AN INDIVIDUAL TRAIT-BASED INVESTIGATION OF EMPLOYEE CYBERLOAFING

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ABSTRACT

Limited attention in IS research has been paid to the phenomenon of cyberloafing, i.e., employee nonwork-related Internet use during work time. This study takes an individual trait approach and investigates the impact of personality traits, including both general and domain-specific ones, on cyberloafing. More specifically, it was hypothesized that while general traits, like the "Big Five," will be significant predictors of cyberloafing, domain-specific traits, such as computer playfulness, will have more superior explanatory power and explain incremental variance beyond the Big Five. Also explored was the conceptual foundation of computer playfulness in the Big Five trait framework, particularly its relationship with openness to experience. Survey data from a sample of working adults were used to explore these relationships. Implications of these findings for research and practice are discussed.

Keywords: Individual Trait, Computer Playfulness, Big Five Traits, Cyberloafing

INTRODUCTION

Employee loafing, as one type of counterproductive or deviant work behavior, is a perennial phenomenon in organizations [16, 17, 59]. While modern information technologies, such as the Internet, can be used to improve productivity, they also provide employees with the opportunity to loaf.

Also referred to as cyberslacking [74] or personal Web use [4], cyberloafing refers to employee nonwork-related Internet use during work time, such as playing online games and browsing the Internet for personal reasons [43], and is one type of production-related deviant use of IT [46]. Unlike the many traditional forms of workplace loafing, cyberloafing enables workers to engage in personal pursuits while seemingly hard at work [41] and is currently the most common way employees waste time at work [6].

Much has been written in the popular press about the pervasiveness of this phenomenon. For example, it is reported that the average American admits to wasting away more than two working hours each day, with personal Internet use being the primary distraction [23]. Some 90 percent of employees spend work time surfing recreational websites [62], translating into an estimated annual productivity loss of $54-85 billion for U.S. companies [1, 45]. Besides productivity loss, cyberloafing can pose additional threats like bandwidth loss, computer viruses and legal liabilities [43, 52].

Despite the coverage in the popular press, this phenomenon has received limited attention in the IS

literature. Research in business management has examined a set of situational factors related to cyberloafing, such as employee perception of injustice [31, 65, 43], punishment [19], workplace norms [9, 18], telecommuting [54], and Internet usage policies [5, 33]. Others have attributed it to employee boredom, avoidance of less rewarding tasks [41], lack of intrinsic or job involvement [42], stress relief [30], and job dissatisfaction [24]. Technology characteristics, such as perceived usefulness of the Internet [24, 70] have also been explored as predictors.

Other than a few studies examining some disparate individual difference factors (e.g., self-regulation [71], self-control [58] and locus of control [30], there have been few attempts at systematically investigating the role that individual traits play in cyberloafing (exceptions include [33]); even less work has looked to IT-related domain-specific traits for potential explanations.

Cumulative research has shown that personality traits play a powerful role in explaining a multitude of individual attitudes and behaviors in the workplace [34]. In the IS literature, individual traits, such as the "Big Five," have been found to predict technology adoption and use (e.g., [20, 50, 68]). It has also been suggested that Internet misuse can be predicted by examining individuals' preexisting tendencies [39]. Despite their explanatory power, many have pointed out the lack of and need to study individual traits [20, 50, 66, 68]. Individuals' attitudes, beliefs and cognitions with respect to technology are, at least in part, determined by their traits after all [68].

This study strives for a deeper understanding of the cyberloafing phenomenon as it also contributes to the trait literature in IS. We take an individual trait approach to investigate the influence of general traits, like the Big Five, as well as domain-specific ones, such as computer playfulness, and also explore their relative explanatory power. Though IS researchers believed that domain-specific traits likely have superior explanatory power [3, 73], there has been little effort to empirically assess the value of this approach in the IT domain. Such empirical tests are necessary since much trait research in IS has focused on domain-specific traits.

Also related to the focus on domain-specific traits, there are few attempts at grounding IS trait research in established frameworks in the extant trait literature. This study will explore the conceptual grounding of computer playfulness in the Big Five trait framework.

In sum, this research has three major objectives: 1) testing the Big Five and computer playfulness as predictors of cyberloafing, 2) examining their relative explanatory power, and 3) exploring the conceptual grounding of computer playfulness in the Big Five trait framework. We begin by first reviewing research on the Big Five traits and computer playfulness, and then develop their relationships with cyberloafing.

PRIOR LITERATURE AND HYPOTHESIS DEVELOPMENT

Big Five Traits and Cyberloafing

Individual traits refer to attributes that consistently distinguish people from one another in terms of their basic tendencies to think, feel, and act in certain ways [55] and are reasonably consistent over time across situational stimuli [10]. Thus, traits have a more lasting impact on behaviors and attitudes than states, which are affective or cognitive experience of an individual and are more transient [73].

Amongst the existing frameworks to study individual trait, the Five-Factor Model, or the "Big Five," including extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience, has been regarded as the most agreed upon framework because of its consistency with various psychological theories, validity across age, gender and culture, and links to a biological component [13, 14, 26, 69, 79]. As summarized in Table 1, the five factors theoretically capture the essence of one's personality [21] and can explain a multitude of individual attitudes and behaviors in the organizational setting, such as performance motivation, job attitudes [35], and job performance [8]. More relevant to this study, the Big Five have been found to predict the amount of technology use, particularly Internet use [20, 40, 50]. Thus, we expect that the Big Five can predict employee nonproductive Internet use as well.

H1: The Big Five traits are significant predictors of cyberloafing.

Relationships between cyberloafing and the five traits can also be examined individually using their definitions and descriptors in Table 1. In keeping with prior conceptualizations [33], conscientiousness, emotional stability and agreeableness are likely to be negatively related to cyberloafing while extraversion and openness to experience are likely to be positively related.

Prior research shows that conscientious individuals are less likely to engage in criminal activities [75] or counterproductive work behaviors such as absenteeism, theft, and rule breaking [60, 63]. Given their tendency to be reliable and disciplined (Table 1), they are more likely to remain on task rather than venture off into non-work related activities, like cyberloafing.

Table 1: The Big Five Individual Traits

Trait	Definition [34]	Adjective Descriptors [13, 78]
Extroversion (vs. Introversion)	Conveys an energetic approach to the social and material world, including such traits as sociability, assertiveness, and enthusiasm	Active, assertive, energetic, expressive, gregarious, sociable, spontaneous, talkative
Agreeableness	Contrasts a prosocial and communal orientation toward others with relationships of a more antagonistic nature	Altruistic, amiable, cooperative, empathic, helpful, sympathetic
Conscientiousness	Describes an individual's socially prescribed impulse control that facilitates task and goal oriented behavior, such as following norms and rules, delaying gratification, organizing, and planning	Careful, dependable, hard-working, purposeful, responsible, self-disciplined, scrupulous, strong-willed, thorough, trustworthy
Emotional stability (vs. Neuroticism)	Contrasts even-temperedness with negative emotionality, encompassing feelings such as sadness, anxiousness, insecurity, anger and nervousness	Independent, placid, secure
Openness to experience	Describes the breadth, depth, originality and complexity of an individual's mental and experiential life	Adventurous, creative, curious, flexible, imaginative, intellectual, open-minded, variety-seeking

Individuals high in emotional stability are less likely to be erratic and impulsive [36] and more likely to exhibit higher job performance [37]. Thus, they should be less likely to engage in undesirable workplace behavior like cyberloafing. Agreeable individuals are similarly less likely to cyberloaf as they are characterized as courteous, warm, trusting, and good-natured [11, 25], and tend to perform assigned tasks [60].

> *H1a: Conscientiousness is negatively related to cyberloafing.*
> *H1b: Emotional stability is negatively related to cyberloafing.*
> *H1c: Agreeableness is negatively related to cyberloafing.*

However, for those high in extroversion, their gregariousness and social orientation [25] could lead them to seek social interactions or reinforce social ties through Internet use [39] and be more distracted by it. The relationship is likely similar for those high in openness to experience as well. Since openness describes the breadth, depth, originality and complexity of an individual's mental and experiential life [34], we expect those high in openness to be more intellectually curious and more easily distracted by Internet use.

> *H1d: Extroversion is positively related to cyberloafing.*

> *H1e: Openness to experience is positively related to cyberloafing.*

Computer Playfulness And Cyberloafing

As discussed earlier, much IS research has focused on IT-specific traits, among which computer playfulness is likely the most frequently examined one.[1] Computer playfulness, as a trait, has been defined as the degree of cognitive spontaneity in microcomputer interactions [73]. It explains one's intrinsic tendency to interact spontaneously and imaginatively with a technology and has been examined as an intrinsic motivator [73].

Playfulness has been associated with a wide variety of positive attitudes, beliefs, intentions and behaviors related to IT adoption and use, such as lower computer anxiety, positive mood, greater satisfaction, improved learning in software training [73], and higher satisfaction and decision performance [32]. It has also

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[1] Another frequently studied individual characteristic is computer self-efficacy [12], which refers to one's *perception* (or *belief*) of his/her own ability to perform the behavior [7]. Because it is attitudinal and dynamic in nature [66] and is not a stable trait, it is not included in the scope of this work.

been found to induce cognitive absorption, flow experience, as well as a sense of control over the environment, and lead to increased behavioral intentions to use and other favorable attitudes toward technology (e.g., [2, 67, 68, 72]). A recent meta-analytic review [77] included 21 studies that use playfulness as a predictor of behavioral intentions and five studies using playfulness as a motivator of actual use. In view of its many implications, playfulness is clearly an important variable for this area of research.

As an intrinsic motivator to use technology, playfulness has been posited to lead to non-productive plays, such as playing computer games at work [73]. Thus, we expect it to contribute to Internet loafing at work. Based on the existing literature, there are several mechanisms supporting this relationship.

First, playful individuals are more likely to experience cognitive absorption and flow during IT use [2], which can prolong their nonproductive play. A quick check of a news site or personal email can end up taking an extended period of time away from work for someone who easily becomes cognitive absorbed.

Second, since perceived usefulness of the Internet has been linked to cyberloafing [24, 70], and that playful individuals tend to have inflated perceptions of the usefulness of a technology [2], it is reasonable to expect playfulness to lead to cyberloafing.

Third, an earlier hypothesis has linked Internet loafing to the Big Five trait of openness to experience (H1e), which describes the breadth, depth, originality and complexity of an individual's mental and experiential life [34]. Thus, to the extent that computer playfulness reflects one's cognitive openness to experience in the technological context [53, 76], playful individuals will have higher intrinsic motivation to explore the Internet and be distracted by it during work time.

> *H2: Playfulness is positively related to cyberloafing.*

Relative Explanatory Power

The use of domain-specific traits has received support in other fields (e.g., [22, 28, 56]). Though IS researchers have made similar arguments conceptually -- that in order to achieve high predictive power, the predictor must be domain specific rather than global [3], and that "Situation-specific individual characteristics… relate more strongly than more general individual characteristics to organizational outcomes" [73] – there has been little empirical work supporting the use of domain-specific traits in IS. Such empirical tests are necessary since much trait research in IS has focused on IT-specific traits.

> *H3: Playfulness explains significant incremental variance in cyberloafing beyond the Big Five traits.*

Conceptual Foundation of Playfulness

As discussed earlier, while much IS work on individual traits has focused on IT-specific ones, there has been little effort to systematically ground this body of research in the extant trait literature in psychology and other reference disciplines. Though it has been conjectured that openness is likely a general trait corresponding to playfulness [53, 76], their linkage has not been empirically assessed.

As summarized in Table 1, openness describes the breadth, depth, originality and complexity of an individual's mental and experiential life [34]. Individuals high in openness are characterized as being imaginative, intellectual, curious [48] and open-minded [78]. They also tend to seek variety and intellectual stimulation, are better at grasping new ideas [13], 49], and have more favorable attitudes toward learning [8]. It is thus plausible that computer playfulness (i.e., one's cognitive spontaneity in microcomputer interactions [73]) reflects one's cognitive openness while interacting with a technology, and is therefore an IT-specific trait corresponding to the Big Five trait of openness to experience.

> *H4: Openness to experience is positively related to playfulness.*

In the next sections, we describe the research study designed to test the above set of hypotheses and present results.

METHODOLOGY

Participants and Procedures

The hypotheses were tested using an online survey of working adults facilitated by *StudyResponse*, a nonprofit research facilitator, from which a number of other studies have also collected data (e.g., [57]). Email invitations to participate were sent to 1,000 working adults randomly selected from the participant pool. Though an online survey may be subject to self-selection bias, it afforded us access to a diverse set of working adults. An online survey is also less likely to be subject to social desirability bias than an employer-sanctioned survey, given that it concerns counterproductive work behavior.

Usable responses were received from 147 working adults, including 66 males (45%) and 81 females (55%) who filled out the survey anonymously. All participants have Internet access at work. The average

respondent was 37 years old (range 18 to 69), with eleven years of job experience and five years working full time at the present employer.

Non-response bias was assessed with demographic information from *StudyResponse*. The respondents were not significantly different from the non-respondents in terms of gender, age, employment type (full time vs. part time), etc. However, a higher proportion of respondents (52.9%) received a baccalaureate or higher degree than that of non-respondents (42.2%). This was expected because those having Internet access at work are more likely to be employed in white-collar jobs, which often require college education.

Measures

All measurement items used in this study were extracted from the existing literature. (See items in the Appendix A.) Playfulness was measured by a scale from Webster and Martocchio [73] as refined by Serenko and Turel [61]. Respondents were asked to indicate on a 7-point Likert scale the extent to which they agree or disagree with items like, "When using the Internet, I am playful."

The Big Five traits were assessed with the International Personality Item Pool (IPIP, [27]), which uses 7-point Likert-type items ranging from 1 ("Very Inaccurate") to 7 ("Very Accurate"). The IPIP contains a total of 50 items, with ten items assessing each dimension: conscientiousness (e.g., "pay attention to details"), emotional stability (e.g., "change my mood a lot"), agreeableness (e.g., "make people feel at ease"), openness (e.g., "have a vivid imagination"), and extroversion (e.g., "am the life of the party").

Cyberloafing was assessed with a scale from Lim and Teo [44] as refined by Jia et al. [33]. Respondents were asked to indicate on a scale of 1 ("Never") to 7 ("Constantly") "During office hours, how often do you do the following [nonwork-related Internet activities] for personal reasons?"

Sample descriptive statistics, scale reliability, and intercorrelations are shown in Table 1. Evidence for scale convergent and discriminant validity is provided in the factor loading matrices in Appendix B.

Table 2: Descriptive Statistics, Reliability and Correlation Matrix

	Variable	Mean	SD	Alpha	1	2	3	4	5	6	7
1	Cyberloafing	2.27	1.18	0.91	1.00						
2	Extraversion	4.13	1.12	0.87	0.05	1.00					
3	Agreeableness	5.34	0.96	0.85	-0.24	0.39	1.00				
4	Conscientiousness	4.99	0.90	0.79	-0.27	0.28	0.44	1.00			
5	Emotional Stability	4.43	1.09	0.88	-0.16	0.37	0.27	0.38	1.00		
6	Openness to Experience	5.08	0.90	0.84	-0.03	0.47	0.52	0.47	0.30	1.00	
7	Playfulness	4.77	1.34	0.88	0.27	0.20	0.19	0.08	-0.05	0.33	1.00

RESULTS

Hierarchical regression was used to analyze the data. The major advantage of this technique is that the incremental explanatory power of the predictor variables (ΔR^2 and *p*-value) can be tested as they are entered sequentially into the regression model [29]. To rule out the potential threat of multicollinearity, variance inflation factor (VIF) values were examined in all hierarchical regression models. With the largest VIF value for independent variables in all regression equations at 1.88,

which is well within the threshold of 10 [29], multicollinearity is not likely an issue.

As shown in Table 3 (Step 1), employee age and gender were significantly related to cyberloafing. Specifically, younger, male workers were more likely to loaf on the Internet than older, female employees. After controlling for age and gender, the Big Five traits (Step 2) were simultaneously entered into the equation and explained significant variance (ΔR^2 = 6.2%) in cyberloafing, thus supporting H1.

Table 3: Hierarchical Regression Results (With the Big Five Traits Entered First)

	Variables Added	b	t	*Sig.*	ΔR^2	*Total ΔR^2*	*F* Change	*Sig F* Change
Step 1	Gender	-1.10	-6.84	.000				
	Age	-0.19	-4.77	.000	.342	.342	37.410	.000
Step 2	Step 1 +							
	Extraversion	0.14	1.69	.093				
	Agreeableness	-0.07	-0.60	.549				
	Conscientiousness	-0.22	-2.09	.038				
	Emotional Stability	-0.16	-1.91	.059				
	Openness to Experience	0.20	1.71	.090	.062	.404	2.887	.016
Step 3	Step 2 +							
	Playfulness	0.18	2.96	.004	.036	.439	8.752	.004

In terms of the individual influence of the five traits, conscientiousness (t = -2.09, p = .038) and emotional stability (t = -1.91, p = .059) were significantly related to cyberloafing in the hypothesized directions (Table 3, Step 2), thus supporting H1a and H1b. Extroversion (t = 1.69, p = .093) and openness (t = 1.71, p = .090) approached significance, providing tentative support for H1d and H1e. Agreeableness was not significant (t = - .60, p = .549), thus H1c was not supported.

Computer playfulness was entered into the equation in Step 3, and it had a significant relationship with cyberloafing (t = 2.96, p = .004), thus supporting H2. This IT-specific trait also explained significant incremental variance in cyberloafing beyond the Big Five traits (ΔR^2 = 3.6%), providing support for H3.

To further examine their relative explanatory power, we also investigated whether the Big Five account for any unique variance that is not explained by playfulness. As shown in Table 4, after controlling for playfulness, the Big Five as a whole explained a significant amount of unique variance, with conscientiousness being the only significant factor amongst the five.

H4 postulates that openness is a general trait corresponding to computer playfulness. An observation of the correlations between playfulness and the Big Five (Table 2) indicates that its highest correlation is with openness (r = 0.33, p < .000). Thus, H4 is supported. (Extroversion and agreeableness are also significant, at r = 0.20, p = .007 and r = 0.19, p < .010, respectively.)

Table 4: Hierarchical Regression Results (With Playfulness Entered First)

	Variables Added	b	t	*Sig.*	ΔR^2	*Total ΔR^2*	*F* Change	*Sig F* Change
Step 1	Gender	-1.10	-6.84	.000				
	Age	-0.19	-4.77	.000	.342	.342	37.410	.000
Step 2	Step 1 +							
	Playfulness	0.20	3.53	.001	.053	.395	12.449	.001
Step 3	Step 2 +							
	Extraversion	0.12	1.43	.154				
	Agreeableness	-0.10	-0.95	.346				
	Conscientiousness	-0.21	-2.07	.041				
	Emotional Stability	-0.11	-1.33	.186				
	Openness to Experience	0.11	0.97	.336	.045	.439	2.203	.057

Also, the observations that playfulness is more highly correlated with cyberloafing than openness (Table 2), and that openness becomes nonsignificant after controlling for playfulness (Table 4), provide evidence for the superior explanatory power of a domain-specific trait over its corresponding general trait. However, as noted earlier, conscientiousness, as a non-corresponding general trait to playfulness, explained significant unique variance not accounted for by playfulness (Table 4).

DISCUSSION

This study sought to examine the cyberloafing phenomenon, which to date has received little attention in the IS research literature. We took an individual trait approach to examine the impacts of general traits, such as the Big Five, as well as domain-specific traits, like computer playfulness. Data from a sample of working adults showed that young, male workers were more likely to loaf on the Internet at work than older, female employees, which is in keeping with prior studies (e.g., [24, 70]). Controlling for gender and age, the Big Five traits were found to significantly predict cyberloafing as hypothesized. More specifically, extroversion and openness were positively related, while conscientiousness and emotional stability were negatively related. Agreeableness was found to be nonsignificant.

As hypothesized, computer playfulness is an effective predictor of cyberloafing and explains considerable incremental variance beyond the Big Five. Data also supported the hypothesis that the Big Five trait of openness is a general trait corresponding to playfulness. The fact that playfulness is more highly correlated with cyberloafing than openness provides further evidence for the superior explanatory capability of domain-specific traits.

While these results support the traditional emphasis on IT-specific traits in the IS literature, our findings also offer a cautionary note to such singular focus because an otherwise general trait (e.g., conscientiousness), as seen in this study, can be both conceptually relevant (as it pertains to how hard-working and self-disciplined an individual is) and empirically meaningful (as it explained not only significant variance, but also unique variance not accounted for by an IT-specific trait, i.e., playfulness). This goes to show that labels like general and domain-specific traits can be misleading since there is no fine line between the two. IS researchers must take a nuanced approach when deciding which trait factors to include and which to leave out; those who indiscriminately exclude general traits from consideration may miss the opportunity to build more explanatory models.

Before discussing contributions in the next section, it is important to acknowledge the caveats of the study. Though the sample size ($n = 147$) was sufficient for the regression analyses employed, it was admittedly moderate and did not permit the use of more advanced analytical techniques like SEM due to the large number of survey items (e.g., 50 items for the Big Five scales). Despite the many advantages associated with the use of an online survey (e.g., lower likelihood of social desirability bias), it is still subject to self-selection and common method biases. However, in view of the presence of low intercorrelations (e.g., .03, .05) in Table 2, the latter bias is unlikely a major threat.

CONTRIBUTIONS

An often unstated assumption in much IS research is that increased IT use will necessarily lead to positive outcomes for the users, the organization, or the society at large. Few has examined nonproductive or counterproductive use of IT. This study helped achieve a deeper understanding of cyberloafing, a type of nonproductive use of IT that so far has received little attention in IS research, through introducing the investigation of individual traits, such as the Big Five, and domain-specific traits, like computer playfulness, to our understanding of cyberloafing. As hypothesized, they were found to be significant predictors of cyberloafing, thus demonstrating the efficacy of the trait approach in this area of research.

While prior research has focused on the many desirable outcomes of playfulness, this study contributes to the literature by demonstrating its linkage with an undesirable implication (i.e., cyberloafing). The grounding of playfulness in the Big Five trait framework will deepen our understanding of the IT-specific trait and help avoid "private" IS theories as we strive toward a cumulative tradition [38]. Our findings related to the relative explanatory powers of general vs. domain-specific traits also contribute to a more nuanced approach to future trait research in IS.

This study also has implications for managerial practice. Many organizations already conduct personality assessments for potential new hires in order to optimize selection and enhance job satisfaction, productivity, honesty, and other characteristics. This study can provide additional dimensions whereby personality assessments may prove useful. Understanding the relationships between individual traits and cyberloafing can provide managers with additional information on which to base their hiring decisions, especially when the positions involve unsupervised work (e.g., working from home).

Organizations must determine what levels and types of cyberloafing, if any, can be tolerated, and inform employees accordingly. Such policies can be used in combination with blocking access to certain websites (e.g., Yahoo mail) and applications (e.g., instant messenger) to remove such distractions.

Given the relative newness of cyberloafing research, opportunities for future work in this area are numerous. In addition to replicating this study in different settings, future research could broaden the scope and explore other forms of computer-related loafing that do not involve the Internet (e.g., playing solitaire). It would also be interesting to investigate the relationships between cyberloafing and other forms of workplace loafing and see whether a reduction in cyberloafing would lead to a compensatory increase in other forms of loafing.

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APPENDIX A: MEASUREMENT ITEMS

Playfulness [61, 73]

To what extent do you agree or disagree with the following statements?

"Strongly Disagree" (1) to "Strongly Agree" (7).

CP1.   When using the Internet, I am spontaneous.
CP2.   When using the Internet, I am flexible.
CP3.   When using the Internet, I am creative.
CP4.   When using the Internet, I am playful.

Big Five traits [26]

The following phrases describe people's behaviors. Please use the rating scale below to indicate how accurately each statement describes you. Describe yourself as you are generally now, not as you wish to be in the future.

"Extremely Inaccurate" (1) to "Extremely Accurate" (7).

Extroversion
EXT1   Am the life of the party.
EXT2   Don't talk a lot.
EXT3   Feel comfortable around people.
EXT4   Keep in the background.
EXT5   Start conversations.
EXT6   Have little to say.
EXT7   Talk to a lot of different people at parties.
EXT8   Don't like to draw attention to myself.
EXT9   Don't mind being the center of attention.
EXT10   Am quiet around strangers.

Conscientiousness
CON1   Am always prepared.
CON2   Leave my belongings around.
CON3   Pay attention to details.
CON4   Make a mess of things.
CON5   Get chores done right away.
CON6   Often forget to put things back in their proper place.
CON7   Like order.
CON8   Shirk my duties.
CON9   Follow a schedule.
CON10   Am exacting in my work.

Agreeableness
AGR1   Feel little concern for others.
AGR2   Am interested in people.
AGR3   Insult people.
AGR4   Sympathize with others' feelings.
AGR5   Am not interested in other people's problems.
AGR6   Have a soft heart.

AGR7   Am not really interested in others.
AGR8   Take time out for others.
AGR9   Feel others' emotions.
AGR10 Make people feel at ease.

Emotional Stability
EMO1   Get stressed out easily.
EMO2   Am relaxed most of the time.
EMO3   Worry about things.
EMO4   Seldom feel blue.
EMO5   Am easily disturbed.
EMO6   Get upset easily.
EMO7   Change my mood a lot.
EMO8   Have frequent mood swings.
EMO9   Get irritated easily.
EMO10   Often feel blue.

Openness to experience
OPN1   Have a rich vocabulary.
OPN2   Have difficulty understanding abstract ideas.
OPN3   Have a vivid imagination.
OPN4   Am not interested in abstract ideas.
OPN5   Have excellent ideas.
OPN6   Do not have a good imagination.
OPN7   Am quick to understand things.
OPN8   Use difficult words.
OPN9   Spend time reflecting on things.
OPN10 Am full of ideas.

Cyberloafing [33, 44]

During <u>office hours,</u> how often do you do the following for <u>personal reasons</u>?

"Never" (1) to "Constantly" (7).

CL1.   Visit general news sites
CL2.   Instant messaging/chat online
CL3.   Download non-work related information
CL4.   Play online games
CL5.   Visit adult-oriented sites
CL6.   Visit online discussion boards or forums
CL7.   Visit video sharing sites (YouTube, etc.)

APPENDIX B: FACTOR ANALYSIS

Because the sample size ($n = 147$) did not permit an overall confirmatory factor analysis (CFA) that includes all measurement items, separate CFA runs were performed to assess scale convergent and discriminant validity. The following tables present factor loading matrices from two of such CFA runs. Results from other CFA runs are available upon request.

Though some openness items did not have high factor loadings (Table B2), they were in keeping with the recommended thresholds (i.e., 0.71 excellent, 0.63 very good, 0.55 good, 0.45 fair and 0.32 poor; [64]), and thus were all retained. Subsequent hypothesis test results would not be different if items with lower loadings (e.g., less than 0.50) had been dropped.

Table B1: Factor loading and cross loading matrix

	Cyberloafing	Playfulness
CL1	0.64	0.16
CL2	0.78	0.20
CL3	0.74	0.19
CL4	0.80	0.20
CL5	0.70	0.18
CL6	0.79	0.20
CL7	0.91	0.23
CP1	0.18	0.71
CP3	0.22	0.87
CP4	0.23	0.92
CP5	0.19	0.75

Table B2: Factor loading and cross loading matrix

	Playfulness	Openness
CP1	0.71	0.31
CP3	0.87	0.38
CP4	0.92	0.40
CP5	0.75	0.33
OPN1	0.27	0.62
OPN2	0.22	0.49
OPN3	0.24	0.54
OPN4	0.22	0.49
OPN5	0.34	0.78
OPN6	0.29	0.65
OPN7	0.33	0.74
OPN8	0.19	0.43
OPN9	0.20	0.45
OPN10	0.35	0.80