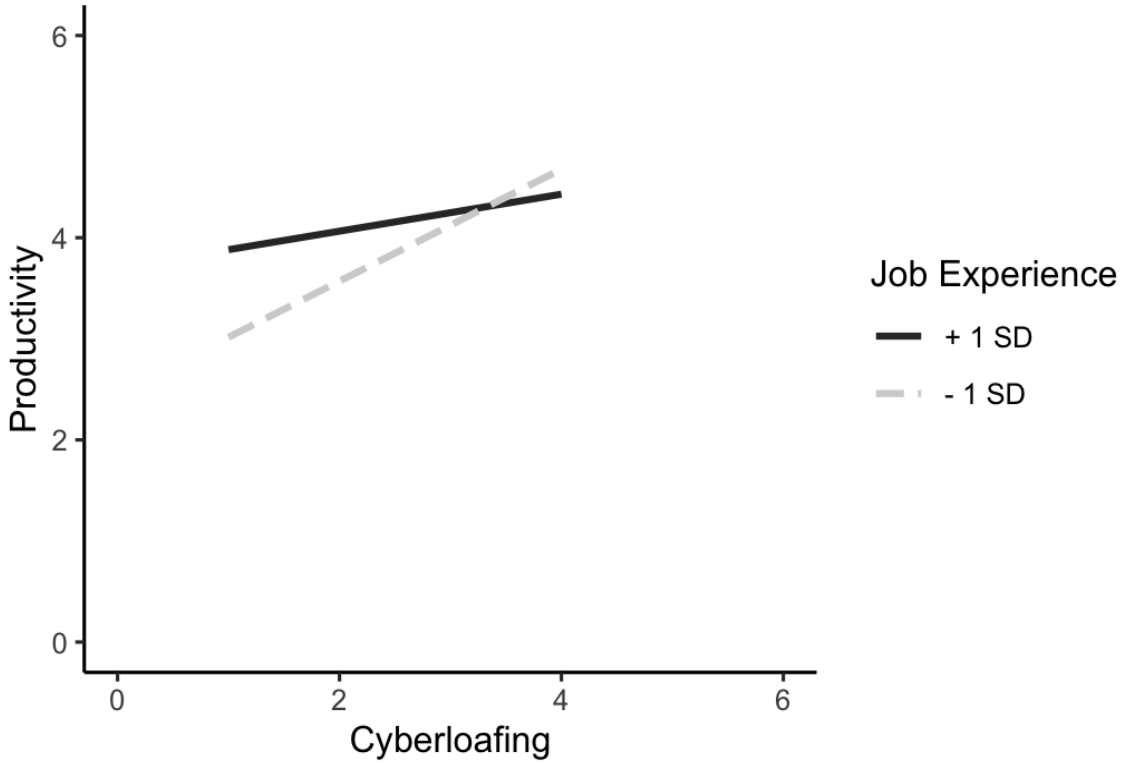
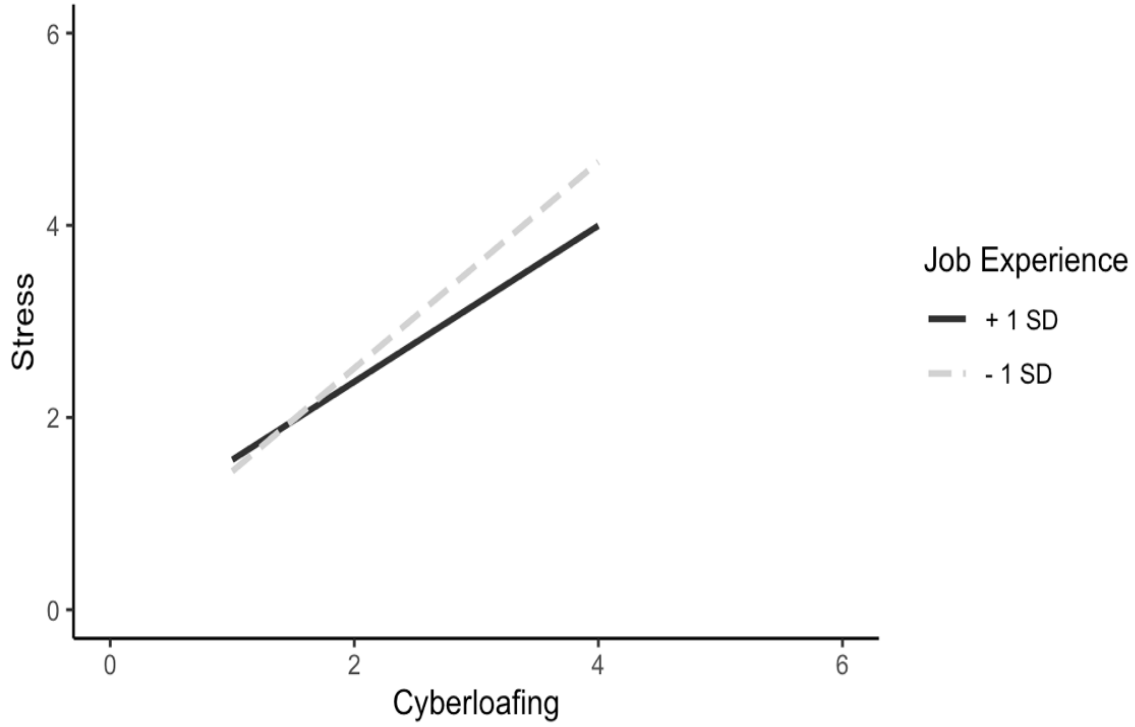


Figure 27

Simple Main Effect of Job Experience on Cyberloafing and Stress in Study 2



Potential Curvilinear Effects of Cyberloafing Effects on Outcomes (Hypothesis 4). I predicted that cyberloafing would have a curvilinear relationship with study outcomes (Hypothesis 4). To test Hypothesis 4, for each outcome, I regressed the outcome on the linear and quadratic effects for cyberloafing. Results are shown in Table 17 and simple effects for productivity, engagement, and stress are shown in Figures 18, 19, and 20, respectively. Figures are shown for composite cyberloafing only because the *composite* and subscales of cyberloafing revealed similar patterns of effects. There was a significant quadratic effect of cyberloafing (*composite, interactive, browsing-related,* and *email-related)* and productivity, job engagement, but not stress. However, the pattern of results was the opposite of the predicted direction. Thus, I did not have support for Hypothesis 4.

Table 17a

Curvilinear Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Cyberloafing	.29	.05	5.75	.00		.072***
	2. Cyberloafing^2	.47	.06	7.98	.00	.122	.194***
Job Engagement	1. Cyberloafing	.37	.05	7.41	.00		.115***
	2. Cyberloafing^2	.44	.06	7.50	.00		.219***
Stress	1. Cyberloafing	.07	.08	12.32	.00		.264***
	2. Cyberloafing^2	.10	.10	1.05	.30	.002	.266***

Note. $N = 425$. *$p < .05$; **$p < .01$; ***$p < .001$. All *b* and *se* values are from the last (second) step of each regression analysis.

Table 17b

Curvilinear Interactive Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Interactive CL	.18	.13.	28.34	.00		.040***
	2. Cyberloafing^2	.38	.05	7.91	.00	.124	.164***
Job Engagement	1. Interactive CL	.28	.04	6.48	.00		.090***
	2. Cyberloafing^2	.37	.05	7.62	.00	.110	.200***
Stress	1. Interactive CL	.83	.07	12.65	.00		.274***
	2. Cyberloafing^2	-.01	.08	-.13	.90	.001	.275***

Note. N = 425. *p < .05; **p < .01; ***p < .001. All *b* and *se* values are from the last (second) step of each regression analysis. Interactive CL = Interactive Cyberloafing.

Table 17c

Curvilinear Browsing-related Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Email CL	.18	.04	4.79	.00		.052***
	2. Cyberloafing^2	.25	.04	6.10	.00	.076	.128***
Job Engagement	1. Email CL	.18	.04	4.50	.00		.046***
	2. Cyberloafing^2	.24	.04	5.54	.00	.064	.110***
Stress	1. Email CL	.47	.06	7.27	.00		.111***
	2. Cyberloafing^2	-.05	.07	-.73	.46	.001	.112***

Note. N = 425. *p < .05; **p < .01; ***p < .001. All *b* and *se* values are from the last (second) step of each regression analysis. Email CL = Non-Work-related Email Cyberloafing.

Table 17d

Curvilinear Email-related Cyberloafing Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Browsing CL	.31	.05	6.20	.00		.083***
	2. Cyberloafing^2	.37	.06	6.47	.00	.083	.166***
Job Engagement	1. Browsing CL	.38	.05	7.53	.00		.118***
	2. Cyberloafing^2	.30	.06	5.18	.00	.053	.171***
Stress	1. Browsing CL	.78	.08	9.55	.00		.177***
	2. Cyberloafing^2	.02	.10	.23	.82	.001	.178***

Note. $N = 425$. *$p < .05$; **$p < .01$; ***$p < .001$. All *b* and *se* values are from the last (second) step of each regression analysis. Browsing CL = Browsing-related Cyberloafing.

Figure 28

Relationship between Cyberloafing and Productivity in Study 2

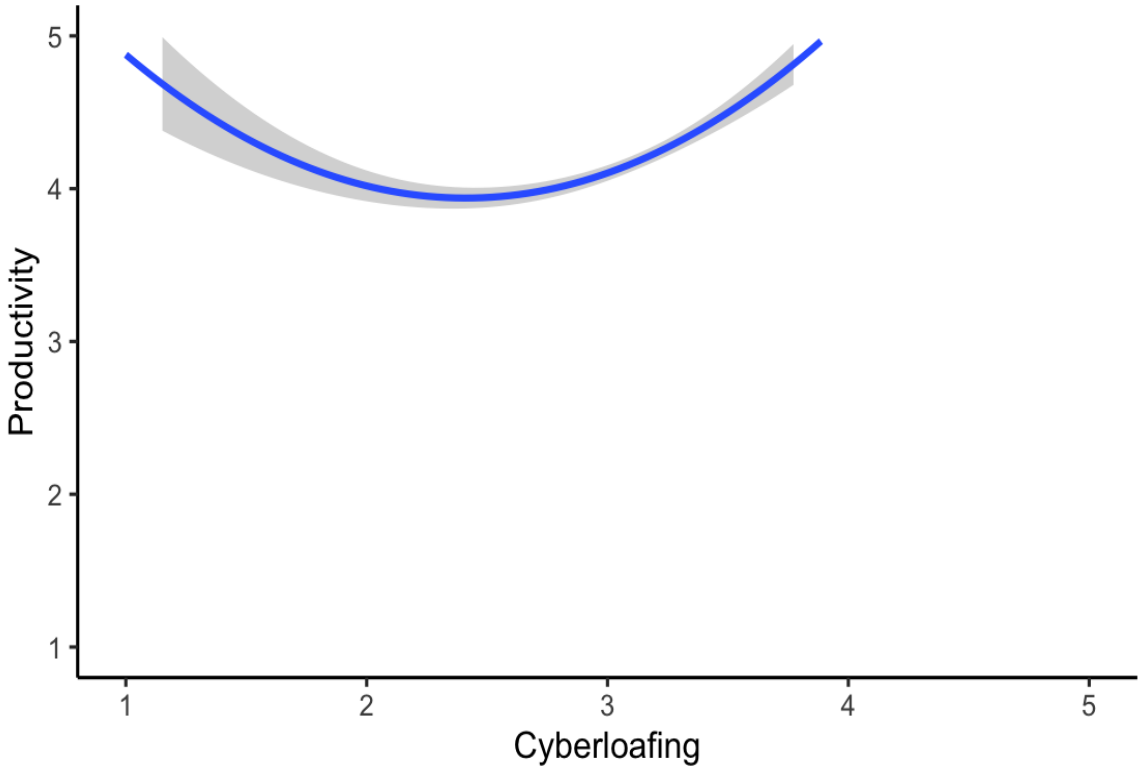


Figure 29

Relationship between Cyberloafing and Job Engagement in Study 2

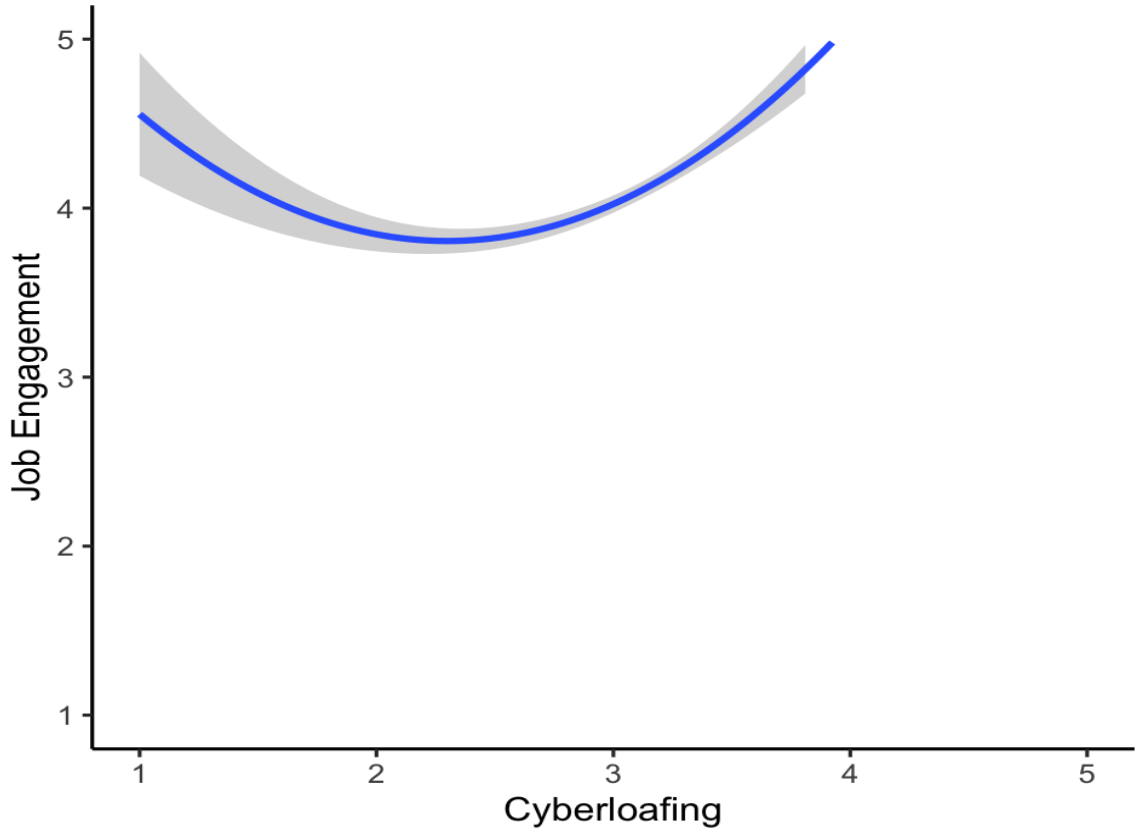
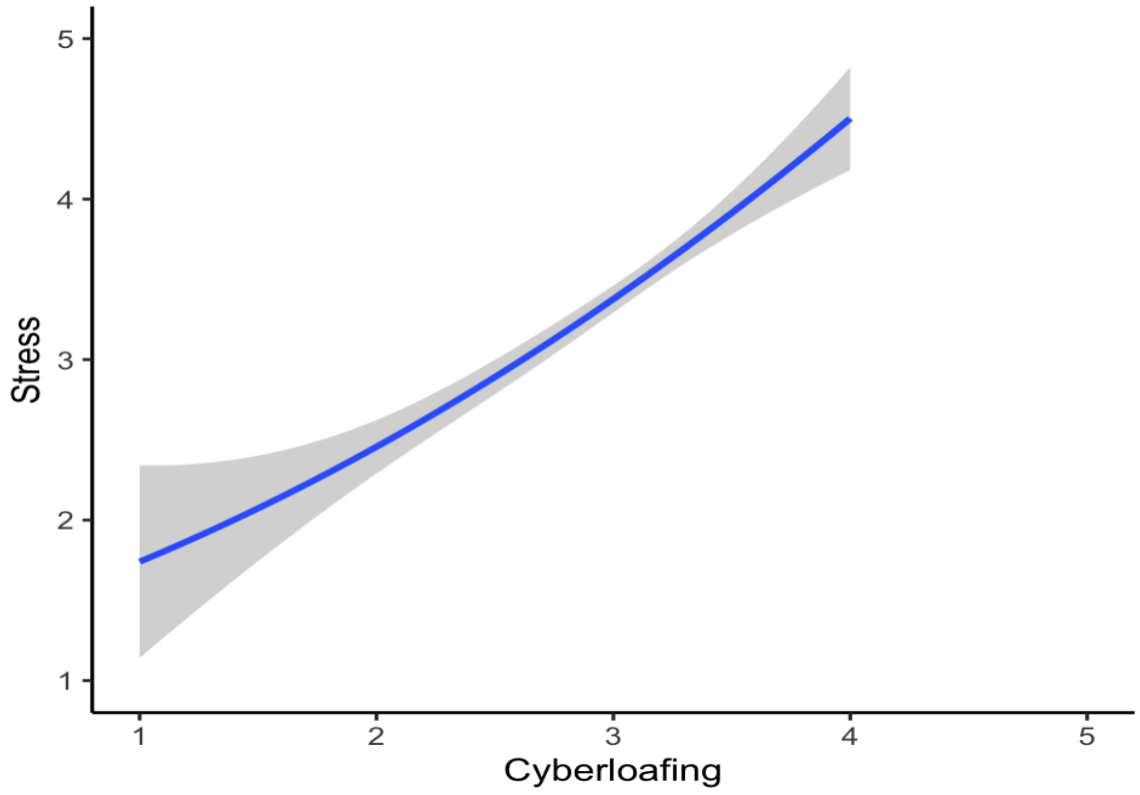


Figure 30

Relationship between Cyberloafing and Stress in Study 2



Exploratory Analyses

To further understand the effects I observed, I conducted post hoc exploratory analyses. Specifically, I examined correlates of cyberloafing. Then, I evaluated cyberloafing as a moderator for the relationship fatigue and boredom as predictors and outcomes of productivity, job engagement, and stress.

Cyberloafing Relationships. Cyberloafing was significantly related to attitudes toward cyberloafing, self-efficacy, organizational citizenship behavior, counterproductive work behavior fatigue, and boredom (r = .60, .46, .52, .45, .65, and .44, respectively).

Theoretical explanations. I suggested that fatigue and boredom would be the underlying explanations as to when cyberloafing would be beneficial or detrimental. I used composite scores of cyberloafing, fatigue and boredom for my analyses.

To test fatigue, for each outcome, I regressed the outcome on the two main effects in the first step and the interaction term in the second step. Results are shown in Table 18, and simple effects for productivity, engagement and stress are shown in Figures 21, 22, and 23, respectively. For productivity, the interaction term was significant, indicating that cyberloafing moderated the relationship between fatigue and productivity. At 1 *SD* above the mean of cyberloafing, the effect of fatigue on productivity was significant (b = .18, se = .04, t = 2.04, p = .04). At 1 *SD* below the mean of cyberloafing, the effect of fatigue on productivity was not significant (b = -.06, se = .04, t = -1.39, p = .16). For job engagement, the interaction term was significant, indicating that cyberloafing moderated the relationship between fatigue and job engagement. At 1 *SD* above the mean of cyberloafing, the effect of fatigue on job engagement was significant (b = .15, se = .04, t = 4.12, p < .001). At 1 *SD* below the mean of cyberloafing, the effect of fatigue on job engagement was not significant (b = .02, se = .04, t = .54, p = .59). For stress, the

interaction term was significant, indicating that cyberloafing moderated the relationship between fatigue and stress. At 1 *SD* above the mean of cyberloafing, the effect of fatigue on stress was significant (b = .70, se = .04, t = 16.21, p < .001). At 1 *SD* below the mean of cyberloafing, the effect of fatigue on stress was not significant (b = .75, se = .05, t = 14.77, p < .001).

Table 18

Cyberloafing as a Moderator of Fatigue Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Fatigue	.10	.03	3.60	.00		
	Cyberloafing	.27	.06	4.47	.00		.030***
	2. Interaction	.15	.05	2.85	.00	.061	.091***
Engagement	1. Fatigue	.18	.03	6.54	.00		.092***
	Cyberloafing	.27	.06	4.62	.00		.136***
	2. Interaction	.14	.05	2.72	.01	.014	.150***
Stress	1. Fatigue	.80	.03	24.86	.00		.594***
	Cyberloafing	.26	.07	3.86	.00		.607***
	2. Interaction	-.05	.06	-.79	.43	.001	.608***

Note. N = 425. *p < .05; **p < .01; ***p < .001. All b and se values are from the last (second) step of each hierarchical regression analysis.

Figure 31

Simple Main Effect of Cyberloafing on Fatigue and Productivity in Study 2

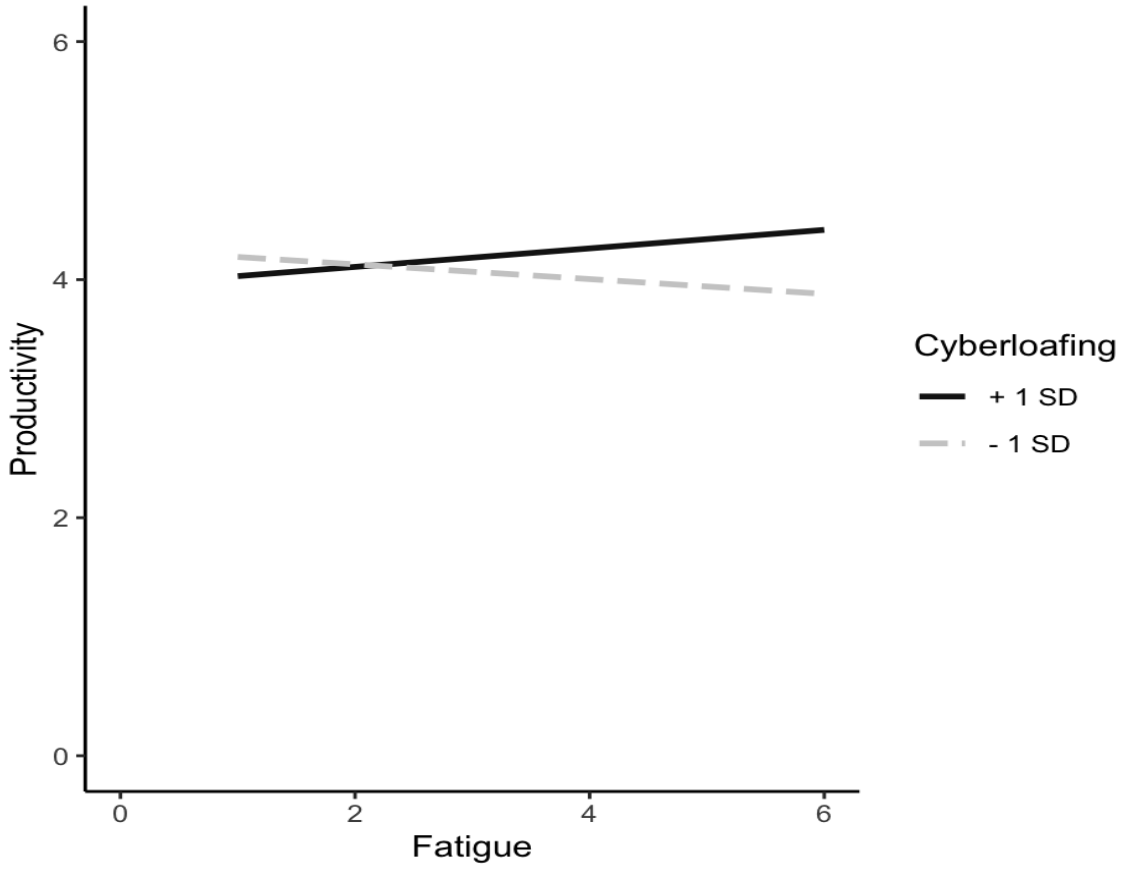


Figure 32

Simple Main Effect of Cyberloafing on Fatigue and Job Engagement in Study 2

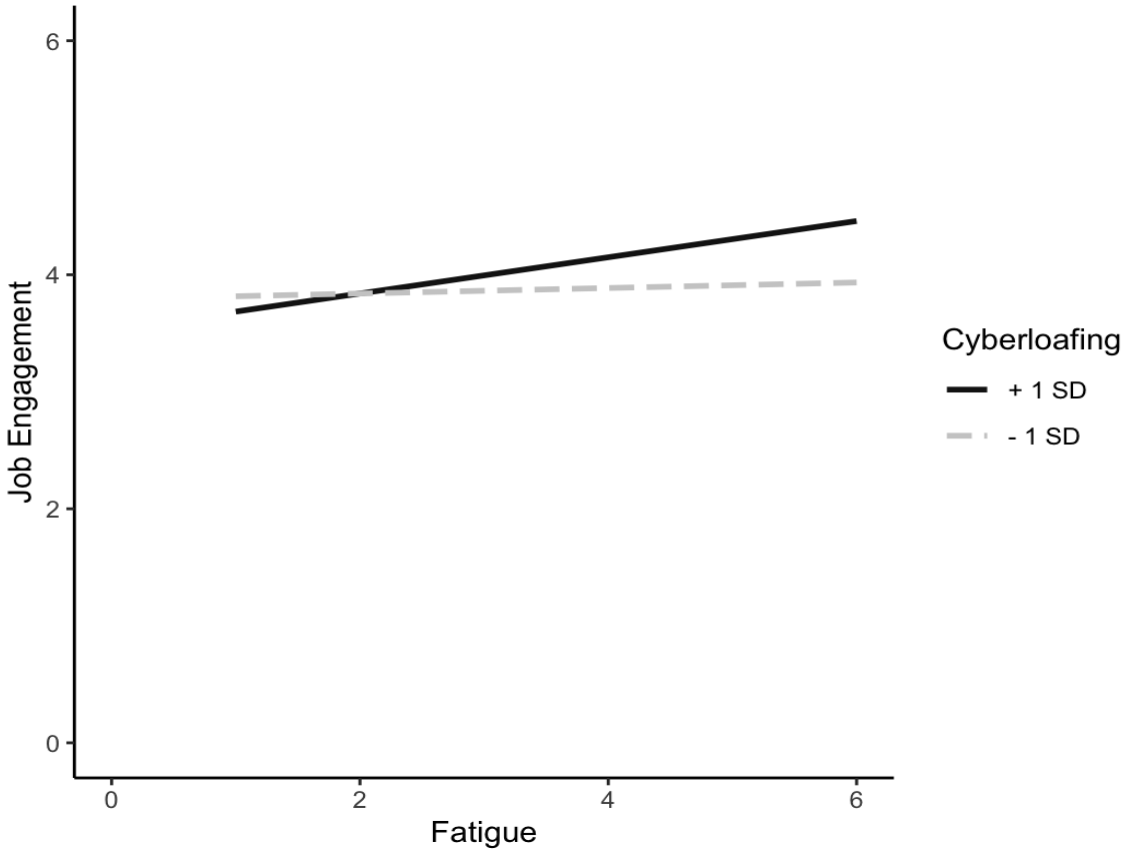
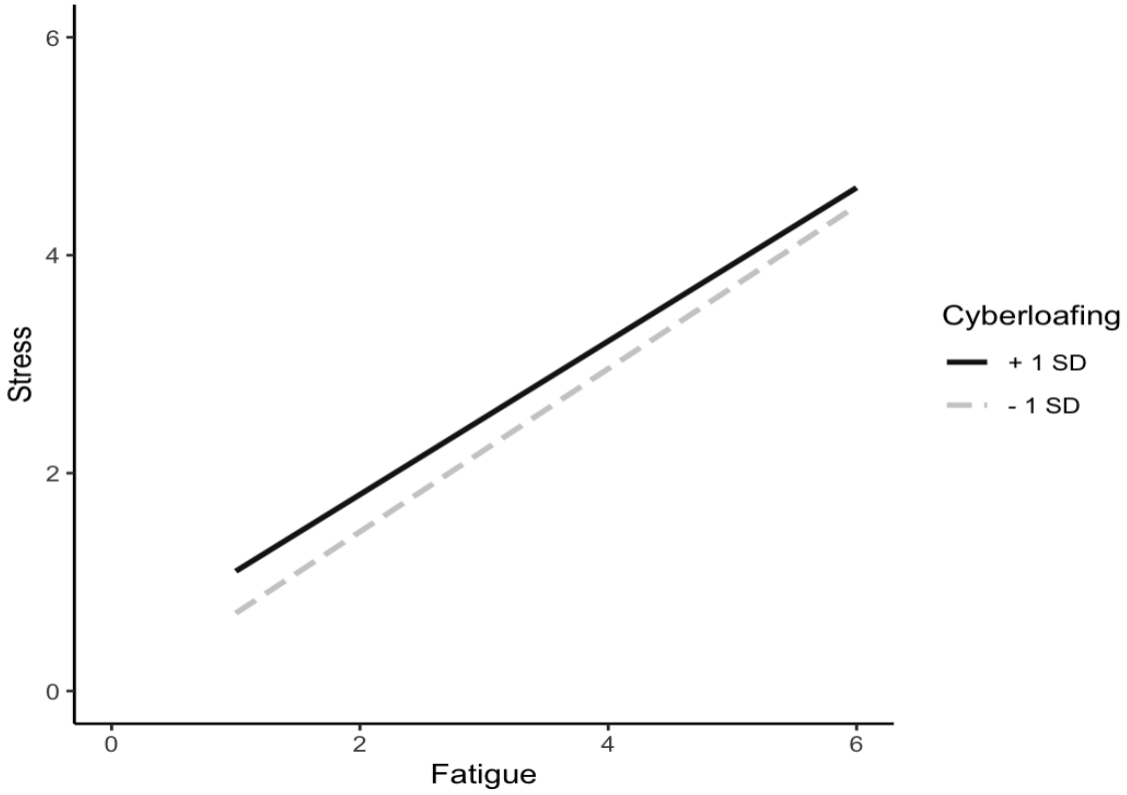


Figure 33

Simple Main Effect of Cyberloafing on Fatigue and Stress in Study 2



To test boredom, for each outcome, I regressed the outcome on the two main effects in the first step and the interaction term in the second step. Results are shown in Table 19, and simple effects for productivity, engagement and stress are shown in Figures 24, 25, and 26, respectively. For productivity, the interaction term was significant, indicating that cyberloafing moderated the relationship between boredom and productivity. At 1 *SD* above the mean of cyberloafing, the effect of boredom on productivity was not significant (b = -.02, se = .03, t = -.51, p = .61). At 1 *SD* below the mean of cyberloafing, the effect of boredom on productivity was significant (b = -.27, se = .04, t = -7.37, p < .001). For job engagement, the interaction term was significant, indicating that cyberloafing moderated the relationship between boredom and job engagement. At 1 *SD* above the mean of cyberloafing, the effect of boredom on job engagement was not significant (b = .03, se = .03, t = 1.02, p = .31). At 1 *SD* below the mean of cyberloafing, the effect of boredom on job engagement was significant (b = -.25, se = .04, t = -6.68, p < .001). For stress, the interaction term was significant, indicating that cyberloafing moderated the relationship between boredom and stress. At 1 *SD* above the mean of cyberloafing, the effect of boredom on stress was significant (b = .67, se = .04, t = 19.00, p < .001). At 1 *SD* below the mean of cyberloafing, the effect of boredom on stress was significant (b = .66, se = .04, t = 16.01, p < .001).

Table 19

Cyberloafing as a Moderator of Boredom Effects on Outcomes in Study 2

Outcome	Predictors	*b*	*se*	*t*	*p*	ΔR^2	R^2
Productivity	1. Boredom	-.03	.03	-1.13	.26		
	Cyberloafing	.40	.06	7.12	.00		.110***
	2. Interaction	.27	.04	6.09	.00	.072	.182***
Engagement	1. Boredom	.02	.03	.74	.46		
	Cyberloafing	.44	.06	7.93	.00		.131***
	2. Interaction	.29	.04	6.62	.00	.082	.213***
Stress	1. Boredom	.75	.03	26.78	.00		.629***
	Cyberloafing	.39	.06	6.52	.00		.663***
	2. Interaction	.01	.05	.04	.97	.001	.662***

Note. $N = 425$. *$p < .05$; **$p < .01$; ***$p < .001$. All *b* and *se* values are from the last (second) step of each hierarchical regression analysis.

Figure 34

Simple Main Effect of Cyberloafing on Boredom and Productivity in Study 2

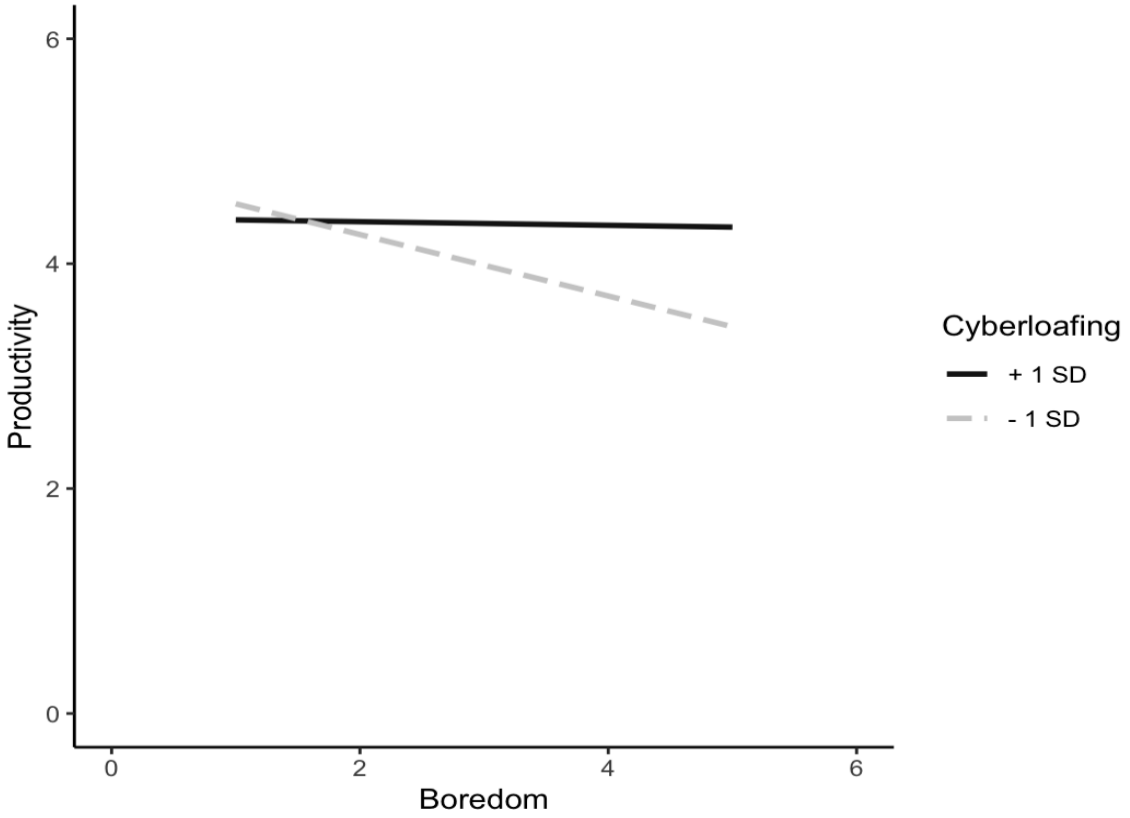


Figure 35

Simple Main Effect of Cyberloafing on Boredom and Job Engagement in Study 2

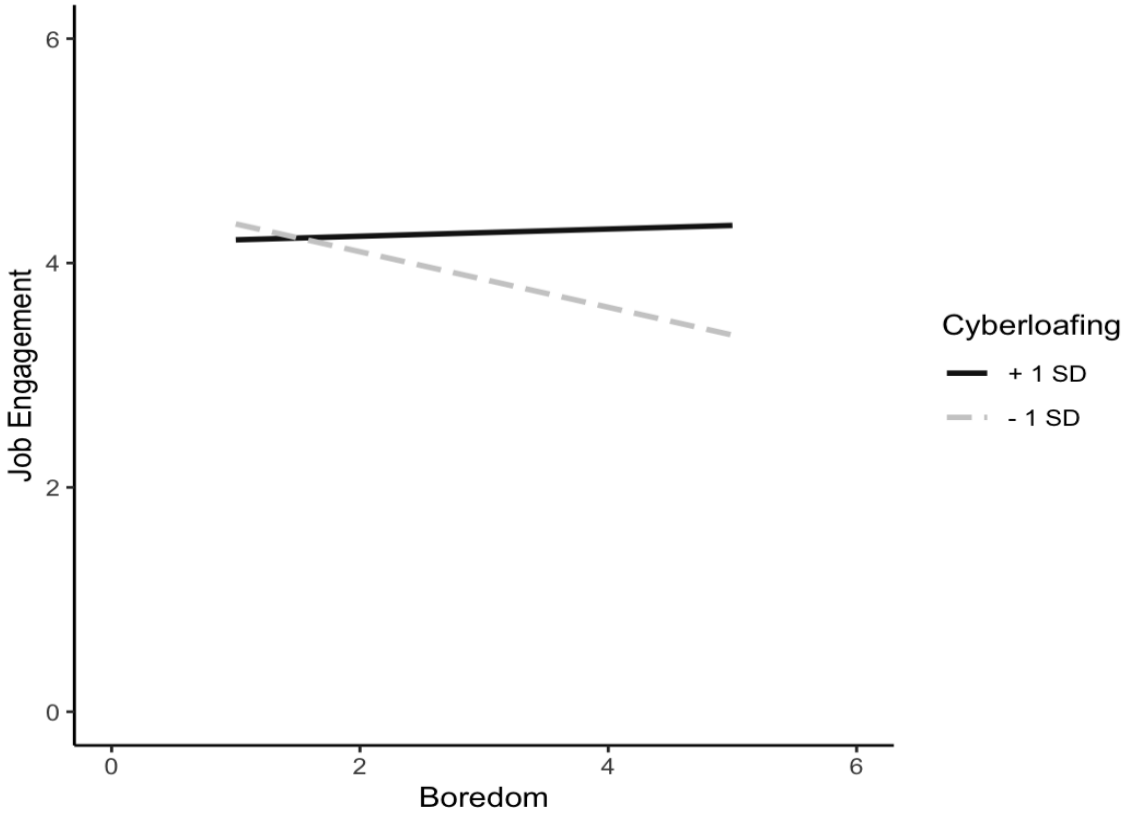
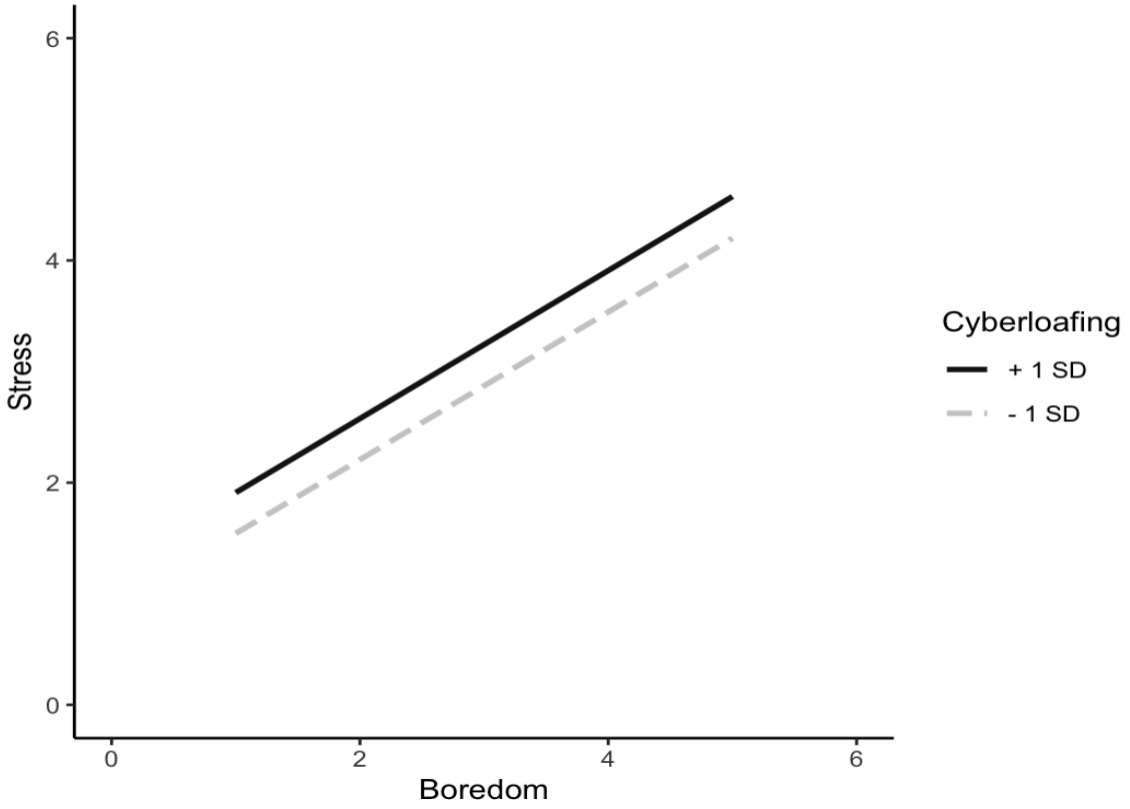


Figure 36

Simple Main Effect of Cyberloafing on Boredom and Stress in Study 2



Study 2 Discussion

The purpose of Study 2 was to investigate the conditions that engender benefits or detriments of cyberloafing by evaluating how features of tasks and individuals (i.e., job complexity, sustained attention demands, and job experience) influence relationships between cyberloafing and outcomes (productivity, job engagement, and stress). Results provided no support for hypotheses. However, results revealed significant and interpretable relationships. For example, there were significant correlations of cyberloafing with job complexity, sustained attention, job experience, productivity, job engagement, stress, cyberloafing attitudes, self-efficacy, OCB, CWB, fatigue, and boredom (*rs* = .68, .45, -.15, .27, .40, .51, .60, .46, .52, .45, .65, .44, respectively). Further, results revealed significant effects for moderators of cyberloafing effects on outcomes although not in the predicted direction.

Regarding moderator effects, I observed that the linear component of job complexity moderated relationships between cyberloafing (*composite, interactive,* and *browsing-related*) and outcomes (productivity, job engagement, and stress), indicating auspicious effects of cyberloafing on productivity and job engagement, but not stress. For productivity, results revealed a significant interaction between cyberloafing (*composite* and *browsing-related*) and linear complexity, indicating a nonsignificant relationship for cyberloafing at 1 *SD* below the mean of complexity and a significant positive (i.e., beneficial) relationship at 1 *SD* above the mean of complexity. Also for productivity, results for *interactive* cyberloafing revealed a significant negative (i.e., dysfunctional) relationship for cyberloafing at 1 *SD* below the mean of complexity and a significant positive (i.e., beneficial) relationship at 1 *SD* above the mean of complexity. For job engagement, results revealed a significant interaction between cyberloafing (*composite, interactive,* and *browsing related*) and linear complexity. There was a nonsignificant

relationship for cyberloafing at 1 *SD* below the mean of complexity and a significant positive (i.e., beneficial) relationship at 1 *SD* above the mean of complexity. For stress, results revealed a significant interaction between *email-related* cyberloafing and linear complexity, indicating a significant positive (i.e., dysfunctional) relationship for cyberloafing at 1 *SD* below the mean of complexity and a significant positive (i.e., dysfunctional) relationship at 1 *SD* above the mean of complexity.

Similar to job complexity, sustained attention moderated the relationship between cyberloafing (*composite, interactive, browsing-related,* and *email-related*) and outcomes (productivity and stress), again indicating beneficial effects of cyberloafing for productivity, but not stress. For productivity, there was a significant interaction between cyberloafing (*browsing-related* and *email-related*) and sustained attention, indicating a significant positive (i.e., beneficial) relationship for cyberloafing and sustained attention at 1 *SD* below the mean of attention and a nonsignificant relationship at 1 *SD* above the mean of attention. For stress, results revealed a significant interaction between cyberloafing (*composite, interactive, browsing-related,* and *email-related*) and sustained attention, indicating a significant positive (i.e., dysfunctional) relationship for cyberloafing at 1 *SD* below the mean of attention and a significant positive (i.e., dysfunctional) relationship at 1 *SD* above the mean of attention.

Finally, similar to job complexity and sustained attention, job experience moderated the relationship between cyberloafing (*composite, browsing-related,* and *email-related*) and outcomes (productivity and stress), indicating beneficial effects of cyberloafing on productivity, but not stress. For productivity, results indicated a significant positive (i.e., beneficial) relationship for cyberloafing (*composite, browsing-related,* and *email-related*) at 1 *SD* below the mean of experience. Also, for productivity, results indicated a significant positive (i.e.,

beneficial) relationship for cyberloafing (*composite* and *browsing-related*) at 1 *SD* above the mean of experience and a nonsignificant relationship for *email-related* cyberloafing at 1 *SD* above the mean of experience. For stress, there was a nonsignificant interaction between cyberloafing and job experience.

Additionally, there was a significant quadratic effect of cyberloafing (*composite, interactive, browsing-related,* and *email-related*) on productivity and job engagement, but not stress. High and low frequency cyberloafing had significant positive (i.e., beneficial) effects on productivity and job engagement but less beneficial effects at moderate frequencies of cyberloafing. Cyberloafing had a nonsignificant quadratic relationship but was significantly correlated (r = .51) with stress.

Moreover, exploratory analyses showed significant interactions between fatigue and cyberloafing for productivity, job engagement, and stress, suggesting that cyberloafing played a role in the effect of fatigue on study outcomes. Note: we examined only *composite* cyberloafing in exploratory analyses. For productivity, results indicated a nonsignificant relationship for fatigue at 1 *SD* below the mean of cyberloafing and a significant positive (i.e., beneficial) relationship at 1 *SD* above the mean of cyberloafing (i.e., cyberloafing reversed the negative effects of fatigue on productivity). For job engagement, results indicated a nonsignificant relationship for fatigue at 1 *SD* below the mean of cyberloafing and a significant positive (i.e., beneficial) relationship at 1 *SD* above the mean of cyberloafing, again indicating that cyberloafing mitigated the effects of fatigue on engagement. For stress, results indicated a significant positive (i.e., dysfunctional) relationship for fatigue at 1 *SD* below the mean of cyberloafing and a significant positive (i.e., dysfunctional) relationship at 1 *SD* above the mean of cyberloafing.

Similar to fatigue, exploratory analyses showed significant interactions between boredom and cyberloafing for productivity, job engagement, and stress, suggesting that cyberloafing played a role in boredom effects on study outcomes. Again, we examined only *composite* cyberloafing in exploratory analyses. For productivity, results indicated a significant negative (i.e., dysfunctional) relationship for boredom at 1 *SD* below the mean of cyberloafing and a nonsignificant relationship at 1 *SD* above the mean of cyberloafing. For job engagement, results indicated a significant negative (i.e., dysfunctional) relationship for boredom at 1 *SD* below the mean of cyberloafing and a nonsignificant relationship at 1 *SD* above the mean of cyberloafing. For stress, results indicated a significant positive (i.e., dysfunctional) relationship for boredom at 1 *SD* below the mean of cyberloafing and at 1 *SD* above the mean of cyberloafing.

The sample in Study 2 primarily consisted of moderately experienced working adults pursuing full-time and salaried positions. Participants in this sample reported semi-frequent cyberloafing, i.e., at least once a week (M = 2.9 on a 4-point scale). Further, participants reported high job complexity (M = 3.70 on a 5-point scale), high sustained attention demands (M = 4.00 on a 6-point scale), and moderate experience (M = 3.20, on a 6-point scale). Finally, participants perceived themselves to be productive and engaged (Ms = 4.20 and 4.10, respectively on a 5-point scale) and moderately stressed (M = 3.30 on a 5-point scale).

My study had some potential limitations that influenced conclusions I drew. I used IER and attention checks to ensure data quality, but self-report surveys are susceptible to socially desirable responding. For example, cyberloafing could be perceived as a deviant behavior, and participants engaged in socially desirable responding may have underreported their levels of cyberloafing. However, participants' average social desirability score was 3.00 on a 7-point scale, which fails to provide strong support for a social desirability explanation although I note

that participants could also provide socially desirable responses to this measure. Another issue in Study 2 was the possible presence of bots. However, I used IER items including bogus (claiming to be able to run 2 miles in 2 minutes) and instructed response (e.g., Select Strongly Agree) items that enabled me to identify and remove at least some bots.

In sum, although the patterns of interactive and curvilinear effects differed from the patterns predicted, results from Study 2 revealed a number of interpretable relationships. Specifically, results revealed that cyberloafing has the potential to directly impact employee outcomes, often demonstrating beneficial effects. The pattern of results did not support my hypotheses, but results revealed auspicious effects of cyberloafing for productivity and job engagement and negative effects of cyberloafing on stress. Thus, future research is required to further understand these relationships and to examine alternative theoretical explanations.

General Discussion

Influenced by COVID-19 and advancements in technology, hybrid and remote work environments have increased substantially (Fan & Moen, 2023). With work being increasingly accomplished through remote or hybrid work environments, potential effects of cyberloafing become an important issue. The purpose of my study was to investigate conditions under which cyberloafing is auspicious versus detrimental to employee outcomes such as perceived productivity, job engagement, and stress. I examined two samples, one representing less experienced, entry level, and often part-time employees and the other sample representing more experienced, higher level, and mostly full-time employees. My results suggested that cyberloafing can have beneficial effects in some circumstances, and these effects might be stronger for more experienced employees compared to less experienced employees. My results raised six issues: similarity of cyberloafing effects for productivity and job engagement,

dysfunctional effects of cyberloafing on stress, cyberloafing as a mitigator of fatigue and boredom, between versus within subject effects, the potential role of self-deception and impression management in reported cyberloafing, and the potential for practitioners to constructively utilize cyberloafing.

Issue 1: Similarity of Cyberloafing Effects for Productivity and Job Engagement. Cyberloafing tended to impact perceptions of productivity and job engagement similarly in both samples. Productivity and job engagements are both likely to be influenced by resource demands placed on employees relative to individuals' resource availability. Possibly, cyberloafing was beneficial because it provided minibreaks, providing opportunities for resource replenishment. Indeed, my results provided evidence of beneficial cyberloafing effects on productivity and job engagement. Moreover, my results indicated stronger beneficial effects for cyberloafing on productivity and job engagement for more complex jobs and for employees with lower experience. Perhaps, more complex jobs and lower experience levels reflected contexts with higher resource demands and contexts in which cyberloafing provided employees with brief breaks through which to rest and replenish resources. This potential explanation is consistent with Hobfoll's (1989) conservation of resources theory that suggests individuals will attempt to maintain and gain resources. Future research should examine resource replenishment as an explanation for cyberloafing effects, possibly by manipulating the timing and frequency of breaks to determine whether cyberloafing is more beneficial when breaks are fewer or too short. Finally, to the extent that cyberloafing can benefit productivity and engagement because it provides individuals with opportunities for resource replenishment, perhaps one would observe similar beneficial effects for other outcomes, such as OCB, that are likely to be affected by resource demands and constraints.

Issue 2: Dysfunctional Effects of Cyberloafing on Stress. In contrast to productivity and job engagement, cyberloafing demonstrated consistent, detrimental effects on stress across contexts. To the extent that cyberloafing consumes resources, cyberloafing might increase stress particularly in cases of higher resource demands. Indeed, my results provided evidence that cyberloafing was positively related to stress, i.e., had dysfunctional effects on stress. Moreover, these positive relationships were stronger at higher levels of resource demands, i.e., for more complex jobs, for jobs with greater sustained attention demands, and for individuals with lower experience. These results are consistent with Morelli and Cunningham's (2012) research that has shown that when resource demands exceed resource availability, stress can result. Future research should manipulate resource demands of task contexts and/or individuals' resource availability to determine whether a resource demands versus availability explanation is consistent with observed cyberloafing effects on stress.

Issue 3: Cyberloafing as a Mitigator of Fatigue and Boredom on Outcomes. Exploratory analyses revealed a mitigating effect of cyberloafing on relationships between negative employee experiences (i.e., fatigue and boredom) and outcomes (productivity and job engagement). These results might be explained in terms of resource demands and availability. For fatigue, my results revealed that fatigue was positively related to productivity and job engagement at higher levels of cyberloafing. Possibly, cyberloafing provided an opportunity for resource replenishment in the face of high resource demands. This is consistent with Ahmed, Babski, and Webb's (2014) theory of fatigue that has suggested that a heavy and uninterrupted workload will inevitably fatigue an employee. Cyberloafing might have interrupted this effect and prevented negative effects of fatigue. For boredom, my results revealed that boredom was negatively related to productivity and job engagement, and this negative relationship was

stronger at lower levels of cyberloafing and weaker at higher levels of cyberloafing. Possibly, cyberloafing can be beneficial in cases in which resource demands are too low. That is, boredom might reflect a situation in which individuals' resources are underutilized. By consuming resources, cyberloafing might decrease the effects of boredom. This is consistent with Spector and Fox's (2001) research showing that employees pursue non-work-related behaviors as a coping mechanism for job demands, in the case of my study, possibly a coping mechanism for too low a level of resource demands. Future research should examine resource demands and availability as possible explanations for fatigue and boredom effects, possibly by manipulating resource demands and examining the effects of cyberloafing in contexts differing on this dimension.

Issue 4: Between Versus Within Subject Effects. My results are based on between subject effects. In this study, I used a between subjects design in which participants rated their perceptions, but their personal experiences were not identical and could lead to discrepancies in response patterns across different participants. However, results would benefit by examining the questions raised in the current study using a within subject design. For example, different participants might have used the response scales differently in the current cross-sectional, between subject study. A research design in which participants were asked to report their experiences in relation to the variables we measured (e.g., cyberloafing, productivity, job complexity) at multiple time points might produce different results. At a minimum, using a within subject design would enable the researcher to use each participant as his/her own control. That would enable a more fine-grained and possibly more accurate assessment of relationships between cyberloafing and moderators and outcomes. Future research might benefit by using a

diary approach, asking participants to report their assessments of levels of cyberloafing, outcomes, and moderators at each of a set of timepoints.

Issue 5: Potential Role of Self Deception and Impression Management in Reported Cyberloafing. In contrast to what I predicted, my results revealed a curvilinear relationship suggesting a negative relationship between cyberloafing and outcomes (i.e., productivity and job engagement) up to moderate levels of cyberloafing and a positive relationship between cyberloafing and outcomes from moderate to higher levels of cyberloafing. These results might reflect accurate assessments of relationships between cyberloafing and outcomes. Else, possibly, my results reflected social desirability effects, specifically, self-deception and impression management. For example, a participant might report a positive relationship between cyberloafing and productivity at higher levels of cyberloafing as a means of rationalizing or justifying time spent cyberloafing. A participant might be demonstrating self-deception or impression management or both. Future research should examine further the potential role of socially desirable responding in assessments of cyberloafing relationships with outcomes. For example, research could use more anonymous strategies of data collection because cyberloafing often is regarded as a dysfunctional behavior that employees may not want to accurately report to an employer (or admit to themselves). Else, researchers using self-report designs might want to administer surveys assessing different variables in different orders to assess the possible presence of order effects in survey responses. Finally, research might obtain other reports of variables or obtain more objective measures of variables to reduce potential social desirability effects on the data collected.

Issue 6: Potential for Practitioners to Constructively Utilize Cyberloafing. Cyberloafing cannot be completely eliminated from the workplace. Instead, employers should

seek to understand features of job contexts that contribute to favorable or unfavorable outcomes of cyberloafing. That is, my results revealed that cyberloafing can have beneficial effects on productivity and job engagement in some contexts, e.g., for more complex jobs. Also, my results revealed that cyberloafing can have detrimental effects on stress, particularly when resource demands are high. Possibly, cyberloafing should be encouraged in cases in which it might reduce detrimental effects of fatigue or boredom. Practitioners should consider aspects of employees (e.g., job experience) or jobs (e.g., complexity) when making decisions about encouraging versus discouraging cyberloafing.

Practitioners might employ the use of technology to increase productivity and engagement and reduce stress. For example, a smart watch can notify its wearer of recommendations to enhance their well-being like reminders to take a break, stand, breathe, etc. Future researchers could delve into the efficacy of wearables to promote optimal employee outcomes. My results show the benefits of cyberloafing on productivity and engagement, and wearables or devices could remind an employee to take a microbreak by cyberloafing. This break would ensure that employees could replenish their cognitive resources they have to allocate to their work.

Limitations. Five potential limitations influenced the conclusions I drew from my results. First, measures were all self-reported, which may have been misrepresentational of certain behaviors. Cyberloafing is often regarded as a fundamentally harmful behavior that could have led people to not be as honest about their responses. This would be due to self-deception or impression management. Second, common method variance may have played a role in the relationships I observed regarding bivariate correlate ranges between variables and there was evidence that variables that should relate but did not. Third, there may have been an issue

regarding poor data quality resulting from careless responding or bots. Although, I utilized IER and attention check measures to ensure data quality, there was a risk of bots or poor data quality in either sample. An example IER item was "I can run 2 miles in 2 minutes" and participants were to rate the degree to which they agreed with the item and participants who agreed were flagged. Participants were allowed to miss up to two of the five total IER items. Online survey platforms such as MTurk are susceptible to poor data quality, but I employed due diligence, such as IER measures and time spent per item, to ensure data quality. Fourth, I did not measure personality characteristics such as effort avoidance, industrious, self-control, or need for cognition. These characteristics may have further explained the relationships I observed or account for non-significant relationships. However, I added several exploratory measures to account for some of these relationships. Fifth, related to the previous point, controlling for too many variables exclude relevant variance, even changing an observed relationship reflecting unique variance to zero by partialling out relevant variance that overlaps with other control variables. So, we considered carefully which variables we controlled for.

Conclusion. After the COVID-19 pandemic, there has been a large increase in remote and hybrid work environments. Due to this remote work increase, employees have more access to cyberloafing through the availability of personal devices and minimal physical supervision. Thus, the purpose of my study was to investigate the conditions under which cyberloafing was beneficial versus harmful to employee outcomes. Results revealed that cyberloafing has beneficial effects on productivity and job engagement when job complexity is high and job experience and sustained attentional demands are low but has perpetually dysfunctional effects on stress. Cyberloafing might have beneficial effects to the extent that it provides microbreaks that might help combat fatigue and boredom. Although prior research has indicated

dysfunctional effects of cyberloafing, my results indicated that cyberloafing can have beneficial effects, particularly to the extent that it provides microbreaks that could reduce fatigue and boredom and suggested that supervisors might seek to allow or constrain cyberloafing depending on the specific circumstance of the employee's work context.

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Appendix A

Demographics

1. What type of industry do you work in? (Derived from O*NET Online)
    a. Accommodation and Food Services
    b. Administrative and Support Services
    c. Agriculture, Forestry, Fishing, and Hunting
    d. Arts, Entertainment, and Recreation
    e. Construction
    f. Educational Services
    g. Finance and Insurance
    h. Government
    i. Health Care and Social Assistance
    j. Information
    k. Management of Companies and Enterprises
    l. Manufacturing
    m. Mining, Quarrying, and Oil and Gas Extraction
    n. Other Services (Except Public Administration)
    o. Professional, Scientific, and Technical Services
    p. Real Estate and Rental and Leasing
    q. Retail Trade
    r. Transportation and Warehousing
    s. Utilities
    t. Wholesale Trade

u. Other

v. Please indicate your industry type here:

2. How many hours do you work per week?

    a. 15-20 hours

    b. 21-30 hours

    c. 31-40 hours

    d. 41-50 hours

    e. 50+ hours

3. Are you a salaried employee?

    a. Yes

    b. No

4. What gender do you identify as?

    a. Male

    b. Female

    c. Other

    d. Prefer not to answer

5. What is your age?

    a. 18-22

    b. 23-27

    c. 28-32

    d. 32-40

    e. 40-49

    f. 50+

6. What is your ethnicity?
    a. Caucasian
    b. African-American
    c. Latino or Hispanic
    d. Asian
    e. Native American
    f. Other/Unknown
    g. Mixed
    h. Prefer not to say

Appendix B

Cyberloafing Scale - Blau, Yang, and Cook (2006)

Please indicate how often you participate in each of the following behaviors.

(1) Hardly ever (Once every few months or less)

(2) Rarely (about Once a month)

(3) Sometimes (At least once a week)

(4) Frequently (At least once a day)

1. Browse sports-related Web sites (Browsing Related Cyberloafing)
2. Shop online for personal goods (Browsing Related Cyberloafing)
3. Check non-work-related e-mail (Non Work Related Email Cyberloafing)
4. Browse investment-related Web sites (Browsing Related Cyberloafing)
5. Send non-work-related e-mail (Non Work Related Email Cyberloafing)
6. Browse entertainment-related Web sites (Browsing Related Cyberloafing)
7. Receive non-work-related e-mail (Non Work Related Email Cyberloafing)
8. Play online games (Interactive Cyberloafing)
9. Download non-work-related information (Interactive Cyberloafing)
10. Download online games (Interactive Cyberloafing)
11. Browse general news websites (Browsing Related Cyberloafing)
12. Chat with other people in online chat rooms (Interactive Cyberloafing)
13. Chat with other people with instant messenger (Interactive Cyberloafing)
14. Post messages on non-work-related items (Interactive Cyberloafing)
15. Use the Internet to gain additional income while at work (Interactive Cyberloafing)

16. Browse non-work-related Web sites (Browsing Related Cyberloafing)

Appendix C

Job Complexity Scale - Kubicek, Paškvan, and Korunka (2015)

Please indicate the degree to which each item applies to you at your job.

(1) Not at all

(2) Rarely

(3) Sometimes

(4) Most all the time

(5) Very much

1. It is increasingly rare to have enough time for work tasks. (Work Intensification)
2. It is increasingly hard to take time for breaks. (Work Intensification)
3. The time between the more intense work phases has decreased. (Work Intensification)
4. One has more often to do two or three things at once. (e.g., eating lunch, writing emails, and talking on the phone). (Work Intensification)
5. Ever more work has to be completed by fewer and fewer employees. (Work Intensification)
6. It is increasingly becoming necessary to plan the workflow (e.g., activities, appointments, breaks, etc.) by oneself. (Intensified Job-Related Planning and Decision-Making Demands)
7. One increasingly has to determine by oneself how to do the work. (Intensified Job-Related Planning and Decision-Making Demands)
8. One increasingly has to determine the sequence of activities by oneself. (Intensified Job-Related Planning and Decision-Making Demands)

9. More often decisions have to be made without consultation with supervisors. (Intensified Job-Related Planning and Decision-Making Demands)
10. One increasingly has to check independently whether the work goals have been reached. (Intensified Job-Related Planning and Decision-Making Demands)
11. One is increasingly demanded to maintain one's attractiveness for the job market (e.g., through advanced education, networking). (Intensified Career-Related Planning and Decision-Making Demands)
12. One's own professional development increasingly requires keeping other alternatives open. (Intensified Career-Related Planning and Decision-Making Demands)
13. One increasingly has to plan one's professional career independently. (Intensified Career-Related Planning and Decision-Making Demands)
14. One has to acquire new expertise for the job more often. (Intensified Knowledge-Related Learning Demands)
15. One increasingly has to acquire new knowledge to handle job tasks. (Intensified Knowledge-Related Learning Demands)
16. One has to update one's knowledge level more frequently. (Intensified Knowledge-Related Learning Demands)
17. One increasingly has to familiarize oneself with new work processes. (Intensified Skill-Related Learning Demands)
18. One increasingly has to get used to new workflows. (Intensified Skill-Related Learning Demands)
19. One has to use new work equipment (devices, programs, etc.) more often. (Intensified Skill-Related Learning Demands)

Appendix D

Sustained Attention Scale

Please rate the degree to which you agree or disagree with each item from (1) strongly disagree to (5) strongly agree.

(1) Strongly disagree

(2) Somewhat disagree

(3) Neither agree nor disagree

(4) Somewhat agree

(5) Strongly agree

1. My job requires my full attention.
2. While I'm performing my job, I am able to multitask easily.
3. While I'm performing my job, I have to avoid distractions.
4. While I'm performing my job, I can have several distractions.
5. While I'm performing my job, I need to be very alert.

Appendix E

Job Experience Scale

Please indicate the amount of experience you have in your current role with the current organization you work for.

a. < 1 year
b. 1-3 years
c. 4-6 years
d. 6-8 years
e. 8-10 years
f. 10+ years

2. Please indicate the amount of experience you have in your current role with ANY or ALL organizations you have worked for.

1. < 1 year
a. 1-3 years
b. 4-6 years
c. 6-8 years
d. 8-10 years
e. 10+ years

Appendix F

Perceived Productivity Scale - Staples, Hulland, and Higgins (1999)

Please rate the degree to which you agree or disagree with each item from (1) strongly disagree to (5) strongly agree.

(1) Strongly disagree

(2) Somewhat disagree

(3) Neither agree nor disagree

(4) Somewhat agree

(5) Strongly agree

1. I believe I am an effective employee.
2. Among my work group, I would rate my performance in the top quarter.
3. I am happy with the quality of my work output.
4. I work very efficiently.
5. I am a highly productive employee.
6. My manager believes I am an efficient worker.

Appendix G

Job Engagement Scale - Rich, Lepine, and Crawford (2010)

Please rate the degree to which you agree or disagree with each item from (1) strongly disagree to (5) strongly agree.

(1) Strongly disagree

(2) Somewhat disagree

(3) Neither agree nor disagree

(4) Somewhat agree

(5) Strongly agree

1. I work with intensity on my job.
2. I exert my full effort at my job.
3. I devote a lot of energy to my job.
4. I try my hardest to perform well on my job.
5. I strive as hard as I can to complete my job.
6. I exert a lot of energy on my job.
7. I am enthusiastic about my job.
8. I feel energetic about my job.
9. I am interested in my job.
10. I am proud of my job.
11. I feel positive about my job.
12. I am excited about my job.
13. At work, my mind is focused on my job.
14. At work, I pay a lot of attention to my job.

15. At work, I concentrate on my job.

16. At work, I focus a great deal of attention on my job.

17. At work, I am absorbed in my job.

18. At work, I devote a lot of attention to my job.

Appendix H

Perceived Stress Scale - Liu, Nauta, Li, and Fan, 2010

Using a scale from (1) less than once a month to (5) several times per day, how often do you find it difficult or impossible to do your job because of…

(1) Less than once a month

(2) Once every other week

(3) Once a week

(4) Several times per week

(5) Several times per day

1. Other employees? (Interpersonal)
2. Interruptions by other people? (Interpersonal)
3. Inadequate help from others? (Interpersonal)
4. Team problems? (Interpersonal)
5. Poor or lack of equipment or supplies? (Job Context)
6. Organizational rules and procedures? (Job Context)
7. Inadequate training? (Job Context)
8. Lack of necessary information about what to do or how to do it? (Job Context)
9. Conflicting job demands? (Job Context)

Job-Affective Well-Being Scale - Van Katwyk, Fox, Spector, and Kelloway, 2000

Below are a number of statements that describe different emotions that a job can make a person feel. Please indicate the extent to which any part of your job (e.g., the work, coworkers, supervisors, clients, pay) has made you feel that emotion in the past 30 days.

(1) Never

(2) Rarely

(3) Sometimes

(4) Frequently

(5) Extremely often or always

1. My job made me feel disgusted.
2. My job made me feel frustrated.
3. My job made me feel angry.
4. My job made me feel anxious.
5. My job made me feel frightened.

Appendix I

Attitudes on Cyberloafing Scale - Anandarajan, Simmers, and Igbaria (2000)

Please rate the degree to which you agree or disagree with each item from (1) strongly disagree to (5) strongly agree.

(1) Strongly disagree

(2) Somewhat disagree

(3) Neither agree nor disagree

(4) Somewhat agree

(5) Strongly agree

1. While at work, using the internet for personal searches is acceptable.
2. It seems to be okay to just surf the internet while at work.
3. My organization's internet usage policies are clearly stated.
4. My organization is very careful about internet usage.
5. (Omit) In my organization, it seems that accessing sexually explicit websites is tolerated if you're alone in your office.
6. Accessing web pages that are derogatory to a particular group is ignored in my organization.
7. (Omit) My organization tends 'to look the other way' on the issue of accessing sexually explicit websites.
8. Internet access increases the risk of importing viruses into my company's system.
9. Accessing unsecured websites is a potential threat to my organization's information system.

10. The internet makes it easier for our competitors to get information about my firm.

Appendix J

Social Desirability Scale - Hart, Ritchie, Hepper, and GeBauer, (2015)

Please rate the degree to which you agree or disagree with each item from (1) strongly disagree to (7) strongly agree.

(1) Strongly disagree

(2) Somewhat disagree

(3) Slightly disagree

(4) Neither agree nor disagree

(5) Slightly agree

(6) Somewhat agree

(7) Strongly agree

1. Not always honest (RS)
2. Know why I like things
3. Hard to shut off a disturbing thought (RS)
4. Never regret decisions
5. Can't make up my mind (RS)
6. Completely rational
7. Confident in judgements
8. Doubted ability as a lover (RS)
9. Sometimes tell lies (RS)
10. Never cover up mistakes
11. Taken advantage of someone (RS)
12. Sometimes try to get even (RS)

13. Said something bad about a friend (RS)

14. Avoid listening

15. Never take things

16. Don’t gossip

RS indicates reverse scored.

Appendix K

Self-efficacy (Dispositional) Scale - Chen, Gully, and Eden (2001)

Please rate the degree to which you agree or disagree with each item from (1) strongly disagree to (5) strongly agree.

(1) Strongly disagree

(2) Somewhat disagree

(3) Neither agree nor disagree

(4) Somewhat agree

(5) Strongly agree

1. I will be able to achieve most of the goals that I have set for myself.
2. When facing difficult tasks, I am certain that I will accomplish them.
3. In general, I think that I can obtain outcomes that are important to me.
4. I believe I can succeed at most any endeavor to which I set my mind.
5. I will be able to successfully overcome many challenges.
6. I am confident that I can perform effectively on many different tasks.
7. Compared to other people, I can do most tasks very well.
8. Even when things are tough, I can perform quite well.

Self-efficacy (Situational) - Rigotti, Schyns, and Mohr (2008)

Please rate the degree to which you agree or disagree with each item from (1) strongly disagree to (5) strongly agree.

1. I can remain calm when facing difficulties in my job because I can rely on my abilities.
2. When I am confronted with a problem in my job, I can usually find several solutions.
3. Whatever comes my way in my job, I can usually handle it.

4. My past experiences in my job have prepared me well for my occupational future.
5. I meet the goals that I set for myself in my job.
6. I feel prepared for most of the demands in my job.

Appendix L

Job Satisfaction Scale - Bowling and Hammond (2008)

Please rate the degree to which you agree or disagree with each item from (1) strongly disagree to (7) strongly agree.

(1) Strongly disagree

(2) Somewhat disagree

(3) Slightly disagree

(4) Neither agree nor disagree

(5) Slightly agree

(6) Somewhat agree

(7) Strongly agree

1. All in all I am satisfied with my job.
2. ‘In general, I don’t like my job. RS
3. In general, I like working here.

Appendix M

Boredom Scale - Bauer, J. A., & Spector, P. E. (2015)

Please indicate how often you experience each item from (1) rarely to (5) often.

(1) Never

(2) Rarely

(3) Sometimes

(4) Often

(5) Always

1. Experience feelings of boredom at work
2. Became upset by a lack of variety on the job
3. Became distressed by how slowly the workday passes
4. Suffered a lack of mental stimulation during the workday

Appendix N

Fatigue Scale - Winwood, Winefield, Dawson, and Lushington, (2005)

Please rate the degree to which you agree or disagree with each item from (0) strongly disagree to (5) strongly agree.

(1) Strongly disagree

(2) Somewhat disagree

(3) Slightly disagree

(4) Slightly agree

(5) Somewhat agree

(6) Strongly agree

1. I use a lot of my spare time recovering from work. (Chronic Fatigue)
2. I often feel at the end of my rope with my work. (Chronic Fatigue)
3. I often dread waking up to another day of my work. (Chronic Fatigue)
4. I often wonder how long I can keep going at my work. (Chronic Fatigue)
5. I feel most of the time I'm living to work. (Chronic Fatigue)
6. My head feels dull/heavy a lot of the time. (Chronic Fatigue)
7. I often feel exhausted at work. (Chronic Fatigue)
8. Too much is expected of me at my work. (Chronic Fatigue)
9. My working life takes all my energy from me. (Chronic Fatigue)
10. I feel exhausted all the time. (Chronic Fatigue)
11. I usually have lots of energy to give to my family or friends. (Acute Fatigue)
12. I have energy for my hobbies/relaxing activities in my spare time. (Acute Fatigue)
13. I have plenty of reserve energy when I need it. (Acute Fatigue)

14. I can't recover my energy completely between work shifts. (Intershift Recovery)
15. I fully rested at the start of each work day/shift. (Intershift Recovery)
16. I usually recover my energy within a few hours of getting home from work. (Acute Fatigue)
17. I usually feel fully relaxed by the time I go to bed. (Acute Fatigue)
18. I don't get enough time between work shifts to recover my energy fully. (Intershift Recovery)

Appendix O

Organizational Citizenship Behavior Scale - Lee and Allen (2002)

Please rate how characteristic each statement is of your behavior at work and rate the frequency you partake in each item from (1) never to (7) always.

(1) Never

(2) Rarely

(3) Occasionally

(4) Sometimes

(5) Frequently

(6) Usually

(7) Always

1. Help others who have been absent. (OCBI)

2. Willingly give your time to help others who have work-related problems. (OCBI)

3. Adjust your work schedule to accommodate other employees' requests for time off. (OCBI)

4. Go out of the way to make newer employees feel welcome in the work group. (OCBI)

5. Show genuine concern and courtesy toward coworkers, even under the most trying business or personal situations. (OCBI)

6. Give up time to help others who have work or nonwork problems. (OCBI)

7. Assist others with their duties. (OCBI)

8. Share personal property with others to help their work (OCBI)

9. Attend functions that are not required but that help the organizational image. (OCBO)

10. Keep up with developments in the organization. (OCBO)

11. Defend the organization when other employees criticize it. (OCBO)

12. Show pride when representing the organization in public. (OCBO)

13. Offer ideas to improve the functioning of the organization. (OCBO)

14. Express loyalty toward the organization. (OCBO)

15. Take action to protect the organization from potential problems. (OCBO)

16. Demonstrate concern about the image of the organization. (OCBO)

Appendix P

Counterproductive Work Behavior Scale - Spector, Bauer, and Fox (2010)

Please indicate how often in the last month you have behaved in the following ways.

1. Never
2. Once or twice
3. Once or twice per month
4. Once or twice per week
5. Every day

1. Purposely wasted your employer's materials/supplies
2. Complained about insignificant things while at work
3. Told people outside the job what a lousy place you work for
4. Came to work late without permission
5. Stayed home from work and said you were sick when you weren't
6. Insulted someone about their job performance
7. Made fun of someone's personal life
8. Ignored someone at work
9. Started an argument with someone at work
10. Insulted or made fun of someone at work

Appendix Q

Insufficient Effort Responding - Huang (2015)

Please read each question carefully and respond truthfully. The researcher will have the ability to screen out participants based on insufficient effort or attention and automated responding. Participants who engage in these behaviors will have their surveys terminated, their data removed, and will NOT be paid.

Please rate the degree to which you agree or disagree with each item from (1) strongly disagree to (7) strongly agree.

(1) Strongly disagree

(2) Somewhat disagree

(3) Slightly disagree

(4) Neither agree nor disagree

(5) Slightly agree

(6) Somewhat agree

(7) Strongly agree

1. I can run 2 miles in 2 min.
2. I eat cement occasionally. (Omitted)
3. I can teleport across time and space. (Omitted)
4. I am interested in pursuing a degree in parabanjology. (Omitted)
5. I have never used a computer.
6. I work fourteen months in a year.
7. I will be punished for meeting the requirements of my job. (Omitted)
8. I work twenty-eight hours on a typical work day. (Omitted)

Instructed response items

1. All animals make for great pets (Select “Moderately disagree”)
2. Worms are an invasive species (Select “Moderately agree”)

Note: Participants were removed from the dataset if they failed to correctly answer any of the above 5 questions.

Appendix R

Student Informed Consent Form.

Investigators: Alexandria Bohn (bohn.18@wright.edu)

WSU Psychology Department, Fawcett Hall Room 335,

Dayton, OH 45435

Dr. Debra Steele-Johnson (debra.steele-johnson@wright.edu)

WSU Psychology Department, Fawcett Hall Room 335,

Dayton, OH 45435

Study site: Online at a time and location of your choosing.

If you have general questions about giving consent or your rights as a research participant in this research study, you can call the Wright State University Institutional Review Board at 937-775-4462.

Background Information:

You are invited to participate in a research study. The study is being conducted by Alexandria Bohn (student in the WSU IO/HF PhD Program) and Dr. Debra Steele-Johnson. To participate, you must be at least 18 years of age, be a U.S. citizen, work at a job at least 10 hours per week.

Purpose

The purpose of this research study is to examine conditions and environmental characteristics that influence the consequences of personal internet usage at work.

Procedure

In this study, you will be asked to complete several online questionnaires. Completion of the online surveys is self-paced but must be completed in one sitting. If you leave the survey,

you will not be able to return to it. If you complete the study satisfactorily, you will receive 3 SONA credits for completing all of the questionnaires. These surveys will be used to measure aspects of personal internet use at work, personal characteristics, and behavioral and attitudinal outcomes. You must answer each item to receive compensation for your participation. This study will take approximately 90 minutes to complete.

Potential Risks

There is minimal risk and discomfort anticipated as part of or as a result of this research study. The primary risk is fatigue resulting from responding to the questionnaires. Additionally, some items may cause discomfort or result in positive or negative feelings. Any information about you obtained from this study will be kept strictly confidential, and you will not be identified in any report or publication.

Benefits

The possible benefits of this study include the gaining of knowledge about human psychology that can improve job attitudes. The knowledge gained may not benefit you directly. The information learned in this study may be helpful to others. You will receive the benefit of 3 SONA credits for completing this study.

Credit

If you complete the study satisfactorily, you will receive 3 SONA credits to compensate you for completing all of the questionnaires. Please note that this study contains several checks to make sure that participants are finishing the tasks honestly and completely. Please read each question carefully and respond truthfully. The researcher will have the ability to screen out participants based on insufficient effort or attention and automated responding. Please accept this only if you are comfortable with 3 SONA credits for 90 minutes of your time.

Confidentiality

Total privacy cannot be guaranteed. We will protect your privacy to the extent permitted by law. If the results from this study are published, your name will not be made public. Once your information leaves our institution, we cannot promise that others will keep it private. Results of the study will show only aggregated (combined) data. No individual results will be available.

Your information may be shared with the following:

- The Wright State IRB and Office of Research and Sponsored Programs
- Office for Human Research Protections (OHRP)

Security

To ensure data collected is secured, your data will be kept in either a password protected computer, or the password protected SONA system.

Voluntary Participation

Taking part in this study is voluntary. You may choose not to take part at all. If you decide to be in this study, you may stop taking part at any time. If you decide not to be in this study or if you stop taking part at any time, you will not lose any benefits for which you may qualify. You will received 1 SONA credit for each 30 minutes of participation and a total of 3 SONA credits for completing the survey.

Research Subject's Rights, Questions, Concerns, and Complaints

You may contact the principal investigator, Alexandria Bohn, at bohn.18@wright.edu and her faculty advisor, Dr. Debra Steele-Johnson, at debra.steele-johnson@wright.edu.

If you have any questions about your rights as a subject, questions, concerns or complaints, you may call the Wright State IRB Office (937) 775-4462. You may discuss any

questions about your rights as a subject with a member of the IRB or staff. The IRB is an independent committee composed of members of the University community, staff of the institutions, as well as lay members of the community not connected with these institutions. The IRB has reviewed this study.

This form tells you what will happen during the study if you choose to take part. Clicking the "I Agree" button below and continuing with the questionnaires implies that this study has been discussed with you, that your questions have been answered, and that you will take part in the study. This informed consent document is not a contract. You are not giving up any legal rights by signing this informed consent document. Your decision to participate or to not participate will not cause a loss of benefits to which you might otherwise be entitled. There is no penalty of any kind for either non-participation or withdrawal at any time. You may request a copy of this consent to keep for your records by contacting the primary investigator, Alexandria Bohn at bohn.18@wright.edu.

Please indicate your agreement to participate in this study. If you choose not to participate you may close your browser now.

By clicking the "I agree to participate in this study" option below, you indicate that you are 18 years of age or older, have read and understood the description of the study, and you agree to participate.

I agree to participate in this study.

Appendix S

Debriefing Form.

THANK YOU FOR PARTICIPATING IN THIS STUDY!

The experiment you just completed examines the conditions and environmental characteristics that influence the consequences of personal internet usage at work.

Prior research has examined the antecedents and outcomes of personal internet use at work. We are interested in the underlying mechanism and moderator effects among these variables.

With data from you and other individuals, we are discovering more about moderators of personal internet use and work and personal outcomes.

Your input is very important and we appreciate your time and participation!

Please do not discuss these surveys with anyone else because it is important that future participants know nothing about the experiment before they participate in the same experiment.

The data you provide today is important to us, and we appreciate your help. If you have any questions or comments about today's experiments, please talk to the researcher, Alexandria Bohn at bohn.18@wright.edu or contact Dr. Debra Steele-Johnson at debra.steele-johnson@wright.edu. Thank you for your time and cooperation.

Appendix T

Mturk Informed Consent Form.

Investigators: Alexandria Bohn (bohn.18@wright.edu)

WSU Psychology Department, Fawcett Hall Room 335,

Dayton, OH 45435

Dr. Debra Steele-Johnson (debra.steele-johnson@wright.edu)

WSU Psychology Department, Fawcett Hall Room 335,

Dayton, OH 45435

Study site: Online at the time and location of your choosing

If you have general questions about giving consent or your rights as a research participant in this research study, you can call the Wright State University Institutional Review Board at 937-775-4462.

Background Information:

You are invited to participate in a research study. The study is being conducted by Alexandria Bohn (student in the WSU IO/HF PhD Program) and Dr. Debra Steele-Johnson. To participate, you must be at least 18 years of age, be a U.S. citizen, and work at a job at least 10 hours per week.

Purpose

The purpose of this research study is to examine conditions and environmental characteristics that influence the consequences of personal internet usage at work.

Procedure

In this study, you will be asked to complete several online questionnaires. Completion of the online surveys is self-paced but must be completed in one sitting. If you leave the survey,

you will not be able to return to it. If you complete the study satisfactorily, you will receive $2.25 to compensate you for completing all of the questionnaires. These surveys will be used to measure aspects of personal internet use at work, personal characteristics, and behavioral and attitudinal outcomes. You must answer each item to receive compensation for your participation. This study will take approximately 90 minutes to complete.

Potential Risks

There is minimal risk and discomfort anticipated as part of or as a result of this research study. The primary risk is fatigue resulting from responding to the questionnaires. Additionally, some items may cause discomfort or result in positive or negative feelings. Any information about you obtained from this study will be kept strictly confidential, and you will not be identified in any report or publication.

Benefits

The possible benefits of this study include the gaining of knowledge about human psychology that can improve job attitudes. The knowledge gained may not benefit you directly. The information learned in this study may be helpful to others. You will receive the benefit of $2.25 for completing this study.

Compensation

If you complete the study satisfactorily, you will receive $2.25 to compensate you for completing all of the questionnaires. You will be paid through Amazon's payment system. Please note that this study contains several checks to make sure that participants are finishing the tasks honestly and completely. In accordance with the policies set by Amazon Mechanical Turk, we may reject your work if you do not complete the Human Intelligence Task (HIT) correctly or if you do not follow the relevant instructions. We are researchers at a public university with

limited grant funding. Please read each question carefully and respond truthfully. The researcher will have the ability to screen out participants based on insufficient effort or attention and automated responding. Participants who engage in these behaviors will have their surveys terminated, their data removed, and will NOT be paid. Please accept this HIT only if you are comfortable with $2.25 for 90 minutes of your time.

Confidentiality

Total privacy cannot be guaranteed. We will protect your privacy to the extent permitted by law. If the results from this study are published, your name will not be made public. Once your information leaves our institution, we cannot promise that others will keep it private. Results of the study will show only aggregated (combined) data. No individual results will be available.

Your information may be shared with the following:

- The Wright State IRB and Office of Research and Sponsored Programs
- Office for Human Research Protections (OHRP)

Security

To ensure data collected is secured, your data will be kept in either a password protected computer, or the password protected Amazon MTURK system.

Voluntary Participation

Taking part in this study is voluntary. You may choose not to take part at all. If you decide to be in this study, you may stop taking part at any time. If you decide not to be in this study or if you stop taking part at any time, you will lose any benefits for which you may qualify.

Research Subject's Rights, Questions, Concerns, and Complaints

You may contact the principal investigator, Alexandria Bohn, at bohn.18@wright.edu and her faculty advisor, Dr. Debra Steele-Johnson, at debra.steele-johnson@wright.edu.

If you have any questions about your rights as a subject, questions, concerns or complaints, you may call the Wright State IRB Office (937) 775-4462. You may discuss any questions about your rights as a subject with a member of the IRB or staff. The IRB is an independent committee composed of members of the University community, staff of the institutions, as well as lay members of the community not connected with these institutions. The IRB has reviewed this study.

This form tells you what will happen during the study if you choose to take part. Clicking the "I Agree" button below and continuing with the questionnaires implies that this study has been discussed with you, that your questions have been answered, and that you will take part in the study. This informed consent document is not a contract. You are not giving up any legal rights by signing this informed consent document. Your decision to participate or to not participate will not cause a loss of benefits to which you might otherwise be entitled. There is no penalty of any kind for either non-participation or withdrawal at any time. You may request a copy of this consent to keep for your records by contacting the primary investigator, Alexandria Bohn at bohn.18@wright.edu.

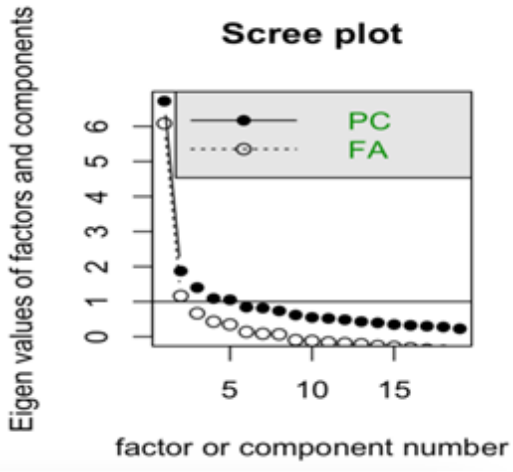
Please indicate your agreement to participate in this study. If you choose not to participate you may close your browser now.

By clicking the "I agree to participate in this study" option below, you indicate that you are 18 years of age or older, have read and understood the description of the study, and you agree to participate.

I agree to participate in this study.

Appendix U

Cyberloafing EFA



EFA 1

	item	ML1	ML2	ML3	h2	u2	com
CL_I_10	10	0.83	-0.10	0.04	0.65	0.35	1.0
CL_I_8	8	0.79	-0.06	0.02	0.60	0.40	1.0
CL_I_14	14	0.54	0.22	0.03	0.43	0.57	1.3
CL_I_9	9	0.51	0.33	0.16	0.57	0.43	1.9
CL_I_12	12	0.50	-0.09	0.20	0.31	0.69	1.4
CL_I_13	13	0.44	0.29	-0.23	0.35	0.65	2.3
CL_BR_11	11	0.26	0.23	0.23	0.26	0.74	3.0
CL_NWR_3	3	-0.10	0.84	0.10	0.70	0.30	1.1
CL_NWR_7	7	0.06	0.76	-0.15	0.58	0.42	1.1
CL_NWR_5	5	-0.10	0.60	0.19	0.39	0.61	1.3
CL_BR_2	2	0.17	0.48	0.22	0.43	0.57	1.7
CL_BR_16	16	0.33	0.44	-0.14	0.39	0.61	2.1
CL_BR_6	6	0.36	0.40	-0.11	0.37	0.63	2.1
CL_BR_4	4	0.03	0.08	0.67	0.49	0.51	1.0
CL_I_15	15	0.14	-0.01	0.51	0.31	0.69	1.1
CL_BR_1	1	0.14	0.00	0.48	0.28	0.72	1.2

	ML1	ML2	ML3
SS loadings	2.97	2.79	1.35
Proportion Var	0.19	0.17	0.08
Cumulative Var	0.19	0.36	0.44
Proportion Explained	0.42	0.39	0.19
Cumulative Proportion	0.42	0.81	1.00

With factor correlations of

	ML1	ML2	ML3
ML1	1.00	0.36	0.24
ML2	0.36	1.00	0.18
ML3	0.24	0.18	1.00

	ML1	ML2	ML3
Correlation of (regression) scores with factors	0.93	0.93	0.83
Multiple R square of scores with factors	0.86	0.86	0.69
Minimum correlation of possible factor scores	0.72	0.72	0.37

EFA 2 eliminating Item 11

```
        item   ML1   ML2   ML3   h2   u2 com
CL_I_10   10  0.83 -0.10  0.05 0.66 0.34 1.0
CL_I_8     8  0.79 -0.06  0.02 0.60 0.40 1.0
CL_I_14   13  0.54  0.21  0.02 0.43 0.57 1.3
CL_I_9     9  0.52  0.33  0.16 0.58 0.42 1.9
CL_I_12   11  0.51 -0.09  0.19 0.31 0.69 1.3
CL_I_13   12  0.44  0.28 -0.24 0.35 0.65 2.3
CL_NWR_3   3 -0.10  0.85  0.10 0.70 0.30 1.1
CL_NWR_7   7  0.06  0.75 -0.14 0.59 0.41 1.1
CL_NWR_5   5 -0.09  0.60  0.20 0.40 0.60 1.3
CL_BR_2    2  0.18  0.48  0.20 0.41 0.59 1.7
CL_BR_16  15  0.33  0.44 -0.16 0.39 0.61 2.2
CL_BR_6    6  0.36  0.39 -0.13 0.37 0.63 2.2
CL_BR_4    4  0.05  0.10  0.65 0.48 0.52 1.1
CL_I_15   14  0.15  0.01  0.50 0.30 0.70 1.2
CL_BR_1    1  0.15  0.02  0.48 0.28 0.72 1.2

                       ML1  ML2  ML3
SS loadings           2.90 2.71 1.24
Proportion Var        0.19 0.18 0.08
Cumulative Var        0.19 0.37 0.46
Proportion Explained  0.42 0.40 0.18
Cumulative Proportion 0.42 0.82 1.00

 With factor correlations of
     ML1  ML2  ML3
ML1 1.00 0.36 0.21
ML2 0.36 1.00 0.15
ML3 0.21 0.15 1.00
```

	ML1	ML2	ML3
Correlation of (regression) scores with factors	0.93	0.93	0.82
Multiple R square of scores with factors	0.86	0.86	0.67
Minimum correlation of possible factor scores	0.72	0.72	0.34

EFA Cyberloafing as one factor

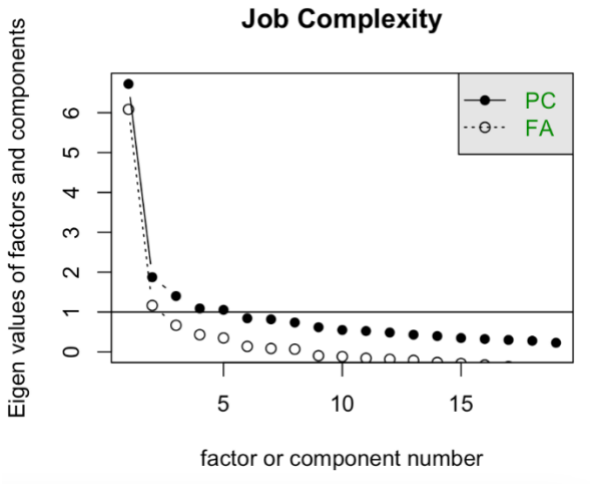
	V	ML1	h2	u2	com
CL_I_9	9	0.76	0.583	0.42	1
CL_I_14	14	0.66	0.433	0.57	1
CL_BR_2	2	0.61	0.370	0.63	1
CL_I_10	10	0.60	0.355	0.64	1
CL_BR_16	16	0.60	0.354	0.65	1
CL_BR_6	6	0.59	0.350	0.65	1
CL_I_8	8	0.59	0.346	0.65	1
CL_NWR_3	3	0.56	0.316	0.68	1
CL_NWR_7	7	0.55	0.301	0.70	1
CL_I_13	13	0.52	0.275	0.72	1
CL_BR_11	11	0.51	0.256	0.74	1
CL_NWR_5	5	0.44	0.195	0.80	1
CL_I_12	12	0.43	0.188	0.81	1
CL_BR_4	4	0.35	0.120	0.88	1
CL_BR_1	1	0.31	0.096	0.90	1
CL_I_15	15	0.31	0.094	0.91	1

	ML1
SS loadings	4.63
Proportion Var	0.29

	ML1
Correlation of (regression) scores with factors	0.94
Multiple R square of scores with factors	0.88
Minimum correlation of possible factor scores	0.76

Appendix V

Job Complexity EFA



	ML1	ML3	ML2	ML4	ML5
Correlation of (regression) scores with factors	0.92	0.90	0.95	0.88	0.88
Multiple R square of scores with factors	0.85	0.82	0.90	0.77	0.77
Minimum correlation of possible factor scores	0.69	0.64	0.79	0.54	0.55

```
Tucker Lewis Index of factoring reliability =  0.674
RMSEA index =  0.115  and the 90 % confidence intervals are  0.106 0.125
BIC =  -226.52
Fit based upon off diagonal values = 0.92
Measures of factor score adequacy
```

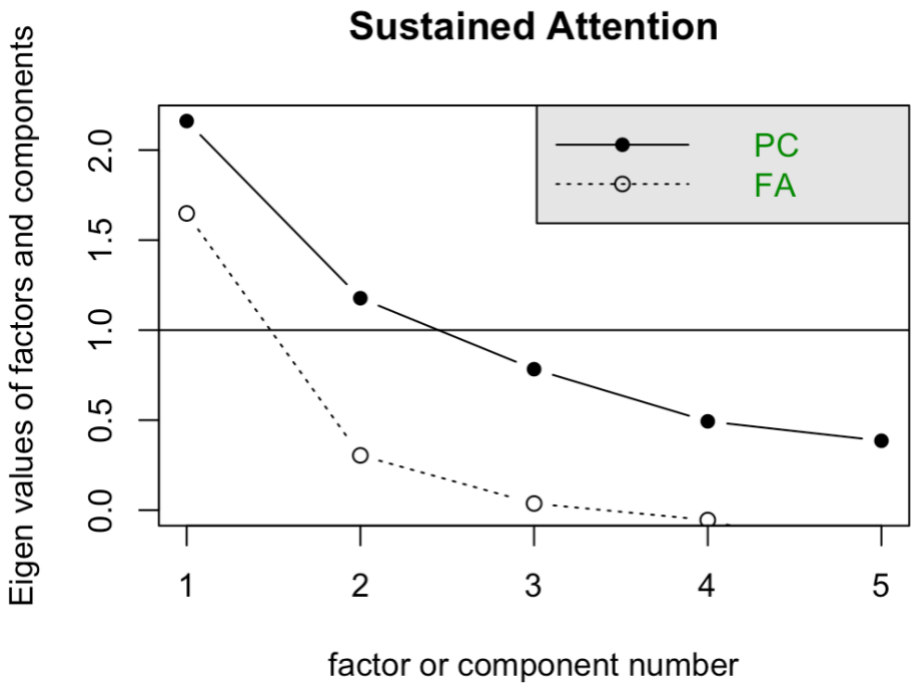
	ML1
Correlation of (regression) scores with factors	0.95
Multiple R square of scores with factors	0.91
Minimum correlation of possible factor scores	0.82

```
Standardized loadings (pattern matrix) based upon correlation matrix
           item   ML1   ML3   ML2   ML4   ML5   h2   u2 com
JC_IKRL_14   14  0.71  0.06  0.16  0.01 -0.05 0.64 0.36 1.1
JC_IKRL_16   16  0.71  0.00 -0.02  0.02  0.16 0.63 0.37 1.1
JC_IKRL_15   15  0.63  0.00 -0.02  0.01  0.32 0.68 0.32 1.5
JC_IJRP_6     6  0.33  0.30  0.02  0.32 -0.13 0.49 0.51 3.3
JC_ICRP_13   13 -0.01  0.80 -0.07  0.00  0.10 0.62 0.38 1.0
JC_ICRP_12   12  0.01  0.74  0.04  0.00 -0.04 0.58 0.42 1.0
JC_IJRP_10   10 -0.06  0.41  0.38  0.06  0.10 0.49 0.51 2.2
JC_IJRP_11   11  0.34  0.35  0.16  0.08 -0.21 0.44 0.56 3.2
JC_IJRP_8     8  0.01 -0.06  0.94  0.00  0.04 0.87 0.13 1.0
JC_IJRP_7     7  0.01  0.19  0.50  0.14  0.05 0.49 0.51 1.5
JC_IJRP_9     9  0.14  0.24  0.39 -0.07 -0.07 0.34 0.66 2.1
JC_WI_2       2 -0.08 -0.03 -0.01  0.82  0.05 0.62 0.38 1.0
JC_WI_4       4  0.15  0.01  0.09  0.53 -0.23 0.40 0.60 1.6
JC_WI_1       1  0.18 -0.05  0.01  0.46  0.08 0.30 0.70 1.4
JC_WI_3       3 -0.23  0.13  0.06  0.34  0.13 0.16 0.84 2.5
JC_WI_5       5  0.12  0.20  0.07  0.33  0.11 0.34 0.66 2.3
JC_ISRL_17   17  0.22  0.01  0.08  0.10  0.65 0.70 0.30 1.3
JC_ISRL_18   18  0.09  0.11  0.19 -0.02  0.59 0.58 0.42 1.3
JC_ISRL_19   19  0.17  0.24  0.06 -0.02  0.43 0.45 0.55 2.0

                       ML1  ML3  ML2  ML4  ML5
SS loadings           2.36 2.22 1.97 1.74 1.53
Proportion Var        0.12 0.12 0.10 0.09 0.08
Cumulative Var        0.12 0.24 0.35 0.44 0.52
Proportion Explained  0.24 0.23 0.20 0.18 0.16
Cumulative Proportion 0.24 0.47 0.67 0.84 1.00
```

```
Standardized loadings (pattern matrix) based upon correlation matrix
             V  ML1   h2   u2 com
JC_IKRL_14  14 0.72 0.52 0.48   1
JC_IKRL_15  15 0.69 0.47 0.53   1
JC_IKRL_16  16 0.66 0.44 0.56   1
JC_ISRL_17  17 0.65 0.42 0.58   1
JC_IJRP_8    8 0.65 0.42 0.58   1
JC_ISRL_18  18 0.62 0.39 0.61   1
JC_IJRP_7    7 0.62 0.38 0.62   1
JC_IJRP_10  10 0.62 0.38 0.62   1
JC_ISRL_19  19 0.60 0.37 0.63   1
JC_IJRP_6    6 0.60 0.36 0.64   1
JC_IJRP_11  11 0.58 0.33 0.67   1
JC_ICRP_13  13 0.55 0.30 0.70   1
JC_ICRP_12  12 0.54 0.30 0.70   1
JC_WI_5      5 0.54 0.29 0.71   1
JC_IJRP_9    9 0.51 0.26 0.74   1
JC_WI_1      1 0.41 0.17 0.83   1
JC_WI_2      2 0.34 0.12 0.88   1
JC_WI_4      4 0.33 0.11 0.89   1
JC_WI_3      3 0.20 0.04 0.96   1

                ML1
SS loadings    6.07
Proportion Var 0.32
```

Appendix W

Sustained Attention EFA

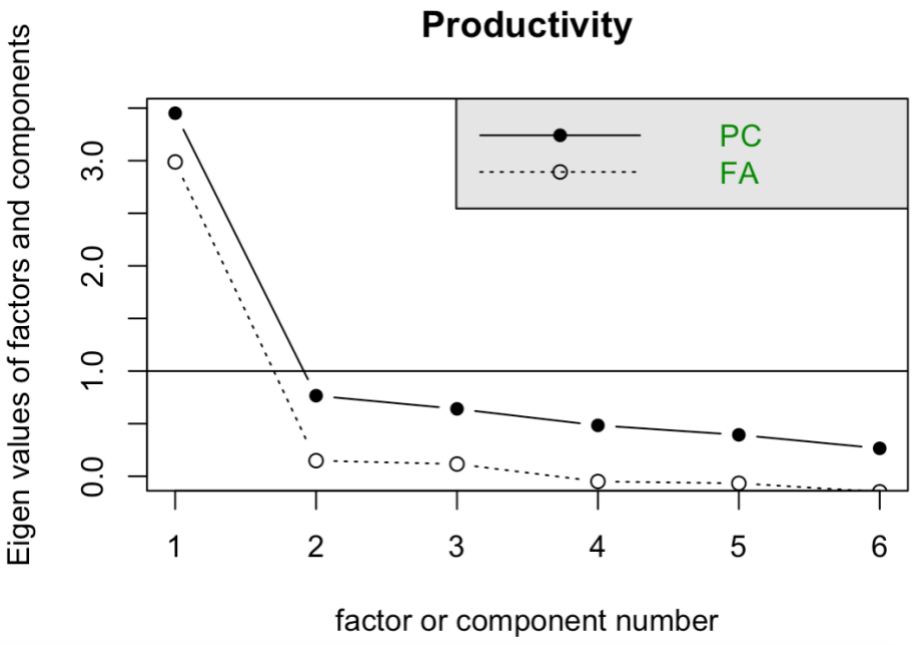



```
Standardized loadings (pattern matrix) based upon correlation matrix
     V   ML1      h2   u2 com
SA_5 5  0.85 7.2e-01 0.28   1
SA_1 1  0.66 4.3e-01 0.57   1
SA_3 3  0.63 4.0e-01 0.60   1
SA_4 4  0.32 1.0e-01 0.90   1
SA_2 2  0.00 1.3e-05 1.00   1
```

```
                                                ML1
Correlation of (regression) scores with factors 0.90
Multiple R square of scores with factors        0.81
Minimum correlation of possible factor scores   0.61
```

Appendix X

Productivity EFA

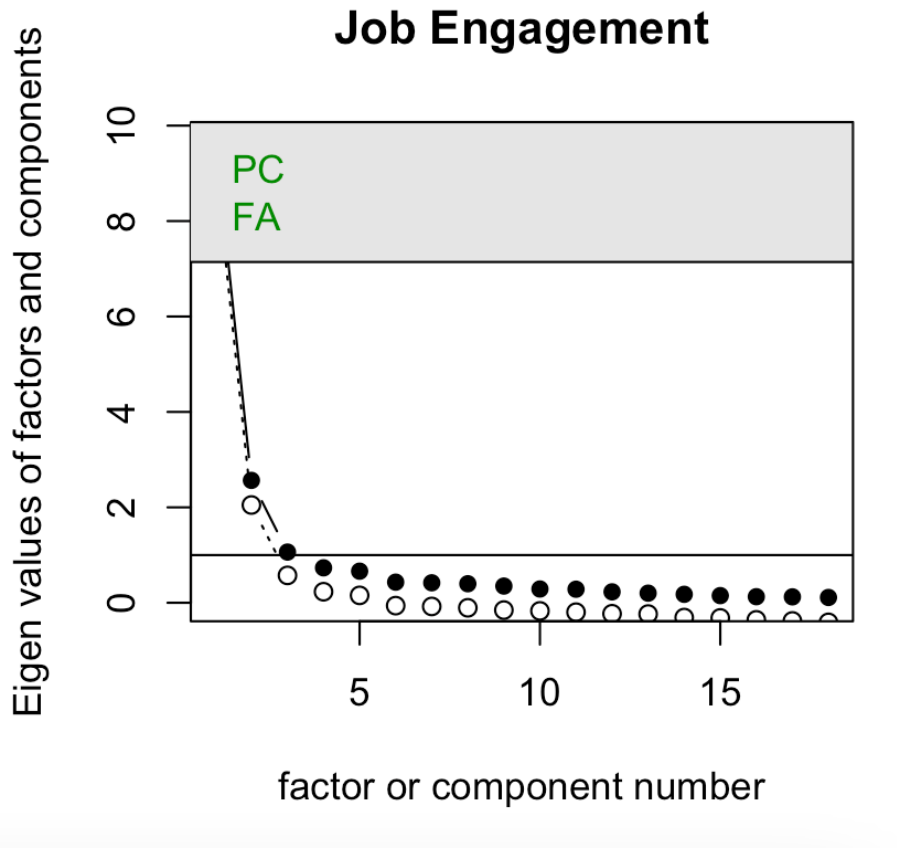



```
                                                ML1
Correlation of (regression) scores with factors 0.94
Multiple R square of scores with factors        0.88
Minimum correlation of possible factor scores   0.76
```

```
Standardized loadings (pattern matrix) based upon correlation matrix
          V  ML1   h2   u2 com
Product_5 5 0.85 0.73 0.27   1
Product_4 4 0.81 0.66 0.34   1
Product_3 3 0.69 0.48 0.52   1
Product_1 1 0.66 0.43 0.57   1
Product_6 6 0.66 0.43 0.57   1
Product_2 2 0.49 0.24 0.76   1

                ML1
SS loadings    2.98
Proportion Var 0.50
```

Appendix Y

Job Engagement EFA

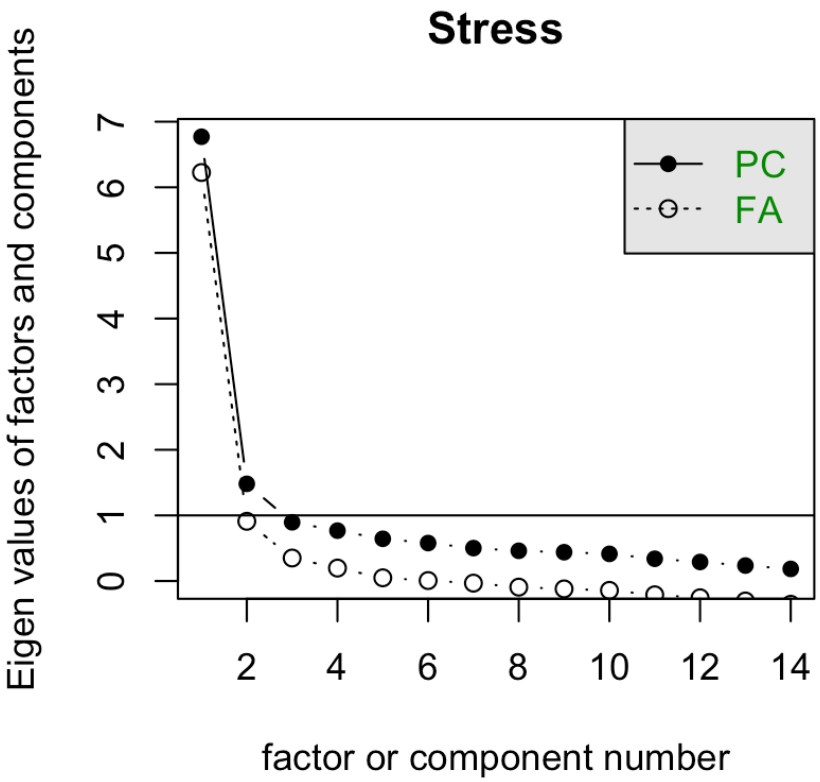


```
Standardized loadings (pattern matrix) based upon correlation matrix
              V  ML1   h2   u2 com
JobEngage_18 18 0.88 0.77 0.23   1
JobEngage_14 14 0.87 0.76 0.24   1
JobEngage_16 16 0.87 0.76 0.24   1
JobEngage_15 15 0.85 0.72 0.28   1
JobEngage_17 17 0.75 0.57 0.43   1
JobEngage_13 13 0.74 0.55 0.45   1
JobEngage_2   2 0.72 0.52 0.48   1
JobEngage_3   3 0.70 0.49 0.51   1
JobEngage_4   4 0.67 0.45 0.55   1
JobEngage_6   6 0.66 0.44 0.56   1
JobEngage_1   1 0.66 0.43 0.57   1
JobEngage_5   5 0.65 0.42 0.58   1
JobEngage_8   8 0.64 0.41 0.59   1
JobEngage_7   7 0.62 0.39 0.61   1
JobEngage_12 12 0.62 0.38 0.62   1
JobEngage_10 10 0.60 0.36 0.64   1
JobEngage_11 11 0.58 0.33 0.67   1
JobEngage_9   9 0.56 0.32 0.68   1

                ML1
SS loadings    9.07
Proportion Var 0.50
```

```
                                                ML1
Correlation of (regression) scores with factors 0.98
Multiple R square of scores with factors        0.96
Minimum correlation of possible factor scores   0.92
```

Appendix Z

Stress EFA



```
Standardized loadings (pattern matrix) based upon correlation matrix
             V  ML1   h2   u2 com
Stress_I_4   4 0.75 0.56 0.44   1
Stress_I_1   1 0.73 0.53 0.47   1
Stress_I_3   3 0.72 0.51 0.49   1
Stress_JC_9  9 0.70 0.49 0.51   1
Strains_3   12 0.69 0.47 0.53   1
Stress_JC_8  8 0.68 0.47 0.53   1
Stress_I_2   2 0.68 0.46 0.54   1
Strains_2   11 0.67 0.45 0.55   1
Stress_JC_6  6 0.67 0.44 0.56   1
Stress_JC_5  5 0.66 0.44 0.56   1
Stress_JC_7  7 0.64 0.42 0.58   1
Strains_1   10 0.62 0.39 0.61   1
Strains_5   14 0.59 0.34 0.66   1
Strains_4   13 0.51 0.26 0.74   1

                ML1
SS loadings    6.22
Proportion Var 0.44
```

Measures of factor score adequacy

	ML1
Correlation of (regression) scores with factors	0.96
Multiple R square of scores with factors	0.92
Minimum correlation of possible factor scores	0.84

Standardized loadings (pattern matrix) based upon correlation matrix

	item	ML3	ML1	ML2	h2	u2	com
Stress_JC_7	7	0.85	-0.07	0.01	0.66	0.34	1.0
Stress_JC_8	8	0.81	0.04	-0.03	0.68	0.32	1.0
Stress_JC_6	6	0.72	-0.02	0.10	0.57	0.43	1.0
Stress_JC_9	9	0.57	0.25	-0.02	0.56	0.44	1.4
Stress_JC_5	5	0.41	0.28	0.05	0.45	0.55	1.8
Stress_I_3	3	0.01	0.79	-0.01	0.62	0.38	1.0
Stress_I_1	1	-0.04	0.73	0.12	0.62	0.38	1.1
Stress_I_2	2	0.06	0.69	0.00	0.54	0.46	1.0
Stress_I_4	4	0.26	0.53	0.04	0.57	0.43	1.5
Strains_3	12	0.02	-0.05	0.94	0.84	0.16	1.0
Strains_2	11	-0.01	0.05	0.81	0.72	0.28	1.0
Strains_4	13	-0.03	0.19	0.45	0.33	0.67	1.4
Strains_1	10	0.03	0.30	0.39	0.42	0.58	1.9
Strains_5	14	0.21	0.10	0.38	0.35	0.65	1.7

	ML3	ML1	ML2
SS loadings	2.84	2.70	2.38
Proportion Var	0.20	0.19	0.17
Cumulative Var	0.20	0.40	0.57
Proportion Explained	0.36	0.34	0.30
Cumulative Proportion	0.36	0.70	1.00

	ML3	ML1	ML2
Correlation of (regression) scores with factors	0.94	0.93	0.95
Multiple R square of scores with factors	0.88	0.87	0.90
Minimum correlation of possible factor scores	0.76	0.74	0.81