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Personal Internet use at work: Understanding cyberslacking

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ABSTRACT

Cyberslacking, typically defined as the use of Internet and mobile technology during work hours for personal purposes, is a growing concern for organizations due to the potential in lost revenue; however, the majority of academic research in this area has focused on a limited number of cyberslacking behaviors and/or employed small, non-representative samples. In order to address these limitations, the present study employs a nationally representative sample of American workers and tests the relationship between nine cyberslacking behaviors and a variety of demographic and work-specific predictors. Three measures of cyberslacking are employed to provide a richer analysis of the phenomenon: individual behaviors, frequency of cyberslacking, and variety of cyberslacking. Results indicate that being younger, male, and a racial minority positively predict cyberslacking variety and frequency, as do routinized Internet use at work and higher perceived Internet utility. Results are discussed as to how the present study expands on previous research, and directions for future research are indicated.

1. Introduction

Cyberslacking (also referred to as cyberloafing, non-work-related computing, cyber deviance, personal use at work, Internet abuse, workplace Internet leisure browsing, and junk computing) is the use of Internet and mobile technology during work hours for personal purposes (Bock & Ho, 2009; Johnson & Indvik, 2004; Lim, 2002; Mastrangelo, Everton, & Jolton, 2006). Within professions that use computers, these behaviors appear to be prevalent: in a recent study, employees reported spending at least 1 h on non-work-related activities during a regular work day, and the largest proportion of non-work-related time was spent on the Internet (Salary.com., 2009). Online shopping, blogging, gaming, and instant messaging are popular non-work-related activities performed during work hours (Madden, 2009), and online gambling (Mills, Hu, Beldona, & Clay, 2001), pornography (Cooper, Safir, & Rosenmann, 2006), personal investing, and online auctions (Pee, Woon, & Kankanhalli, 2008) also raise concerns. In one of the few national studies conducted on cyberslacking behaviors, 80% of information workers reported using a computer for personal email or messaging while on the job (Garrett & Danziger, 2008a; Garrett & Danziger, 2008b). Meanwhile, estimates of US productivity losses due to cyberslacking range as high as $178 billion annually (Websense, 2006). In addition to financial losses from reduced worker productivity, cyberslacking threatens network security, strains organizational bandwidth, and makes employers vulnerable to lawsuits on a variety of issues ranging from securities fraud to sexual harassment (Oswalt, Elliott-Howard, & Austin, 2003).

Most of our knowledge about cyberslacking is limited by non-representative samples. Studies boasting national samples have either focused on a narrow range of cyberslacking behaviors (e.g., online sexual activity in Cooper et al., 2006), or have employed limited explanatory variables (Garrett & Danziger, 2008a; Garrett & Danziger, 2008b). Furthermore, Garrett and Danziger (2008a), Garrett and Danziger (2008b) provided a limited operational definition of cyberslacking (using a computer "for personal email and text messaging" and "to look up information of personal interest, such as news, sports scores, or stock reports"), which did not take into consideration increasingly popular activities such using social network sites (SNSs), viewing online videos, and sending text messages.

The present study seeks to expand on previous studies on cyberslacking by examining how a nationally representative sample of Americans engage in personal use of technology while at work. Employing hierarchical and logistic regression analyses, we analyzed a 2008 dataset from the Pew Internet & American Life Project (for descriptive statistics from this dataset, see Madden & Jones, 2008) that includes nine activities included within most definitions of cyberslacking, as well as a wide range of demographic, disaffection-based, and work requirement variables.

2. Cyberslacking research to date

The characteristics of cyberslackers are not well established. Studies that have tried to identify which employees may be more

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likely to engage in cyberslacking than others have been inconclusive. In their national survey of computer-using workers, Garrett and Danziger (2008b) found that occupational status, perceived autonomy within the workplace, income, education, and gender were significant predictors of cyberslacking. They concluded that personal Internet use at work is not an activity relegated to low-status employees, but rather one that is more frequently performed by men who are well-educated and work in a high-status field such as management, finance, or business. In contrast, Ugrin, Pearson, and Odom (2007) found that young executives were the most likely group to engage in cyberslacking, while Stanton (2002) found that differences in demographics, Internet use, or occupational attitudes did not result in a greater likelihood to cyberslack.

The conflicting findings may arise from the restricted samples used in cyberslacking research. Samples are often comprised of students (Blanchard & Henle, 2008; Chang & Cheung, 2001), or a small number of employees from specific organizations (Chen, Chen, & Yang, 2008; De Lara, Tacoronte, & Ding, 2006; Lavoie & Pychyl, 2001), or case studies of individuals (Day & Gehringer, 2002) or organizations (Simmers, 2002). In the one national US study (Garrett & Danziger, 2008a; Garrett & Danziger, 2008b), only full-time employees who used a computer for at least 5 h of their workweek were surveyed. A great deal of cyberslacking research has been performed in Asian countries (Chen et al., 2008; Lim & Teo, 2005; Lim, Teo, & Loo, 2002; Pee et al., 2008), where workplace practices and cultural norms about deviant behavior may differ substantially from those found in the United States.

To date, studies examining cyberslacking have focused on more traditional Internet-based activities, rarely identifying more recent Web 2.0 activities such as watching online videos, blogging, or using social network sites (SNSs). For example, Lim (2002) identified two major categories of cyberslacking, which he termed browsing (visiting sports, news, investment, entertainment, non-work, or adult websites; online shopping; and downloading non-work information) and emailing (checking, sending, and receiving non-work emails). Drawing on this research, Garrett and Danziger (2008a), Garrett and Danziger (2008b) employed a two-item measure of cyberslacking in their study, asking participants about the frequency with which they sent personal emails and browsed the Web while at work. Since Garrett and Danziger's data collection (i.e., 2006), sites such as YouTube and Facebook have become increasingly popular; adult use of SNSs has grown tremendously, from just 8% of online adults in 2005 to 37% of online adults in 2008 and 47% in 2009 (Lenhart, Purcell, Smith, & Zickhur, 2010), while 62% of online adults watch videos on sites like YouTube (Madden, 2009). These activities may be contributing to cyberslacking behaviors significantly and need to be examined in conjunction with behaviors that have previously been analyzed.

While cyberslacking is typically portrayed as a negative behavior leading to loses in productively and revenue (Greenfield & Davis, 2002; Mastrangelo et al., 2006), engaging in brief periods of time on tasks not related to work may have positive effects, including relief from boredom, fatigue, or stress, greater job satisfaction or creativity, increases in well-being, recreation and recovery, and overall happier employees (Eastin, Glynn, & Griffiths, 2007; Oravec, 2002; Reinecke, 2009; Stanton, 2002). Employees believe that behaviors typically associated with cyberslacking, such as sending personal emails and browsing news websites, help them "deal with problems at work" and makes them "a better worker" (Zafar, 2008). Personal Internet use as work has also been associated with productivity benefits: Garrett and Danziger (2008a) found a positive relationship between the expected productivity benefits of the Internet and cyberslacking activity.

A variety of explanations have been offered for cyberslacking. For example, Chen et al. (2008) found that employees with a high external locus of control (i.e., they believe their fate is in other people's hands) and those with low self-esteem reported diminished self-control of Internet use (e.g., they experienced symptoms of withdrawal when they were unable to indulge in cyberslacking), which in turn affected their level of Internet abuse at work. When employees in Singapore felt they were being treated unjustly, such as when they did not think company-provided rewards matched employee contributions, they were more likely to engage in cyberslacking than when their job responsibilities are clearly defined (Lim, 2002; Lim et al., 2002).

Recent research has questioned whether employees' disaffection with their jobs leads to cyberslacking, suggesting instead that engagement in such activities mirrors web activities in other environments. Garrett and Danziger (2008a) found that neither one's job-related stress level nor their job satisfaction was related to the amount of time spent using the Internet for non-work-related activities. Among the factors that did influence the level of cyberslacking, the expected outcomes of such activities had the strongest effect; in other words, people who perceived their Internet use as beneficial to their overall job performance were more likely to engage in cyberslacking than others. Those who used the Internet at work as part of a habitual routine were also more likely to engage in personal use at work. Conversely, employees who were more committed to their job and who would face stronger penalties for engaging in deviant behaviors were less likely to cyberslack. This finding contradicted earlier work (e.g., Lim, 2002), which suggested that employees engaged in cyberslacking to "get back" at unfair employers. Instead, these findings supported Lim et al.'s (2002) findings that one's personal habits are the best single predictor of cyberslacking.

Efforts to explain cyberslacking have made varying distinctions among different types of cyberslacking. Lim and colleagues (e.g., Lim, 2002; Lim & Teo, 2005) separated browsing activities from email-related activities. Robinson and Bennett (1995) proposed that deviant behaviors varied by seriousness, as well as whether they were interpersonal or organizational in nature. Drawing from this typology, Blanchard and Henle (2008) divided cyberslacking into minor (e.g., reading personal emails) and serious (e.g., downloading pornography) categories. They found that perceptions of what other employees were doing explained minor cases of cyberslacking (e.g., online shopping), but not serious cases (e.g., online gambling). Lim and Teo (2005) found a similar result, with 88% of respondents in their study saying that cyberslacking was acceptable when they perceived other employees to be engaging in similar behavior. However, the more serious employees perceived a cyberslacking activity to be, the less likely they were to engage in it while at work.

Overall, the extant cyberslacking research fails to distinguish among online activities that may have distinct motivations. Researchers either combine all behaviors identified as cyberslacking together into a single dependent variable (as in Garrett & Danziger, 2008a, 2008b) or divide them into a small number of categories that may neglect important distinctions among them. For example, online shopping and personal email may both be characterized as minor cases (e.g., Blanchard & Henle, 2008). However, these activities have been shown to have distinct patterns of motivation (LaRose, Kim, & Peng, 2010) and there is growing appreciation of the need to distinguish among specific online activities in examining the determinants of Internet use.

Zhang, Oh, and Teo (2006) found that the perceived importance of the ethical prohibitions on cyberslacking were negatively related to the acceptability of the behavior, which was, in turn, positively related to one's intention to engage in misuse. In addition, individuals' personal normative beliefs (i.e., their belief that cyberslacking is morally wrong) reduced intentions to engage in cyberslacking. Mahatanankoon (2006) found that attitudes and intentions to engage in cyberslacking predicted cyberslacking behavior, although subjective norms were not a significant predic-

tor. Pee et al. (2008) found that social norms (e.g., the approval of co-workers and the IT department), expected positive (e.g., saving time) and negative (e.g., decreases in productivity) outcomes, and the presence of facilitating conditions (e.g., monitoring software) explained over half of the variance in intentions to engage in cyberslacking in a mixed sample of students and professionals in Singapore. Garrett and Danziger (2008a) also found that factors shaping employees' routine use of computers and their belief in the productivity benefits of general Internet use predicted cyberslacking.

3. Current research

Research has yet to come to a common agreement on the variables and behaviors that contribute to personal Internet use at work, and studies of these behaviors have traditionally employed small, non-representative samples. The one national study on cyberslacking behaviors (Garrett & Danziger, 2008a; Garrett & Danziger, 2008b) is also limited in three important ways. First, the sampling frame led to a significant overrepresentation of certain demographic characteristics, specifically that of education, with 36% of respondents holding a bachelor's degree and 24% more holding a graduate degree. Second, the researchers employed a limited operational definition of cyberslacking that does not account for a number of increasingly popular cyberslacking behaviors, including text messaging, watching online videos, playing games, and using SNSs. Finally, it combined a variety of cyberslacking behaviors without examining the determinants of individual activities that may make some more problematic in the workplace than others. The present study attempts to clarify cyberslacking's antecedents by examining the behavior in three distinct ways: by (1) looking at predictors of engaging in nine cyberslacking behaviors overall, including both frequent and relatively infrequent cyberslacking activities, (2) looking at predictors of frequency of four communication-based cyberslacking behaviors, and (3) looking at predictors of specific non-communication-based cyberslacking behaviors.

The relationship between job satisfaction and engagement in deviant behaviors such as cyberslacking is a popular topic in both mass media and academic research. One way of conceptualizing satisfaction is in terms of perceived "justice" within a work environment; when there is a high degree of injustice, workers may be more likely to cyberslack. Lim and Teo (2005) tested the role of three justice-based variables in predicting cyberslacking—distributive justice (i.e., performance-based rewards), procedural justice (i.e., fairness of organizational procedures), and interactional justice (i.e., relationship between employees and supervisors)—and found that all three forms of justice were negatively associated with cyberslacking. In a previous study, Lim (2002) found that when employees perceived some form of injustice within their job, such as the perception of being overworked and underpaid, one way to seek to restore balance is through cyberslacking. Garrett and Danziger (2008a) treated job satisfaction and interactional injustice as distinct variables in their analysis, but did not find any relationship between either variable and cyberslacking. To address the conflicting findings in the literature, the following hypothesis is proposed:

H1. Increasing job dissatisfaction is associated with (a) greater variety of cyberslacking behaviors and (b) greater frequency of communicative cyberslacking behaviors.

Garrett and Danziger (2008a) argued that perceptions of the Internet's ability to perform work tasks may shape perceptions of the Internet's ability to achieve personal objectives. While unable to establish causality, they did find empirical support for a positive relationship between these two variables. Therefore:

H2. Greater expected work utility of the Internet is associated with (a) greater variety of cyberslacking behaviors and (b) greater frequency of communicative cyberslacking behaviors.

The role that control (or a lack thereof) plays in cyberslacking has been examined through a variety of variables. Chen et al. (2008) found that having a high external locus of control—the belief that one does not have control over a situation—positively predicted Internet addiction, which in turn positively predicted Internet abuse at work. Blanchard and Henle (2008) tested the relationship between two facets of control (chance and powerful others) and cyberslacking, finding that individuals who believe that events occur through chance or fate were more likely to engage in both minor and cyberslacking behaviors. Within a job environment, one situation in which locus of control may manifest itself is in employees' perception of control over their career growth. Employees who believe they have less control over what happens in their job may be more likely to engage in cyberslacking behaviors. Therefore:

H3. Reduced perception of control at work is associated with (a) greater variety of cyberslacking behaviors and (b) greater frequency of communicative cyberslacking behaviors.

Habitual Internet use may also play a role in cyberslacking behavior. Evidence that habits play a role in cyberslacking was found in the relationship between routinized (i.e., habitual) computer use and personal use at work (Garrett & Danziger, 2008a), the relationship of so-called flow states (an indication of automatic behavior) to cyberslacking (Verplanken & Orbell, 2003), and in the direct relationship between a measure of habit strength and non-work-related computing (Pee et al., 2008). So-called Internet addictions can also be understood as habits (LaRose, 2004) and so evidence that Internet addiction is related to cyberslacking (Chen et al., 2008) is also evidence that they are habitual behaviors. After media habits are established, they may be triggered without further conscious decision-making in response to internal (e.g., a feeling of stress or anxiety) or external (e.g., a chance reference to gambling or sex encountered in one's work) stimuli (LaRose, 2010).

H4. More routinized Internet use is associated with (a) greater variety of cyberslacking behaviors and (b) greater frequency of communicative cyberslacking behaviors.

Smaller scale studies have found positive effects of cyberslacking, suggesting that spending brief periods of time on tasks not related to work may result in relief from boredom, fatigue, or stress, greater job satisfaction or creativity, increases in well-being, recreation and recovery, and overall happier employees (Eastin et al., 2007; Oravec, 2002; Reinecke, 2009; Stanton, 2002). Therefore, it is feasible that specific job characteristics, such as if a job requires creativity or involves repetitive tasks, may lead to more cyberslacking to increase creativity or relieve boredom.

H5. Jobs that require more creativity are associated with (a) greater variety of cyberslacking behaviors and (b) greater frequency of communicative cyberslacking behaviors.

H6. Jobs that require performing the same action repeatedly are associated with (a) greater variety of cyberslacking behaviors and (b) greater frequency of communicative cyberslacking behaviors.

Finally, it is important to consider cyberslacking behaviors individually in addition to aggregate form, to assess how individual behaviors may vary in their predictors. This is especially important

for employers concerned about specific behaviors. For example, many government organizations restrict access to specific websites such as SNSs, so this behavior would not be a concern for them; however, they may be interested in identifying the types of employees who are more likely to engage in online shopping while at work so that behavior can be curbed. Also, prior research among college students (LaRose et al., 2010) has established that some online activities have a greater propensity than others to become harmful habits that interfere with important life responsibilities. Therefore, we pose a research question to unpack the cyberslacking variable into its nine individual behaviors:

RQ: What differences emerge in predictors for each of the nine cyberslacking behaviors?

4. Method

4.1. Participants

This study provides a reanalysis of data from the Pew Internet & American Life Project (for full descriptive statistics from the dataset, see the original report, Madden & Jones, 2008). Pew conducted a nationally representative telephone survey of 2134 adults living in the continental United States in March and April of 2008. Of these, 1000 identified themselves as part-time or full-time workers. Within this sample, the average participant was male (51.8%), White/Non-Hispanic (79%), 46.5 years old (SD = 14.7), and had completed some college. Nearly all workers in the study (96%) use some sort of communications technology (email, Internet, or mobile phone). For the regression analyses, only individuals who reported using the Internet for work at least occasionally (N = 628) were included. Within this subsample, respondents were evenly split between men and women, slightly younger (mean age = 44.7, SD = 11.7), better educated (55.3% had a college degree or greater), and equally as likely to be White (79%).

4.2. Measures

4.2.1. Cyberslacking

Two dependent variables were computed for variety and frequency of cyberslacking. The first, which will be called "*cyberslacking variety*," is a cumulative index of nine online activities that participants reported engaging in for personal reasons while at work: sending emails, instant messages, and texts; visiting a SNS; watching videos; writing or reading blogs (coded separately); playing games, or shopping. The four communication behaviors (i.e., email, IM, texting, SNS) were phrased as frequency measures in the questionnaire and were recoded into binary variables, with a value of 1 indicating the respondent engaged in these behaviors while at work, regardless of frequency. The five remaining activities were originally coded into categories indicating if the respondent performed them while at home only, at work only, at home and work, or neither. These behaviors were recoded into binary variables, with 1 indicating the respondent engaged in these behaviors either at work only or at work and home. Therefore, the possible index range was 0–9 and the reported range was 0–8, with a higher value indicating a greater variety of cyberslacking behaviors (N = 853; M = 1.53; SD = 1.58).

The second variable, "*communicative cyberslacking frequency*," is a cumulative index of the four communication-based cyberslacking behaviors (email, IM, texting, and SNS). Previous measures of cyberslacking frequency have focused on a limited range of communication behaviors (e.g., Garrett & Danziger's "personal email and text messaging"). Due to the increasing popularity of online communication and specifically the increasing popularity of SNS use among adults (Lenhart et al., 2010), this measure provides a greater range of communication behaviors employees may be using at work for personal reasons. The items were recoded on a 0–6 scale ranging from 0 = never to 6 = constantly. The possible index range was 0–24 and the reported range was 0–23, with a higher value indicating greater frequency of cyberslacking (N = 1000; M = 2.51; SD = 3.27).

To answer the research question, each cyberslacking behavior was coded as a binary variable, with 1 indicating the respondent engaged in the behavior.

4.2.2. Demographics

Seven control variables are included in the regression analyses. Gender (women = 1; M = .50 SD = .50), race (White = 1; M = .79, SD = .408), job title (supervisor = 1; M = .23, SD = .424), and job type (high status jobs, i.e., professional jobs, manager/executive, business owners = 1; M = .461 SD = .500) were coded as dummy variables. Age (M = 45.6, SD = 13.18) was a continuous variable with a range of 18–88. Income (M = 5.35, SD = 2.00) included eight response ranges (1 = under $10,000, 2 = $10,000 to under $20,000, 3 = $20,000 to under $30,000, 4 = $30,000 to under $40,000, 5 = $40,000 to under $50,000, 6 = $50,000 to under $75,000, 7 = $75,000 to under $100,000, and 8 = over $100,000). Linear interpolation was used to replace missing values, which accounted for 10.3% of all data. Education (M = 3.34, SD = .834) included four response ranges (1 = less than high school, 2 = high school graduate, 3 = some college, 4 = undergraduate/graduate degree).

4.2.3. Job dissatisfaction

Job dissatisfaction (M = 1.76, SD = 0.65) was measured through one item: "Now thinking about your job overall, would you say you are completely satisfied with your job overall, mostly satisfied, mostly dissatisfied, or completely dissatisfied?" with four response options (1 = completely satisfied, 2 = mostly satisfied, 3 = mostly dissatisfied, 4 = mostly satisfied). This measure closely mirrors item wording used by Garrett and Danzier (2008), who note that broad, inclusive measures such as this have been shown to capture employee attitudes that may be missed in more specific measures.

4.2.4. External control

This variable is derived from research examining the relationship between an external locus of control—the belief that control of a given situation lies in the hands of people other than the individual—and cyberslacking (e.g., Blanchard & Henle, 2008; Chen et al., 2008). Employees may have varying degrees of control within an organization, based on factors such as the size of the organization and their position within the organization. For this study, we employed a one-item measure ("I have a lot to say about what happens in my job") to address the degree of control an employee possesses related to his/her job specifications. This question is measured on a five-item, Likert-type scale ranging from 1 = Strongly Agree to 5 = Strongly Disagree (M = 2.32, SD = 1.39).

4.2.5. Internet job utility

To improve upon Garrett and Danziger's (2008a) one-item measure of this variable, we included four items that we believe tap into the relationship between affordances of the Internet and job productivity ("How much, if at all, have technologies such as Internet, email, cell phones and instant messaging (1) improved your ability to do your job, (2) allowed you more flexibility in the hours you work, (3) improved your ability to share your ideas with coworkers, (4) expanded the number of people you communicate with?"). Individual items were measured on a four-item scale (1 = not at all, 2 = only a little, 3 = some, 4 = a lot); therefore, the final scale (Cronbach's α = .754) had a response range of 4–16 (M = 10.98, SD = 3.60).

4.2.6. Routinized use of Internet

This variable includes one item ("About how often do you use the Internet or email from work?"), with response options of 1 = less often [than every few days], 2 = every few days, 3 = once a day, 4 = several times a day, 5 = constantly (M = 3.89, SD = 1.19). In addition, this variable was used as a screener for inclusion in the regressions; individuals who did not use the Internet at least occasionally were not included in the final analysis.

4.2.7. Job characteristics

As a preliminary investigation into specific job characteristics that may predict cyberslacking, two variables were included in analyses: (1) "My job requires creativity" (M = 3.74, SD = 1.34) and (2) "My job requires that I do the same things over and over" (M = 3.47, SD = 1.41). Both items were measured on a five-item, Likert-type scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree.

5. Results

As this analysis is being performed to expand upon Garrett and Danziger's (2008a), Garrett and Danziger's (2008b) study of cyberslacking behaviors, we chose to recreate their analysis plan, using hierarchical multiple regressions to account for the unique contributions of each of the three blocks of variables: (1) control variables, including sex, race, education, age, income, supervisory status, and job type; (2) disaffection variables, including job dissatisfaction and perceived inequity; and (3) work requirements, including the Internet's work utility, routinized use of the Internet at work, and the two job characteristics, creativity and repeated actions. Two hierarchical multiple regressions were run using cyberslacking variety and communicative cyberslacking frequency as the dependent variables. The contribution of both individual variables as well as improvement in the overall explanatory model with the addition of each block will be discussed. See Table 1 for a Pearson's correlation matrix of all included variables and Table 2 for results of these regressions. Table 4 contains a summary of findings as they pertain to each of the hypotheses. In addition, a series of logistic regressions were run for each of the nine cyberslacking behaviors in order to address the research question regarding how predictors varied across specific behaviors.

5.1. Regression predicting variety of cyberslacking behaviors

The first hierarchical multiple regression analyzed variables predicting the variety of cyberslacking behaviors that respondents ever use while at work and included nine different activities. In the first stage of this regression, the seven control variables were tested, accounting for nearly 10% of the variance (R^2 = .091), which is consistent with Garrett and Danziger's analysis. Race (β = −.167, p < .001), age (β = −.161, p < .001), education (β = .152, p < .01), and sex (β = −.094, p < .05) were significant, such that younger, more educated, non-White males engaged in a greater quantity of cyberslacking behaviors.

In the second stage, we introduced two additional variables that relate to employee disaffection: job dissatisfaction and external control. Contrary to the hypothesized relationship—but in line with Garrett and Danziger's (2008a) findings—we found no relationship between the quantity of cyberslacking behaviors employees engage in and how satisfied they were with their current position (β = .037, p > .05), providing no support for H1a. A significant relationship emerged for the external control variable (β = −.142, p < .001), but in the opposite direction than predicted. In other words, people with a higher external locus of control engaged in *fewer* cyberslacking behaviors, so H3a was not supported. The addition of these two variables improved the adjusted R^2 slightly to .106.

In the final stage, we added the four outcome variables to the regression. It was predicted that employees who had a more positive attitude about technology's ability to improve their work (H2a), those who used the Internet more in their work (H4a), and those whose jobs required more creativity (H5a) or repetitive actions (H6a) would engage in more cyberslacking. Three of these variables were significantly correlated with cyberslacking: Internet utility (β = .152, p < .001), routinized Internet use (β = .181, p < .001), and working in a job that requires creativity (β = .085, p < .05) positively predicted the number of cyberslacking behaviors individuals engage in, while working a job requiring repetitive action was non-significant. Furthermore, these variables caused both education and perceived injustice to become non-significant predictors. Overall, the work requirement variables significantly increased the R^2 from .106 to .172.

5.2. Regression predicting frequency of communicative cyberslacking behaviors

The second hierarchical multiple regression tested predictors of the frequency of cyberslacking for four communication behaviors—sending personal emails, IMs, and texts, and using SNSs while at work. In the first stage, only the control variables were tested. Similar to the cyberslacking quantity analysis, gender (β = −.088, p < .05), age (β = −.194, p < .001), and race (β = −.150, p < .001) were significant predictors, such that younger, non-White men

Table 1
Pearson product moment correlation coefficients for hierarchical multiple regressions.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Cyberslacking (variety measure)	1													
2.	Sex	−.08*	1												
3.	Race	−.15**	−.07*	1											
4.	Income	.20**	−.22**	.08**	1										
5.	Education	.24**	.05	.08*	.43**	1									
6.	Age	−.14**	.05	.17**	.15**	.07*	1								
7.	Supervisor	.14**	−.10**	.02	.29**	.17**	−.01	1							
8.	High-status Job	.13**	.08**	.00	.31**	.43**	.06	.28**	1						
9.	Job dissatisfaction	−.02	−.02	−.14**	−.08*	−.02	−.11**	.03	−.04	1					
10.	External control	−.15**	.05	−.05	−.17**	−.10**	.02	−.21**	−.13**	.17**	1				
11.	Internet/job utility	.38**	.04	−.07*	.29**	.33**	−.05	.17**	.21**	−.10**	.19**	1			
12.	Routinized Internet use	27**	−.02	.03	.29**	.30**	.08	.12**	.21**	−.06	−.19**	.38**	1		
13.	Job requires creativity	−.08*	.03	−.05	−.24**	−.24**	−.08*	−.15**	−.23**	.09**	.11**	−.18**	−.13**	1	
14.	Job requires repetitive actions	.18**	−.04	.02	.14**	.16**	.06	.13**	.18**	−.12**	−.42**	.18**	.12**	−.12**	1

* p < .05.
** p < 0.01 (2-tailed).

Table 2
Hierarchical multiple regressions predicting quantity and frequency of cyberslacking behaviors ($N = 621$).

	Standardized coefficients (betas)					
	Model 1: cyberslacking variety			Model 2: communicative cyberslacking frequency		
	Block 1: control variables	Block 2: disaffection variables	Block 3: work requirement variables	Block 1: control variables	Block 2: disaffection variables	Block 3: work requirement variables
Control variables						
Sex (women)	−.094*	−.083*	−.095*	−.088*	−.077	−.096*
Race (white)	−.167***	−.171***	−.148***	−.150***	−.156***	−.127**
Income	.084	.074	.012	.037	.025	−.017
Education	.152**	.144**	.083	.061	.053	.022
Age	−.161***	−.157***	−.153***	−.194***	−.190***	−.177***
Supervisor	.025	.000	.013	−.017	−.042	−.024
High-status job	−.043	−.049	−.065	−.036	−.042	−.038
Disaffection variables						
Job dissatisfaction		.037	.048		.030	.039
External control		−.142***	−.070		−.147***	−.106*
Work requirement variables						
Internet/job utility			.152***			.196***
Routinized Internet use			.181***			.090*
Creativity			.085*			.033
Repetitive actions			.012			.106**
Constant	–***	–***		–***	–***	
F test	9.88***	9.21***	10.93***	7.91***	7.72***	8.99***
Adjusted R^2	.091	.106	.172	.072	.089	.143

* $p < .05$.
** $p < 0.01$.
*** $p < .001$.

engaged in a greater frequency of cyberslacking than those who were older, White, and women. However, education, which was significant in the previous regression, was non-significant in predicting frequency of cyberslacking. The control variables explained 7.2% of the variance in cyberslacking frequency.

In the second stage, the disaffection variables were added to the regression, with similar outcomes to those found in the regression predicting variety of cyberslacking behaviors. Job dissatisfaction was unrelated to frequency of cyberslacking, providing no support for H1b, while external control predicted frequency, but in the opposite direction to what was hypothesized ($\beta = -.147$, $p < .001$); therefore, H3b was not supported. The addition of these variables increased the R^2 to .089.

In the third stage, the work requirement variables were added. Internet utility ($\beta = .196$, $p < .001$), routinized Internet use ($\beta = .090$, $p < .05$), and working in a job that requires repetitive actions ($\beta = .106$, $p < .01$) positively predicted frequency of cyberslacking, providing support for H2b, H4b, and H6b. Working in a job that requires creativity was non-significant; therefore, H5b was not supported. The final model's R^2 was .143.

5.3. Regressions predicting engagement in individual cyberslacking behaviors

To address the research question, nine binary logistic regressions were conducted using the nine cyberslacking behaviors: sending personal emails, IMs, and texts; visiting SNSs; watching online videos; writing or reading blogs; playing online games; and online shopping. The 13 independent variables used in previous analyses were also included. Results indicated that predictors vary greatly across cyberslacking behaviors (see Table 3 for odds ratios, significance, and Nagelkerke R^2 for the nine behaviors). Routinized Internet use positively predicted online shopping, blogging, reading blog, and watching videos, such that the more employees use the Internet at work, the more likely they are to engage in these activities. Likewise, the more employees believe that technology such as the Internet improves their ability to perform their job, the more likely they were to send personal emails, IMs, and text messages, as well as blog. Age negatively predicted three communication activities, with the odds of IMing, texting, and using an SNS while at work decreased as age increased. Men were more likely than women to read blogs and watch videos while at work, while non-White employees are more likely to send IMs and texts than White employees. Education is positively associated with sending personal emails and shopping; in other words, the more educated an employee is, the more likely s/he will engage in these activities. Job satisfaction, which was non-significant in the two hierarchical multiple regressions, was significant for two activities: texting and using SNSs. In this case, as satisfaction decreased, the odds of engaging in these activities increased.

6. Discussion

The oeuvre of cyberslacking literature has not yet provided a fully comprehensive review of all behaviors that could potentially predict cyberslacking behaviors. This analysis is no exception, focusing solely on antecedents of cyberslacking and thus ignoring questions related to the types of outcomes—both positive and negative—that result from cyberslacking. However, the present study contributes to our understanding of cyberslacking in a number of important ways, including, but not limited to, its use of a nationally representative sample, the robustness of the cyberslacking measure including important recent additions to the repertoire of cyberslacking behavior, and its examination of both individual and composite measures of cyberslacking, which has not previously been done with a nationally representative sample.

To analyze the impact that various factors have on cyberslacking, we conducted three separate analyses. First, we conducted two hierarchical multiple regressions focusing on the variety and frequency of cyberslacking behaviors employees may be engaging in while at work. Several demographic variables remained significant, even with the addition of disaffection and work requirement

Table 3
Logistic regressions predicting nine cyberslacking behaviors ($N = 622$).

	Odds ratios – Exp(B)								
	Email	IM	Text	SNS	Shopping	Games	Blog	Read blogs	YouTube
Sex: women	0.824	0.675	1.053	0.603	0.959	1.038	0.518	0.550*	0.555**
Race: white	1.021	.281***	0.413***	0.674	1.373	0.692	0.423	0.624	0.572*
Income	0.927	1.057	1.082	1.109	1.079	0.815	0.826	0.981	0.966
Education	1.289*	0.929	0.914	1.180	1.329*	1.620	0.943	1.265	1.122
Age	0.997	0.974*	0.946***	0.947***	0.998	0.981	1.023	0.996	0.983
Supervisor	1.089	0.928	0.963	0.666	1.217	1.585	0.937	0.948	1.227
High-status job	0.823	0.732	0.942	0.954	0.663*	0.600	1.710	1.071	0.912
Job dissatisfaction	1.089	1.076	1.442*	1.795**	0.927	1.396	0.572	1.046	1.009
External control	0.952	0.839	0.882	0.796	0.984	0.846	0.873	1.046	0.908
Internet utility	1.083**	1.102*	1.115**	1.027	1.050	1.025	1.516**	1.083	1.045
Routinized Internet use	1.141	1.251	0.968	1.104	1.615***	1.411	3.220*	1.622***	1.483***
Job: creativity	1.104	1.157	1.024	0.975	1.097	0.942	2.737*	1.249	1.195
Job: repetitive	1.019	0.957	1.115	1.207	0.987	1.154	1.156	0.846	1.011
Constant	0.177*	0.197	1.072	0.123	0.008***	0.007*	0.000***	0.005***	.050**
Nagelkerke R^2	.063	.169	.205	.139	.153	.083	.300	.148	.123

* $p < .05$.
** $p < .01$.
*** $p < .001$.

variables. As with prior research (e.g., Blanchard & Henle, 2008; Garrett & Danziger, 2008a; Mastrangelo et al., 2006), being younger and male significantly predicted both quantity and frequency of cyberslacking. These findings carry a high degree of face validity; stereotypes (and research) suggest that being young and male is associated with a greater frequency of a variety of deviant behaviors, including technology-related ones. However, when looking at individual activities, sex was only predictive of two behaviors, while age was predictive of three, suggesting that the relationship between these three variables is more complex than originally believed.

The relationship between media habits and cyberslacking remains an understudied area of research, but appears to be playing a significant role in predicting these behaviors. The strong positive relationship between routinized Internet use and both measures of cyberslacking—and to involvement in several specific cyberslacking behaviors—highlights this relationship. The relationship of so-called flow states (also an indication of automatic, habitual behavior) to cyberslacking (Verplanken & Orbell, 2003) and of Internet addiction to cyberslacking (Chen et al., 2008) further confirms this relationship.

However, due to the limitations of secondary analysis, the present research was limited in defining the past frequency of Internet usage behavior at work as an indicator of habit strength (similar to Garrett & Danziger, 2008a, 2008b). This approach is not satisfactory since it confounds habit strength with the opportunity to perform the behavior in question. That is, people who use the Internet more at work than others do at work also have more opportunity to engage in personal use. The frequency of engaging in each specific cyberslacking behavior might be a superior measure. But also, the frequency of past behavior is an unsatisfactory measure of habit strength. Current conceptualizations of habit regard it as a mental construct that is best measured by items that do not ask about past frequency such as the Self-Report Habit Index (SRHI; see Verplanken & Orbell, 2003) or deficient self-regulation (LaRose & Eastin, 2004). Habit strength, once properly conceptualized and operationally defined, should be incorporated in future investigations of personal Internet use at work (see below).

One noteworthy distinction between this sample and the sample analyzed by Garrett and Danziger (2008a) is the extent of cyberslacking behaviors identified. Garrett and Danziger (2008a), Garrett and Danziger (2008b) reported that 80% of employees in their sample reported engaging in at least one of the two cyberslacking measures (sending personal emails/texts and web browsing for non-work reasons), while only 68% of respondents in this study engaged in at least one of the nine items measured. The incidence of cyberslacking is a significant issue since it helps to define the relative social significance of the cyberslacking problem and related research. One possible reason for this difference is that Garrett and Danziger restricted their sample to full-time employees who used a computer for a minimum of 5 h of their work week, while the present study included both full-time and part-time employees and did not require a minimum number of hours of computer use per week, but rather only that they used the Internet at least occasionally while at work. Our choice of expanding the criteria for inclusion allows us to generalize our results to a wider proportion of American workers, whose productivity is still of high importance to employers.

Other important differences between Garrett and Danziger's dataset and the Pew dataset are that their dataset appears more slightly more skewed toward higher educated (60% hold a college degree vs. 55.3% in the Pew sample) and higher earning (47% reported incomes over $75,000 vs. a 30.3% in the Pew sample) employees, as well as higher-status jobs (67% vs. 46.1% in the Pew sample). Each of these factors could explain differences in the relative incidence levels found. For example, post hoc analysis of the Pew dataset revealed that only 59.8% of part-time workers compared to 69.9% of full-time workers engaged in cyberslacking activities. Similarly, only 65.2% of those who said they used the Internet at work less than once a day, compared to 82.4% who used it more frequently, participated in at least one cyberslacking behavior. There were also differences in variety of cyberslacking behaviors by level of education (78.7% among those with a college degree engaged in any cyberslacking vs. 58.7% among those with less) and income (82.4% for those earning over $75,000 engaged in any cyberslacking vs. 65.8% for those earning less). Thus, the differences in sample composition between the two studies could account for the differences in the estimated prevalence of cyberslacking.

7. Limitations

As a secondary analysis, the present research was limited by the items selected for the original study, which was not focused primarily on cyberslacking. Specifically, the questions did not include what some have termed serious forms of cyberslacking such as online gambling and cyberporn. Furthermore, no distinctions were made between personal activities that may have positive ef-

Table 4
Summary of hypotheses and findings.

	Quantity of behaviors (a)	Frequency of behaviors (b)
H1: Job satisfaction negatively predicts cyberslacking	NOT SUPPORTED	NOT SUPPORTED
H2: Internet utility positively predicts cyberslacking	SUPPORTED	SUPPORTED
H3: Control negatively predicts cyberslacking	NOT SUPPORTED	NOT SUPPORTED
H4: Routinized Internet use positively predicts cyberslacking	SUPPORTED	SUPPORTED
H5: Creative jobs positively predict cyberslacking	SUPPORTED	NOT SUPPORTED
H6: Repetitive jobs positively predict cyberslacking	NOT SUPPORTED	SUPPORTED

fects on worker productivity. Finally, we were forced to rely on several one-item measures for several of our variables rather than previously tested validated scales, so the measures should be interpreted with some caution.

8. Future research

Cyberslacking research has yet to produce a comprehensive account of the phenomenon under study, explaining only 10–20% of the variance in the two extant studies of national scope. A more robust conceptualization is needed, one that will distinguish positive cyberslacking that restores the energies of information workers by varying their tasks from destructive behavior that disrupts productivity and endangers the livelihoods of participants. Further complicating automated monitoring and control efforts are distinctions that can be made between "nonproductive" and "counterproductive" Internet use (Mastrangelo et al., 2006). Nonproductive use suggests activities such as shopping, chatting, or gaming which are far less harmful than counterproductive use, which includes using the Internet to transmit or download pornography, create computer viruses, or even traffic drugs while on the job. Distinguishing between non-work-related activities that are beneficial and those that are merely draining company resources makes the creation of countermeasures more difficult and calls for more nuanced approaches than monitoring and filtering.

More behavior-specific explanations are needed that examine the beliefs, attitudes, norms, and indicators of self-regulation applicable to the various forms of cyberslacking that can add to the explanatory power of individual difference and organizational attributes that have thus far had limited utility. The search for new explanations leads to research arguing that excessive Internet use is a disease, variously called an Internet addiction or problematic Internet use (PIU; for a review, see Byun, Celestino, Mills, Ajecia, et al., 2009). Chen et al.'s (2008) research on cyberslacking behaviors in Taiwan supported the link between psychosocial factors and behavior, finding that self-esteem was negatively correlated to Internet addiction, which was in turn positively correlated with Internet abuse at work.

An alternative approach views cyberslacking purely as a conscious, rational behavior, applying models (Ajzen, 1991; Ajzen & Fishbein, 1980; Bandura, 1986) that predict behavior from conscious behavioral intentions, which are in turn predicted by the expected personal outcomes (attitudes), personal and social norms governing a behavior, as well beliefs about facilitators and barriers that control its performance. Zhang et al. (2006) found that the perceived importance of the ethical prohibitions on cyberslacking were negatively related to the acceptability of the behavior, which was, in turn, positively related to one's intention to engage in misuse. In addition, individuals' personal normative beliefs (i.e., that cyberslacking is morally wrong) reduced intentions to engage in cyberslacking. Mahatanankoon (2006) found that attitudes and intentions to engage in cyberslacking predicted cyberslacking behavior, although subjective norms were not a significant predictor. As noted earlier, Pee et al. (2008) found that social norms, expected positive and negative outcomes, and the presence of facilitating conditions explained over half of the variance in intentions to engage in cyberslacking in a mixed sample of students and professionals in Singapore. The two perspectives have been integrated in the case of general Internet use (LaRose & Eastin, 2004) and for specific applications that are relevant to cyberslacking including social networking, gaming, and online shopping (LaRose et al., 2010). In brief, the model proposes that individuals initially choose to engage or not engage in personal Internet use at work in response to the outcomes that they expect to result from that use. Beliefs in one's ability to achieve important outcomes through the behavior in question (e.g., confidence that one can successfully employ personal use to improve their productivity or, failing that, that they can successfully avoid detection) are also important in the initial decision-making.

However, the current results are most consistent with a model of media attendance proposed by LaRose and Eastin (2004) that argues that both conscious and non-conscious processes contribute to Internet consumption. In the present research, conscious motivations were represented by perceptions of job utility, conceptualized as expected outcomes in that model. Habit strength, operationalized here as routine Internet use, also determined media consumption, an indication that automatic, non-conscious processes were present. In previous research, habit strength emerged as the most important predictor of cyberslacking behavior (Pee et al., 2008), compared to conscious behavioral intentions and the presence of corporate practices (e.g., usage policies, monitoring, disciplinary policies), emphasizing the limits of approaches that treat non-work-related computing as a purely conscious behavior.

Evidence that habits play a role in cyberslacking was also found in the relationship between routinized (i.e., habitual) computer use and personal use at work (Garrett & Danziger, 2008a) and the relationship of so-called flow states (an indication of automatic behavior) (Blanchard & Henle, 2008) to cyberslacking. Internet habits may become especially strong and can become self-destructive when they become a primary means of responding to dysphoric states including depression, loneliness, low self-esteem, dissatisfaction, and boredom (LaRose et al., 2010). Jobs that require repetitive tasks are boredom-inducing and so are likely to be related both to habit strength and to communicative cyberslacking, as was found in the present results. Similarly, job dissatisfaction predicted texting and SNS use. On the other hand, creative jobs are likely to have more varied demands and be less boring, and so are less likely to motivate communicative cyberslacking or habitual Internet use, relationships that were also confirmed here in the communicative cyberslacking analysis. However, persons with effective self-control are able to moderate their destructive habits (LaRose et al., 2010). In the present study, those who felt they were in control of conditions at work (i.e., the "external control" variable) were less likely to engage in communicative cyberslacking than those with lower perceived control. Thus, the media attendance model (LaRose & Eastin, 2004) affords a promising model with which to guide further research. Its explanatory power could be greatly increased by focusing both independent and dependent measures on specific cyberslacking activities (see

LaRose et al., 2010). In that model, demographic differences are thought to be accounted for by other explanatory variables, offering a more parsimonious and theoretically elegant account of cyberslacking.

After habits are established, they may be triggered without further conscious decision-making in response to internal (e.g., a feeling of stress or anxiety) or external (e.g., a chance reference to gambling or sex encountered in one's work) stimuli. Fortunately, the downward spiral in which innocuous habits become bad habits is, to some degree, self-correcting. In other words, the maintenance and restoration of self-control over cyberslacking is possible. Awareness of the negative consequences of the behavior (e.g., awareness that important work deadlines are being missed) diminishes habit strength (LaRose et al., 2010). That is, some degree of self-control can be restored simply by making individuals aware of the extent of their involvement with a habitual activity and linking its performance to potential negative outcomes, such as missed deadlines and negative employee evaluations.

Once these processes are fully understood, the next step will be for organizations to create ways for employees to identify negative behaviors and correct them. Research has shown that employee surveillance measures, such as those that monitor Web browsing and block access to certain websites, can lower job satisfaction and productivity (De Lara et al., 2006). Furthermore, such measures often carry large financial investments, which many organizations are unable to justify. Such strong measures also ignore the potential positive impact of brief breaks spent engaging in personal Web browsing activities. Strategies that place more power in the control of the employees while providing them with feedback about their Internet use may be more readily adopted and may help employees develop healthier (and more productive) habits related to their use of the Internet while at work. Implementation plans that set and monitor goals for reduced involvement may also have an impact while habits are still in a formative stage and still subject to conscious self-regulation.

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