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**CYBERSLACKING IN THE WORKPLACE:
ANTECEDENTS AND EFFECTS ON JOB PERFORMANCE**

Viswanath Venkatesh
Virginia Tech
vvenkatesh@vvenkatesh.us

Christy M.K. Cheung
Hong Kong Baptist University

Fred D. Davis
Texas Tech University

Zach W. Y. Lee
Durham University

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ABSTRACT

Employees' nonwork use of information technology (IT), or cyberslacking, is of growing concern due to its erosion of job performance and other negative organizational consequences. Research on cyberslacking antecedents has drawn on diverse theoretical perspectives, resulting in a lack of cohesive explanation of cyberslacking. Further, prior studies generally overlooked IT-specific variables. To address the cyberslacking problems in organizations and research gaps in the literature, we used a combination of a literature-based approach and a qualitative inquiry to develop a model of cyberslacking that includes a 2x2 typology of antecedents. The proposed model was tested and supported in a three-wave field study of 395 employees in a Fortune-100 US organization. For research, this work organizes antecedents from diverse research streams and validates their relative impact on cyberslacking, thus providing a cohesive theoretical explanation of cyberslacking. This work also incorporates contextualization (i.e., IT-specific factors) into theory development and enriches IS literature by examining the nonwork aspects of IT use and their negative consequences to organizations. For practice, the results provide practitioners with insights into nonwork use of IT in organizations, particularly on how they can take organizational action to mitigate cyberslacking and maintain employee productivity.

INTRODUCTION

As information technologies (ITs) continue to permeate and restructure our work lives, opportunities for cyberslacking (also called cyberloafing), *i.e.*, *use of IT for nonwork activities in the workplace during work hours* (Whitty and Carr 2006), have increased greatly (Holland and Bardoel 2016; Mazmanian et al. 2013). Examples of cyberslacking include spending work time shopping online, sending personal email messages, visiting pornographic websites, accessing social networking sites for personal use, sending personal chat messages, and playing online games (Askew et al. 2014; Lim et al. 2021). Such counterproductive use of ITs has received significant industry attention because it has resulted in not only productivity loss (Wushe and Shenje 2019), but also public embarrassment, legal bills, compensation claims and clean-up costs for many companies (Kuschnaroff and Bayma 2014; Zhang et al. 2015). Employees who engaged in cyberslacking have been reprimanded or even fired (Khansa et al. 2017). Further, personal use of workplace systems can overload the bandwidth and undermine the security of

organizational networks (Hernández 2016; Koay and Soh 2018). Thus, research on cyberslacking is relevant to organizations, especially to maintain employee productivity.

Understanding why employees engage in cyberslacking is an important research topic (Khansa et al. 2017; Venkatraman et al. 2018; Wagner et al. 2012). However, our review of prior literature (see Table A1 in Appendix A) reveals two gaps in cyberslacking research. First, researchers studying cyberslacking have approached the topic with different theoretical perspectives, yielding many antecedents that are often tested in isolation. Little is known about the extent to which the different perspectives used in the cyberslacking literature complement each other. Thus, there is a lack of a cohesive theoretical explanation of cyberslacking (see Ones et al. 1993). Second, most prior work does not include IT-specific variables. For example, many studies (e.g., Betts et al. 2014; Bock et al. 2010; Pee et al. 2008; Sheikh et al. 2015) draw on the theory of planned behavior (TPB; Ajzen 1991) or the theory of interpersonal behavior (Triandis 1977) to examine how personal motivation factors influence cyberslacking while overlooking IT-specific variables. Researchers have been encouraged to identify and examine IT-specific variables more closely tied to the context of cyberslacking (Aghaz and Sheikh 2016), which might provide more specific guidance to direct design and practice (Hong et al. 2014; Venkatesh and Bala 2008; Venkatesh et al. 2016). This is consistent with the calls to leverage context in theoretical inquiry (Hong et al. 2014; Johns 2006, 2017).

Against the backdrop of organizational efforts to curb cyberslacking and the gaps in research on cyberslacking, we have the following three objectives: (1) conduct a systematic literature review of extant cyberslacking research to identify and organize antecedents of cyberslacking; (2) identify and examine IT-specific factors affecting cyberslacking; and (3) understand the relative importance of cyberslacking antecedents that stem from diverse

theoretical underpinnings. To address these objectives, we use a literature-based approach (Webster and Watson 2002) and a qualitative inquiry (see Venkatesh et al. 2010; Zhang and Venkatesh 2017) to develop our research model and hypotheses. We specifically focus on integrating cyberslacking research from four dominant perspectives: organizational justice, control and deterrence mechanisms, planned behavior, and personality. We then classify and organize cyberslacking antecedents into a 2x2 conceptual typology along two dimensions: their underlying nature (i.e., situational versus personal factors) and their motivation-control orientation (i.e., enabler versus inhibitor). This classification is intended to support the diagnosis of cyberslacking antecedents and guide the design of practical interventions. We further use a qualitative inquiry based on focus groups (see Venkatesh et al. 2010; Zhang and Venkatesh 2017) to identify IT-specific factors affecting cyberslacking. We then propose and test a research model in a three-wave field study of 395 employees in one organization. This field study employs multiple methods, multiple data sources, and data collection at multiple points in time to enhance methodological rigor.

This work provides a more systematic understanding of cyberslacking antecedents, and it contributes to research and practice in several ways. First, we identify and organize antecedents of cyberslacking according to the underlying nature and motivation-control orientation. Although most studies used one or two perspectives to explain cyberslacking (see Appendix A), we integrate antecedents from the four dominant research perspectives, enabling the advancement of a research program on understudied phenomena (Marcus and Schuler 2004). Our results demonstrate that these diverse theories and models complement each other to explain cyberslacking. Second, by adding IT-specific factors to predict cyberslacking and employee job performance, we incorporate contextualization into our theory development approach.

Specifically, we incorporate IT-specific variables to provide a foundation for future work on understanding the role of IT characteristics in cyberslacking. Third, our work contributes to the broader IS literature on negative IT use in the workplace. Given most IS studies have focused on positive IT use in the workplace and its desired outcomes (e.g., Bala and Venkatesh 2016; Hu et al. 2016; Yen et al. 2015), we enrich the IS literature by focusing on negative IT use—*nonwork IT use in the workplace during work hours*. Finally, we provide managers with a holistic view of cyberslacking from various theoretical perspectives, which can help organizations better manage cyberslacking and its impact on job performance.

THEORY DEVELOPMENT

Conceptualization of Cyberslacking

Cyberslacking refers to *the use of IT for nonwork activities in the workplace during work hours* (Whitty and Carr 2006). Some researchers refer to such nonwork use of IT in the workplace using various terms interchangeably: cyberslacking (Greengard 2000), cyberloafing (Polito 1997), Internet abuse (Urbaczewski and Jessup 2002), or nonwork-related computing (Pee et al. 2008). Although we use the term “cyberslacking” in this paper, our literature search and analysis as well as theoretical foundation and arguments were built upon prior literature that more broadly represent nonwork use of IT in the workplace. Cyberslacking is considered a form of counterproductive workplace behavior because it violates the legitimate interests of an organization by being potentially harmful to its members and the organization (Sackett and DeVore 2001; Venkatraman et al. 2018). For instance, employees’ nonwork activities (e.g., sending personal emails and messages) during work hours represent a loss of productive time at

work. Such undesirable behaviors at work have captured the attention of researchers and practitioners because of their considerable costs to organizations (e.g., O’Neill et al. 2014).

Theoretical Underpinnings of Cyberslacking Research

We followed the procedures suggested by Webster and Watson (2002) to identify studies on cyberslacking in the workplace. Prior work on cyberslacking has explained its antecedents using diverse theoretical perspectives. We also observed that prior cyberslacking articles used only one or two theoretical perspectives in explaining cyberslacking (see Appendix A). Further, most studies, including IS studies, have overlooked IT-specific variables. Based on our literature review, we identified four dominant theoretical underpinnings of cyberslacking research (see Table 1). We reviewed and synthesized prior studies to understand the key drivers of cyberslacking from different theoretical perspectives and reveal the complementarity of the diverse perspectives.

Theoretical Perspective	Frequently Used Theories	Frequently Investigated Antecedents	References
Organizational justice	-Theory of organizational justice	-Organizational justice (i.e., distributive justice, procedural justice, and interactional justice)	Betts et al. (2014) Henle et al. (2009) Khansa et al. (2017) Kim et al. (2016) Lim (2002) Restubog et al. (2011) Son and Park (2016) Zoghbi-Manrique-de-Lara (2006) Zoghbi-Manrique-de-Lara (2007)
Control and deterrence mechanisms	-Social learning theory -General deterrence theory	-Perceived IT control policy	Henle and Blanchard (2008) Hensel and Kacprzak (2021) Khansa et al. (2017) Ugrin and Pearson (2013) Zoghbi-Manrique-de-Lara et al. (2006) Zoghbi-Manrique-de-Lara and Olivares-Mesa (2010)
Planned behavior	-Theory of planned behavior -Theory of reasoned action	-Attitude toward cyberslacking -Subjective norm (i.e., prescriptive norm and descriptive norm)	Askew et al. (2014) Askew et al. (2019) Bock et al. (2010) Hensel and Kacprzak (2020) Lieberman et al. (2011)

	-Theory of interpersonal behavior	-Perceived behavioral control (i.e., facilitating conditions and cyberslacking self-efficacy)	Pee et al. (2008)
Personality traits	-Five-factor model of personality	-Extraversion -Neuroticism -Openness -Agreeableness -Conscientiousness	Andreassen et al. (2014) Jia et al. (2013) Kim et al. (2016) Sheikh et al. (2019) Wagner et al. (2012)

The first theoretical perspective draws from the organizational justice literature and explains cyberslacking using perceived organizational justice (i.e., distributive justice, procedural justice, and interactional justice) (e.g., Henle et al. 2009; Kim et al. 2016; Son and Park 2016). The basic tenet of this theoretical perspective is that employees are likely to engage in misconduct (Greenberg 1987) if they feel that they are being treated unfairly by the organization.

The second theoretical perspective focuses on the control and deterrence mechanisms. These studies examined the effectiveness of diverse control mechanisms, such as monitoring, IT control policy, punishment, organizational policies and sanctions, in mitigating cyberslacking (e.g., Glassman et al. 2015; Khansa et al. 2017; Wang et al. 2013).

The third theoretical perspective uses planned behavior theories, such as theory of planned behavior (TPB; Ajzen 1991) and theory of interpersonal behavior (TIB; Triandis 1980), to explain cyberslacking. This theoretical perspective has received support in prior cyberslacking studies (e.g., Askew et al. 2014; Bock et al. 2010; Pee et al. 2008). Attitude toward cyberslacking, subjective norm (i.e., prescriptive norm and descriptive norm), and perceived behavioral control (e.g., facilitating conditions and cyberslacking self-efficacy) are drivers of nonwork IT use in the workplace (e.g., Bock et al. 2010; Pee et al. 2008).

The fourth theoretical perspective focuses on personality traits (e.g., Andreassen et al. 2014; Jia et al. 2013; Sheikh et al. 2019). Although there are many ways to conceptualize

personality traits, the five-factor model (FFM) is the most widely used (see Venkatesh and Windeler 2012).

Although these four theoretical perspectives do not exhaustively cover all theoretical perspectives used in cyberslacking research, they are the most prominent ones. Strikingly, there is minimal overlap of antecedents across the four theoretical perspectives: a given construct only appears in a single theoretical perspective. Reliance on only one or two of the theoretical perspectives can limit the salience and visibility of the full range of potentially operative antecedents. Overall, the reliance on these established theoretical perspectives has perhaps inadvertently resulted in different theoretical models with incomplete subsets of the relevant antecedents. If important antecedents are overlooked by a single theoretical perspective, this raises several interpretational issues concerning the results. Therefore, one of our goals is to integrate diverse cyberslacking antecedents into a more complete cross-theoretical model.

Classifying Antecedents of Cyberslacking

In examining prior cyberslacking studies, as noted earlier, we described four major theoretical perspectives and the corresponding cyberslacking antecedents that they identified. We further organized the identified antecedents into a 2x2 typology according to: their underlying nature (i.e., situational versus personal factors) and their motivation-control orientation (i.e., enabler versus inhibitor). The first dimension, i.e., *situational versus personal* factors, is derived from the counterproductive workplace behavior literature. Much of the research on counterproductive workplace behavior adopts either a situational or personal view to organize the factors (e.g., Marcus and Schuler 2004; Martinko et al. 2002). Situational factors refer to the perceptions of the work situation (e.g., organizational justice, perceived IT control policy) and personal factors are internal dispositions (e.g., attitude toward cyberslacking, personality traits).

The second dimension, i.e., *enablers versus inhibitors*, distinguishes motivation from control as fundamental classes of antecedents of cyberslacking. In examining cyberslacking from the perspective of a negative aspect of IT use, we attempt to contribute to the understanding of the different facets of technology use. Traditional IS research has focused extensively on the factors that drive technology use (i.e., enablers) and much less on the factors that discourage use (i.e., inhibitors). We posit that enablers and inhibitors are conceptually distinct and can coexist. Understanding IT use from both enabling and inhibiting perceptions can provide us with a more complete view of the phenomenon (Cenfetelli and Schwarz 2011). The enabler-inhibitor perspective is consistent with the motivation-control perspective from the general theory of crime (Marcus and Schuler 2004). Enablers are a type of external pressure or internal propensity that motivate people to engage in counterproductive behavior at work, whereas inhibitors are barriers that prevent deviant behavior. In the context of cyberslacking, enabling factors, such as cyberslacking self-efficacy, are positively oriented and expected to push individuals toward cyberslacking, whereas inhibiting factors, such as perceived IT control policy, serve as a barrier between the employees and cyberslacking acts and are expected to have a negative effect on cyberslacking. Integrating these two dichotomous dimensions to generate a 2x2 conceptual typology with four groups of factors shaping cyberslacking (see Figure 1): *situational enablers, situational inhibitors, personal enablers, and personal inhibitors*.

	Situational Factors	Personal Factors
Enablers	<ul style="list-style-type: none"> Facilitating conditions (i.e., technology re-adaptability and limited work use of IT) Subjective norm (i.e., prescriptive norm and descriptive norm) 	<ul style="list-style-type: none"> Attitude toward cyberslacking Cyberslacking self-efficacy Extraversion Neuroticism
Inhibitors	<ul style="list-style-type: none"> Organizational justice (i.e., distributive justice, procedural justice, and interactional justice) IT control policy 	<ul style="list-style-type: none"> Openness Agreeableness Conscientiousness

Figure 1: A 2x2 Conceptual Typology of Cyberslacking Antecedents

Situational enablers are triggers that can provoke cyberslacking. They are enabling factors that are related to the work situation and have a positive effect on cyberslacking. Based on our literature review, *facilitating conditions* and *subjective norm* (i.e., descriptive norm and prescriptive norm) are positively oriented factors that drive employees to engage in cyberslacking. Investigating individuals' IT use through the planned behavior perspective is one of the most mature streams in the IS literature (Venkatesh et al. 2003, 2007, 2016). Our review of the previous literature suggests that a large number of studies (e.g., Betts et al. 2014; Huma et al. 2017; Koay et al. 2017; Pee et al. 2008) have drawn on planned behavior theories, such as theory of planned behavior (Ajzen 1991) and theory of interpersonal behavior (Triandis 1980), to explain cyberslacking. *Facilitating conditions* and *subjective norm* are the two core situational variables in these theories. *Facilitating conditions* refer to factors in an individual's environment that provide an opportunity to act intentionally and thus it is also called a motivating factor (i.e., enabler) for the behavior (Robert and Sykes 2017). Given that prior cyberslacking work has not considered IT-specific factors as facilitating conditions, especially as it relates to cyberslacking, we conducted focus group studies to identify the two IT-specific variables, namely technology re-adaptability and limited work use of IT (see the section "*Qualitative Inquiry and IT-Specific Variables*"). *Subjective norm* refers to the belief held by specific individuals or groups regarding the appropriateness of specific behaviors (Bock et al. 2010). It serves as an enabler for individuals to engage in deviant behaviors. Drawing on theory of interpersonal behavior (Triandis 1980), prior cyberslacking work has used the term social factors to capture the belief about the approval of cyberslacking in the workplace (e.g., Betts et al. 2014; Huma et al. 2017; Koay et al. 2017) and studies based on theory of planned behavior (Ajzen 1991) used the term subjective norm (e.g., Bock et al. 2010; Sheikh et al. 2015). Askew et al. (2014, 2019) focused

on the two specific types of norms: prescriptive norms (i.e., referent others say cyberslacking is acceptable behavior) and descriptive norms (i.e., referent others engage in cyberslacking).

Situational inhibitors refer to barriers that prevent an individual from engaging in cyberslacking. They are inhibiting factors that are related to one's work situation and have a negative effect on cyberslacking. Based on our literature review, *organizational justice* (i.e., distributive justice, procedural justice, and interactional justice) and *perceived IT control policy* were frequently investigated situational inhibitors in prior cyberslacking studies. Prior studies adapted the perspective of organizational justice as the theoretical lens to investigate cyberslacking. Although some researchers examined organizational justice as a broad concept (e.g., Betts et al. 2014; Khansa et al. 2017; Kim et al. 2016), others focused only on procedural justice and examined its impact on cyberslacking (e.g., Son and Park 2016; Zoghbi-Manrique de Lara 2009). *Perceived IT control policy*, which is based on the theoretical lens related to control and deterrence mechanisms, has been widely investigated in prior cyberslacking studies. Researchers examined the effectiveness of various forms of formal controls such as blocking (Glassman et al. 2015), organizational policies and sanctions (Ozler and Polat 2012), electronic monitoring (Wang et al 2013), and punishment (Zoghbi-Manrique de Lara and Olivares-Mesa 2010). By consolidating prior findings, perceived IT policy control is defined as the perception about organizational policies that monitor and prohibit nonwork use of IT in the workplace.

Personal enablers refer to the motivating personal factors that can drive employees to engage in cyberslacking. They are enabling factors that are related to individual differences and have a positive effect on cyberslacking. Based on our literature review, *attitude toward cyberslacking*, *cyberslacking self-efficacy*, *extraversion*, and *neuroticism* were frequently investigated personal enablers of cyberslacking. Similar to the situational enablers, *attitude*

toward cyberslacking, and *cyberslacking self-efficacy* stem from planned behavior theories (Ajzen 1991; Fishbein and Ajzen 1975). Although personal enablers can encourage or discourage cyberslacking, depending on their valence, we focus on favorable *attitude toward cyberslacking* that refers to the degree to which a person has a favorable evaluation of cyberslacking. *Cyberslacking self-efficacy* represents an internal form of the perceived behavior control construct in the theory of planned behavior. It refers to an individual's belief about his or her ability to perform a specific task (Ajzen 1991; Venkatesh 2000). Previous studies have investigated how these two personal enablers affect cyberslacking (e.g., Askew et al. 2014; Betts et al. 2014; Bock et al. 2010). Extraversion and neuroticism are personality traits drawn from the five-factor model (Venkatesh and Windeler 2012) that encourage individuals to engage in cyberslacking (Andreassen et al. 2014; Kraut et al. 2002; Jia et al. 2013). *Extraversion* refers to the propensity to be talkative, sociable, and dominant, and *neuroticism* refers to the propensity to demonstrate anxiety, hostility, and impulsiveness.

Personal inhibitors refer to factors that impede employees from performing acts of cyberslacking. They are inhibiting factors that are related to individual differences and have a negative effect on cyberslacking. Based on our literature review, *openness*, *agreeableness*, and *conscientiousness* were frequently investigated personal inhibitors of cyberslacking. These three personality traits are from the five-factor model (see Venkatesh and Windeler 2012) that discourage individuals from engaging in cyberslacking (see also Devaraj et al. 2008; Jia et al. 2013; O'Neill et al. 2014). *Openness* refers to the propensity to try new and different things. *Agreeableness* refers to the tendency to be kind, trusting and trustworthy, and warm. *Conscientiousness* refers to the tendency to be orderly, responsible, and dependable.

Qualitative Inquiry and IT-Specific Variables

IT-specific variables are seldom found in prior cyberslacking studies. In response to the call for incorporating specific variables that are tied more closely to the research context, we conducted focus groups to identify IT-specific variables and examine their impacts on cyberslacking. This approach is also suitable for a situation where the extant theories and constructs are inadequate to explain the phenomenon of interest (see Venkatesh et al. 2010; Zhang and Venkatesh 2017).

We grounded our theorizing in a qualitative field study in which we conducted six focus groups, each with 20 employees of three different Fortune-100 companies. These 120 employees were knowledge workers with different job roles in the company. Their profiles were consistent with the sampling frame of the field study and these employees were not included in the main study. We followed the guidelines and suggestions provided by Morgan (1997) to conduct the focus groups. The moderator in four of the focus groups was someone who was not involved in the research and followed a script to foster the basic dialog in the sessions. The script and session plans were discussed between one of the authors and the moderator to ensure that it had no value judgments and was unbiased. A co-facilitator in all sessions was someone who was not involved in the research, kept track of time, facilitated the discussions, and took notes. The facilitation by an individual who did not know the research or its objectives allowed the discussion to be free-flowing and yet not be steered in any biased direction. At the beginning of each focus group session, the specific activities for the session were explained to the participants. In two of the sessions, which were conducted online using a collaborative tool that allowed for anonymous sharing by participants, one of the authors served as the moderator and followed the script. This approach also allowed the authors to more deeply engage in the phenomenon. Further, the similarity in the pattern that emerged in the two sets of focus groups adds to the robustness of the

knowledge gained.

We used a top-down approach and asked open-ended questions. The questions focused on technology-related factors that drive employees to engage in cyberslacking (e.g., please identify technology-related factors that may facilitate someone using IT for nonwork activities during work hours in the company). Each session lasted between 40 and 90 minutes depending on the number of factors the interviewees provided. Based on the focus group sessions, a list of IT-specific variables related to cyberslacking was identified. As we asked the participants to state the cyberslacking behaviors that *others* have performed, we believe that this approach encouraged honest voicing of opinions while limiting social desirability bias.

The focus group data were transcribed and then read by one of the authors who used a data reduction and presentation technique for analyzing, triangulating and documenting the contents of the transcripts (Miles and Huberman 1984) to identify and group similar quotes. In addition, we used a software (i.e., NUD*ST) to further content analyze the focus group data. We followed examples in research where qualitative data were used to identify constructs of relevance (e.g., Bala and Venkatesh 2007; Sherif et al. 2006). We further followed the steps used in Zhang and Venkatesh's (2017) study to identify key IT-specific factors (see Appendix B). This approach to identification of factors is consistent with the *development* purpose in mixed methods research (Venkatesh et al. 2013; Venkatesh et al. 2016). The entire coding process was repeated by another researcher who was not aware of our research objectives. The coding by both coders was highly consistent. Based on the quotes, the labels for the two identified IT-specific variables were technology re-adaptability and limited work use of IT.

RESEARCH MODEL AND HYPOTHESES

We used a combination of a literature-based approach and a qualitative inquiry to

develop the research model. Figure 2 depicts our research model of cyberslacking.

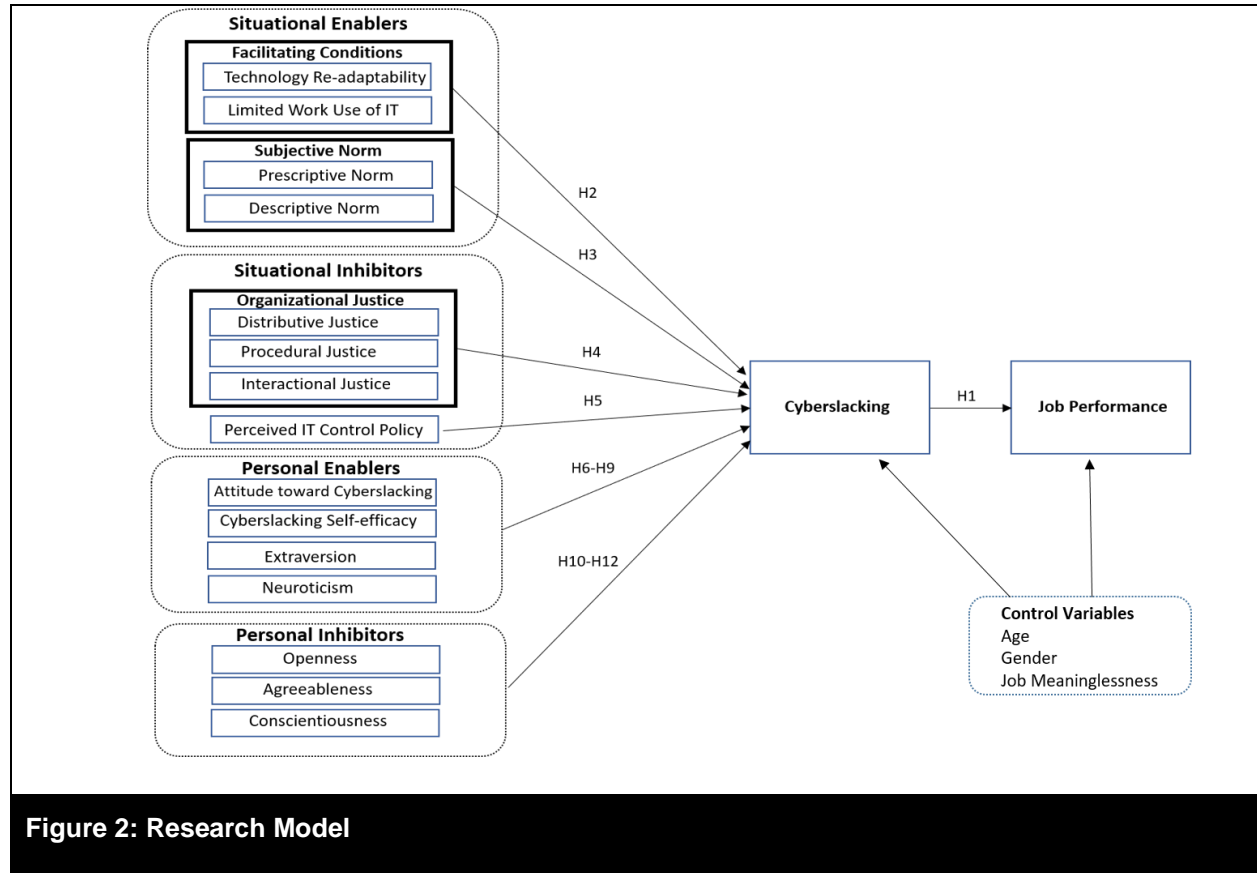


Figure 2: Research Model

Performance Consequences of Cyberslacking

Job performance refers to the degree to which an individual fulfills his or her job duties effectively, efficiently and responsibly to the employer’s satisfaction (Zhang and Venkatesh 2017). There is consensus that employees’ engagement in cyberslacking affects job performance due to the time wasted on nonwork activities during work hours. This dominant view is consistent with the empirical evidence found in the workplace deviant behavior literature (Bennett and Robinson 2000; Griffin and Lopez 2005; Hershcovis and Barling 2010; Rotundo and Sackett 2002). When employees engage in cyberslacking, they are less likely to complete their job duties effectively, efficiently and responsibly from the employer’s perspective. Such interference means that employees take more time to complete tasks (Addas and Pinsonneault

2015, 2018). Studies have found that employees are constantly interrupted by personal communications, such as personal emails and instant messaging, and the recovery time results in a great deal of time wasted, leading to a decline in job performance (Jackson et al. 2003). Prior work has found support for the negative effect of cyberslacking on job performance (e.g., Jia et al. 2013). Thus, we hypothesize:

H1: Cyberslacking in the workplace will negatively influence job performance.

Antecedents of Cyberslacking

As discussed earlier, we identified four groups of antecedents of cyberslacking: situational enablers (i.e., facilitating conditions and subjective norm), situational inhibitors (i.e., organizational justice and perceived IT control policy), personal enablers (i.e., attitude toward cyberslacking, cyberslacking self-efficacy, extraversion, and neuroticism), and personal inhibitors (i.e., openness, agreeableness, and conscientiousness). We expect that variables from a 2x2 conceptual typology (see Figure 1) will have effects on cyberslacking.

Situational Enablers

Facilitating conditions. Adapted from TPB, facilitating conditions refer to factors within an individual's environment that are perceived to facilitate the performance of a particular behavior (Ajzen 1991). In the context of cyberslacking, employees are likely to engage in cyberslacking when they have helpful external conditions, right settings, or access to the right resources (Betts et al. 2014). In order to identify facilitating conditions specific to the context of cyberslacking, as discussed earlier, we conducted focus groups. The focus groups suggested the two core IT-specific variables: *technology re-adaptability* and *limited work use of IT*. Drawing on IS and reference discipline literature, we then developed our theoretical arguments.

Technology re-adaptability is defined as the degree to which an individual thinks the IT

can be adapted for nonwork purposes in the workplace. In the technology adaptability literature, researchers have focused on how employees appraise a newly implemented IT and perform technology adaptation behaviors for work-related tasks. For example, Bala and Venkatesh (2016) identified four different technology adaptation behaviors that employees perform to cope with a newly implemented IT in organizations, i.e., exploration-to-innovate, exploitation, exploration-to-revert, and avoidance. Beaudry and Pinsonneault (2005) developed a coping model of user adaptation and derived four different technology adaptation behaviors, i.e., benefits maximizing, benefits satisficing, self-preservation, and disturbance handling. Sun (2012) examined four different technology adaptation behaviors including trying new features, feature repurposing, substituting features, and feature combining. This works clearly point to individuals believing they can and actually modifying the characteristics of IT (Chin et al. 1997). However, previous works primarily examined IT adaptation behaviors for *work-related purposes*. We identified a new concept, technology re-adaptability that focuses on the adaptation of IT for *nonwork-related purposes*, which are typically different from the originally intended goal of the technology and its intended focus on work purposes. According to the technology affordance literature (Treem and Leonardi 2013), IT can be adapted and used in different ways by different individuals who may have different perceptions about the role and utility of the IT and how it can be tailored to their activities. By applying the affordance perspective in this work, we expect that when employees find the IT at work can afford them to engage in nonwork activities, they are likely to use it for cyberslacking. In other words, the perception of technology re-adaptability represents a condition that enables employees to engage in cyberslacking.

Limited work use of IT refers to the degree to which an individual thinks there is limited use of the IT for work tasks. When employees find IT characteristics not fitting with their current

work tasks, they tend to either reduce the use of IT or use it inappropriately (Orlikowski et al. 1995). This is aligned with the task-technology fit that occurs “*when a technology provides features and support that “fit” the requirement of a task*” (p. 214, Goodhue and Thompson 1995). However, most studies focused on how task-technology fit influences work-related activities and job performance (e.g., Fuller and Dennis 2009), and there is a limited understanding of how the limited use of IT due to misfit (IT characteristics versus work tasks) affects nonwork-related activities. According to structuration theory (Giddens 1984), organizational resources for the purpose of production of institutional outcomes, when underutilized, become a target resource for self-development and self-expression altering the established modes of proper conduct and proper use of resources. Human agents always strive to put resources to use but when resources do not fit the original purposes, such underutilized resources will be used for personal benefit, thus constituting a violation of norms. Thus, this work suggests that when individuals find that they have limited use of the IT for work purposes, they might try to use it for the purpose of cyberslacking. In other words, the limited work use of IT represents a facilitating condition that encourages employees to use the IT for nonwork purposes. For example, when an individual finds a video conferencing system is not frequently used for work tasks, he or she may use it when available for communicating with friends and family. Together, these facilitating conditions motivate employees to use the IT for nonwork activities. Thus, we hypothesize:

H2a: Technology re-adaptability will positively influence cyberslacking in the workplace.

H2b: Limited work use of IT will positively influence cyberslacking in the workplace.

Subjective norm. Adapted from TPB, subjective norm is defined as “the perceived social pressure to perform or not to perform the behavior” (Ajzen 1991, p. 188). There are two broad

types of norms: what referent others say is acceptable behavior—i.e., *prescriptive norm*—and what referent others actually do—*descriptive norm* (Cialdini et al. 1990). With regard to cyberslacking, prescriptive norm refers to the extent that the employees’ referent others would approve of their engagement in cyberslacking and descriptive norm refers to the extent to which the employees’ referent others, such as coworkers and supervisors, are involved in cyberslacking. In general, people seek social acceptance. They tend to use social norms to guide their own behaviors so that they can fit with their referent groups (Bagozzi 2000; Cheung and Lee 2010; Gong et al. 2019). In a workplace environment, employees tend to comply with expectations of others and follow their co-workers’ and supervisors’ acts (Sykes 2015). Specifically, in the case of cyberslacking, others’ overt support and/or encouragement (prescriptive norm) and others’ actual engagement in cyberslacking (descriptive norm) will provide both explicit and tacit approval, respectively. Such norms will have impacts on different outcomes, particularly given the counterproductive and possibly organizationally restricted behavior like cyberslacking. Subjective norm has been shown to be significant in enabling cyberslacking (Askew et al. 2014; Blanchard and Henle 2008; Liberman et al. 2011; Lim and Teo 2005; Restubog et al. 2011). Thus, we hypothesize:

H3a: Prescriptive norm (i.e., referent others’ approval of cyberslacking) will positively influence cyberslacking in the workplace.

H3b: Descriptive norm (i.e., referent others’ involvement in cyberslacking) will positively influence cyberslacking in the workplace.

Situational Inhibitors

Organizational justice. The organizational justice literature suggests that if employees feel they are being treated unfairly by the organization, they are likely to engage in misconduct (Greenberg 1987). Individuals seek to engage in deviant behaviors by working less or

performing low quality work, stealing from the organization, engaging in vandalism, sabotaging, engaging in aggression, and retaliating to counter the unfair treatment received. Three components of justice perceptions have been examined in the literature—distributive justice, procedural justice, and interactional justice (Lim 2002). *Distributive justice* refers to the perceived fairness of outcomes relative to one's contribution; *procedural justice* refers to the perceived fairness of procedures used to determine the outcomes; and *interactional justice* refers to the perceptions of interpersonal treatment meted out by the supervisors. Prior studies found that individuals are able to distinguish across the different types of justice experiences (Ambrose and Schminke 2009). Thus, we examine how different forms of justice influence cyberslacking. In today's work environment, when employees perceive that they are unjustly treated by their employers, they can discreetly engage in nonwork behaviors within the confines of their cubicles without directly demonstrating that they are not working. For instance, they can retaliate against the organization by engaging in cyberslacking such as chatting, emailing friends, or messaging friends and family during work hours. When an employee is unhappy with his/her pay or other forms of compensation (distributive justice), or when an employee finds the procedure for providing feedback or appeal against or challenge a company's decision is unfair (procedural justice), or when an employee finds his/her immediate work supervisor is unable to suppress personal bias (interactional justice), the employee is likely to engage in a counterproductive behavior like cyberslacking. Prior studies have demonstrated a negative relationship between organizational justice and cyberslacking (e.g., Restubog et al. 2011; Zoghbi-Manrique-de-Lara 2007). Thus, we hypothesize:

H4a: Distributive justice will negatively influence cyberslacking in the workplace.

H4b: Procedural justice will negatively influence cyberslacking in the workplace.

H4c: Interactional justice will negatively influence cyberslacking in the workplace.

Perceived IT control policy refers to the perception about organizational policies that monitor and prohibit nonwork use of IT in the workplace. Most firms today monitor employees' workplace activities through cameras and other detection devices to minimize deviant behaviors (Glassman et al. 2015; Holland et al. 2015). Based on the IT control and compliance literature (e.g., Liang et al. 2013; Xue et al. 2011), formal controls can increase employees' perceptions of accountability and risk of punishment, and thus employees are more likely to follow rules and less willing to engage in nonuse or misuse of IT. The role of organizational control and sanction has also been found important in inhibiting employees' engagement in nonwork use of IT at work (Andreassen et al. 2014; Henle and Blanchard 2008; Henle et al. 2009; Wang et al. 2013). Monitoring and enforcement for violations (sanctions/punishments) are factors that likely determine the perceptions of the effectiveness of the IT control policy. Thus, we hypothesize:

H5: Perceptions of highly effective IT control policy will negatively influence cyberslacking in the workplace.

Personal Enablers

Attitude toward cyberslacking. Adapted from TPB, attitude toward cyberslacking refers to the degree to which a person has a favorable evaluation of cyberslacking. Attitude toward a behavior is a good predictor of the behavior (Ajzen 1991). Similarly, prior work on counterproductive work behaviors (Lau et al. 2003) found that employee attitude toward the performance of a specific counterproductive work behavior drives the extent to which they engage in the behavior. Similarly, we expect employees with a more favorable attitude toward cyberslacking will engage in the behavior. Prior work has also shown that when employees view cyberslacking as acceptable, they are more willing to engage in cyberslacking (Andreassen et al. 2014; Liberman et al. 2011; Vitak et al. 2011). Thus, we hypothesize:

H6: Attitude toward cyberslacking will positively influence cyberslacking in the workplace.

Cyberslacking self-efficacy. Adapted from TPB, self-efficacy is an internal form of the perceived behavioral control variable that represents one's belief about his/her ability to perform a specific task (Ajzen 1991; Venkatesh 2000). According to our literature review, cyberslacking self-efficacy, an employee's beliefs regarding his/her ability to perform nonwork IT tasks, has been frequently investigated and found to be significant in enabling their participation in cyberslacking (e.g., Askew et al. 2014; Pee et al. 2008). Confidence in their ability to perform the behavior, both in terms of actual behavioral performance and doing so without being seen or caught, will contribute to cyberslacking. Thus, we hypothesize:

H7: High level of cyberslacking self-efficacy will positively influence cyberslacking in the workplace.

Personality is defined as “a dynamic and organized set of characteristics possessed by a person that uniquely influences his or her cognitions, motivations and behaviors in various situations” (Ryckman 2004, p. 5). Although there are many ways to conceptualize personality traits, the five-factor model (FFM) is the most widely used (see Venkatesh and Windeler 2012) and is used to assess human personality along five main dimensions: *extraversion* (defined by characteristics such as talkative, assertive, and energetic), *neuroticism* (defined by characteristics such as anxiety, hostility, and impulsiveness), *openness* (defined by characteristics such as intellectual, imaginative, and independent-minded), *agreeableness* (defined by characteristics such as sympathetic and warm), and *conscientiousness* (defined by characteristics such as being organized and structured). The impact of personality on human behavior has been studied in various realms (Digman 1990). In IS research, personality has been integrated to predict IT use (McElroy et al. 2007; Venkatesh et al. 2003; Venkatesh et al. 2016), including nonwork IT use at work (e.g., Andreassen et al. 2014; Jia et al. 2013; Kim et al. 2015; Sheikh et al. 2019).

Extraversion is the propensity to be talkative, sociable, and dominant. Individuals who are high in terms of extraversion are social, active, and outgoing and focus on interpersonal relationships (Watson and Clark 1997). Behaviors that are intuitively linked to sociability have been correlated with high scores for extraversion (Wilt and Revelle 2019). Individuals who score high on extraversion also derive pleasure and energy from interacting with others (Digman 1990) and are likely to spend more time in online social interactions (Bowden-Green et al. 2020). In the case of cyberslacking, employees who score high on extraversion are likely to send emails and exchange instant messages with friends and family during work hours with an intention to build and maintain social networks and relationships. Prior studies have also found that extraversion was positively associated with cyberslacking (Kraut et al. 2002; Jia et al. 2013; Wyatt and Phillips 2005). Thus, we hypothesize:

H8: Extraversion will positively influence cyberslacking in the workplace.

Neuroticism is the propensity to demonstrate anxiety, hostility, and impulsiveness. Individuals who are high in terms of neuroticism are anxious, self-conscious, and prone to negative emotions to work-related stimuli (Devaraj et al. 2008). They focus on the negative side of issues (Sheikh et al. 2019) and are likely to experience worries and stress at work. Prior studies found that individuals who score high on neuroticism tend to have a lower ability to focus on tasks for an extended period of time because they are worriers (Mark et al. 2016). They stress about decisions they have made and replay conversations in their mind. All of this focus on the past makes individuals who are neurotic less likely to stick to one task for a long period of time. In the case of cyberslacking, employees high on neuroticism are likely to send emails and exchange instant messages with friends and family during work hours because they cannot focus on their work tasks. They may engage in nonwork IT use with an intention to get rid of stress

associated with their work tasks. Prior studies have also found that neuroticism was positively associated with cyberslacking (Andreassen et al. 2014; Jia et al. 2013). Thus, we hypothesize:

H9: Neuroticism will positively influence cyberslacking in the workplace.

Personal Inhibitors

Openness is the propensity to try new and different things. Individuals who are high in terms of openness are creative, flexible, intellectual, imaginative and broad-minded (McCrae 1996). They enjoy intellectual stimulation and exhibit a more favorable attitude toward learning (Barrick and Mount 1991), and are passionate about developing creative ways of thinking and doing tasks. According to our literature review, employees who score high on openness are less likely to engage in cyberslacking (Jia et al. 2013). Although the finding is somewhat counterintuitive, we speculated that while openness increases both work and nonwork exploration, it has more of an impact on work-related exploration than nonwork-related exploration. For instance, interacting with friends and family may not easily generate new and good ideas, as individuals in a strong tie are more similar in various ways (Granovetter 1973). Employees may even think interacting with friends and family during work hours will affect their learning experiences and work-related goals. Prior studies have also found that openness was negatively related to being with family (Wrzus et al. 2016) and socializing (Wilt and Revelle 2019). Thus, we hypothesize:

H10: Openness will negatively influence cyberslacking in the workplace.

Agreeableness is the tendency to be kind, trusting and trustworthy, and warm (Judge and Ilies 2002). Individuals who score high on agreeableness tend to respect another person's point of view and are less likely to behave aggressively in the workplace (Peters et al. 2003). They also focus on the positive aspects of a collaborative experience (Venkatesh and Windeler 2012).

Agreeable people are generally liked more and tend to follow the rules. Individuals who score low on agreeableness are more likely to engage in counterproductive work behaviors (Wilt and Revelle 2019). Employees who score high on agreeableness are thus less likely to engage in cyberslacking activities, as they seek to meet job expectations to maintain positive relationships with supervisors and other colleagues in the organization (Judge et al. 2002). Prior studies have also found that agreeableness was negatively associated with cyberslacking (Jia et al. 2013; O'Neill et al. 2014). Thus, we hypothesize:

H11: Agreeableness will negatively influence cyberslacking in the workplace.

Conscientiousness refers to the tendencies to be orderly, responsible and dependable. Individuals who are score high on conscientiousness are self-disciplined and persevering (Devaraj et al. 2008; O'Neill et al. 2014). Conscientious individuals are less likely to engage in criminal (Wiebe 2004), antisocial (Shiner et al. 2002) or deviant workplace behaviors (Salgado 2002). Further, they have high levels of commitment to their organizations and are more likely to follow rules and standards of their workplace (Tepper, Duffy, and Shaw 2001). Individuals who score high on conscientiousness are likely to spend more time working (Barnett, 2006; Wrzus et al., 2016). Such high conscientiousness employees are less likely to engage in cyberslacking, as they are attentive to social contracts such as work arrangements (Barrick et al. 2001). Prior studies have also found that conscientiousness was negatively associated with cyberslacking (Sheikh et al. 2019). Thus, we hypothesize:

H12: Conscientiousness will negatively influence cyberslacking in the workplace.

METHOD

Participants

We collected data from one business unit of a U.S.-based Fortune-100 organization. Data

were collected via online surveys at three points in time. In wave 1, hypothesized cyberslacking determinants and demographic control variables (age, gender, and education) were measured. In wave 2, 6 months later, self-reported cyberslacking behavior was measured. In wave 3, another 6 months later, supervisor-rated job performance was measured. In wave 1, 719 employees who used IT to accomplish their work tasks on a daily basis were invited to respond to the online survey, of which 560 responded, for a response rate of 78%. In wave 2, the 560 respondents from wave 1 were invited to respond, of which 444 responded, for a response rate of 79%. In wave 3, supervisors provided ratings for 395 of the 444 employee respondents from wave 2, for a response rate of 89%. In our final sample for data analysis for which we received responses from all three waves (n=395), 64% of participants were men, the average age was 35.8 (SD 13.2), and over half had completed some college education.

Data Collection Procedure

The same procedure was followed for all three waves of data collection. Each survey wave was introduced to potential respondents in advance via an e-mail announcement from the head of the business unit being sampled, which explained that they were encouraged to fill out the survey during work hours as part of their job duties, and that results would be received and analyzed by an independent third party and be kept confidential and anonymous. To further enhance the response rate, the same unit head sent two follow-up email reminders each week for the next two weeks preceding data collection. In waves 1 and 2, employees were informed that: (a) supervisor-rated job performance data would be collected in wave 3, (b) as employees they would not have access to the supervisor performance ratings, and (c) supervisors would not have access to their wave 1 and 2 responses. In wave 3, supervisors were informed that their subordinates would not have access to their performance ratings.

Once the email containing the link to the online survey was sent, respondents had three days to participate. The web-based surveys requested voluntary consent to participate and identified the researchers who would be receiving and summarizing the results. The surveys did not allow participants to skip questions and they were instructed to close the browser if they did not wish to continue. Unique links were used in emails sent to participants and the surveys they completed allowed us to track participants over time. All responses were anonymized by removing identifying information and kept confidential. Data files were securely stored by the authors and the participating organization did not have access to any disaggregate identifying employee or supervisor data.

Our response rates of 78% (wave 1), 79% (wave 2) and 89% (wave 3) compare favorably with response rates around 50% typical for online employee surveys (e.g., Kulas et al. 2017; Saunders 2012), somewhat mitigating concerns about non-response or self-selection bias. These response rates may have been enhanced by the email messages from the unit head informing respondents that it was legitimate and encouraged to complete the surveys during work hours as part of their job duties. High response rates do not necessarily eliminate nonresponse bias (Wagner 2012), which can be exacerbated by the skewness of underlying data (Kulas et al. 2017). The absence of skewness in our data reduces concerns about serious nonresponse bias. Further, we compared the wave 1 responses of wave 2 respondents versus nonrespondents, and compared the wave 1 and wave 2 responses of wave 3 respondents versus non-respondents, and found no significant differences in distributions of demographic or research variables. The high response rates, absence of skewness, and lack of differences in prior wave data between respondents versus non-respondents all suggest that little or no nonresponse bias in our dataset.

Measures

One key aspect of this research design is the two distinct sources used in the data collection: (1) individual-level self-report data from employees and (2) job performance data provided by the employees' supervisors. Previously validated measures were used wherever possible (see Appendix C). For situational enablers, technology re-adaptability and limited work use of IT were newly developed scales (discussed later). The scales for prescriptive norm and descriptive norm were adapted from Cialdini et al. (1990). For situational inhibitors, the scales for distributive justice, procedural justice, and interactional justice were adapted from Lim (2002). Perceived IT control policy was modeled using reflective indicators and was adapted from Hollinger and Clark (1983). For personal enablers and inhibitors, the scale for attitude toward cyberslacking was adapted from Venkatesh et al. (2003), and the scale for cyberslacking self-efficacy was adapted from Compeau and Higgins (1995). We used five separate 4-item scales from Donnellan et al. (2006) to measure the five personality variables. Cyberslacking was a newly developed scale (discussed later). Supervisor-rated job performance was measured using reflective indicators—the four items were an evaluation provided by the employees' supervisors and we used a scale used in much organizational behavior research and IS research (e.g., Sykes 2015, 2020; Sykes and Venkatesh 2017; Sykes et al. 2014; Welbourne et al. 1998; Zhang and Venkatesh 2017). We included age, gender, and job meaningfulness as control variables. We conceptualized and operationalized our structural model with first-order constructs. Prior studies have confirmed that a simple formulation of constructs and concomitant model can yield comparable empirical results to more complex models that use multidimensional constructs (e.g., Polites et al. 2012; Thatcher et al. 2018). We conducted a post-hoc analysis to demonstrate that the simpler form of the first-order construct model had as much explanatory power as the model with more sophisticated measures (see Appendix D).

We developed the scales for technology re-adaptability, limited work use of IT, and cyberslacking following the procedures suggested by DeVellis (2003). We conducted a pilot study using a sample of 112 MBA and undergraduate business students to refine the items for these new scales and assess their validity and reliability. Based on the results of the pilot study, a few further items were eliminated due to poor loadings and scale differences, giving us a final tally of five items each for cyberslacking, re-adaptability, and limited work use. Further, all the MBA student respondents in the pilot study were asked to assess the clarity, form, and presentation of the items. The participants did not report any major problems but based on the feedback received, minor changes, such as font size, were made to the presentation of the items.

RESULTS

Preliminary Analysis

The four groups of antecedents measured at wave 1 were used to predict cyberslacking measured at wave 2 and cyberslacking at wave 2 was used to predict job performance at wave 3. This design followed procedures formulated to assess and infer causation with panel data (Cohen et al. 2002; Finkel 1995; Markus 1979) and is consistent with prior studies with similar designs (Hammer et al. 2005; Kraut et al. 1998). Before testing the hypotheses, basic assumptions (e.g., outliers, multicollinearity) regarding the structure of data were tested and no apparent problems were found. Self-reported data can be subject to common method bias. We used the marker variable technique (see Lindell and Whitney 2001) to check for this potential threat. The adjusted correlations showed no substantial changes. In addition, we collected data from multiple sources at multiple points of time (i.e., data were collected for the independent variables at a different time than the dependent variables) (see Brown and Venkatesh 2005). This alleviated concerns regarding common method bias. Descriptive statistics, Cronbach's alpha (CA) reliabilities, and

correlations are shown in Table 2. The CAs were greater than .70 for all the scales, suggesting acceptable reliability (Nunnally 1978). Factor analysis with direct oblimin rotation supported convergent and discriminant validity of the scales, with loadings greater than 0.70 and cross-loadings lower than 0.35. Thus, the evidence suggests that the scales were reliable and valid.

Model Testing

Regression analyses were performed to test the research model. Table 3 presents these results. We estimated two models for each dependent variable. We first estimated the model with control variables (models 1 and 3) followed by a model with the hypothesized predictors (models 2 and 4). Model 1 explained 8% of the variance in job performance. Except gender, all the control variables had significant effects on job performance. Model 2 showed that the variance explained by adding cyberslacking was 21%. Cyberslacking had a significant negative effect on job performance, thus supporting H1. Model 3 explained 16% of the variance in cyberslacking. All the control variables had significant effects on cyberslacking. Model 4 included the effects of situational enablers, situational inhibitors, personal enablers, and personal inhibitors, and explained 40% of the variance in cyberslacking. Both IT-specific variables had significant effects on cyberslacking, supporting H2a regarding technology re-adaptability ($\beta = .12, p < .05$) and H2b regarding limited work use of IT ($\beta = .12, p < .05$). The other two situational enablers (prescriptive norm and descriptive norm) had significant positive effects on cyberslacking, supporting H3a and H3b. Except distributive justice, all the situational inhibitors (i.e., procedural justice, interactional justice, and perceived IT control policy) had significant negative effects on cyberslacking, thus supporting H4b, H4c, and H5. Among the personal enablers, only extraversion and neuroticism had significant effects on cyberslacking, thus supporting H8 and

H9. Among the personal inhibitors (i.e., openness, agreeableness, and conscientiousness), only conscientiousness had a significant negative effect on cyberslacking, thus supporting H12.

Table 2: Descriptive Statistics and Correlations (n=395)

		Mean	S.D.	CA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Gender (1: men)	NA	NA	NA	—																			
2	Age	35.8	13.2	NA	.06	—																		
3	Job Meaninglessness	3.71	1.30	.79	-.17**	-.13*	—																	
4	Distributive Justice	3.80	1.81	.76	-.14*	.12*	-.19**	—																
5	Procedural Justice	4.14	1.77	.79	-.19**	.10	-.14*	.24***	—															
6	Interactional Justice	4.10	1.70	.81	-.21***	.17**	-.17**	.21***	.29***	—														
7	Technology Re-adaptability	4.17	1.55	.75	.21***	-.15*	.06	.14*	.13*	.17**	—													
8	Limited Work Use of IT	4.40	1.60	.78	.17**	-.19**	.08	.08	.09	.04	.19**	—												
9	Descriptive Norm	3.90	1.87	.74	-.15*	.21***	.14*	.03	.17**	.09	.04	.07	—											
10	Prescriptive Norm	3.70	1.99	.72	-.19**	.20**	.17**	.04	.18**	.13*	.09	.11*	.40***	—										
11	Perceived IT Control Policy	4.13	1.66	.79	.15*	.06	.05	.12*	.08	.14*	.13*	.12*	.04	.10	—									
12	Attitude toward Cyberslacking	5.04	1.41	.75	.17**	-.24***	.07	.06	.13*	.19**	.10	.17**	.14*	.17**	.10	—								
13	Cyberslacking Self-Efficacy	4.08	1.97	.82	.24***	-.18**	.09	.09	.13*	.14*	.19**	.24***	.14*	.18**	.13*	.14*	—							
14	Extraversion	3.75	1.67	.74	-.17**	-.10	.13*	.06	.02	.04	.14*	.20**	-.22***	-.10	-.13*	.17**	-.15*	—						
15	Neuroticism	2.89	.87	.79	.08	.06	.14*	.19**	-.17**	-.14*	.06	.10	.13*	.17**	.17**	.17**	.15*	-.13*	—					
16	Openness	3.15	1.39	.73	.19**	-.13*	.04	.10	.14*	-.15*	.19**	.14*	.20**	.22***	.15*	.06	.19*	.13	-.15*	—				
17	Agreeableness	3.44	1.75	.81	-.30***	.14*	.05	.14*	.17**	.19**	.20**	.17**	.09	.04	-.08	-.13*	-.15*	.06	-.16**	.14*	—			
18	Conscientiousness	4.07	1.35	.86	.06	.19**	.14*	.19**	.20**	.22**	.27***	.24***	.20**	.14*	.19**	.24***	-.16*	.10	-.19**	.15*	.11*	—		
19	Cyberslacking	3.94	1.99	.70	.30***	-.31***	.29***	-.19**	-.40***	-.31***	.24***	.20**	.29***	.22***	-.20**	.17**	.21***	.29***	.36***	-.17**	-.14*	-.28***	—	
20	Job Performance	4.65	1.76	.75	.24***	.23***	-.17**	-.20**	-.21***	-.17**	.19**	.19**	.21**	.18**	-.16**	.11*	-.12*	.21***	.26***	-.12*	-.08	-.20**	-.48***	—

Notes:

- *p<.05; **p<.01; ***p<.001.
- CA: Cronbach's Alpha; NA: Not Applicable

With regard to mediation, we note that we do not explicitly hypothesize partial or full mediation—and given the number of antecedents, without specific hypotheses, mediation tests will yield purely data-driven results. We, therefore, do not report these detailed results but note that in our testing, we found that all significant predictors of cyberslacking were mediated either partially or fully in influencing job performance, with an interesting pattern of effects pertaining to neuroticism. The total effect of neuroticism on job performance (not shown in Table 3) when cyberslacking was included was .07, which was a direct effect of .15 and an indirect effect via cyberslacking of -.08 (.21 x -.37); the bootstrapping confidence interval of the total effect did not include 0, thus suggesting a small overall positive effect of neuroticism on job performance. Similarly interesting is the total effect of IT control policy on job performance of -.05, which was a direct effect (not shown in Table 3) and an indirect effect via cyberslacking of .07 (-.17 x -.37), thus suggesting a small overall negative effect of IT control policy on job performance, which was also confirmed by the absence of 0 in the bootstrapped confidence interval.

Table 3: Results of Model Testing				
	Job Performance		Cyberslacking	
	Model 1	Model 2	Model 3	Model 4
R ²	.08	.21	.16	.40
ΔR ²		.13***		.24***
Gender (1: men)	.10	.07	.18**	.10
Age	.17**	.05	-.20**	-.11*
Job Meaninglessness	-.14*	-.09	.17**	.14*
Distributive Justice				-.10
Procedural Justice				-.19**
Interactional Justice				-.17**
Technology Re-adaptability				.12*
Limited Work Use of IT				.12*
Prescriptive Norm				.19**
Descriptive Norm				.14*
Perceived IT Control Policy				-.17**
Attitude toward Cyberslacking				.10
Cyberslacking Self-Efficacy				.10
Extraversion				.15*
Neuroticism				.21***
Openness				-.09
Agreeableness				-.06

Conscientiousness				-0.21***
Cyberslacking		-0.37**		

Note: *p<.05; **p<.01; ***p<.001.

Post-hoc Analysis

Assessment of Relative Importance among Predictors

An interesting aspect that goes beyond the mediation and total effects noted are the relative importance of various predictors that we examined using partial and semipartial correlations (Cohen et al. 2002) to assess the relative importance of the antecedents of cyberslacking (see Table 4). A partial correlation measures the correlation between two continuous variables while controlling for the effect of one or more other continuous variables. A semipartial correlation (also called part correlation) measures the relationship between a dependent variable (or criterion) with an adjusted independent variable (or predictor) while controlling for the effects of other predictors. Thus, partial and semipartial correlations can show the unique contribution of an independent variable. Among variables from all four quadrants, neuroticism (personal enabler) has the largest impact on cyberslacking (with partial and semipartial correlation between neuroticism and cyberslacking as 0.16 and 0.10, respectively, while controlling for the effects of other independent variables), followed by conscientiousness (personal inhibitor) (with partial and semipartial correlation between conscientiousness and cyberslacking of -0.15 and -0.12, respectively, while controlling for the effects of other independent variables), and procedural justice (situational inhibitor) (with partial and semipartial correlation between procedural justice and cyberslacking of -0.15 and -0.12, respectively, while controlling for the effects of other independent variables).

Table 4: Partial and Semipartial Correlations

	Job Performance	Job Performance	Cyberslacking	Cyberslacking
	Model 1	Model 2	Model 3	Model 4

	Partial	Semipartial	Partial	Semipartial	Partial	Semipartial	Partial	Semipartial
Gender (1: men)	.14	.12	.09	.07	.16	.15	.07	.04
Age	.19	.16	.08	.06	-.14	-.12	-.07	-.05
Job Meaninglessness	-.13	-.10	-.11	-.08	.11	.09	.08	.07
Distributive Justice							-.08	-.04
Procedural Justice							-.15	-.12
Interactional Justice							-.12	-.09
Technology Re-adaptability							.06	.04
Limited Work Use of IT							.07	.04
Prescriptive Norm							.14	.10
Descriptive Norm							.10	.06
Perceived IT Control Policy							-.13	-.10
Attitude toward Cyberslacking							.06	.03
Cyberslacking Self-Efficacy							.04	.03
Extraversion							.10	.09
Neuroticism							.16	.10
Openness							-.04	-.02
Agreeableness							-.05	-.03
Conscientiousness							-.15	-.12
Cyberslacking			.41	.39				

DISCUSSION

This work provides a systematic understanding of the antecedents of cyberslacking. Based on a literature-based approach, we identified antecedents from four dominant perspectives and organized them based on their underlying nature and motivation-control orientation. We also integrated two new IT-specific variables identified via focus groups. Importantly, cyberslacking and its antecedents were linked to the important outcome of employee job performance. Our model was tested in a three-wave field study of 395 employees in one organization.

Summary of Results

The overall model explained 40% of the variance in cyberslacking and 21% of the variance in job performance. Our results showed that cyberslacking had a negative effect on job performance. In general, the antecedents specified in our new 2x2 conceptual typology (i.e., situational enablers, situational inhibitors, personal enablers, and personal inhibitors) had

significant effects on cyberslacking. A key goal of our research was to identify new IT-specific determinants of cyberslacking. We were successful in this regard, finding that two IT-specific factors, i.e., technology re-adaptability and limited work use of IT had significant effects on cyberslacking. The other two situational enablers, prescriptive norm and descriptive norm, were also significantly linked to cyberslacking. Except for distributive justice, all situational inhibitors had significant effects on cyberslacking. One possible explanation for the nonsignificant relationship between distributive justice and cyberslacking is that we only focused on online social communication type of cyberslacking (e.g., sending emails to and messaging with friends and family at work). Distributive justice may be associated with some other forms cyberslacking (e.g., playing online games, online shopping, and browsing online news) that could be more serious in nature (Venkatraman et al. 2018). These findings create opportunities for future research. Among personal enablers, only two personality factors, extraversion and neuroticism, were significant. Among personal inhibitors, only conscientiousness was significant.

Further, the partial and semipartial correlations showed that though IT-specific factors, including technology re-adaptability and limited work use of IT, were significant, they did not have the largest impact on cyberslacking. Our results show that neuroticism had the largest impact on cyberslacking, while controlling for the effect of others. Individuals who score high on neuroticism are likely to engage in cyberslacking in the workplace. Slaughter and Kausel (2009) further argued that autonomy influences how employees who score high on neuroticism behave. That is, when an employee who scores high on neuroticism has a lot of discretion over how they spend their time at work, they are more apt to shirk their duties. Thus, future studies can situate the personality traits firmly in the center of the investigation and show how employee personality affects their engagement in cyberslacking.

Theoretical Contributions

This paper contributes to the IS literature by addressing the gaps we identified in the cyberslacking literature. First, this work contributes to the literature by identifying and organizing antecedents of cyberslacking. Using a literature-based approach, we synthesized four theoretical perspectives (i.e., organizational justice, control and deterrence mechanisms, planned behavior, and personality) into a unified model and provide a cohesive explanation of cyberslacking. This is in line with calls from IS scholars for unified models to progress toward a synthesis of diverse theories and models (e.g., Moody et al. 2018; Venkatesh et al. 2003; Venkatesh et al. 2016).

This work also makes novel contributions to the cyberslacking literature through knowledge recombination (see Uzzi et al. 2013). Guided by the underlying nature and motivation-control orientation, we organized the antecedents of cyberslacking from four theoretical perspectives into a 2x2 conceptual typology (see Figure 1). In other words, factors from different theoretical perspectives were combined and their relative impacts on cyberslacking were examined using a new classification scheme (i.e., situational enablers, situational inhibitors, personal enablers, and personal inhibitors). In general, the four groups of antecedents had significant effects on cyberslacking. However, some antecedents were no longer significant when they were tested in a unified model of cyberslacking that synthesized diverse theories and models. Situational enablers and inhibitors had theoretical underpinnings in planned behavior theories and control and deterrence mechanisms. In general, situational factors (except for distributive justice) were significant. Personal enablers and inhibitors had theoretical underpinnings in planned behavior theories and personality. Although planned behavior theories are the most widely used theoretical perspective in cyberslacking research, attitude toward

cyberslacking and cyberslacking self-efficacy from the planned behavior perspective were no longer significant antecedents in our unified model. Personality traits, such as extraversion, neuroticism, and conscientiousness, had significant effects on cyberslacking. Future work can build on our classification framework to examine additional, related antecedents and their impacts on cyberslacking.

Second, our work advances the cyberslacking literature by incorporating contextualization into theory development. Specifically, there was a lack of understanding of how IT-specific factors relate to cyberslacking. In filling this gap, we identified the IT-specific variables through a qualitative study. Two IT-specific factors, i.e., technology re-adaptability and limited use of IT at work were identified and their effects on cyberslacking were empirically examined. By introducing IT-specific variables to cyberslacking research, our work introduces key new constructs to explain cyberslacking. For instance, the two identified IT-specific factors represent user perceptions of the characteristics of IT in the workplace that facilitate unfaithful IT use. Although the two newly introduced IT-specific variables share some similarities with well-established concepts, such as IT adaptation behaviors (Sun 2012), malleable IT use (Schmitz et al. 2016), and task-technology fit (Goodhue and Thompson 1995), technology re-adaptability and limited use of IT at work are specific to the nonwork purposes. For example, technology re-adaptability refers to adaptive use of IT for nonwork activities. The conceptualization of these two IT-specific factors is consistent with Schmitz et al.'s (2016) work that extended adaptive structuration theory (AST) (Giddens 1984) to the individual level to investigate individual user adaptation of malleable IT. Therefore, by incorporating specific variables that are tied more closely to the context of IT and nonwork-related IT use (i.e., cyberslacking), we were able to make a more contextualized theoretical contribution and

concomitant practical contribution (see Hong et al. 2014; Johns 2006).

Third, our work enriches the IT use literature by focusing on negative IT use. It also responds to calls for a re-conceptualization of the system use construct (Burton-Jones and Grange 2013; Orlikowski and Barley 2001; Venkatesh et al. 2007) and for more scholarly attention to the dark side of IT use in organizations (e.g., Venkatesh et al. 2016; Venkatraman et al. 2018; Willison and Warkentin 2013). IT use constructs, such as cyberslacking, should be considered a facet of system use in future research. Thus, our investigation of cyberslacking is an important complement to the existing IS use literature and one that should be examined in models in conjunction with positive outcomes.

Finally, we collected data from multiple sources. The four sets of antecedents of cyberslacking and beliefs about cyberslacking were collected from employees, whereas job performance was obtained from the employees' supervisors. Further, these data were collected at different points in time. This research design thus provides greater scientific rigor compared to a single-source and/or cross-sectional study that was typical in much prior work on this topic.

Limitations and Future Research

This work has some limitations. First, we collected data from one same business unit in one geographical location of one organization. This homogeneity may affect the generalizability of our conclusions. However, the sample consisted of 11 different job categories, with heterogeneity in the tasks involved, alleviating concerns about generalizability to some extent. Second, a survey was used to collect data and common method bias could have affected the results. Nonetheless, a more significant role for time in understanding cyberslacking and its intra-individual evolution over time is important (see Venkatesh et al. 2006; Venkatesh et al. 2021). As we collected data from more than one source, concerns related to common method

bias were somewhat alleviated. Third, as not all participants completed the survey at every point of data collection, attrition from wave 1 to wave 2 and from wave 2 to wave 3 may affect the sample's representativeness and hence, the results. However, we did not find any significant demographic differences between the study sample and attrition sample. Fourth, as this work deals with negative workplace behavior, the participants may not have answered questions truthfully due to social desirability. Scholars have suggested that a longitudinal analysis of such behavior and Web-based surveys can limit the adverse impact of social desirability (Bennett and Robinson 2003; Cheyne and Ritter 2001), which was the case in our study.

This work provides a foundation for future research. First, we developed our research model based on a literature-based approach and a qualitative inquiry. Our model, which only included a parsimonious set of antecedents that were frequently investigated in prior cyberslacking studies, explained 40% of the variance in cyberslacking. Future research could focus on other variables, such as network connectivity, societal culture, corporate culture, personal innovativeness with IT, knowledge, skill, cyberslacking experience, emotion and habit, to extend our work. Specifically, researchers can expand the 2x2 conceptual typology of cyberslacking antecedents to include other theoretical perspectives. Future research can also continue to examine cross-perspective dynamics and identify the interplay of antecedents from different theoretical perspectives.

Second, our results provide support for the importance of control beliefs in the IS literature. Control beliefs have long been recognized as a core factor enabling and impeding IS use (Robert and Sykes 2017). As noted earlier, there are two types of control beliefs, i.e., internal and external (Ajzen 2002; Venkatesh 2000). With internal control beliefs, the innate ability to perform the behavior, being cyberslacking self-efficacy in our study, and external control beliefs,

the resources and opportunities needed to perform the behavior, being the situational variables in our study, i.e., facilitating conditions, subjective norm, and perceived IT control policy. Indeed, organizations have been adopting various organizational actions or controls, such as education and training programs, security awareness programs, computer use policies, monitoring systems, and sanctions, to mitigate the negative consequences of cyberslacking. We only focus on IT control policy. Future studies should compare the effectiveness of different control mechanisms in mitigating the negative consequences of cyberslacking.

Third, Blanchard and Henle (2008) suggested that employees engage in various forms of cyberslacking from online shopping to trading stocks during office hours. They even proposed two forms of cyberslacking namely, minor cyberslacking (e.g., checking and sending nonwork-related emails) and serious cyberslacking (e.g., surfing pornographic websites). In this work, we considered only one type of cyberslacking—a minor form of cyberslacking (i.e., using IT for social interaction with friends and family at work). Future work can examine how the four groups of cyberslacking antecedents influence various forms of cyberslacking. Further, outcomes other than performance, such as social and psychological outcomes, including job stress and job satisfaction (Sykes 2015, 2020), should be considered in future research. Researchers in psychology and psychiatry have suggested that individuals have become increasingly addicted to computers, the Internet, games, and online gambling, and suffer from loneliness and depression. Future research should also examine the impact of cyberslacking on work-life balance and subjective well-being (Venkatesh et al. 2019).

Finally, future research should examine whether there are positive outcomes of cyberslacking that may outweigh negative job performance. Often, it is important for individuals to take a break from work by engaging in nonwork activities such as playing computer games.

Such breaks can have a positive effect on job performance, particularly for jobs that involve constant pressure and stress (Anandarajan and Simmers 2004), and in turn reduce job stress (Sykes 2015, 2020). It is possible that cyberslacking offers such a break and thus has positive consequences that are not captured in our model—and such positive consequences may manifest in other job outcomes—e.g., job satisfaction.

Practical Implications

This research has important implications for practitioners. Although organizations are increasingly relying on Internet-based technologies for their daily operations, this work confirms that nonwork IT use in the workplace can have a significant negative effect on employee job performance. Thus, it is imperative that managers pay close attention to prevention and control mechanisms to cyberslacking in check. By uncovering the relative impacts of the four groups of factors, we offer managers insights on how to curb cyberslacking in the workplace.

Our findings show that all situational factors (except distributive justice) had significant effects on cyberslacking. Thus, managers should pay attention to employees' working environment and conditions because they can lead to cyberslacking. First, organizations could improve employees' perceptions of fairness through establishing fair procedures, providing detailed and timely explanations of procedures, and training supervisors to implement fair practices in their interactions with subordinates. Second, some training (or re-training) on the use of communication tools could be offered to employees so that they fully understand what constitutes proper use of IT at work. Third, managers could pay closer attention to the prevention and control mechanisms of cyberslacking. Our findings confirm that perceived IT control policy had a significant negative effect on cyberslacking. Managers should impose formal control policies with periodic monitoring so that employees are aware of the risk of engaging in

cyberslacking. We also found that both prescriptive and descriptive norms had significant effects on cyberslacking. Employees' norms of appropriate behavior come from their referent groups, primarily coworkers and supervisors. Apart from imposing organizational actions, organizations should work closely with managers and supervisors in developing social norms about appropriate use of IT in the workplace. Finally, given the importance of personality in enabling/inhibiting cyberslacking, managers could screen candidates in terms of their big-five personality variables. They could pay more attention to those with high levels of extraversion and neuroticism, as they are likely to engage in nonwork IT use.

CONCLUSIONS

By synthesizing prior cyberslacking studies, we identified and organized antecedents from diverse research streams and tested their relative impacts on cyberslacking. We also integrated two new IT-specific variables to present a contextualized explanation of cyberslacking. By relating various predictors to job performance through cyberslacking, we present a rich understanding of the phenomenon. Thus, we not only contribute to literature on cyberslacking, but also offer practical implications for organizational interventions to mitigate cyberslacking.

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Appendix A. Literature Search (Identification of Prior Cyberslacking Papers)

We conducted a literature search to identify studies on cyberslacking in the workplace following the procedures suggested by Webster and Watson (2002). First, we conducted a literature search on electronic databases, including Business Source Complete, PsycARTICLES, PsycINFO, Applied Social Sciences Index & Abstracts, Scopus, Science Direct, and JSTOR, using the following keywords: cyberslack*, cyberloaf*, non-work-related computing, and personal internet use. After identifying the initial set of articles, we conducted a backward search by reviewing the citations for the identified articles to determine additional prior articles for further consideration. Next, we conducted a forward search using Web of Science to identify articles citing the key articles identified for further consideration. We included articles in which cyberslacking was the focus of the study and excluded cyberslacking studies beyond the workplace context. Finally, we obtained 62 articles on cyberslacking in the workplace.

Table A1. Review of Studies on Cyberslacking

Authors (Year)	Variables being Investigated	Theoretical Perspectives					Consequences
		Organizational Justice	Control and Deterrence Mechanisms	Planned Behavior	Personality Traits	Others	
Aghaz and Sheikh (2016)	-Job burnout	_____	_____	_____	_____	Maslach's burnout model	NONE
Akbulut et al. (2017)	NONE	_____	_____	_____	_____	_____	NONE
Alharthi et al (2019)	-Employee commitment to the organization	_____	_____	_____	_____	Commitment theory	NONE
Andreassen et al. (2014)	-Extraversion -Neuroticism -Agreeableness -Conscientiousness -Imagination	_____	_____	_____	Five-factor model of personality	_____	NONE
Arciniega et al. (2017)	-Self-enhancement -Conservation	_____	_____	_____	_____	Schwartz's theory of individual values	NONE
Askew et al. (2014)	-Descriptive norm -Prescriptive norm -Intention -Cyberslacking attitude -Web access self-efficacy	_____	_____	Theory of planned behavior	_____	_____	NONE
Askew et al. (2019)	-Descriptive norm -Prescriptive norm	_____	_____	Theory of planned behavior	_____	_____	NONE

Betts et al. (2014)	-Affect -Habit -Intention -Internet skill -Metaphor of the ledger -Organizational justice -Perceived (positive) consequences -Facilitating conditions -Social factors	Theory of organizational justice	_____	Theory of interpersonal behavior	_____	_____	NONE
Blandchard and Henle (2008)	NONE	_____	_____	_____	_____	_____	NONE
Blau et al. (2006)	NONE	_____	_____	_____	_____	_____	NONE
Bock et al. (2010)	-Intention -Attitude -Perceived benefit -Habit -Subjective norm -Control mechanism	_____	_____	Theory of reasoned action	_____	_____	NONE
Cheng et al. (2018)	-Perceived overqualification -Harmonious passion -Need for achievement	_____	_____	_____	_____	Equity theory	NONE
Garrett and Danziger (2008)	-Job autonomy	Social exchange theory	_____	_____	_____	_____	NONE
Glassman et al. (2015)	-Blocking module -Confirmation module -Quota module	_____	Agency theory	_____	_____	_____	NONE
Gügerçin (2019)	-Technostress	_____	_____	_____	_____	Neutralization theory	NONE
Henle and Blanchard (2008)	-Organizational sanctions -Role ambiguity -Role conflict -Role overload	_____	The control and deterrence mechanisms	_____	_____	Role theory	NONE

Henle et al. (2009)	-Procedural justice	Theory of organizational justice	_____	_____	_____	_____	NONE
Hensel and Kacprzak (2020)	-Job overload -Organizational commitment -Employee motivation	_____	Self-control failure model	Theory of planned behavior The ego depletion model	_____	_____	NONE
Hensel and Kacprzak (2021)	-Reminder -Punishment - Punished/Unpunished -Time -Proximity in organizational structure	_____	General deterrence theory	_____	_____	_____	NONE
Hu et al. (2021)	-Workplace ostracism -Workplace loneliness -Conscientiousness	_____	_____	_____	_____	Affective events theory	NONE
Huma et al. (2017)	-Facilitating conditions -Social factors -Intention -Attitude -Habit -Affect	_____	_____	Triandis model of choice	_____	_____	NONE
Jeong et al. (2020)	NONE	_____	_____	_____	_____	_____	NONE
Jia et al. (2013)	-Extraversion -Neuroticism -Agreeableness -Conscientiousness -Openness	_____	_____	_____	Five-factor model of personality	_____	NONE
Khansa et al. (2017)	-Announcement of formal controls -Neutralization -Peer cyberloafing -Perceived justice -Past cyberloafing behavior	Theory of organizational justice	Akers' social learning theory	_____	_____	_____	NONE

	-Intention						
Kim et al. (2016)	-Organizational justice -Conscientiousness	Theory of organizational justice	_____	_____	Five-factor model of personality	_____	NONE
Koay (2018)	-Workplace ostracism -Emotional exhaustion	_____	_____	_____	_____	Conservation of resources theory	NONE
Koay et al. (2017)	-Intention -Habit -Affect -Perceived favorable consequences -Facilitating conditions -Social factors	_____	General strain theory	Triandis model of choice	_____	_____	-Job stress -Work performance
König and de la Guardia (2014)	-Border strength -Influence at the workplace -Supervisory support for border-crossing -Private demands -Identification with the job	_____	_____	_____	_____	Work/family border theory	-Work-nonwork balance
Liberman et al. (2011)	-Job attitude -Favorable attitudes toward cyberslacking -Others' cyberslacking behavior -Managerial support of Internet use -Non-Internet loafing behavior	_____	_____	Theory of reasoned action	_____	_____	NONE
Lim (2002)	-Metaphor of the ledge -Organizational justice	Theory of organizational justice	_____	_____	_____	_____	NONE
Lim and Chen (2012)	NONE	_____	_____	_____	_____	_____	-Work conflict -Work facilitation
Lim et al. (2020)	-Abusive supervision -Emotional exhaustion	Social exchange theory,	_____	_____	_____	Conservation of resources theory	NONE

	-Organizational commitment						
Lim and Teo (2005)	NONE	_____	_____	_____	_____	_____	NONE
Ng et al. (2016)	-Avoidance coping strategy	_____	_____	_____	_____	Avoidance coping strategy	-Task performance -Creative performance -Guanxi performance
Nivedhitha and Manzoor (2020)	-Self-expression -Recognition -Network externality -Workplace social bonding -Perceived co-worker involvement	_____	_____	_____	_____	Social bonding theory	NONE
O'Neill et al. (2014a)	-Neuroticism -Agreeableness -Conscientiousness	_____	_____	_____	Trait activation theory	_____	NONE
O'Neill et al. (2014b)	-Personality traits	_____	_____	_____	Trait activation theory	_____	NONE
Ozler and Polat (2012)	-Intention -Unfavorable job attitudes -Habit -Personality traits -Internet addiction -Job satisfaction -Personality traits -Personal ethical code -Anticipated (negative) outcomes -Job commitment -Job satisfaction -Managerial support -Perceived co-worker cyberslacking norm -Injustice -Facilitating conditions -Restrictions on Internet use	_____	_____	_____	_____	Review paper	-Positive consequences -Negative consequences

	-Proximity of supervisors -Organizational policies and sanctions						
Page (2015)	NONE	_____	_____	_____	_____	_____	-Productivity
Pee et al. (2008)	-Intention -Habit -Affect -Perceived (positive) consequences -Facilitating conditions -Social factors	_____	_____	Theory of planned behavior	_____	_____	NONE
Pindek et al. (2018)	NONE	_____	_____	_____	_____	_____	NONE
Restubog et al. (2011)	-Organizational justice -Self-control	Theory of organizational justice	General strain theory	_____	_____	_____	NONE
Sheikh et al. (2019)	-Conscientiousness -Agreeableness -Neuroticism -Extraversion -Openness to experience	_____	_____	_____	Five-factor model of personality	_____	NONE
Sheikh et al. (2015)	-Intention -Attitude -Subjective norm	_____	_____	Theory of planned behavior	_____	_____	NONE
Son and Park (2016)	-Procedural justice	Theory of organizational justice	_____	_____	_____	_____	NONE
Soral et al. (2020)	-Enabling bureaucracy -Coercive bureaucracy -Organizational identification -Work engagement	_____	Containment theory	_____	_____	Social identity theory	NONE
Ugrin and Pearson (2013)	-Sanctions	_____	General deterrence theory	_____	_____	_____	NONE

Usman et al. (2021)	-Meaningful work -Affective commitment -Leader-member exchange	_____	_____	_____	_____	Job characteristics model Leader-member exchange theory	NONE
Vitak et al. (2011)	NONE	_____	_____	_____	_____	_____	NONE
Wagner et al. (2012)	-Conscientiousness	_____	_____	_____	Five-factor model of personality	_____	NONE
Wang et al. (2013)	-Perceived Internet use policy -Perceived electronic monitoring	_____	Self-consistency theory	_____	_____	_____	NONE
Wu et al. (2020)	NONE	_____	_____	Ego-depletion theory, the effort-recovery model	_____	_____	-Psychological detachment -Fatigue -Mental health
Zhang et al. (2020)	-Perceived overqualification -Moral disengagement -Anger toward organization -Moral identity	Social exchange theory	_____	_____	_____	_____	NONE
Zhang et al. (2015)	NONE	_____	_____	_____	_____	_____	NONE
Zhou et al. (2021)	-Challenge stressors -Hindrances stressors -Resilience -Emotional exhaustion	_____	_____	_____	_____	Conservation of resources theory	NONE
Zoghbi-Manrique-de-Lara (2006)	-Interactional justice	Theory of organizational justice	_____	_____	_____	_____	NONE
Zoghbi-Manrique-de-Lara (2007)	-Organizational justice	Theory of organizational justice	_____	_____	_____	_____	NONE
Zoghbi-Manrique-de-Lara (2009)	-Normative conflict -Procedural justice	Social exchange theory	_____	_____	_____	_____	NONE
Zoghbi-Manrique-de-	-Perceived organizational control	_____	The control and deterrence mechanisms	_____	_____	_____	NONE

Lara et al. (2006)	-Fear of formal punishment						
Zoghbi-Manrique-de-Lara and Olivares-Mesa (2010)	-Monitoring -Proximity -Punishment	_____	The control and deterrence mechanisms	_____	_____	_____	NONE
Zoghbi-Manrique-de-Lara and Viera-Armas (2017)	NONE	_____	_____	_____	_____	_____	NONE
Zoghbi-Manrique-de-Lara et al. (2020)	-Employee's mindfulness -Supervisor's mindfulness -Compassion at work -Empathic concern	_____	_____	Unitarism theory	_____	_____	NONE

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Appendix B. Qualitative Inquiry (Data Analysis and Results)

We conducted six focus groups (each with 20 employees of three different Fortune-100 companies) to identify IT-specific variables. Following the steps used in Zhang and Venkatesh's (2017) study, we examined the transcripts for components representing IT-specific variables that may facilitate someone using IT for cyberslacking. The approach used here is consistent with the *development* purpose of mixed methods research (Venkatesh et al. 2013; Venkatesh et al. 2016). We identified two most important IT-specific variables by selecting those that were most frequently cited. At least 70 participants identified each of the two IT-specific variables and a fourth of the participants cited both reasons together. Given that each of these two variables were the most frequently cited and both variables were the most frequently cited together, we believe these two variables are the most important IT-specific variables affecting cyberslacking. The last column of Table B1 provides example comments from interviewees who identified IT-specific variables and explained why the two IT-specific variables are important for cyberslacking.

Table B1. Summary of IT-Specific Variables	
IT-Specific Variables	Example Comments from Interviewees
Technology re-adaptability	<p>“[Collaboration tool] can easily be used for personal conferencing and other social purposes both at work and with my friends outside work.”</p> <p>“So many conferencing tools that we have integrate nicely with my [tablet] that I can use them to talk to my friends and people at work would never know. It’s already a tool used at work.”</p> <p>“I use [tool] a lot for the various fantasy leagues. So many stat packages [e.g., ...] I use for analysis of my teams. It helps me organize my teams better than what’s available on standard fantasy sites where I play.”</p> <p>“I used to use ... for my personal financial management. Now, my brokerage site offers all the functionality. But, I expect this will always be the case. Things [software/apps] are available at my company first and I can use it until I can get it elsewhere.”</p> <p>“Any time I use a tool [at work], I think about if it can add value to my personal life.”</p>
Limited work use of IT	<p>“The old calendaring tool has no use at work after we started using... so I found that I can get the license for free and use it for my personal activities.”</p> <p>“So many of the drawing tools that come with ... are never used at work. We only use the basic reader and writer. But these other tools are super cool for my use and even my kids can use it. I can help them using ... collaborative functions with their school assignments, at times, in the early evening, especially if I am stuck for some late meeting at work.”</p>

	<p>“When I have spare time, I poke around and see what tools we have on our VM. Most of these licenses can be downloaded to my machine and are they are quite useful for me personally even though they aren’t used at work.”</p> <p>“Numerous useless work software are precious for my personal life.”</p> <p>“Free unused software at work. I use them during the day because I can’t access them off-site.”</p>
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Appendix C. Constructs and Measures

Table C1. Constructs and Measures			
Construct	Code	Item	Note
Distributive Justice		How fairly has the organization been rewarding you...	Lim (2002) 7-point Likert Scale from strongly disagree to strongly agree
	DJ1	For the amount of effort you have put in?	
	DJ2	For the responsibilities you have?	
	DJ3	For the work that you have done well?	
	DJ4	For the stresses and strains of your job?	
	DJ5	For the amount of education and training you received?	
Procedural Justice		How fairly has the organization's procedures designed to...	Lim (2002) 7-point Likert Scale from strongly disagree to strongly agree
	PJ1	Provide useful feedback regarding a company's decision and its implementation?	
	PJ2	Hear the concerns of everyone affected by a company's decision?	
	PJ3	Allow for requests for clarifications or additional information about a company's decision?	
	PJ4	Have all parties affected by a decision included in the decision-making process?	
	PJ5	Help you to collect accurate information for decision-making?	
	PJ6	Generate standards so that decisions can be made with consistency?	
PJ7	Provide opportunities to appeal against or challenge a company's decision?		
Interactional Justice	IJ1	My supervisor shows concern for my rights as an employee.	Lim (2002) 7-point Likert Scale from strongly disagree to strongly agree
	IJ2	My supervisor treats me with kindness and consideration.	
	IJ3	My supervisor takes steps to deal with me in a truthful manner.	
	IJ4	My supervisor is able to suppress personal bias.	
	IJ5	My supervisor generally considers my viewpoint.	
	IJ6	My supervisor provides me with timely feedback about decisions and their implications.	
Technology Re-adaptability	RAD1	Changing the features of the email/instant messaging application is not straightforward.*	Self-developed 7-point Likert Scale from strongly disagree to strongly agree
	RAD2	I think the features of email/instant messaging application can be adapted to use it for communicating with friends/family members.	
	RAD3	I think the email/instant messaging application's features can easily be altered to use it for communicating with friends/family members.	
	RAD4	I think the email/instant messaging application's features can easily be changed to use it for communicating with friends/family members.	
	RAD5	In general, it is difficult to change the features of the email/instant messaging application.*	
Limited Work Use of IT	LWU1	At work, I don't use email/instant messaging a whole lot for work-related purposes.	Self-developed 7-point Likert Scale from strongly disagree to strongly agree
	LWU2	In general, I don't send a whole lot of emails/instant messages to my co-workers about work-related things.	
	LWU3	In general, I don't receive a whole lot of emails/instant messages from my co-workers about work-related things.	
	LWU4	I sparingly use email/instant messaging for work-related things at work.	
	LWU5	At work, I almost never use email/instant messaging for work-related purposes.	
Prescriptive Norm	PN1	My co-workers would approve of me using the email/instant messaging system at the workplace for nonwork activities.	Adapted from Cialdini et al. (1990)

	PN2	My supervisors would approve of me using the email/instant messaging system at the workplace for nonwork activities.	7-point Likert Scale from strongly disagree to strongly agree
	PN3	My colleagues would approve of me using the email/instant messaging system at the workplace for nonwork activities.	
Descriptive Norm	DN1	My co-workers have used the email/instant messaging system at the workplace for nonwork activities.	Adapted from Cialdini et al. (1990) 7-point Likert Scale from strongly disagree to strongly agree
	DN2	My supervisors have used the email/instant messaging system at the workplace for nonwork activities.	
	DN3	My colleagues have used the email/instant messaging system at the workplace for nonwork activities.	
Perceived IT Control Policy	PIT1	My organization will know if I am using the email/instant messaging system at the workplace for nonwork purposes.	Adapted from Hollinger and Clark (1983) 7-point Likert Scale from strongly disagree to strongly agree
	PIT2	It is risky to use the email/instant messaging system at the workplace for nonwork purposes.	
	PIT3	My organization will be able to monitor all the email/instant messaging system use, if they want to.	
	PIT4	It is tough for the organization to monitor the email/instant messaging system use at the workplace.*	
	PIT5	My organization monitors all uses of the email/instant messaging system at the workplace.	
Attitude toward Cyberslacking	ATT1	Using the email/instant messaging system at the workplace for nonwork activities is a bad/good idea.	Adapted from Venkatesh et al. (2003) Bi-polar Scale
	ATT2	Using the email/instant messaging system at the workplace for nonwork activities is a foolish/wise idea.	
	ATT3	I dislike/like the idea of using the email/instant messaging system at the workplace for nonwork activities.	
	ATT4	Using the email/instant messaging system at the workplace for nonwork activities is unpleasant/pleasant.	
Cyberslacking Self-Efficacy	CSE1	I could perform a nonwork activity using the email/instant messaging system if there was no one around to tell me what to do as I go.	Adapted from Compeau and Higgins (1995) 7-point Likert Scale from strongly disagree to strongly agree
	CSE2	I could perform a nonwork activity using the email/instant messaging system if I could call someone for help if I got stuck.	
	CSE3	I could perform a nonwork activity using the email/instant messaging system if I had just the built-in help facility for assistance.	
	CSE4	I could perform a nonwork activity using the email/instant messaging system if I had seen someone using it before trying it myself.	
Extraversion	EXT1	I am the life of the party.	Donnellan et al. (2006) 7-point Likert Scale from strongly disagree to strongly agree
	EXT2	I don't talk a lot.*	
	EXT3	I talk to a lot of different people at parties.	
	EXT4	I keep in the background.*	
Neuroticism	NEU1	I have frequent mood swings.	
	NEU2	I am relaxed most of the time.*	
	NEU3	I get upset easily.	
	NEU4	I seldom feel blue.*	
Openness	OPN1	I have a vivid imagination.	Donnellan et al. (2006)
	OPN2	I am not interested in abstract ideas.*	
	OPN3	I have difficulty understanding abstract ideas.*	

Agreeableness	OPN4	I do not have a good imagination.*	7-point Likert Scale from strongly disagree to strongly agree
	AGR1	I sympathize with others' feelings.	
	AGR2	I am not interested in other people's problem.*	
	AGR3	I feel others' emotion.	
Conscientiousness	AGR4	I am not really interested in others.*	
	CON1	I get chores done right away.	
	CON2	I often forget to put things back in their proper place.*	
	CON3	I like order.	
Cyberslacking	CON4	I make a mess of things.*	
	CS1	I frequently email my friends/family from work.	
	CS2	I consider myself to be a heavy user of email at work to communicate with friends and family.	
	CS3	I spend more time on email from/to friends/family than work-related email on any given day at work.	
	CS4	I consider myself to be a heavy user of instant messaging at work to communicate with friends and family.	
CS5	I spend more time on instant messaging from/to friends/family than work-related instant messaging on any given day at work.		
Job Performance		Please rate your subordinates along the following dimensions:	Zhang and Venkatesh (2017) 7-point Likert Scale from strongly disagree to strongly agree
	JP1	Quality of work	
	JP2	Quantity of work	
	JP3	Technical competence	
	JP4	Working as part of a team or work group	
	JP5	Help others when it is not part of his/her job	

Note: * Reverse-coded items.

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Appendix D. Post-hoc Analysis (A Second-Order Construct Model)

Table D1: Descriptive Statistics and Correlations (n=395)

		Mean	S.D.	ICR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Gender (1: men)	NA	NA	NA	NA															
2	Age	35.8	13.2	NA	.06	NA														
3	Job Meaninglessness	3.72	1.30	.77	-.08	-.14*	.73													
4	Organizational Justice	4.01	1.75	NA	-.17**	.13*	-.17**	NA												
5	Facilitating Conditions	4.31	1.57	NA	.16**	-.17**	.06	.13*	NA											
6	Subjective Norm	3.88	1.92	NA	-.19**	.19**	.13*	.05	.07	NA										
7	Perceived IT Control Policy	4.13	1.66	.79	.15*	.07	.05	.13*	.06	.09	.70									
8	Attitude toward Cyberslacking	5.01	1.39	.75	.17**	-.24***	.07	.06	.14*	.13*	.10	.80								
9	Cyberslacking Self-efficacy	4.08	1.97	.82	.24***	-.18**	.09	.11	.17**	.16*	.13*	.14*	.73							
10	Extraversion	3.75	1.64	.75	-.17**	-.10	.13*	.06	.17**	-.09	-.13*	.17**	-.15*	.74						
11	Neuroticism	2.87	0.87	.79	.06	.06	.14*	.17**	.10	.15*	.10	.17**	.15*	-.13*	.73					
12	Openness	3.15	1.39	.73	.19**	-.13*	.04	.13*	.17**	.19**	.15*	.07	.19*	.13*	-.15*	.69				
13	Agreeableness	3.43	1.75	.81	-.30***	.14*	.04	.15*	.19**	.08	-.08	-.13*	-.15*	.09	-.16**	.14*	.71			
14	Conscientiousness	4.04	1.37	.85	.06	.17**	.14*	.17**	.24***	.16**	.19**	.24***	-.16*	.09	-.19**	.15*	.09	.74		
15	Cyberslacking	3.99	2.01	NA	.30***	-.31***	.29***	-.36***	.21***	.26***	-.19**	.17**	.21***	.28***	.35***	-.17**	-.13*	-.28***	NA	
16	Job Performance	4.67	1.73	.75	.24***	.24***	-.18**	-.18**	.17**	.19**	-.15*	.11*	.15*	.21***	.27***	-.11*	-.08	-.21***	-.49***	.79

Notes:

1. Diagonal elements are average variances extracted for the respective constructs from its indicators. Off-diagonal elements are correlations.
2. Organizational justice, facilitating conditions, and subjective norm were modeled as second-order factors with formative first-order factors. Weights on organizational justice were: distributive justice (.30), procedural justice (.28), and interactional justice (.22); all three constructs were modeled using reflective indicators and all loadings were significant and ranged from .71 to .77. Weights on subjective norm were: prescriptive norm (.43) and descriptive norm (.46); both prescriptive and descriptive norms were modeled using formative indicators and all weights were significant and ranged from .73 to .81. Weights on facilitating condition were: Technology re-adaptability (.30) and limited work use of IT (.28); both constructs that were modeled using formative indicators and all weights were significant and ranged from .68 to .78.
3. Cyberslacking was modeled using formative measures and all weights were significant and ranged from .20 to .30.
4. ICR: Internal consistent reliability; NA: Not applicable
5. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table D2: Structural Model Results

	Job Performance		Cyberslacking	
	Model 1	Model 2	Model 3	Model 4
R ²	.07	.20	.14	.34
ΔR ²		.13***		.20***
Gender (1: men)	.10	.08	.16**	.11*
Age	.16**	.10	-.19**	-.13*
Job Meaninglessness	.15*	.11*	.18**	.12*
Organizational Justice				-.19**
Facilitating Conditions				.17**
Subjective Norm				.15*
Perceived IT Control Policy				-.17**
Attitude toward Cyberslacking				.05
Cyberslacking Self-Efficacy				.14*
Extraversion				.18**
Neuroticism				.18**
Openness				-.08
Agreeableness				-.04
Conscientiousness				-.19**
Cyberslacking		-.34***		

Note: *p<.05; **p<.01; ***p<.001.