CYBERVETTING: A COMMON ANTECEDENTS MODEL

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ABSTRACT

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Cybervetting, defined as a practice of performing internet-based background checks on prospective employees including reviewing Social Networking Websites (SNWs; Mikkelson, 2010), is becoming widely used among hiring managers. Although prevalent in practice, the topic of cybervetting remains largely understudied by industrial and organizational psychologists. Lack of systematic research leaves cybervetters with little guidance on how to engage in psychometrically sound web-based searches. The aims of the current study were twofold: (1) to propose and empirically test a taxonomy of cyber-behavior, according to which SNW-based behaviors fall into four categories (professional, prosocial, antisocial, and job-irrelevant); and (2) to advance and test a common antecedents model of cybervetting, according to which (a) personality and general mental ability (GMA) serve as common antecedents of cyber-behavior and workplace criteria and (b) privacy settings usage and activity level serve as moderators of the relationship between cyber-behavior and cybervetters’ judgments of employability. Using a multitrait-multimethod approach, the data were collected from 200 full-time employees and 131 supervisors at several large Mid-Western universities. Ten trained research assistants rated the participants’ Facebook profiles using a standardized cybervetting form, developed specifically for this study. The results of the confirmatory factor analysis provided support for the taxonomy. Although personality and GMA were not found as common antecedents of cyber-behavior and workplace criteria, privacy settings usage and activity level were found to moderate the relationship between cyber-behavior and employability. Limitations and future directions are discussed.
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INTRODUCTION

Cybervetting, defined as a practice of performing background checks on prospective employees using information available on the internet, including Social Networking Websites (SNWs; Mikkelson, 2010), has become popular among hiring managers in recent years. According to one survey, in 2006, 25% of surveyed United States organizations screened job applicants using search engines such as Google and Yahoo! and 12% reviewed the job applicants’ SNW sites (Brandenburg, 2008). A year later, this percentage doubled (Zeidner, 2007). From 2008 to 2013, the use of cybervetting practices has increased from 50% to 94% (Jobvite Social Recruiting Survey, 2013). According to the most recent survey, 93% of hiring managers across different industries in the US claimed to continue reviewing their job candidates’ SNWs before making a hiring decision (Jobvite Social Recruiting Survey, 2014). There is evidence to suggest that the prevalence of this practice enjoys growth in other countries as well (United Kingdom, Germany; Karl, Peluchette, & Schlaegel, 2010).

Typically, these cyber-searches result in a wide array of personnel selection outcomes ranging from elimination of job candidates from further consideration to targeted recruitment. For example, in 2014 about 51% of the cybervetting organizations admitted to disqualifying job applicants based on unfavorable information discovered on their SNWs; whereas 33% of hiring managers made a hire using SNW-based information (Grasz, 2014). A survey by Microsoft revealed that 75% of the US recruiters and human resource (HR) professionals are required by their companies to cybervet their prospective employees using search engines, SNWs, photo and video sharing sites, personal websites, blogs, twitter, and online gaming sites (Rosen, 2010). Although some attempts had been made to document and standardize the cybervetting process (e.g., Rose et al., 2011), Roberts and Clark (2008) report that 96% of hiring companies have no
formal policies in place guiding the practice of cybervetting, which may inadvertently lead to a host of undesirable outcomes, such as violation of prospective employees’ privacy rights, defamation of character, and disparate treatment\(^1\) of protected classes (Davison, Maraist, & Bing, 2011; Davison, Maraist, Hamilton, & Bing, 2012; Sprague, 2009).

Although employers argue that this approach saves their organization time and money, improves candidate quantity and quality, and guards them against claims of negligent hiring\(^2\) (Bartram, 2000; Sprague, 2009), a systematic, theory-driven line of research is necessary to show psychometric properties and validity of cybervetting before it should be implemented in high-stakes personnel selection settings (Brown & Vaughn, 2011). The literature addressing the issues of reliability and validity of cybervetting is scarce. To bridge the gap in the literature and stimulate further scientific investigations, the current project set the following goals. The first goal was to propose and empirically test a taxonomy of cyber-behavior, according to which the SNW-based behaviors fall into four categories (professional, prosocial, antisocial, and job-irrelevant). The second goal was to advance and test a common antecedents model of cybervetting, according to which (a) personality and general mental ability (GMA) serve as common antecedents of cyber-behavior and workplace criteria and (b) privacy settings usage and activity level serve as moderators of the relationship between cyber-behavior and employability.

This paper is organized as follows. First, I review the extant literature on cybervetting. Then, I propose the common antecedents model of cybervetting and discuss its components. Later, I present the method and results of the current study.

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\(^{1}\) According to Section 11 of the Uniform Guideline on Employee Selection Procedures, “Disparate treatment occurs when members of a race, sex, or ethnic group have been denied the same employment, promotion, membership, or other employment opportunities as have been available to other employees or applicants.”

\(^{2}\) Negligent hiring involves a situation when the employer fails to perform a thorough background check prior to hiring to determine the employee’s unfitness (Sprague, 2009).
Literature Review

Traditional background checks are performed to verify job applicants’ knowledge, skills, and abilities, because previous research has shown that falsification of job-related credentials is prevalent. Specifically, there is evidence to suggest that 44% of job applicants lie about their work histories, 41% lie about their education, and 23% falsify their licenses (Levashina & Campion, 2009; Sprague, 2009). Using the web as a supplement to the traditional background checks, hiring managers are increasingly engaging in cybervetting by ‘Googling’ their job applicants, inspecting blogs, reviewing chat room conversations, and browsing through the posts on video-, audio-, and photo-sharing websites like Facebook. According to previous research, cybervetting is sometimes performed to evaluate Person-Organization (P-O) fit or Person-Job (P-J) fit of the prospective employee with the hiring organization (Roulin & Bangerter, 2013).

Practicing organizations claim that cybervetting offers a compelling substitute for traditional background checks, because the internet is easy and cheap to access (Bartram, 2000; Davison et al., 2011). It takes only a few mouse clicks to access job candidates' profiles on most widely used SNWs (e.g., Facebook, LinkedIn). Also, given low costs associated with accessing the web, large corporations and small businesses alike may engage in cybervetting (Brown & Vaughn, 2011). Moreover, search engines allow a time-efficient way to screen job candidates. According to the Jobvite Social Recruiting Survey (2013), 33% of the surveyed organizations reported that it took them less time to hire qualified individuals when using the web, compared to more traditional recruitment outlets, such as career websites. Finally, employers cybervet their job applicants to avoid claims of negligent hiring (Sprague, 2009). That is, they believe that if applicants fail to maintain an appropriate online image pre-hire, they may do the same post-hire. This is an example of a well-known notion in psychology that past behavior predicts future
behavior (e.g., Ouellette & Wood, 1998).

Although widely used in practice, cybervetting remains largely understudied by industrial and organizational psychologists. A quick literature search using Google Scholar and PsychInfo databases revealed that the scientific scrutiny of this topic has started only in the last decade (see Figure 1). The number of articles published in peer-reviewed scientific journals has doubled since the last decade and is likely to continue growing. On the other hand, the efforts to advance and test a theoretical framework that would guide future research and practice of cybervetting are still minimal. There are few empirical studies devoted to the assessment of validity and job-relevance of this practice in hiring settings. Most of the articles on the topic of web-based background checks come from non-psychological sources, such as popular press columns, legal commentaries, books, and non-empirical essays. A handful of cybervetting-related empirical studies were published in non-I-O journals, such as Communication Research, Journal of Education for Business, Computers in Human Behavior, and Cyberpsychology, Behavior, and Social Networking. Empirical and conceptual articles that are published in I-O journals like Journal of Business and Psychology, Journal of Managerial Psychology, and Journal of Personnel Psychology deal primarily with the inferences that raters make after reviewing SNW profiles (refer to Figure 1; Brown & Vaughn, 2011; Roulin & Bangerter, 2013).

Only a few articles were located that linked the information uncovered on the web to various work-related criteria. For example, Roulin and Bangerter (2013) proposed and tested a theoretical framework for using SNWs in personnel selection efforts. The authors argued that the SNW users send signals to their prospective employers by posting various information on their webpages. Recruiters may identify these signals and evaluate the extent to which the prospective applicant fits with the hiring organization (the Person-Organization fit and Person-Job fit; Roulin
& Bangerter, 2013). Inappropriate posts serve as negative signals and consequently decrease the fit; whereas posts about one’s education, employment history, and recommendations increase the fit (Roulin & Bangerter, 2013). The authors also distinguished between professional SNW like LinkedIn and personal SNWs like Facebook, such that the former would be used to assess the P-J fit, whereas the latter to assess the P-O fit. Additionally, Roulin and Bangerter posited that the signals sent by the SNW users may be interpreted differently by the applicants themselves and the recruiters. The scholars found that the P-J fit was assessed by reviewing the professional SNWs, whereas the P-O fit was assessed by reviewing the personal SNWs. Furthermore, although the recruiters and the applicants tended to focus on different aspects of the profiles, their ultimate hiring recommendations were similar (Roulin & Bangerter, 2013).

Another study by Kluemper and Rosen (2009), demonstrated that raters accurately determined one’s personality and intelligence by reviewing SNW profiles. For example, the scholars found that the difference between the mean ratings of conscientiousness provided by the SNW observers was statistically significant ($d = .40$). That is, the raters were able to distinguish between those users who scored high and those who scored low on the conscientiousness scale. In a follow up study, Kluemper, Rosen, and Mossholder (2012) showed that personality reported by the observers of SNWs predicted unique variance in job performance above and beyond cognitive ability and personality reported by the SNW users (e.g., $\Delta R^2_{\text{conscientiousness}} = .06$). Collectively, the findings reported by Roulin and Bangerter (2013) and Kluemper and colleagues (2009, 2012) suggest that cybervetting may have a predictive potential for the hiring organizations. Specifically, by using the process of cybervetting as a supplemental background check, the hiring managers may encounter information on their prospective job applicants that may predict important organizational outcomes.
A Common Antecedents Model

Figure 2 illustrates the common antecedents model of cybervetting. The discussion of the theoretical components of the model unfolds in the following order. First, I propose a taxonomy of cyber-behavior. Then, I discuss the role that workplace criteria, personality, and GMA play in the model. Finally, I review the moderators of the relationship between cyber-behavior and the observers’ ratings of the Facebook profile owner’s employability (refer to Figure 2).

A Taxonomy of Cyber-Behavior. Literature on the factor structure of online behavior is limited and inconclusive. There is some research suggesting that various online activities fall into several manageable categories. For example, Amichai-Hamburger and Vinitzky (2010) investigated the relationship between personality of Facebook users and their online behaviors. The scholars placed Facebook-based online activities into the following categories: Basic information, personal information, contact information and education, and work information. Note that the authors used intuition rather than a data-driven approach when theorizing the four-factor Facebook activity structure. Ultimately, various Facebook behaviors were recorded, converted into numerical values, and aggregated into the four variables, which corresponded to the aforementioned four categories (Amichai-Hamburger & Vinitzky, 2010). A similar approach was undertaken in a pilot study conducted prior to the current investigation, wherein an exhaustive list of Facebook-based activates was collected and later analyzed with an exploratory factor analytic technique (Berger, Zickar, Khosravi, Zhang, & King, 2014, May). The majority of the cyber-behaviors loaded on their respective four factors (see Table 1). These two studies provided support for a multi-factorial structure of online behaviors.

On the other hand, research by Ross et al. (2009), which operationalized Facebook
activity by an eight-item measure originally developed by Ellison, Steinfield, and Lampe (2007), found that the scale items loaded on two factors—attitudes and online sociability. Whereas the first factor explained variance in the items that were designed to gauge the user’s attitude toward Facebook, the second factor explained variance in the items that included different Facebook activities (e.g., commenting on photos). This suggests that there may be a single factor that drives variance in the Facebook activities. To make matters more complicated, some might argue that because Facebook was not developed for professional networking, the nature of the online behavior, in which Facebook users engage, may be substantively different compared to other SNWs like LinkedIn. This may lead one to speculate that the proposed taxonomy should exclude professional cyber-behavior for its irrelevancy—thereby suggesting a three-factor model of cyber-behavior. To reconcile these theoretical and empirical differences, the current study pitted a four-factor taxonomy against its alternative one-factor and three-factor counterparts, using a data-driven approach, which attempted to emulate a rich tradition of personality research (Cattell & Mead, 2008; Costa & McCrae, 1992; Goldberg, 1990).

The taxonomy of online behavior offers several advantages. From the theoretical standpoint, it allows researchers to identify, record, and aggregate seemingly sparse online behaviors in a set of manageable, theoretically meaningful constructs that may be empirically examined in relation to other variables (e.g., job performance, job satisfaction, etc.). Thus, the taxonomy may prove helpful in theory development and refinement. From the practical standpoint, the proposed classification of cyber-activity offers a systematic way of collecting information about job candidates, which may protect the organization from legal challenges (for more information on the US legal framework and privacy laws associated with cyber-searches
refer to Tenenbaum, 2012). The following paragraphs describe each category of online behavior in more detail.

**Professional cyber-behavior.** Professional cyber-behavior relates to one's area of expertise and involves posting job-related accomplishments, joining professional groups, marketing one’s products and services, advertising one’s work experience and proficiencies, and/or posting comments about previous or current jobs, coworkers, or supervisors. Peer-reviewed journals, newspapers, webinars, and the like exemplify some of the avenues through which professionals and experts exchange job-relevant information among each other. Empirical evidence suggests that employers review the content of SNWs to determine the degree of fit between the applicant and the organization (Frampton & Child, 2013; Roulin & Bangerter, 2013). Specifically, studies have shown that hiring managers evaluate person-job fit and person-organization fit by perusing job candidates' LinkedIn and Facebook profiles, respectively (Frampton & Child, 2013; Roulin & Bangerter, 2013). LinkedIn is a SNW that allows individuals to share their work- and school-related credentials (e.g., educational degrees, publications, honors, employment history) and establish professional affiliations (Stroughton et al., 2012). Facebook on the other hand was developed to foster social rather than business networking (Keenan & Shiri, 2009). Because of that, Facebook users often do not expect their profiles to be reviewed by prospective employers (Baglione, Arnold, & Zimmerer, 2009), and therefore, may post information that either confirms or disconfirms their resume. Any job-related factual discrepancies may be of interest to prospective employers.

Research suggests that users of SNWs engage in self-presentation behaviors to influence the impressions others form of them (Diminick, 1999; Trammell & Keshelashvili, 2005; Walker, 2000). According to Leary and Kowalski (1990) people are motivated to manage impressions to
maximize material rewards, maintaining self-esteem, and to create a desired self-identity by constructing desired impressions through his or her choice of various self-presentation strategies. Because LinkedIn users have an expectation that their profiles may be viewed by employers, it seems logical that they tend to engage in self-monitoring online behavior. Facebook users, on the other hand, are less likely to have this expectation. According to Acquisti and Gross (2006), many Facebook users were unaware about the possibility of their profile content being reviewed by future employers. Therefore, the current study embarked on examining the professional behaviors that web-users engage in on a SWN that has not been designed for business purposes, yet has features allowing the users to share professional information. Among possible professional cyber-behaviors that individuals may engage in on Facebook are the following: listing educational and employment history; posting pictures or wall comments that involve past or current coworkers/classmates, supervisors/teachers, working or studying space; and joining or liking professional groups.

Previous research has shown that users with professionally looking SNW profiles have a higher chance of being offered an interview than their counterparts with less professionally looking profiles (Hooker & Rathke, 2011). Specifically, in their experimental study, Hooker and Rathke compared professional and unprofessional Facebook accounts for potential job candidates. The scholars found a large main effect for professionalism, suggesting that the raters were more likely to hire a job candidate with professionally-looking SNW sites (Hooker & Rathke, 2011). Although promising, these results should be evaluated with caution due to potential construct deficiency. Specifically, in their study, Hooker and Rathke conceptualized professionalism as the posts that included pictures of family, travel, and pets, and unprofessionalism was conceptualized as posts that included sexually suggestive pictures, and
references to drinking and drug use. Note that professionalism did not include references to one’s current or previous job history, education, professional affiliations, and so on. Failure to tap into the construct domain may undermine the construct validity of the aforementioned findings and limit their generalizability. The current study attempted to overcome this limitation.

**Prosocial cyber-behavior.** Similar to the notion of volunteerism (Sproull, 2011), prosocial cyber-behavior is defined as a web-based posting activity that is discretionary and aims to assist, comfort, and share someone other than oneself. It may involve the following behaviors: joining 'good cause' groups (e.g., *Remembering All United States Service Men* and *Women*, *Parkinson's Disease Research Society*); posting about volunteering for and participating in charities and fundraising events; and posting helpful taglines (e.g., tornado watch; Sproull, 2011). According to a recent survey, 65% of the human resources managers preferred job candidates who demonstrated volunteerism on their SNW profiles (Jobvite Social Recruiting Survey, 2013). Some scholars lament the heavy research focus on negative online behaviors and call for a more systematic investigation of positive online interactions. Thus, using the co-construction theory which posits that individuals are psychologically connected to their online and offline worlds (Subrahmanyam & Greenfield, 2008), Wright and Li (2011) found that individuals who engaged in online prosocial behaviors were more likely to engage in face-to-face prosocial behaviors.

Social identity theory (SIT) attempts to explain how identities are shaped (Ashforth, Harrison, & Corley, 2008). A positive sense of self is a critical foundation for development of self-esteem. Facebook provides the ability to present identity to others via pictures, hobbies, music, and so forth. SIT states that people are naturally attracted to others who are similar to themselves, as it aids in maintaining a consistent and positive self-image (Goldberg, 2003). Thus,
participation in various kinds of prosocial activities may expand Facebook users’ social circle, which may lead to the accumulation of both self- and other-generated positive posts. Positive, prosocial posts in turn would allow the user to maintain positive self-image. Previous research showed that raters tend to associate positive wall posts with the user's social attractiveness and credibility (Walther, Van Der Heide, Kim, Westerman, & Tong, 2008). Therefore, it seems that the owners of predominantly prosocial profiles tend to make positive impressions on the cybervetters.

**Antisocial cyber-behavior.** Posts of inappropriate nature are called antisocial (Karl et al., 2010). They may include a wide range of content, such as references to excessive alcohol consumption, criminal or gaming behavior, rudeness or bullying, or inappropriate personal disclosure (suggestive or provocative images; Peluchette & Karl, 2010). Additionally, a recent survey has reported that hiring managers tend to dislike posts that demonstrate poor communication skills (e.g., using improper grammar, spelling, and punctuation) or are unreasonably self-revealing [i.e., explicit communication of self-data that unintended parties would not have access to otherwise (Simms, 1994)]. A study by Peluchette and Karl has shown that SNW users who strove to appear “sexually appealing, wild, and offensive” tended to post inappropriate comments and pictures on their profiles, whereas those user who intended to appear intelligent and hard-working refrained from this activity. Another study reported that excessive alcohol references and gambling behavior negatively affected the likelihood of being offered an interview, assessment of qualifications, recommendation for hire, expected work performance and expected work tenure (Spon, 2010). Posts of sexual nature are likely to lead to a dismissal from a job pursuit, because they are viewed as evidence of immaturity and irresponsibility (Smith & Kidder, 2010). In fact, according to a survey, 35% of hiring managers
eliminated job candidates from further consideration due to the unfavorable information found on their SNWs (Grasz, 2014).

There is evidence to suggest that employers weigh the negative information heavier than positive. This phenomenon, known as a positive-negative asymmetry effect, has received a great deal of empirical support (Baumeister, Bratslavshy, Finkenauer, & Vohs, 2001; Madera, 2012; Peeters & Czapinski, 1990). Specifically, positive information is often viewed as conforming to social norms, whereas negative information is considered as an indication of ‘true’ attributes (Hamilton & Zanna, 1972; Leventhal & Singer, 1964). Weiner's attribution theory explains that individuals that are seen as causing their own problems are viewed as undesirable employees (Bohnert & Ross, 2010). For example, cybervetters may encounter the pictures of a job candidate on his or her Facebook wall where he or she appears intoxicated. Consequently, this job candidate may be disqualified, because heavy drinking and drug use may be attributed to lack of self-control (Bohnert & Ross, 2010). Confirming the results of the Jobvite Social Recruiting Survey (2013), previous research has demonstrated that alcohol consumption and gambling behavior adversely impacts the raters' evaluations of job candidates' fit for the vacancy in question and expected work performance (Weathington & Bechtel, 2012).

According to an unpublished survey, about 45% of managers tended to agree on the fact that Facebook provides accurate information about the profile owners (Lory, 2011). This may lead managers assume that applicants who post inappropriate info on their profiles are likely to have related performance problems in the workplace such as carelessness, lack of integrity, poor attendance, or inappropriate use of the internet.

**Job-irrelevant cyber-behavior.** Although some information found online may be considered useful from the personnel selection standpoint, other information may not be helpful
(Davidson, Maraist, Hamilton, & Bing, 2012). As was mentioned before, the requirements of a specific job should determine job-relevance of certain online behaviors. For example, for a software designer position, job-irrelevant cyber-behaviors may include posting wall comments about one’s physical health issues (e.g., migraines, insomnia), specifying one's political and religious preferences, and posting and commenting about one's social activities (e.g., outings with friends). Because these behaviors are generally irrelevant for the software developer job, they should be ignored in the personnel selection context. On the other hand, similar posts may be perceived as relevant for a position of a criminal court judge and may result in a dismissal of a candidate based on perceived incapacity or political and religious prejudice.

From the arguments presented thus far, it seems logical to break down the cyber-behaviors into the four categories—professional, prosocial, antisocial, and job-irrelevant. There is also preliminary empirical evidence to support the proposed taxonomy. Specifically, the results of an exploratory factor analysis conducted on the cyber-behaviors collected from 281 Facebook accounts by twenty trained research assistants (RAs) using a standardized cybervetting form revealed that the majority of the behaviors loaded on four factors—professional, prosocial, antisocial, and job-irrelevant (Berger et al., 2014, May). Note that the researchers used a hybrid approach when evaluating the results of the EFA. Specifically, to inform the item-factor linkages among the four categories of cyber behavior, the researchers used the item-factor loadings generated by the EFA as well as their theoretical framework. For example, work-related and school-related behaviors tended to cross-load on Factor 1 and 2. Slang and spelling errors tended to cross-load on factor 1 and 4. Although empirically these items should had been subsumed under the recommended factors, the researchers decided to re-arrange them into other factors using the theory. Thus, work-related and school-related behaviors were combined in the same
category as education (high-school attendance and college attendance) to form a professional
cyber-behavior category. The same logic was used with the remaining three groups of behaviors.
Note that the four factors were hypothesized to be orthogonal (uncorrelated with each other, refer
to Table 1).

The best factor analytic practices call for a confirmation of the EFA findings using a
confirmatory factor analytic (CFA) approach on a different sample (Fabrigar, Wegener,
MacCallum, & Strahan, 1999), which was attempted by the current project. As Lance and
Vandenberg (2002) argued, the pattern of factor loadings as well as the alternative models should
be specified \textit{a priori}. Therefore, CFA techniques were used to validate the constructs (the four
cyber-behavior categories proposed by the taxonomy). Based on the aforementioned research
findings and the theoretical underpinnings, the following hypothesis was advanced:

\textit{Hypothesis 1}. A four-factor model of cybervetting would show a superior model-data fit
compared to a three-factor and a one-factor model.

\textbf{Workplace Criteria}. Research on job performance has provided ample evidence for its
multifaceted nature (Borman, Penner, Allen, & Motowidlo, 2001; LePine, Erez, & Johnson,
2002). Job performance is now commonly conceptualized as consisting of three domains: task
performance, organizational citizenship behaviors (OCBs), and counterproductive work behavior
(CWBs; Van Iddekinge & Ployhart, 2008). Meta-analyses have shown that the three job
performance facets are theoretically and empirically different and have different antecedents that
are discussed in more detail in the following paragraphs (e.g., Fox, Spector, & Miles, 2001;
Organ & Ryan, 1995; Sackett, Berry, Wiemann, & Laczo, 2006).

Task performance is defined as effectiveness with which job incumbents perform
activities that contribute to the organization’s technical core (Dalal, 2005). Organizational
citizenship behaviors (OCBs), also known as extra-role or contextual behaviors, are described as activities that go beyond an employee's job's prescribed duties and may include volunteering for additional projects, helping others, supporting the organization, and so forth (Borman et al., 2001; Organ & Ryan, 1995; Sacket et al., 2006). Counterproductive work behaviors (CWBs) are defined as any intentional behaviors that run contrary to the organizational objectives (Sackett & DeVore, 2001). Although many attempts have been made to identify a typology of CWBs, the current study used a two-factor conceptualization of workplace deviance, namely interpersonal deviance (e.g., aggression against coworkers) and organizational deviance (e.g., time theft; Bennett & Robinson, 2000). From the personnel selection standpoint, it is important to effectively predict task performance to ensure the successful completion of the core tasks prescribed by the job. OCBs are important to predict because the extra-role activities are essential for promoting good morale in an organization and improving its efficiency and productivity (Borman & Motowidlo, 1997). Finally, it is desirable to predict CWBs to decrease the incidents of production deviance (e.g., Brock, Martin, & Buckley, 2013; Martin, Brock, Buckley, & Ketchen, 2010), sexual harassment (e.g., Dionisi, Barling, & Dupré, 2012), theft (e.g., Greenberg, 2002; Schmidtke, 2007), and incivility (e.g., Porath & Pearson, 2012).

Employers and scholars are constantly searching for the most optimal ways to assess job candidates' characteristics that would predict the aforementioned behaviors and would ultimately improve the criterion-related validity of their personnel selection instruments. Given the growing popularity of cybervetting, it may become a supplemental tool used to predict task performance, OCBs, and CWBs.

There is a rich tradition of research that examines both cognitive and noncognitive antecedents of job performance. Cognitive predictors, such as GMA (i.e., abstract thinking,
problem solving; Lubinski, 2004), are considered to be the best predictors of task performance ($r = .30$; Borman & Motowidlo, 1997; Outtz, 2002). This relationship has been shown to be mediated by job knowledge and moderated by job complexity (Farr & Tippins, 2013; Hunter, 1986). GMA has also been demonstrated to predict contextual behaviors, such as OCBs and CWBs (Farr & Tippins, 2013). Among the noncognitive predictors of job performance, the personality traits as described by the Five Factor Model, especially conscientiousness and neuroticism, are considered to be the best predictors of extra-role behaviors (Barrick & Mount, 1991; Judge & Bono, 2001; Outtz, 2002; Salgado, Viswesvaran, & Ones, 2001). Because cognitive and noncognitive predictors are criticized for being susceptible to response distortions (cheating and faking, respectively; see for example Chapman & Webster, 2003; McFarland & Ryan, 2000; Tippins et al., 2006), employers may engage in cybervetting to uncover 'the truth' about the job candidates, believing that SNWs like Facebook, where the targeted audience generally excludes prospective employers, convey unaltered information about the users. Thus, cybervetters may attempt to assess the profile-owners' GMA and personality when reviewing job applicants' SNWs.

**General Mental Ability.** Among most common findings in I-O psychology is that GMA, the overall ability to learn and process information (Huffcutt, Conway, Roth, & Stone, 2001), is positively associated with task performance and OCBs and negatively associated with CWBs (Farr & Tippins, 2013). It is worth mentioning, however, that the predictive validity of GMA is higher for task performance than for contextual outcomes due to the fact that a successful task completion requires an employee to engage in a host of mental activities, including reasoning, abstract thinking, problem solving, decision making, and planning (Farr & Tippins, 2013). OCBs and CWBs, on the other hand, are extra-role behaviors that require certain personality traits
rather than cognitive abilities to be performed. Thus, previous research has established that GMA predicts the three job performance facets with task performance being its strongest outcome.

Although scholars differ on what mental abilities constitute the overall GMA, it is commonly accepted that attention, in addition to working memory, defined as an ability to encode, store, and retrieve relevant information and discard irrelevant information (Alloway & Alloway, 2012), represent a large part of this construct (Campbell, 1996). There are several competing theories explaining the effects that working memory and attention have on task performance. One theory, which proposes that attention can only be directed at one task at a time, predicts that multitasking may impede task performance (Pashler, 1994); in contrast, another theory predicts that multitasking does not hinder task performance when the tasks are not highly cognitively demanding (Navon & Miller, 2002). The former theory proposes a serial information processing approach, whereas the latter a concurrent processing approach. Alloway and Alloway (2012) pitted the two theories against each other and showed that active SNW users tended to process information in parallel, thereby providing support for the concurrent information processing theory; whereas passive users tended to process incoming information in successions, providing support for the serial information processing theory. In other words, active users were better at managing the influx of multiple streams of information, whereas their passive counterparts were better at focusing on one piece of information at a time, filtering out irrelevant cues and switching to another task only when the first one was complete. In line with this study, Freese, Rivas, and Hargittai (2006) demonstrated that mental ability was associated with internet use, such that individuals with higher cognitive abilities tended to utilize online resources more frequently and efficiently than their less cognitively able counterparts. Based on this evidence, it seems that active and passive SNW use may be associated with GMA. This
further suggests that cybervetters may be able to identify SNW users who have higher GMA than others based on the amount of visible information found on the profile.

Research investigating the relationships between GMA and online behavior is scarce. One study was located which found that job candidates with positive posts on their SNW profiles were rated as having higher GMA than their counterparts with negative profiles (Broeke, 2011). This is perhaps due to the fact that individuals with higher cognitive ability are more likely to be cautious about the information that gets posted on their profiles, because they realize that it may adversely influence their professional development. Furthermore, users with high GMA may attempt to post information that may convey their job knowledge, skills, and abilities to the prospective employers. In other words, it is conceivable that high-GMA SNW users are more likely to engage in cyber-behaviors that are self-complimentary in nature—professional and prosocial; whereas their low GMA counterparts may post self-discrediting information--thereby engaging in antisocial cyber-behaviors. However, because research on the extent to which GMA predicts different types of cyber-behavior is virtually nonexistent, the hypotheses advanced below are exploratory.

*Hypothesis 2a.* GMA will be positively correlated with task performance.

*Hypothesis 2b.* GMA will be positively correlated with OCB.

*Hypothesis 2c.* GMA will be negatively correlated with CWBI.

*Hypothesis 2d.* GMA will be negatively correlated with CWBO.

*Hypothesis 2e.* GMA will be positively correlated with professional cyber-behavior.

*Hypothesis 2f.* GMA will be positively correlated with prosocial cyber-behavior.

*Hypothesis 2g.* GMA will be negatively correlated with antisocial cyber-behavior.

*Hypothesis 2h.* GMA will be negatively correlated with job-irrelevant cyber-behavior.
**Personality.** In the field of I-O psychology, the most oft-researched personality taxonomy is the Five Factor Model (FFM), which includes **conscientiousness** (the extent to which an individual is dutiful, organized, and careful), **extraversion** (the extent to which one is outgoing and sociable), **agreeableness** (the extent to which a person is cooperative and compliant), **neuroticism** (the extent to which one is reactive to stress), and **openness to experience** (one's willingness to explore new things; Costa & McCrae, 1992). Countless primary studies and meta-analyses have demonstrated criterion-related validity of the FFM with conscientiousness being the strongest correlate of job performance ($r$ ranges from .20 to .23, Barrick & Mount, 1991; Outtz, 2002) followed by emotional stability, another name for neuroticism ($r = .19$; Judge & Bono, 2001). Openness to experience and extraversion have been linked to training proficiency ($r = .25$ and $r = .26$, respectively; Barrick & Mount, 1991)\(^3\). Whereas ineffective in predicting job performance on its own, agreeableness has been found to predict job performance when interacting with conscientiousness, such that highly conscientious employees who are not agreeable tend to perform worse than their highly conscientious counterparts who are highly agreeable (Witt, Burke, Barrick, & Mount, 2002). Furthermore, conscientiousness and emotional stability have been found to correlate with OCBs ($r = .24$ and $r = .24$, respectively) and CWBs ($r = -.23$ and $r = -.25$, respectively; Le et al., 2011). It was also found that extraversion is a valid predictor of job performance for managers and sales representatives ($r = .15$ and $r = .18$, respectively; Barrick & Mount, 1991).

Another stream of research that investigates the extent to which noncognitive constructs predict cyber-behaviors has consistently demonstrated that personality plays an important role in

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\(^3\) The current study focused on the extent to which personality predicts task performance, OCBs, and CWBs, and not training performance. Therefore, no hypotheses were set forth predicting the relationship between openness to experience and those outcomes.
determining these behaviors. Thus, self- and other-reported measures of conscientiousness have been found to be negatively associated with the frequency of Facebook use, adding photos of oneself and others, commenting on one's own and other users' walls, and engaging in public self-disclosures (Gosling, Augustine, Vazire, Holtzman, & Gaddis, 2011; Muscanell & Guadagno, 2012). Furthermore, conscientiousness has been found to predict impression management\(^4\), defined as an attempt to create and maintain favorable perceptions of themselves (Brown & Vaughn, 2011; Gardner & Martinko, 1988; Hill, 2004) and self-monitoring behavior (Bagby & Marshall, 2003), suggesting that highly conscientious SNW users may attempt to modify their public accounts by posting professional and prosocial content and deleting or omitting problematic content to appeal to prospective employers. Another study by Karl and colleagues (2010) has shown that conscientious users tend to engage in less antisocial posting than their non-conscientious counterparts \((r = -.21, p < .001)\). Additionally, one study shows that lower levels of conscientiousness are associated with compulsive online shopping (Wang & Yang, 2008), suggesting that the SNW profiles of those who are low on conscientiousness may contain job-irrelevant posts (e.g., shopping posts, references to recent or projected item acquisitions, pictures of newly bought articles of clothes or electronics). Together, these findings speak to the possibility that conscientiousness may be inversely related to antisocial and job-irrelevant cyber-behaviors and positively related to professional and prosocial cyber-behaviors.

**Hypothesis 3a.** Conscientiousness will be positively correlated with task performance.

**Hypothesis 3b.** Conscientiousness will be positively correlated with OCBs.

\(^4\) Because profile users can manipulate and control the content of their webpages on SNWs (Walther et al., 2008), exaggeration of the user’s character is almost expected. However, there is empirical evidence to suggest that web-users tend to present themselves truthfully to larger audiences due to the fact that their identities and posts may be evaluated and either endorsed or discredited by the third parties (Back et al., 2010; Gosling, Gaddis, & Vazire, 2008; Waggoner, Smith, & Collins, 2009; Weisbuch, Ivcevic, & Ambady, 2009; Marcus, Machilek, & Schütz, 2006).
**Hypothesis 3c.** Conscientiousness will be negatively correlated with CWBI.

**Hypothesis 3d.** Conscientiousness will be negatively correlated with CWBO.

**Hypothesis 3e.** Conscientiousness will be positively correlated with professional cyber-behavior.

**Hypothesis 3f.** Conscientiousness will be positively correlated with prosocial cyber-behavior.

**Hypothesis 3g.** Conscientiousness will be negatively correlated with antisocial cyber-behavior.

**Hypothesis 3h.** Conscientiousness will be negatively correlated with job-irrelevant cyber-behavior.

Although research about the extent to which agreeableness predicts various online activities is limited, there is some evidence to suggest that this personality dimension is important. A study by Moore and McElroy (2012) showed that although there was a non-significant association between agreeableness and Facebook wall posting behavior, individuals higher on this trait tended to express regret about the inappropriate comments and pictures that their profile contained. Further, previous research has found that agreeableness is negatively associated with frequency of the SNW use, such that individuals with low scores of agreeableness tend to spend more time online where the pressure to comply and cooperate is lower than offline (Wilson, Fornasier, & White, 2010). Another study has shown that agreeableness was negatively associated with posting blog entries (Muscanell & Guadagno, 2012), probably because the users feel less pressure to conform and comply with social norms on individuals' blogs than on SNWs. A study by Wang and Yang (2008) also showed that higher levels of agreeableness were associated with a higher probability of engagement in self-
disclosure activities due to the fact that individuals higher on agreeableness tend to trust others rather than being suspicious of them. Because of their trusting nature, it is likely that agreeable users may post inappropriate and job-irrelevant content on their webpages. It also likely that because highly agreeable individuals are characterized by being caring and empathetic, they may tend to engage in prosocial online behaviors. In fact, there is some empirical evidence to suggest that agreeableness is associated with self-monitoring behavior with users higher on this dimension viewing their pages more frequently than engaging in other types of SNW activities ($r = .18$; Gosling et al., 2011; Vazire & Gosling, 2004).

**Hypothesis 4a.** Agreeableness will moderate the positive association between conscientiousness and task performance, such that the highest task performance will be observed for individuals with high scores on conscientiousness and low scores on agreeableness.

**Hypothesis 4b.** Agreeableness will be positively correlated with professional cyber-behavior.

**Hypothesis 4c.** Agreeableness will be positively correlated with prosocial cyber-behavior.

**Hypothesis 4d.** Agreeableness will be positively correlated with antisocial cyber-behavior.

**Hypothesis 4e.** Agreeableness will be negatively correlated with job-irrelevant cyber-behavior.

Previous research has shown that extraversion predicts OCBs (e.g., Moon, Hollenbeck, Marinova, & Humphrey, 2008) and managerial performance (Barrick & Mount, 1991). Furthermore, extraversion has been associated with the frequency of internet use. Specifically,
it has been shown that extraverted individuals tend to actively utilize SNWs by joining online
groups, freely expressing their opinions, and sharing video- and audio-files (Acar, 2008; Jenkins-
Guarnieri, Wright, & Johnson, 2013). This is likely due to the fact that individuals who are
gregarious, talkative, and friendly tend to reach out to as many people as possible as a way to
expand their social networks (Muscanell & Guadagno, 2012). Further, Zywica and Danowski
(2008) showed that introverts tended to manipulate their SNWs to appear more popular and
extraverted than they were in the real life. This speaks to a possibility that extraversion may
predict both prosocial and antisocial cyber-behaviors. On the one hand, it is likely that
individuals low on this trait may engage in antisocial cyber-behavior to appear popular (Zywica
& Danowski, 2008), create a hoped-for-identity (Leary & Kowalski, 1990; Zhao, Grasmuck, &
Martin, 2008), conform to social norms (Smith & Kidder, 2010), and/or gain social approval
(Marcus et al., 2006). On the other hand, as previous research suggests, high levels of
extraversion may predict self-promoting behaviors, such as posting self-enhancing information
and omitting self-disparaging information (Bagby & Marshall, 2003; Kristof-Brown, Barrick, &
Franke, 2002).

**Hypothesis 5a.** Extraversion will be positively correlated with task performance.

**Hypothesis 5b.** Extraversion will be positively correlated with OCBs.

**Hypothesis 5c.** Extraversion will be positively correlated with professional cyber-
behavior.

**Hypothesis 5d.** Extraversion will be positively correlated with prosocial cyber-
behavior.

**Hypothesis 5e.** Extraversion will be negatively correlated with antisocial cyber-
behavior.
**Hypothesis 5f.** Extraversion will be negatively correlated with job-irrelevant cyber-behavior.

As was mentioned before, neuroticism has been found to relate positively to task performance and OCB and relate negatively to CWB (e.g., Judge & Bono, 2001; Le et al., 2011; Rodell & Judge, 2009). Another line of research has demonstrated that neuroticism also predicts online behaviors (e.g., Amichai-Hamburger & Vinitzky, 2010; Karl et al., 2010; Kluemper & Rosen, 2009). A study by Moore and McElroy (2012) showed that, although statistically nonsignificant, lower levels of neuroticism were negatively associated with the number of photos and self- and other-generated wall postings. Scholars explained these findings by speculating that users who are emotionally unstable are more likely to be anxious about the quality and quantity of posts and comments that they and their friends enter on their SNW walls and therefore exercise discretion when using publicly accessible profiles. In support, a study by Karl and associates (2010) found that high levels of neuroticism was related to lower propensity to post inappropriate material on their SNW pages. This reluctance to engage in antisocial cyber-behavior is not related to impression management, as several studies have shown (e.g., Hill, 2004; Davies, French, & Keogh, 1998). These findings suggest that neuroticism may be inversely related to job-irrelevant and antisocial cyber-behaviors due to the fact that individuals with low levels of this trait may be nervous about the image they convey to the viewers—therefore preferring not to engage in behaviors that may be misconstrued by relevant parties. Conversely, neuroticism may have a positive association with prosocial and professional behaviors, although empirical support for this is lacking.

**Hypothesis 6a.** Neuroticism will be positively correlated with task performance.

**Hypothesis 6b.** Neuroticism will be positively correlated with OCBs.
Hypothesis 6c. Neuroticism will be negatively correlated with CWBI.

Hypothesis 6d. Neuroticism will be negatively correlated with CWBO.

Hypothesis 6e. Neuroticism will be positively correlated with professional cyber-behavior.

Hypothesis 6f. Neuroticism will be positively correlated with prosocial cyber-behavior.

Hypothesis 6g. Neuroticism will be negatively correlated with antisocial cyber-behavior.

Hypothesis 6h. Neuroticism will be negatively correlated with job-irrelevant cyber-behavior.

Openness to experience has consistently been found to predict leadership emergence (e.g., Den Hartog & Koopman, 2002). However, a common finding is that openness does not predict job performance (Barrick & Mount, 1991). On the other hand, it was associated with online behaviors, such that individuals with a higher score on this trait tended to use SNWs for the purposes of entertainment (e.g., Muscanell & Guadagno, 2012; Wilson et al., 2010). This may be explained by the fact that individuals with high levels of openness to experience may prefer engaging in job-irrelevant cyber-behaviors, such as game playing. Another study by Wang and Yang (2008) has demonstrated that individuals who are higher on openness and are innovative, creative, and open-minded tend to engage in online shopping more frequently than their counterparts who score lower on this trait—again, suggesting a higher likelihood of accumulation of random, job-irrelevant information on their profiles. Marcus et al. (2006) have found that openness is positively associated with self-monitoring behavior, suggesting that individuals high on this trait may engage in self-enhancing and self-promoting behaviors on their
SNW to appear more desirable as a job candidate. In another study by Gosling et al. (2011), openness predicted SNW users' propensity to adding and replacing profile photos, which may be viewed as an attempt to monitor the content of one's page. More research than not, however, shows no relationship between openness and SNW-based behavior. Therefore, the hypotheses proposed in this study is exploratory in nature.

**Hypothesis 7a.** Openness will be positively correlated with professional cyber-behavior.

**Hypothesis 7b.** Openness will be positively correlated with prosocial cyber-behavior.

**Hypothesis 7c.** Openness will be negatively correlated with antisocial cyber-behavior.

**Hypothesis 7d.** Openness will be positively correlated with job-irrelevant cyber-behavior.

**Privacy Settings Usage and the Level of Activity.** In the current study, activity level was defined as the frequency with which Facebook users populate their public profiles. Privacy settings usage was defined as the extent to which Facebook users make the content of their profiles private. Employability was defined as the capability of a Facebook user to gain employment. As can be seen in Figure 2, SNW activity level and privacy settings usage are presented as moderators of the relationship between cyber-behavior and employability. This means that job candidates’ employability may be contingent on the amount of SNW-based information available to the cybervetters. Figure 3 demonstrates a two-dimensional plane, where a horizontal line represents a continuum of SNW activity level ranging from low to high and a vertical line represents a continuum of privacy settings usage ranging from low to high (refer to
Figure 3). Facebook users’ public profiles may fall into either of the two continua or in one of the four quadrants. For example, Quadrant II represents users who populate their public SNW profiles infrequently and set much of personal information to private view. In a similar vein, SNW users who participate on SNW frequently by posting textual, audio, or video material and do not guard the posts by privacy settings would fall in Quadrant IV. It is reasonable to speculate that the profiles that fall in Quadrant IV would give hiring managers plenty of opportunity for cybervetting. However, profiles that fall in Quadrant I, II, and III may make it difficult to evaluate the profile owner due to lack of visible information (which may be due to either the use of privacy settings or infrequent posting activity, or both). Thus, the model suggests that privacy settings usage and activity level would have a combined moderating effect on the extent to which cyber-behaviors would influence the cybervetters’ employability judgments.

The model also predicts that each of the constructs would have an individual effect on the viewer. Specifically, it is conceivable that some users prefer to keep their profile content private, whereas others may refrain from doing that (whether it be intentionally or unintentionally). Thus, cybervetters may encounter paucity of information on some profiles and wealth of information on others. Abundant profiles would allow the viewers to sample different online behaviors and make inferences about the extent to which the profile owner may be a good job candidate. On the other hand, if a profile is highly restrictive, the viewers may have to form their impressions based on the limited information available, which may include the user’s photos (leading to an inadvertent evaluation of the user’s physical attractiveness) and few posts. In this case, it is conceivable that the cybervetters would focus on posts that are most frequently encountered. It is likely that the viewers would concentrate on the content of inappropriate postings, because
according to the positive-negative asymmetry effect (Baumeister et al., 2001; Madera, 2012; Peeters & Czapinski, 1990), positive information is often viewed as conforming to social norms, whereas negative information is considered as an indication of ‘true’ attributes (Hamilton & Zanna, 1972; Leventhal & Singer, 1964). Furthermore, the inferred information model (e.g., Johnson & Levine, 1985) predicts that missing or incomplete information may be viewed with suspicion. For example, employers may become skeptical of the credibility of the job applicants' employment history reported on their resume, when the latter's SNW profiles do not contain any references to previous jobs, coworkers, or supervisors. Consequently, job applicants who either have private SNW accounts or do not have them altogether may be put at a disadvantage, because the withheld information may be treated as an attempt to conceal the 'truth.' Thus, the model predicts that privacy settings usage would moderate the relationship between the observed cyber-behaviors and employability.

Activity level may also moderate the viewers’ impressions of the profile owners as potential employees. Specifically, the cybervetters may encounter profiles that populate fairly regularly (for example, daily) and those that do not. It is conceivable that actively populated accounts would accumulate a wealth of information while passively populated profiles would not. Thus, the cybervetters may evaluate the extent to which the profile owner participates in the online community and make appropriate judgments. Imagine, for instance, that User A posts pictures, comments, and status updates on a daily basis and most of his posts refer to his current job. He informs his network about professional conferences, mentions personal work-related achievements, praises his colleagues for a good job, and so on. Even if the profile contains several inappropriate postings, it is likely that the cybervetters would evaluate this user favorably, given his active engagement in professional cyber-behaviors. On the other hand,
imagine User B who utilizes his account fairly irregularly. Although her public profile may be filled with posts, they may have been generated primarily by her network. As in the case with the active profiles, passive profiles would be evaluated in terms of the content that is available to the viewer. It is therefore possible that the cybervetters would concentrate on the content that is more frequently posted. As per positive-negative asymmetry (Baumeister et al., 2001; Madera, 2012; Peeters & Czapinski, 1990), the chances are that the cybervetters would pay close attention to antisocial cyber-behavior, which may negatively impact the employability ratings. In sum, Figure 2 and Figure 3 hypothesize that privacy settings usage and activity level would independently and in combination moderate the association between the four types of online activity and employability.

**Hypothesis 8a.** Facebook activity level will moderate the relationships between the observed cyber-behaviors and the users’ employability, such that these relationships will be stronger for profiles that exhibit high activity level and weaker for profiles that exhibit low activity level.

**Hypothesis 8b.** Facebook privacy settings usage will moderate the relationships between cyber-behaviors and employability, such that the magnitude of these relationships will increase for low levels of privacy settings usage and will decrease for high levels of privacy settings usage.

**Hypothesis 8c.** Both activity level and privacy settings usage will moderate the relationships between cyber-behaviors and employability, such that the magnitude of these relationships will increase for high level of activity and low level of privacy settings usage and will decrease for low level of activity and high level of privacy settings usage.
METHOD

Participants and Procedure

A priori power analysis was conducted using G*Power to determine the sample size necessary to detect a desirable effect size (Faul, Erdfelder, Lang, & Buchner, 2007). A sample size with enough statistical power to detect the effect size of .30 was 134. Given the multitrait-multi-source nature of data collection and the low response rates for the web-based surveys (Cook, Heath, & Thompson, 2000), multiple measures were taken to increase the response rate to achieve the targeted sample size. Specifically, the surveys were made short (taking less than 5 minutes), personalized (addressing the participants by their first and last name), and confidential. Reminders were sent out a week after the first survey administration.

The data collection involved several steps. First, public records containing the contact information of full-time non-faculty staff members5 were requested from 11 Mid-Western universities listed in Appendix F. Next, the survey link was sent to the employees’ email addresses. The survey included a skip logic feature available through Qualtrics, which redirected the participants to the appropriate pages of the survey depending on their answers to the filter questions. There were two filter questions that appeared at the beginning of the survey. The first one asked if the participants had a Facebook profile and the second asked if the participants were willing to provide their supervisor’s contact information. If the answers were ‘no’ to either of these filters, the participants were redirected to the end of the survey.

26,740 emails with the survey link were sent out, of which 1,502 (5.6%) were returned as undeliverable. 256 (.9%) emailed back stating that they did not have a Facebook account. Of the

5 Because the pilot study was conducted primarily on the undergraduate students at a large Mid-Western university, the recruitment of full-time university employees who had at least one supervisor was necessary to enhance ecological and external validity of the current findings. Note that although I requested the contact information of the full-time non-faculty university staff members, the email lists that I obtained also included 15 graduate students.
new sample size \((N = 24,982)\), 1,993 (7.9%) submitted the survey. However, 221 (11%) of the cases were discarded because the participants endorsed ‘no’ for the filter questions, which disqualified them from taking the survey. Of the final sample size of 1,782\(^6\), 951 (53.4%) provided their Facebook profile links; 520 (29.2%) provided their supervisor’s contact information; and 387 (21.7%) participants provided both their Facebook links and their supervisor’s contact information. Of the total supervisory sample that was contacted (e.g., 520), 26 (.05%) emails were returned as undeliverable. 131 (26.5%) supervisors completed the survey. For the analyses that required the job performance data, the self-reported and cybervetter-reported data from the 131 cases were used. Because confirmatory factor analyses typically require a minimum of 200 cases, an additional random sample of 69 cases was selected, cybervetted, and added to the 131 cases to achieve the desired sample size.

The final sample consisted predominately of White (81.6%) females (66.9%) 40 years of age working in a wide range of occupations including registered nurses, program coordinators, and secretaries.

**Measures**

**Personality.** The participants received a twenty-item version of the Big Five personality scale, known as the mini Intentional Personality Item Pool (mini-IPIP), which was derived on the basis of a fifty-item version by Donnellan, Oswald, Baird, and Lucas (2006). The abridged version of the IPIP scale was shown to possess sound psychometrics properties (i.e., internal consistency, convergent, discriminant, and criterion-related validity; Donnellan et al., 2006). Similar to its longer counterpart, the mini-IPIP assesses extraversion, agreeableness, openness to

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\(^6\) The obtained response rate from the participants was 7.1%. The response rate from the supervisors was higher (26.5%).
experience, neuroticism, and conscientiousness. Each personality facet was measured with 4 items. A sample item from the extraversion subscale of the mini-IPIP included "I am the life of the party." The scale was administered using a five-point Likert scale with anchors ranging from ‘strongly disagree’ (1) to ‘strongly agree’ (5). Cronbach alphas ranged from .67 to .83.

**General Mental Ability.** The ability to store and manipulate information in working memory (WM) has been shown to correlate highly with cognitive ability ($r = .80$ to $.90$, Carpenter, Just, & Shell, 1990; Kyllonen & Christal, 1990). Such high correlation estimates permit the use of WM tasks as proxies for GMA (for more information on the use of proxies in research, please refer to Carlson & Herdman, 2012). The participants were asked to complete a delayed list recall WM task developed and validated by Williams (1991). A list of 12 words along with the instructions was presented on a screen for 30 seconds. After that, the next page appeared asking the participants to list all the words they can remember (delayed recall trial). On the next screen, the participants were asked to recall the words that were capitals of the countries (e.g., London, Paris; cued recall trial). All correctly recalled words were coded as 1. The total GMA score was computed by summing the number of correctly recalled words. Therefore, no internal consistency statistics were available.

**Demographics.** To determine the extent to which the data were representative of the employed population in the U.S., demographic variables were collected, including race, age, gender, and job title.

**Facebook Activity Level.** Several self-reported Facebook frequency scales have been developed in recent years. For example, Ellison and colleagues (2007) created a self-reported eight-item Facebook Intensity scale, which aimed to capture the extent to which the users were engaged in Facebook activities. Two of the items were designed to capture the time spent on
Facebook in the last week and the number of friends the users had on Facebook. The rest of the items measured Facebook attitudes (e.g., “I feel I am part of Facebook community”; Ellison et al., 2007). In another study by Junco (2012), a self-reported fourteen-item measure using a five-point Likert scale ranging from ‘never’ (1) to ‘frequently’ (5) was designed to assess the frequency with which the users engaged in certain Facebook-related activities (e.g., playing games, updating status, sharing links). However, neither of the aforementioned Facebook frequency scales were appropriate for the goals of the current study, because the current study aimed to assess the users’ overall Facebook activity level rather than their engagement in certain activities. Therefore, a one-item measure of Facebook level of activity was developed, which used a four-point Likert scale ranging from ‘never’ (1) to ‘often’ (4).

**Privacy Settings Usage.** Previous studies have attempted to gauge the extent to which the Facebook users utilize privacy settings. For example, building on the research by Ellison et al. (2007), Ross et al. (2009) developed a self-report Facebook questionnaire. Sample questions from the questionnaire were “Who can see your Facebook profiles?” and “Do you use the Limited Profile List to prevent certain people from seeing certain aspects of your profile?” Another study by Tuunainen, Pitkanen and Hovi (2009) developed a Facebook Privacy and Data Security Concerns measure using a seven-point Likert scale ranging from ‘strongly disagree’ (1) to ‘strongly agree’ (7). A sample item is “I worry about my privacy and data security whereas using Facebook.” However, the purpose of this investigation was to determine the extent to which the users utilized privacy settings. Therefore, a one-item measure was developed, which used a four-point Likert scale ranging from ‘not at all’ (1) to ‘to a great extent’ (4).

**Supervisor-rated CWBs.** To avoid common method bias, which could arise from the
overreliance on self-reported measures (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), the current study collected supervisor-reports of the job performance criteria. This method was warranted given the findings of a recent meta-analysis by Berry, Carpenter, and Barratt (2012), which showed that self-reports and supervisor-reports of CWB provide unique perspectives on deviant behavior. Thus, supervisors were asked to fill out an oft-used measure of counterproductive work behaviors developed and validated by Bennett and Robinson (2000). The measure was administered using a seven-point Likert scale ranging from ‘never’ (1) to ‘daily’ (7). Twelve items capture organizational deviance and seven items capture interpersonal deviance. A sample item from the CWB measure includes "Made fun of someone at work." Cronbach alphas were .69 for CWBI and .79 for CWBO.

**Supervisor-rated OCBs.** The supervisors were also be asked to report their subordinate's organizational citizenship behaviors that were assessed using a scale developed and validated by Smith, Organ, and Near in 1983. The anchors range from ‘strongly disagree’ (1) to ‘strongly agree’ (5). An example item includes "I am someone who helps others who have been absent." Cronbach alpha was .91.

**Supervisor-rated Task Performance.** A seven-item scale measured using a five-point Likert scale ranging from ‘strongly disagree’ (1) to 5 (‘strongly agree’) was administered to the supervisors. The scale was originally developed and validated by Williams and Anderson (1991). An example item from the scale includes "Adequately completed my assigned duties." Cronbach alpha was .88.

**Standardized Cybervetting Form.** The development of the cybervetting form has occurred in multiple iterations using the expertise and insight of several SMEs and previous research. First, an exhaustive list of possible posting activities, in which the Facebook users may
engage (e.g., uploading a picture or updating status), was developed. As was noted before, the concept of a post, or posting activity, refers to all types of entries published by the user or their network including subtle cyber-activities such as 'liking,' commenting, tagging, and sharing, that are available on the user's webpage wall and are not restricted by the privacy settings.

The next iteration involved the development of appropriate scales for each behavior. For the majority of cyber-behaviors, frequency rather than agreement scales were chosen. Specifically, instead of focusing on the content of the pictures, styles of music, and genres of books, the cybervetting form attempts to record the quantity (aka frequency) of posts due to the fact that quantities are more objective and therefore provide less room for rater biases. Similarly, frequency scales rather than agreement scales were chosen to indicate the prevalence of hobbies, work- and school-related activities, and antisocial (e.g., references to doing illegal drugs or criminal behavior). The frequency scales ranged from 'never' (1) to 'frequently' (4).

Several points are worth mentioning. First, the RAs only cybervetted the content of the profiles that was set to public view. This is due to the fact that the majority of US states have officially prohibited or restricted employers from soliciting the login information from their prospective employees in both private and public sectors (National Conference of State Legislatures, 2014). This makes it illegal to circumvent the privacy settings. Therefore, reviewing the profile information that is not restricted by the privacy settings maximally resembles "the real world" practice, and therefore, improves the generalizability of the findings. Second, although some might argue that the use of non-professional hiring managers (i.e., RAs) may limit the external validity of the current study, there is evidence to suggest that professional and non-professional cybervetters end up with fairly similar judgments about the employability of a particular job candidate (Roulin & Bangerter, 2013). Finally, the current study employed a
criterion-related validation design, in which the predictors and criteria were assessed using a sample of incumbents rather than job applicants (Cronbach & Meehl, 1955). This is due to the fact that supervisors could provide reports of the workplace criteria only for currently working adults. The inter-rater reliability coefficients ranged from small (.30) to large (.98).

**Employability.** To assess the extent to which the review of the Facebook profiles impacted the RA’s judgments of the profile owner’s employability, four items were developed. Specifically, one items asked the RA to indicate on a five-point Likert scale ranging from ‘highly negative’ (1) to ‘highly positive’ (5) the general impression of the profile owner. The second item inquired about the extent to which the review of the profile would impact the evaluation of the profile owner as a potential job candidate using a five-point Likert scale ranging from ‘to a very small extent’ (1) to ‘a very large extent’ (5). The third item measured the likelihood of hiring the profile owner using a five-point Likert scale ranging from ‘highly unlikely’ (1) to ‘highly likely’ (5). Finally, the fourth item asked to what extent to the profile owner may be deemed as a top notch candidate using the same scale as item three. Cronbach alpha for the combined four-item scale was .86. A commonly accepted threshold for the Cronbach alpha adequacy is .70 (Nunnally, 1978). However, some scholars (e.g., Cortina, 1993) argue that one should take into account the number of items, number of orthogonal dimensions, and average item intercorrelation to determine the appropriate alpha level. An exploratory factor analysis with Varimax rotation revealed that the four items explained 76.55% of variance in a single dimension. The average intercorrelation among the items was .75. Following the guidelines proposed by Cortina (1993), an acceptable Cronbach alpha level may be estimated to be in the .90s. After examining the item-total correlations among the four items, it became clear that the desirable alpha level could be reached by deleting the second item, namely ‘impact.’ A three-
item employability scale had a Cronbach alpha of .93. Thus, the current study tested Hypothesis 8a-c using the three-item measure of employability (see Table 6).

**Attractiveness.** One item asked to rate the profile owner's attractiveness given that attractive people tend to be rated as more hirable than nonattractive people (e.g., Desrumaux, De Bosscher, & Leoni, 2009; Luxen, & Van De Vijver, 2006). Specifically, research has shown that physically attractive people are typically considered to be perceived as having higher potential and are rated as more hirable (Bohnert & Ross, 2010; Dion, Berscheid, & Walster, 1972). Therefore, it was important to control for attractiveness when examining the relationships among the cyber-behaviors and the raters’ judgments to see whether or not the observed online behaviors predict any variance in the raters’ impressions of the profile owners’ employability above and beyond their physical attractiveness. A study by Tews, Stafford, and Zhu (2009) found that physical attractiveness impacted hiring decisions above and beyond cognitive ability and personality.
RESULTS

Prior to testing the hypotheses, it was important to evaluate the nature of the missing values and examine the general descriptive statistics. Table 2 displays the self-reported, supervisor-reported, and cybervetter-reported variables measured in the current study along with the percentage of missing values and the reliability coefficients\(^7\) (refer to Table 2).

As can be seen, the missing data reported by the participants and their supervisors were treated as missing completely at random (less than 5%; MCAR), which means that the pattern of missing data on one variable was not related to another variable (Rubin, 1976). However, the missing data reported by the RAs were treated as missing completely not at random (MNAR) due to the fact that the content of public Facebook profiles is discretionary, which implies that the absence of certain online behaviors may be due to the use of privacy settings or lack of engagement in those behaviors. Because the MNAR may bias the estimated of regression weights and correlations (Roth, 1994), the decision was made to recode each cyber-behavior into ‘observed’ (1) and ‘not observed/missing’ (0). Table 2 shows that the least frequently observed posts were those that were sexually suggestive in nature (5%), referred to illegal drugs (1%) and crime (1%), were rude (2%), or exhibited excessive gaming (7%). Failure to detect these cyber-behaviors may be due to a possibility that the web users do not engage in these behaviors online or they conceal them with the privacy settings. The extent to which Facebook activity level and privacy setting usage moderate the observed cyber-behaviors will be discussed later.

The Cronbach alphas for the self- and supervisor-reported data were consistent with the literature and ranged from medium (.67) to high in magnitude (.91; Bennett & Robinson, 2000;  

\(^7\) Note that Cronbach alphas (the measure of internal consistency; Cronbach, 1951) were calculated for self- and supervisor-reported scales. Intraclass correlations (ICCs; Bartko, 1966) were calculated for the cybervetter-reported data to determine the inter-rater reliability.
Cooper, Smillie, & Corr, 2010; Smith et al., 1983; Williams & Anderson, 1991) indicating a high internal consistency among the scale items. All profiles were rated by at least two RAs, which ruled out the Type 3 ICC statistic. The pairs of raters that evaluated each profile differed, which ruled out the Type 2 ICC statistic. In the situations where each ratee is evaluated by different raters who are randomly selected from the population of raters, which was the case in the present study, the most appropriate inter-rater reliability statistic is the Type 1 ICC. High ICCs (above .80) were obtained for the cyber-behaviors that were present on the profile owner’s main page (e.g., education, movies, TV shows), which suggests a high inter-rater agreement. This information did not require the RAs to engage in an intensive search as it is usually available on the user’s main page. The ICCs tended to decrease in magnitude as the raters began examining the content of the profile that was not easily available on one’s main page (e.g., comments, picture content, likes). This is probably due to the fact the raters were exposed to different pieces of information while cybervetting. For example, a Facebook user may post a picture of a drunken party on Monday, which would permit one cybervetter to observe this posting activity on Tuesday but would not allow the other cybervetter to do that on Sunday. In other words, due to the malleable fabric of the SNWs, it is conceivable that the cybervetters observe different samples of behaviors, which would naturally lower the inter-rater agreement. The lowest ICCs (ranging from .30 to .42) were obtained for the reactional activities and sexually suggestive posts. This could be due to the aforementioned reasons, but also due to the individual difference among the raters who have to perceive a certain behavior and name it. For example, one rater might have deemed skiing as a recreational activity, whereas the other one might have considered it as sports. Even though a rigorous training was undertaken with each cybervetter along with the practice runs of fake Facebook profiles using the cybervetting form, it is still
conceivable that there would be discrepancies among the raters, especially on the cybervetted behaviors that require personal judgment.

**Hypothesis Testing**

Hypothesis 1 predicted that the cyber-behaviors would load on the four distinct latent constructs (professional, prosocial, antisocial, and job-irrelevant). This hypothesis was derived based on the preliminary results of the pilot study, wherein a four-factor solution was found after conducting an EFA using the Principal Component Extraction Method and Varimax Rotation with Kaiser Normalization (see Table 1; Berger et al., 2014, May). It was also hypothesized that the four-factor model would show a superior fit compared to the three-factor or one-factor models. The item-factor linkages for each model are displayed in Table 3.

As can be seen, in Model 1, all cyber-behaviors were set to load on a single factor. In Model 2, the cyber-behaviors were broken down into three categories (job-irrelevant, prosocial, and antisocial) and were set to load on their respective factors. Model 3 tested the proposed taxonomy of online behavior. Therefore, all items were set to load on four factors (job-irrelevant, prosocial, antisocial, and professional). A series of CFA using SPSS AMOS 4 was run. The following model-data fit indices were used: chi square/df ratio, Normed Fit Index (NFI), Comparative Fit Index (CFI), Tucker Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), Akaike Information Criterion (AIC) and Consistent Akaike Information Criterion (CAIC; Hu & Bentler, 1999). Chi-squares indicate lack of fit when significant. However, the likelihood of obtaining a significant chi-square value is positively correlated with the sample size (Iacobucci, 2010). Therefore, it is uncommon to rely on this statistic as a sole indicator of fit. CFI, NFI, and TLI higher than .95, RMSEA lower than .08, and SRMR lower than .08 indicate an acceptable fit (Hu
& Bentler, 1999). AIC and CAIC statistic indicate a loss of information. Generally, lower values indicate better fit than higher values (Burnham & Anderson, 1998). Maximum Likelihood (ML) estimation procedures were used (Beauducel & Herzberg, 2006). Finally, although the taxonomy of cyber-behavior predicted that the four factors were orthogonal, both oblique (the latent constructs were allowed to covary) and orthogonal (the covariance among the latent factors was set to 0) CFA models were run for comparison purposes (refer to Table 4).

Table 4 provides the fit statistics for the CFAs. As can be seen, the worst model-data fit indices were observed for one-factor model ($\chi^2(230) = 1139.53, p < .01, \text{CFI} = .56, \text{RMSEA} = .14, \text{SRMR} = .04$), ruling out the alternative hypothesis that all online behaviors load on a single factor. The comparison of the orthogonal and oblique three-factor and four-factor models revealed worse fit for the former. This suggests that the cyber-behaviors covary. Although not optimal, the oblique four-factor model produced better fit statistics among the tested alternative CFA models ($\chi^2(225) = 760.86, p < .01, \text{CFI} = .74, \text{RMSEA} = .11, \text{SRMR} = .04$). In a situation when the hypothesized factor analytic model exhibited a non-optimal fit, it is sometimes recommended to examine the Modification Indices (MI; e.g., Steiger, 1990). MI provide post hoc remedies to the marginal fit between the observed and predicted models. Specifically, they indicate the item measurement error terms that may improve the model-data fit after being correlated. Only the error terms that belong to the items loading on the same latent constructs are allowed to be modified. Close inspection of the MI revealed that the largest improvement in the model-data fit would result from allowing nine error terms to covary. However, these terms belonged to the items (education, relationship status, groups, photos, friends, alcohol, volunteering, crime, and religious posts) that cross-loaded on different latent constructs—thereby preventing the correlation of the error terms. Typically, items with large MI are either dropped or
respecified (Kenny, 2011). The respecification often involves a creation of additional factors. Therefore, it is plausible that the aforementioned items may indicate the presence of a fifth and a sixth factor. Because the current study proposed a four-factor taxonomy, the decision was made to omit these nine items from further analyses. However, future investigations should entertain the expansion of the taxonomy. Possible research directions are discussed later.

The next largest model-data fit improvement was expected to be achieved by correlating the error terms between the items 28 (references to coworkers) and 32 (references to school). Specifically, the MI was equal to 71.04 with an expected reduction in $\chi^2$ by about .80. These two items were set to load on the same factor (professional cyber-behavior). The model-data fit indices were estimated for the modified model. As can be seen from the last line in Table 4, although not perfect, the fit indices improved for the modified oblique model ($\chi^2(203) = 600.16$, $p < .01$, CFI = .80, RMSEA = .09, SRMR = .03). The amount of information lost was the lowest in comparison with the rest of the models (AIC = 700.16, CAIC = 713.23). Based on these findings the modified four-factor modified model was chosen for further analyses.

The next step involved combining the behaviors that belonged to the same category in the four new variables. Because the individual rater reports of these behaviors were dummy coded into ‘observed’ (1) and ‘not observed/missing’ (0), the average scores were created that ranged from 0 to 1. Afterward, to create professional, prosocial, antisocial, and job-irrelevant variables, the behaviors that made up each category were summed. For example, an antisocial cyber-behavior category was computed using the following formula:

$$\text{Antisocial Cyber-Behavior} = \text{Drugs} + \text{Sex} + \text{Profanity} + \text{Slang} + \text{Grammar} + \text{Gaming} + \text{Rude} + \text{Political Posts} + \text{Personal Disclosure}$$

This approach allowed for a computation of the total sum of the online behaviors per each case,
resulting in continuous variables ranging from 0 to 9 (9 is the maximum score you may obtain for the antisocial category; note that the remaining three categories had their own maxima). Once the four categories were created, further analyses were conducted to test Hypotheses 2-8. Table 5 displays the descriptive statistics and bivariate correlations for all variables included in the current study.

The inter-correlations among the four cyber-behaviors were interesting. Specifically, job-irrelevant category did not relate to either of the other three categories; whereas the magnitude of the inter-correlations among professional, prosocial, and antisocial cyber-behaviors ranged from medium (.35) to large (.61). This may suggest a two-factor structure of cyber-activity, such that all SNW-based behaviors may be described in terms of job-relevant and job-irrelevant behaviors (refer to Table 5). This will be discussed in more detail later.

Hypotheses 2a-2d predicted that GMA would be correlated with the workplace criteria. As can be seen from Table 5, GMA did not correlate significantly with task performance ($r = -.04, ns$), OCB ($r = -.08, ns$), and CWB ($rcwbi = .00, ns$ and $rcwbo = .06, ns$)—thereby failing to support Hypotheses 2a-2d. Hypothesis 2e, 2f, 2g, and 2h predicted that GMA would correlate positively with professional and prosocial cyber-behaviors and negatively with antisocial and job-irrelevant cyber-behaviors, respectively. Neither of the correlations were significant, except for the association between GMA and antisocial cyber-behavior ($r = .18, p < .05$). In contrast to the hypothesized negative relationship, this relationship was positive, which means that the higher scores on the WM task were associated with a higher likelihood of engaging in inappropriate posting activity.

Hypotheses 3a-3d predicted that conscientiousness would be correlated with the workplace criteria. As Table 5 shows, conscientiousness did not correlate significantly with task
performance \((r = .04, \text{ns})\), OCB \((r = .11, \text{ns})\), and CWB \((r_{\text{CWBj}} = .05, \text{ns} \text{ and } r_{\text{CWB0}} = -.02, \text{ns})\), thus failing to support Hypotheses 3a-3d. Hypothesis 3e, 3f, 3g, and 3h predicted that conscientiousness would correlate positively with professional and prosocial cyber-behaviors and negatively with antisocial and job-irrelevant cyber-behaviors, respectively. None of these correlations were significant. Note that although statistically nonsignificant, the correlation coefficients ran in the predicted directions, except the association between conscientiousness and professional cyber-behavior \((r = -.14, \text{ns})\).

Hypotheses 4a predicted that agreeableness would moderate the positive relationship between conscientiousness and the workplace criteria. As can be seen from Table 5 and as was previously noted, conscientiousness did not relate to task performance nor did it correlate with agreeableness \((r = .15, \text{ns})\), which removes the basis for the moderator analyses and disconfirms Hypothesis 4a. Hypothesis 4b, 2c, 2d, and 2e predicted that agreeableness would correlate positively with professional, prosocial, and antisocial cyber-behaviors and negatively with job-irrelevant cyber-behavior, respectively. Neither of the correlations were significant \((r_{\text{professional}} = .15, \text{ns}, r_{\text{prosocial}} = .11, \text{ns}, r_{\text{antisocial}} = .06, \text{ns}, \text{ and } r_{\text{job-irrelevant}} = -.17, \text{ns})\). Note, however, that the direction of the correlation coefficients was consistent with the hypotheses.

Hypotheses 5a and 5b predicted that extraversion would correlate positively with task performance and OCB, respectively. As can be seen from Table 5, extraversion did not correlate significantly with task performance \((r = .04, \text{ns})\) nor with OCB \((r = -.12, \text{ns})\)—thereby disconfirming Hypotheses 5a and 5b. Hypothesis 5c, 5d, 5e, and 5f predicted that extraversion would correlate positively with professional and prosocial cyber-behaviors and negatively with antisocial and job-irrelevant cyber-behaviors, respectively. Table 5 shows that no correlations were significant, except for the association between extraversion and prosocial cyber-behavior \((r = \text{...} \text{ns})\).
Consistent with Hypothesis 5d, this relationship was positive, which means that higher scores on the extraversion scale were associated with a higher likelihood of engaging in prosocial posting activity.

Hypotheses 6a-6d predicted that neuroticism would correlate positively with task performance and OCB and negatively with CWB. As can be seen from Table 5, neuroticism did not correlate significantly with task performance ($r = .04, ns$), OCB ($r = .05, ns$), nor CWB ($r_{CWBI} = .09, ns$ and $r_{CWBO} = -.06, ns$)—thereby disconfirming Hypotheses 6a-6d. Hypothesis 6e, 6f, 6g, and 6h predicted that neuroticism would correlate positively with professional and prosocial cyber-behaviors and negatively with antisocial and job-irrelevant cyber-behaviors, respectively. Table 5 shows that no correlations were significant ($r_{professional} = -.08, ns$, $r_{prosocial} = .08, ns$, $r_{antisocial} = .09, ns$, and $r_{job-irrelevant} = .12, ns$).

Hypotheses 7a-7d predicted that openness to experience would correlate positively with professional and prosocial cyber-behaviors and negatively with antisocial and job-irrelevant cyber-behaviors, respectively. Table 5 shows that no correlations were significant ($r_{professional} = .14, ns$, $r_{prosocial} = .02, ns$, $r_{antisocial} = .01, ns$, and $r_{job-irrelevant} = .16, ns$). This fails to support Hypotheses 7a-7d. Collectively, these findings failed to provide support for the speculation that personality and GMA are common antecedents of both the cyber-behaviors and the workplace criteria.

Hypothesis 8a and 8b predicted that Facebook activity level and privacy settings usage would moderate the relationship between the four types of cyber-behavior and employability. Table 5 shows that activity level correlated significantly with all four types of cyber-behavior ($r_{job-irrelevant} = .17, p < .05$, $r_{antisocial} = .67, p < .01$, $r_{prosocial} = .69, p < .01$, and $r_{professional} = .35, p < .01$). Similarly, privacy settings usage correlated significantly with job-irrelevant cyber-behavior
(r = -.26, p < .01), antisocial (r = -.52, p < .01) prosocial cyber-behavior (r = -.38, p < .01), and professional cyber-behavior (r = -.32, p < .01). Furthermore, activity level and privacy settings usage correlated significantly with employability (r = .13, p < .05 and r = -.09, p < .05, respectively). Hypothesis 8c predicted that activity level and privacy settings usage would collectively moderate the relationship between the cyber-behaviors and employability. Table 5 demonstrates that the interaction term derived by multiplying activity level and privacy usage significantly correlated with professional cyber-behavior (r = .14, p < .05), prosocial cyber-behavior (r = .49, p < .01), and antisocial cyber-behavior (r = .33, p < .01). Additionally, there was a significant association between the interaction term and employability (r = .13, p < .05).

Together, these strong associations permitted the moderator analyses, proposed by Hypotheses 8a-c. Note that the goal of these analyses was to determine the incremental validity of the two-way (activity level with the cyber-behaviors and privacy usage with the cyber-behaviors) and three-way (activity level with privacy usage with the cyber-behaviors) interaction terms above and beyond the individual impact of each of these variables including attractiveness, which was used as a control, on employability (refer to Table 6).

Table 6 displays the results of the regression analyses that tested the relationships predicted by Hypotheses 8a-c. As mentioned earlier, the employability scale was operationalized as a three-item scale (with ‘impact’ omitted). As can be seen, individually, activity level and privacy settings usage moderated the relationship between the antisocial cyber-behavior and employability (b = -.44, t = -2.46, p < .05 and b = .53, t = 2.16, p < .05, respectively). The incremental change in the variance explained by the interaction term was .03 for activity level and .02 for privacy settings usage. This supports Hypothesis 8a and 8b. Note that only the relationship between the antisocial cyber-behavior and employability was moderated by activity
level and privacy settings. The interaction terms obtained by multiplying the moderators with professional cyber-behavior, prosocial cyber-behavior, and job-irrelevant cyber-behavior were nonsignificant. These findings suggest that the extent to which the antisocial cyber-behavior impacts the cybervetters’ hiring decision depends on the level of the users’ posting activity (ranging from low to high) or on the extent to which the users utilize the privacy settings (ranging from low to high). In other words, if the content of one’s profile is frequently populated, the impact that the inappropriate postings would have on the prospective employers would diminish. On the other hand, if most of one’s public profile content is protected by the privacy settings and the postings that are available for the public view, the raters may focus heavily on the inappropriate postings, which may impact their hiring decision.

The interaction between activity level and privacy usage did not moderate the relationships among the four types of cyber-behavior and employability (note that Table 6 displays only the results of the regression analyses with the antisocial cyber-behavior as a predictor). This fails to confirm Hypothesis 8c. As such, the proposed interaction model of the Facebook activity level and privacy settings usage did not receive empirical support by the current data. This means that the combination of privacy settings usage and the amount of information that the web users post does not influence the cybervetters’ ratings of the user’s employability. Rather, the judgments are based on the level of Facebook activity and the use of privacy settings individually.

**Post Hoc Analyses**

Because research on cybervetting is still at its infancy, it is important to keep exploring the nature of the relationships among the variables germane to the topic. Thus, a series of additional analyses was performed to answer some of the empirical questions that may be
entertained by researchers and practitioners alike.

Although an explicit hypothesis was not advanced, the relationship between the cyber-behaviors and the workplace criteria was of interest to the current investigation. If significant, this relationship may provide preliminary evidence for the criterion-related validity of cybervetting. Thus, the correlations among the taxonomized online behaviors and the job performance facets were examined. As can be seen in Table 5, the significant relationships were quite surprising. Specifically, job-irrelevant category was statistically significantly related to task performance \( r = -.19, p < .05 \). This suggests that job applicants, whose profiles contain posts about movies, music, TV shows, and books, may perform worse at their jobs than their counterparts with profiles that do not contain as much of this information. Furthermore, job-irrelevant behavior was significantly associated with organizational deviant behavior \( r_{CWBO} = .18, p < .05 \). This suggests that the owners of the profiles that contain a lot of references to TV shows, books, music, and movies, are more likely to engage in deviant behavior aimed to harm the organization as a whole. Prosocial cyber-behavior was positively related to interpersonal counterproductive workplace behavior \( r_{CWBI} = .22, p < .05 \). This suggests that potential job applicants who engage in posting activity that concerns sports, travel, cultural and other recreational endeavors may be more likely to intentionally harm other employees (e.g., coworker, supervisor, subordinate), if hired.

During the data collection stage, the participants were asked to voluntarily provide the links to their Facebook accounts and supply their supervisor’s name and work email. As was indicated before, some individuals readily provided the links and their supervisor’s emails whereas others refrained from doing that. I was curious whether or not there were individual differences among participants who gave this information (coded as 1) versus not (coded as 0).
Table 7 shows the results of the independent $t$-tests. As can be seen, there were statistically significant mean differences in conscientiousness ($t(1780) = -2.94, p < .01, \text{Cohen's } d = .13$), openness to experience ($t(1780) = 5.31, p < .01, \text{Cohen's } d = -.25$), and GMA ($t(1780) = 9.35, p < .01, \text{Cohen's } d = -.44$) among those who supplied their Facebook links and those who did not. Additionally, there was a significant mean difference in GMA ($t(1780) = 4.97, p < .01, \text{Cohen's } d = -.07$) among between participants who provided their supervisor’s information and those who did not. These results suggest that there are meaningful difference in personality and GMA among those job applicants who willingly provide their SNW links and their supervisor’s information and those who refrain from sharing this information.

A part of understanding the nature of cyber-behavior is observation. The cybervetting form contains an open-ended section, which allows the raters to submit their impressions of the profile. A content coding of the comments revealed that 36% of the profiles were set to private view and as a consequence contained little information. Given this information, it was interesting to test the extent to which the privacy settings usage and activity level moderate the relationship between the user’s personality and the four types of cyber-behavior and between the user’s GMA and the four types of cyber-behavior. A series of hierarchical linear regressions with two-way interactions were run. No interaction terms were significant, which suggests that privacy settings usage and activity level do not moderate the path between the individual differences constructs and the cyber-behaviors.

There is some literature suggesting that gender congruence (or lack thereof) between an interviewer and an interviewee may favorably (unfavorably) impact the former’s ratings. This effect may be explained by the notion of homogeneity preference, which predicts that the higher ratings are given to the target who are seen as similar to the rater (e.g., Kraiger & Ford, 1985;
Pazy, 1986). Furthermore, it is well established in the social psychology literature that individuals tend to gravitate toward people who are similar to themselves (Byrne, Clore, & Smeaton, 1986). Therefore, one may predict that the gender of the rater and the rate may interact to influence the employability ratings, such that higher ratings would be given to the same sex ratee compared to the opposite sex ratee. To test this *post hoc* hypothesis, a hierarchical linear regression was conducted with gender of the rater entered in Step 1, gender of the ratee entered in Step 2, and the interaction between the genders entered in Step 3. The results showed no effect of the rater-ratee gender interaction on employability ratings ($b = .03, t = .07, ns, \Delta R^2 = .00$). This suggests that gender congruence (or lack thereof) does not impact the raters’ evaluations of the profile owner’s employability.
DISCUSSION

The increasing popularity of cybervetting among hiring managers and the lack of systematic research guiding its practice provided impetus for the current investigation. The pattern of results described in this study makes an incremental contribution to the literature on cybervetting in at least two ways. First, similar to the Big Five personality research paradigm, which was able to describe personality in terms of five traits (conscientiousness, neuroticism, openness, agreeableness, and extraversion; Costa & McCrae, 1992), the current study was able to describe online behavior in terms of four types (professional, prosocial, antisocial, and job-irrelevant). Because the taxonomy allows one to combine the cyber-behaviors into a set of four manageable categories, it may prove useful in both research and practice. Specifically, researchers may find the taxonomy of online behavior beneficial for theoretical advancement, because (a) it provides a common nomenclature for scientists from different disciplines, and as a consequence, (b) it allows for the integration and refinement of theories. From the practical standpoint, if the hiring managers decide to cybervet their prospective employees, they may discover that the taxonomy allows for a more rigorous and standardized cybervetting approach rather than an unstructured review of online activity.

The second contribution of the current study is the finding that SNW privacy settings usage and activity level individually moderate the relationship between antisocial cyber-behavior and employability. As mentioned before, cybervetting is an alternative form of a background check, which is often performed to avoid claims of negligent hiring. HR professionals engage in cybervetting using popular search engines and social networks hoping to uncover the digital dirt that their prospective employees left on the web that could potentially undermine the hiring company’s reputation and public trust (as in the case of law enforcement agencies; Brandenburg,
As the current results show, the extent to which the inappropriate content on one’s public Facebook account negatively influences the raters’ decision to hire depends on privacy settings usage and activity level. On the one hand, the data seem to suggest that when the profiles are highly restrictive (that is the users utilize privacy settings to a great extent), the cybervetters may focus on the posts that are rude, sexually suggestive in nature, excessively self-disclosive, and refer to illegal drugs or alcohol. This is consistent with the positive-negative asymmetry effect (Baumeister et al., 2001; Madera, 2012; Peeters & Czapinski, 1990), which predicts that negative (antisocial) information may outweigh positive (prosocial) information, because it may be viewed as the manifestation of ‘true’ attributes. Prosocial information may be viewed as an indication of a socially desirable behavior. These results also corroborate previous research in that inappropriate posting adversely influences one’s chances of being hired (e.g., Smith & Kidder, 2010; Spon, 2010). This also falls in line with Weiner’s attribution theory, which posits that individuals who are viewed as causing their own problems are viewed as undesirable employees (Bohnert & Ross, 2010). On the other hand, the current study revealed that the extent to which the antisocial posting activity negatively influences cybervetters’ hiring decisions depends on the users’ level of activity on a SNW (even after controlling for physical attractiveness). Specifically, if a user’s account is fairly abundant and contains a plethora of information, the influence of the inappropriate postings on cybervetters’ employability rating may be diminished. This is perhaps due to the fact that abundant profiles tend to accumulate both self- and other-generated posts, which may divert the observers’ attention from the posts (whether they be appropriate or not) published by the user to the ones published by his or her network. This confirms the attribution theory (Bohnert & Ross, 2010), such that the content posted by the third parties is beyond the user’s control, therefore the user would not be viewed as
an undesirable employee.

In addition to examining the factorial validity of the taxonomy and the moderating effects of privacy settings usage and activity level, the current study attempted to bridge the gap between the two streams of literature: One that established personality and general mental ability as predictors of online behavior and the other one that established personality and general mental ability as predictors of important workplace criteria. To achieve this goal, a common antecedents model was proposed and tested using a multitrait-multimethod study design. Correlational analyses revealed that neither the self-reported personality nor GMA (operationalized as a working memory task) related to the three supervisor-reported job performance facets. Although inconsistent with the well-established notions in the I-O literature that personality and GMA predict job performance (e.g., Barrick & Mount, 1991; Hurtz & Donovan, 2000; Salgado, 1997), the pattern of the current findings is not unprecedented. Specifically, a meta-analysis by Judge, LePine, and Rich (2006)8 reported statistically nonsignificant inter-correlations among the Big Five personality traits and supervisor-reported task performance, contextual performance (i.e., OCBs), and workplace deviance (i.e., CWBs). The personality traits were only significantly correlated with self-reported workplace outcomes (Judge et al., 2006). Furthermore, a meta-analysis by Berry et al. (2012) showed that, although the pattern of relationships with the common correlates was similar for the self- and other-reports of CWB, supervisor-reports

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8 The author is aware of the meta-analyses (e.g., Barrick & Mount, 1991; Salgado, 1997; Hurtz & Donovan, 2000) that established fairly strong connection among the Big Five personality traits and job performance. However, the results from these meta-analytic studies may not be extrapolated to the current investigation due to the following shortcomings. In Barrack and Mount (1991) and Salgado (1997), some of the personality scales from the primary studies did not use the Big Five framework as a conceptual foundation—therefore threatening the construct validity of the measures and the accuracy of the criterion-related validity estimates. Although Hurtz and Donovan (2000) attempted to address the methodological and statistical limitations of the previous meta-analyses, they did not provide validity coefficients for self- and other-reports of job performance. Therefore, the results from the study by Judge et al. (2006) was taken as a foundation for speculating about the nature of the relationships between the Big Five personality traits operationalized by using the mini-IPIP scale and the workplace criteria (reported by the self and a supervisor).
provided little incremental validity above and beyond the self-reports. Some scholars argue that the supervisory reports of the employees’ job performance do not correlate perfectly with true job performance (Hunter, 1986; Williams & Anderson, 1991). That is, the supervisory ratings of performance are likely to capture work-irrelevant factors (measurement contamination), such as personal appearance, and fail to capture work-related factors, such as productivity (measurement deficiency; Wexley & Yukl, 1984). As Hunter (1986) claims, according to the classic theory, even if the error associated with the idiosyncratic job performance ratings were to be removed from the supervisory ratings, the supervisory ratings would still fail to capture a substantive amount of variance in job performance. Therefore, future investigations may attempt to collect job performance ratings from the self rather than from the supervisors.

Additionally, there are several other reasons for why the significant relationships among personality, GMA, and the three job performance facets may have been not detected. First, examination of the descriptive statistics for the workplace criteria revealed that most of the participants tended to receive high scores on task performance measured on a 5-point Likert scale ($M = 4.42, SD = .67$) and OCBs measured on a 5-point Likert scale ($M = 4.12, SD = .60$), and low scores on CWBs measured on a 7-point Likert scale ($M = 1.27, SD = .45$ for CWBI and $M = 1.27, SD = .46$ for CWBO). As such, the distribution of scores was highly skewed (positively with CWBs and negatively with task performance and OCB). Low variability in the scores and skewed distributions weaken the validity of the statistical conclusions due to the violation of the Ordinary Least Squares regression assumptions (Shadish, Cook, & Campbell, 2002). Note that transformations to normalize the data were not undertaken due to a lack of subsequent interpretability of the results. Second, in this study cognitive ability was operationalized as a working memory task. Although there is a plethora of research providing
evidence of the convergent validity between working memory and cognitive ability (e.g., Carpenter et al., 1990; Kyllonen & Christal, 1990; Salthouse, 2014), working memory is only a proxy and not a direct measure of cognitive ability. As Carlson and Herdman (2012) argue, proxies are often used by researchers as substitutes for the targeted constructs, however, even small departures from perfect convergence may distort the results of the studies and cloud the interpretations drawn from the statistical analyses. Therefore, future research should use alternative (oft-used in I-O literature) measures of cognitive ability (e.g., verbal and math ability tests).

Third, because the present study collected predictor and criterion data simultaneously (emulating concurrent criterion-related validation design), it is conceivable that the data were subject to a reduced motivation and range restriction (Allen & Yen, 1979; Mendoza, Bard, Mumford, & Ang, 2004). Arguably, the incumbents do not possess the same motivation as the job applicants when filling out self-reports. In fact, substantial differences were found between job applicants and incumbents in validation studies examining integrity tests (Van Iddekinge, Roth, Raymark, & Odle-Dusseau, 2012), personality, structured interview, P-O fit, biodata, and situational judgment tests (Van Iddekinge & Ployhart, 2008). Range restriction, a form of missing data which occurs when variance on the predictor is reduced due to the selection on the third variable (Sackett & Yang, 2000), may introduce bias in the estimation of criterion-related validity or render it invalid (Wainer et al., 1990). Although statistical procedures to correct for range restriction are available (Sackett & Yang, 2000), they should be applied only when the nature of the restriction is well understood (Sackett & Yang, 2000). However, in the present study the extent of range restriction on the cyber-behaviors is unknown—therefore, no correlations were corrected. To overcome this drawback, the future investigations may attempt to
sample job applicants in a predictive criterion-related validation study design. Due to the
aforementioned methodological limitations, the current study failed to confirm the speculation of
the common antecedents model that personality and GMA would serve as common antecedents
to both the cyber-behaviors and workplace criteria. On the other hand, an interesting pattern of
relationships was observed between extraversion and prosocial cyber-behavior and between
GMA and antisocial cyber-behavior. Specifically, a positive association was found between
extraversion and prosocial cyber-behavior, suggesting that individuals with a higher score on this
trait would engage in web-based posting activity that is discretionary and aims to assist and
comfort someone other than oneself. This is consistent with previous research, which has shown
that extraverts tend to belong to more groups (Ross et al., 2009), have more friends, post more
comments, and update their status more frequently than introverts (Wang, Jackson, Zhang, & Su,
2012). This allows the former to expand their social networks (Acar, 2008; Jenkins-Guarnieri et
al., 2013; Muscanell & Guadagno, 2012). According to the social identity theory, expansion of
one’s social circle may help an individual maintain positive self-image (Ashforth et al., 2008).
Applying this theory to online behavior, it seems likely that extraverts may try to engage in
prosocial online activity to receive social approval and, by doing that, maintain their self-image.

A negative association was found between GMA and antisocial cyber-behavior, which
was inconsistent with the proposed hypothesis. This suggests that the higher the Facebook user’s
cognitive ability, the more likely he or she is to engage in inappropriate posting activities. As
mentioned before, the current study used WM task as a proxy for GMA, which limits the
external validity of the results. Moreover, given the novelty of the taxonomy, no empirical
evidence is available that could confirm or disconfirm the aforementioned findings. One article
was located that examined the relationship between the need for cognition (one’s desire for
cognitive activity) and internet use (e.g., Tuten & Bosnjak, 2001). The authors found that the need for cognition related positively to three uses of the internet (product information, current events and news, and learning). Albeit nonsignificant, a negative association was found between the need for cognition and internet use for entertainment purposes (Tuten & Bosnjak, 2001). This means that individuals with a higher need for mental activity may utilize the web to acquire knowledge; whereas their lower scoring counterparts may engage in online activity to have fun. Given the inconclusive nature of the findings, I encourage future research to utilize direct measures rather than proxies of the key variables and test them in relation to the cyber-behaviors using a different sample.

Post hoc analyses were conducted to probe the relationships among the studied variables that could be of interest to researchers and practitioners alike. In light of the ever-growing popularity of cybervetting among hiring managers and general skepticism of its utility in the pre-employment setting among I-O scholars, the relationships between the cyber-behaviors and the workplace criteria were examined. Similar to previous research (Van Iddekinge, Lanivich, Roth, & Junco, 2013), the overall correlations were nonsignificant suggesting that online activities did not relate to job performance. Note, however, that there were three exceptions. Specifically, job-irrelevant online activity was negatively related to task performance, suggesting that job applicants, whose profiles contain posts about movies, music, TV shows, and books, may perform worse at their jobs than their counterparts with profiles that do not contain as much of this information. Furthermore, job-irrelevant behavior had a positive relationship with organizational deviant behavior, suggesting that the owners of the profiles that contain a lot of references to TV shows, books, music, and movies, are more likely to engage in deviant behavior aimed to harm the organization as a whole. At first, these findings may seem counterintuitive,
because according to the taxonomy, job-irrelevant cyber-behavior should be unrelated to any of the organizational outcomes. Moreover, the inclusion of this category in the taxonomy was meant to demonstrate that there are online behaviors that hiring managers (or any cybervetters, in general) should ignore as being irrelevant to future job performance. However, based on the current results, it seems that the value of personal hobbies like watching TV shows, listening to music, reading books, and watching movies might have been underestimated. In fact, anecdotal evidence proves that these relationships are not all that implausible. Picture a job applicant whose SNW profile indicates a high level of enthusiasm for a popular reality TV show. It is possible that he or she may engage in cyber-loafing (using the company’s computer for personal purposes while on the job; Lim, 2002) or in time banditry (tendency to engage in non-work related activities while on the job; Martin et al., 2010) once hired to keep up with their favorite reality stars. These behaviors may ultimately result in a reduced task performance and may hurt the organization as a whole.

Another post hoc finding was that prosocial online activity positively related to interpersonal counterproductive workplace behavior. This suggests that potential job applicants who engage in posting activity that concerns sports, travel, cultural and other recreational endeavors may be more likely to harm other employees (e.g., coworker, supervisor, subordinate), if hired. As first, this relationship may appear counterintuitive. On the other hand, the aforementioned prosocial activities involve one joining groups of similar-minded people. According to the belief congruence theory (Rokeach, Smith, & Evans, 1960), similarity of the belief systems may lead people to join groups and identify with them forming an in-group bias; whereas dissimilarity of the belief systems may lead people to disassociate from others forming an out-group bias. It is well-established in social psychology that in-groups may show hostility
(aggression) toward the members of the out-groups (e.g., Brewer, 1999). Applying the principles of this theory to the current findings, it is feasible that employees who vehemently participate in a good cause (e.g., raise money to respond to the ebola epidemic in Western Africa) using their online social networks may exhibit hostility toward their colleagues, especially if the latter express a different viewpoint (out-groups). Thus, the relationships among the cyber-behaviors and the workplace criteria are more complicated than expected.

Given the overall findings of this study, one may be tempted to deem the proposed cybervetting model invalid. However, I would like to caution against making such a radical conclusion as the methods employed in the current study and the research questions they attempted to answer were novel to the extant literature. More research is needed to confirm the current results and expand the proposed model of cybervetting and revise the taxonomy of cyber-behavior.

**Revising the Taxonomy of Cyber-Behavior**

Although a statistically acceptable fit for the modified four-factor taxonomy of the cyber-behavior was found, future research should aim to revise and possibly expand or reduce the taxonomy. On the one hand, the examination of the modification indices revealed that nine items (education, relationship status, groups, photos, friends, alcohol, volunteering, crime, and religious posts) were determined to be problematic. That is, they cross-loaded on different latent constructs, which undermined the model-data fit of the overall model. This suggests that there may be other factors that drive variance in the aforementioned items. For example, references to alcohol and crime may be treated as a fifth factor; whereas education, relationship status, groups, photos, friends, and religious posts may be treated as a sixth factor. Note that on Facebook the latter behaviors are typically found on the users’ main page and are self-generated, whereas the
former behaviors are scattered throughout one’s timeline and may or may not be self-generated. Therefore, the behaviors that are self-generated and are easier to find may comprise a separate factor of \textit{basic information}, similar to research by Amichai-Hamburger and Vinitzky (2010). On the other hand, the examination of the inter-correlations among the four categories of online activity revealed that prosocial, antisocial, and professional cyber-behavior may combine to form job relevant behavior whereas everything else may be job-irrelevant.

It is also likely that some of the important online behaviors were missing from the current cybervetting form. This may result in construct deficiency and ultimately undermine the validity of the four constructs. SNWs, including Facebook, are fairly unstandardized, such that different features are added and deleted on a regular basis (whether it be by the users or by the SNW corporate decision makers). This ever-changing nature of SNWs makes it difficult to create an all-inclusive measure of cyber-behavior, despite the fact that all reasonable attempts have been made during the design of the cybervetting form in this study to include as many behaviors as possible. Consequently, it becomes difficult to match predictors and criteria to the appropriate level of specificity (Meade & Eby, 2007). Previous research employed various methods of studying the online behavior, ranging from investigations at a molecular level (linguistic analysis; Sumner, Byers, & Shearing, 2011) to molar level (overall purpose of using Facebook; Tuten & Bosnjak, 2001). Although those studies found interesting relationships between online behaviors and other variables (social capital, personality types, privacy concerns, etc.), they did not relate the online behaviors to important organizational criteria. The current study attempted to take a middle-of-the-road approach, which did not prove to match the level of job performance specificity. Future research should expand and revise the cybervetting form to improve the
model-data fit of the four-factor model and further our theoretical understanding of online behavior.

**Research Implications**

As was mentioned before, the failure of the current study to support some of the tenets of the common antecedents model does not immediately invalidate the model. In contrast, the present findings help rule out some of the hypotheses in favor of alternative hypotheses. Because theory-driven research on cybervetting is still at its infancy, it is important to continue searching for additional correlates of the cyber-behaviors and the workplace criteria. Thus, future studies may choose to test the model by including a set of new antecedents, such as the Dark Triad of personality (Psychopathy, Narcissism, and Machiavellianism) and self-esteem. With regard to the former set of individual differences, Garcia and Sikström (2014) have demonstrated that Psychopathy and Narcissism correlated significantly with Facebook status updates. A meta-analysis by O'Boyle, Forsyth, Banks, and McDaniel (2012) linked the Dark Triad personality traits to job performance. In another study, Zywica and Danowski (2008) found that low self-esteemers tended to engage in self-promoting behaviors online, exaggerating some of their information to look popular. Judge and Bono (2001) provided meta-analytic evidence for the association between self-esteem and job performance. Therefore, there seems to be other common antecedents that the cyber-behaviors and workplace behaviors share.

Another possible direction that the research on cybervetting may go is the inclusion of other important organizational criteria. For example, instead of focusing on the three job performance facets which are generally predicted fairly well by traditional personnel selection tools like personality assessments and cognitive ability tests (Sackett & Lievens, 2008), future research may choose to study Person-Organization fit, Person-Job fit, absenteeism, and burnout,
just to name a few. In fact some empirical steps have already been taken in this direction. For example, a study by Roulin and Bangerter (2013) established that Facebook proves useful in evaluating P-O fit, whereas more professional SNW like LinkedIn are useful for P-J fit. This may be due to the fact that Facebook transmits non-job-related values and interests, whereas LinkedIn promotes professional interests.

It may be fruitful to examine the impact that the third party interventions on one’s SNW profile may have on the cybervetters. Previous research has unequivocally pointed to the fact that the profile owner’s network may post information on their Facebook wall that may either facilitate or hinder the profile owner’s chances of getting hired. A study by Christofides, Muise, and Desmarais (2012), which aimed to study risky disclosures on Facebook, found that some of the provocative or embarrassing content that the users had on their profiles was posted by their friends (e.g., pictures, comments). Experimental studies by Walther and colleagues (2008, 2009) showed that other-generated content on one’s SNW wall is viewed as more credible than self-generated content, because the former is perceived as immune to manipulations whereas the latter is not. The current study did not differentiate between self- and other-generated online behaviors, which could confound the findings.

**Practical Implications**

As was noted before, the practice of cybervetting has outpaced its research. Many hiring managers across the globe utilize the web as a means of conducting supplemental background checks on their prospective employees without using any scientifically-based and psychometrically-sound approaches. Without criterion-related validity evidence, these searches may expose the cybervetting organization to legal scrutiny. As it is widely known, statistical judgments almost always outperform clinical judgments (Grove, Zald, Lebow, Snitz, & Nelson,
Therefore, a systematic, theory-driven cybervetting approach may provide a robust alternative to the current practices. Furthermore, according to research by Madera (2012), organizations that use SNWs as their personnel selection tool are perceived as less fair and have lower job pursuit intentions than organizations that do not. Such negative applicant reactions result from their failure to link their SNW activity to the job (lack of face validity). Another study by Stoughton, Thompson, Meade, and Wilson (2012) showed that cybervetting job applicants in the pre-employment contexts tended to lower the applicants’ perceptions of the organizational justice and its attractiveness as a potential employer. To increase transparency of their personnel selection procedures, organizations are often recommended to implement official policies for the strategies used to hire best talent. Similarly, cybervetting companies should consider implementing an official cybervetting policy if they decide to screen potential job candidates using the web. As mentioned before, the majority of US states have officially prohibited or restricted employers from soliciting the login information from their prospective employees in both private and public sectors (National Conference of State Legislatures, 2014). Thus, the hiring organizations may ask (not require) job applicants to voluntarily share links to their SNWs. However, as the post hoc analyses in the current study showed, there are systematic personality and GMA differences among those individuals who willingly share their links and those who do not. This may lead to a host of undesirable outcomes (e.g., disparate treatment, adverse impact). Therefore, to avoid losing top talent at the initial stages of the personnel selection processes and to prevent costly litigations, it is imperative to demonstrate that cybervetting possesses sound psychometric properties and predicts job performance (Ryan & Ployhart, 2000).

Therefore, the current study attempted a new research paradigm, which aimed to
advance and statistically test the practice of cybervetting so that the research consumers could implement this screening tool in the pre-employment context. Although preliminary evidence was found for the association between the cyber-behaviors and the workplace criteria, it should be interpreted with caution. Hiring managers ought to be extremely careful when using the cybervetting techniques for hiring decisions, before a clear relationship between online behavior and workplace behavior is found. The web is amenable to changes. Thus, the users may manipulate their profiles to look more attractive as prospective employers—thereby engaging in self-promotion or impression management (Kristof-Brown et al., 2002).
CONCLUSION

The current study is one of the first systematic endeavors that attempted to advance and empirically test a theoretical framework of cybervetting. Although some of the goals were achieved and others were not, I hope that this research project will serve as a stepping stone in the subsequent empirical investigations of this practice. The goal of future research should be to refine and further the findings of the current study in order to provide psychometric validity for cybervetting when used in high-stakes personnel decision making processes. As Hough and Oswald (2008) said, “Useful taxonomies are important milestones in the history and advancement of a science” (p. 278). The goal-setting theory for example has undergone decades of scrupulous research, which revised and refined the original framework, before it was named one of the most rigorouslydeveloped theories in the history of I-O psychology (Locke & Latham, 2009). By virtue of further scientific exploration of the practice of cybervetting we as a field may be able to develop a set of procedures to help practitioners and scientists to make better decisions.
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### APPENDIX A TABLES

**Table 1**

*Pilot Study Results of Exploratory Factor Analysis*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
</tr>
</thead>
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<tr>
<td>Recreation</td>
<td>.55</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sports</td>
<td>.54</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel</td>
<td>.42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fitness</td>
<td>.52</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volunteering</td>
<td>.36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family-Oriented</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Helpful</td>
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</tr>
<tr>
<td>Humorous</td>
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</tr>
<tr>
<td>Social</td>
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<td></td>
</tr>
<tr>
<td>Cultural</td>
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</tr>
<tr>
<td>Performing Arts</td>
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<tr>
<td>Work-related</td>
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<tr>
<td>School-Related</td>
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<td>College</td>
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<td>Relationship Status</td>
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</tr>
<tr>
<td>Friends</td>
<td>.57</td>
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<td></td>
</tr>
<tr>
<td>Movies</td>
<td>.83</td>
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</tr>
<tr>
<td>Music</td>
<td>.81</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>TV shows</td>
<td>.82</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profanity</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Slang</td>
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<tr>
<td>Spelling Errors</td>
<td>.44</td>
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<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>.39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Disclosure</td>
<td>.53</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* All values were rounded to two decimal places. The behaviors with the loadings of less than .30 were dropped. Variance explained by the four factors was 37.29.
### Table 2

**Missing Data and Reliability**

<table>
<thead>
<tr>
<th>Source</th>
<th>Variable</th>
<th>Frequency of Missing Behaviors (%)</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-Reported</strong></td>
<td>Extraversion</td>
<td>&lt;5</td>
<td>.83</td>
</tr>
<tr>
<td></td>
<td>Agreeableness</td>
<td>&lt;5</td>
<td>.75</td>
</tr>
<tr>
<td></td>
<td>Conscientiousness</td>
<td>&lt;5</td>
<td>.67</td>
</tr>
<tr>
<td></td>
<td>Neuroticism</td>
<td>&lt;5</td>
<td>.80</td>
</tr>
<tr>
<td></td>
<td>Openness</td>
<td>&lt;5</td>
<td>.82</td>
</tr>
<tr>
<td></td>
<td>GMA</td>
<td>&lt;5</td>
<td>-</td>
</tr>
</tbody>
</table>

| Supervisor-Reported | Task Performance | <5 | .88 |
|                     | CWBI              | <5 | .69 |
|                     | CWBO              | <5 | .79 |
|                     | OCB               | <5 | .91 |

| Cybervetter-Reported | Education         | 56 | .92 |
|                      | Relationship Status| 79 | .92 |
|                      | Groups            | 28 | .95 |
|                      | Photos            | 10 | .68 |
|                      | Friends           | 31 | .94 |
|                      | Movies            | 75 | .89 |
|                      | Music             | 59 | .98 |
|                      | TV Shows          | 71 | .89 |
|                      | Books             | 78 | .94 |
|                      | Drugs             | 99 | .91 |
|                      | Sexually Suggestive| 95 | .42 |
|                      | Profanity         | 89 | .68 |
|                      | Slang             | 76 | .50 |
|                      | Grammar           | 69 | .91 |
|                      | Alcohol           | 86 | .74 |
|                      | Volunteering      | 82 | .59 |

| Cybervetter-Reported | Family            | 44 | .78 |
|                      | Helpful           | 75 | .58 |
|                      | Crime             | 99 | .91 |
|                      | Gaming            | 93 | .67 |
|                      | Rude              | 98 | .91 |
|                      | Recreation        | 71 | .30 |
|                      | Sports            | 71 | .67 |
|                      | Travel            | 70 | .62 |
|                      | Political         | 87 | .62 |
|                      | Religious         | 87 | .69 |
|                      | Humorous          | 73 | .59 |
|                      | About Coworkers   | 80 | .53 |
|                      | Social Activity   | 52 | .56 |
|                      | Personal Disclosure| 74 | .50 |
|                      | Intellectual      | 85 | .64 |
|                      | School-related    | 89 | .91 |
|                      | Cultural          | 83 | .91 |

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*a. The ICC coefficients were not calculated because the values were negative due to a negative average covariance among the items, which violated reliability model assumptions.*

**Note.** Cronbach alphas were calculated for self-reported scales and supervisor-reported scales. The Intraclass Correlations (ICCs) were computed for the cybervetter-reported online behaviors. The GMA was computed by summing the number of correctly recalled words from two exercises (free recall and cued recall). Therefore, no internal consistency statistics were available. Heretofore, GMA—General Mental Ability; CWBI—Interpersonal Counterproductive Workplace Behavior; CWBO—Organizational Counterproductive Workplace Behavior; OCB—Organizational Citizenship Behavior.
Table 3

Linkages among the Cyber-Behaviors and The Factors

<table>
<thead>
<tr>
<th>Items</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Factor 1</td>
<td>Factor 2</td>
<td>Factor 3</td>
</tr>
<tr>
<td>1. Education</td>
<td>X</td>
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<td></td>
</tr>
<tr>
<td>2. Rel. Status</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>3. Groups</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>4. Photos</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5. Friends</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6. Movies</td>
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<td>X</td>
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<tr>
<td>7. Music</td>
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<td>X</td>
<td></td>
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<tr>
<td>8. TV Shows</td>
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<tr>
<td>10. Drugs</td>
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<td>X</td>
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<tr>
<td>12. Profanity</td>
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<td>X</td>
<td></td>
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<td>13. Slang</td>
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<td>X</td>
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<td>14. Grammar</td>
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<td>16. Volunteering</td>
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<td>17. Family</td>
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<td>X</td>
<td></td>
</tr>
<tr>
<td>18. Helpful</td>
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<td></td>
<td></td>
</tr>
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<td>19. Crime</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
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<td>20. Gaming</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
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<td>21. Rude</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>22. Recreation</td>
<td>X</td>
<td>X</td>
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</tr>
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<td>23. Sports</td>
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<td>X</td>
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<td>24. Travel</td>
<td>X</td>
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<td>25. Political</td>
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<td>X</td>
<td></td>
</tr>
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<td>26. Religious</td>
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<td>X</td>
<td></td>
</tr>
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<td>27. Humorous</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>28. Coworkers</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>29. Soc. Activity</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>31. Intellectual</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>32. School</td>
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<td>X</td>
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</tr>
<tr>
<td>33. Cultural</td>
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</tr>
</tbody>
</table>

Note. Underscored and bolded are the items that were retained after the use of modification indices. Rel. Status—Relationship Status; Soc. Activity—Social Activity; Pers. Discl.—Personal Disclosure.
<table>
<thead>
<tr>
<th>N of Factors</th>
<th>Model</th>
<th>( \chi^2 )</th>
<th>df</th>
<th>( p )</th>
<th>NFI</th>
<th>TLI</th>
<th>CFI</th>
<th>RMSEA</th>
<th>SRMR</th>
<th>AIC</th>
<th>CAIC</th>
</tr>
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<tr>
<td>1</td>
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<td>230</td>
<td>&lt; .01</td>
<td>.50</td>
<td>.45</td>
<td>.56</td>
<td>.14</td>
<td>.04</td>
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<tr>
<td></td>
<td>Oblique</td>
<td>873.11</td>
<td>230</td>
<td>&lt; .01</td>
<td>.62</td>
<td>.58</td>
<td>.69</td>
<td>.12</td>
<td>.08</td>
<td>965.11</td>
<td>977.73</td>
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<tr>
<td>3</td>
<td>Orthogonal</td>
<td>993.88</td>
<td>231</td>
<td>&lt; .01</td>
<td>.57</td>
<td>.52</td>
<td>.63</td>
<td>.13</td>
<td>.09</td>
<td>1083.88</td>
<td>1277.30</td>
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<td></td>
<td>Oblique</td>
<td>760.86</td>
<td>225</td>
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<td>.67</td>
<td>.63</td>
<td>.74</td>
<td>.11</td>
<td>.04</td>
<td>862.86</td>
<td>876.85</td>
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<tr>
<td>4</td>
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<td>600.16</td>
<td>203</td>
<td>&lt; .01</td>
<td>.72</td>
<td>.68</td>
<td>.80</td>
<td>.09</td>
<td>.03</td>
<td>700.16</td>
<td>713.23</td>
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</tbody>
</table>

*The CFA model was re-specified, such that the error terms between the items 28 (references to coworkers) and 32 (references to school) were allowed to co-vary. Further, nine items (education, relationship status, groups, photos, friends, alcohol, volunteering, crime, and religious posts) were set to have a zero loading on the factors.

Note. \( \chi^2 \)—chi square; df—degrees of freedom; \( p \)—p value; NFI—Normed Fit Index; TLI—Tucker Lewis Index; CFI—Comparative Fit Index; RMSEA—Root Mean Square of Approximation; SRMR—Standardized Root Mean Square Residual; AIC—Akaike Information Criterion; CAIC—Consistent Akaike Information Criterion.
### Table 5
Means, Standard Deviations, and Correlations among the Variables in This Study

| Variables       | M   | SD  | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| **Predictors**  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 1. E            | 3.16| .85 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 2. A            | 3.94| .62 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 3. C            | 3.77| .72 | -.07| .15 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 4. N            | 2.56| .82 | -.02| .04 | -.23***|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 5. O            | 3.81| .82 | .32**| .12 | -.13 | -.06 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 6. GMA          | 10.53| 2.68| .18**| .02 | -.17 | .04 | .24**|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| **Criteria**    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 7. Task Perf.   | 4.42| .67 | .04 | .12 | .04 | -.04 | -.04 | -.04 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 8. CWBI         | 1.27| .45 | .08 | .05 | -.09 | -.10 | .00 | -.15 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 9. CWBO         | 1.27| .46 | -.13| -.06| -.05 | .06 | -.47**| .49**|     |     |     |     |     |     |     |     |     |     |     |     |     |
| 10. OCB         | 4.12| .60 | -.12| .13 | .05 | -.03 | -.08 | .57**| -.27**| -.67**|     |     |     |     |     |     |     |     |     |     |     |
| **Cyber-Behaviors** |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 11. Job-Irrelevant | 1.18| 1.43| -.17| -.13| .12 | .16 | .07 | -.19*| .04 | .18*| -.05 |     |     |     |     |     |     |     |     |     |     |
| 12. Antisocial  | 1.21| 1.39| .06 | -.05| .09 | .01 | .18*| .07 | .12 | .07 | .01  | .12 |     |     |     |     |     |     |     |     |     |
| 13. Prosocial   | 1.99| 1.69| .19*| .11 | .07 | .08 | .02 | .11 | .12 | .22*| .02 | -.02 | .08 | .61**|     |     |     |     |     |     |     |
| 14. Professional | .31 | .45 | .14 | .15 | -.14| -.08| .14 | .07 | .06 | .16 | .01 | -.02| .05 | .38**| .35**|     |     |     |     |     |     |
| **Cybervetters** |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 15. Employability | 9.73| 1.68| .07 | .10 | -.01| -.13| .09 | -.03| .14 | .09 | -.09| .09  | .07 | -.11 | .23**| .27**|     |     |     |     |     |     |
| **Control**     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 16. Attract.    | 3.06| .63 | .12 | .05 | -.05| .05 | .03 | -.03| -.08| -.14| .00  | .04 | -.17*| -.08 | -.00 | .25**|     |     |     |     |     |     |
| **Moderators**  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 17. Activity Level | 2.01| 1.06| .11 | .05 | .02 | .13 | -.00| .06 | .07 | .21*| .04  | -.02| .17*| .67**| .69**| .35**| .13*| -.13 |     |     |     |
| 18. Privacy Usage | 3.01| .80 | -.02| .14 | .03 | .03 | .06 | -.01| .01 | -.14| -.15 | .11 | -.26**| -.52**| -.38**| -.32**| -.09*| .12 | -.55**|     |
| 19. Priv. x Act. | 5.57| 2.38| .07 | .14 | .02 | .21*| -.02| .02 | .06 | .10 | -.08| .08  | .01 | .33**| .49**| .14* | .13*| .00 | .72**| .10 |     |     |

* Significant at .05 level  
** Significant at .01 level  

N for variables 1-10 was 131, N for variables 11-19 was 200.

**Note.** E—Extroversion; A—Agreeableness; C—Conscientiousness; N—Neuroticism; O—Openness to Experience; Task Perf.—Task Performance; Job-Irrelevant—Job-Irrelevant Cyber-Behavior; Antisocial—Antisocial Cyber-Behavior; Prosocial—Prosocial Cyber-Behavior; Professional—Professional Cyber-Behavior; Employability—Cybervetters’ impressions of a profile owner’s employability; Attract.—Facebook profile owner’s physical attractiveness; Priv. x Act.—Interaction between Facebook activity level and privacy settings usage.
### Table 6

Results of the Regression Analyses Testing the Moderators

<table>
<thead>
<tr>
<th>H</th>
<th>Predictor</th>
<th>$b$</th>
<th>SE</th>
<th>Beta</th>
<th>$t$</th>
<th>$F$</th>
<th>$R^2$</th>
<th>$R^2_{adj}$</th>
<th>$\Delta R^2$</th>
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</thead>
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<tr>
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<td>7.53</td>
<td>.13</td>
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<td>.03</td>
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<tr>
<td></td>
<td>Attract.</td>
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<td>.46</td>
<td>.23</td>
<td>**</td>
<td>3.42</td>
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<tr>
<td>8a</td>
<td>Anti.</td>
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<td>.57</td>
<td>.19</td>
<td>1.01</td>
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<tr>
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<td>Activity Level</td>
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<td>Act. x Anti.</td>
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<td>.18</td>
<td>-.57</td>
<td>-2.46</td>
<td>*</td>
<td>7.53**</td>
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<td>.12</td>
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<td>Intercept</td>
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<td>2.29</td>
<td>5.99</td>
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<td>5.82</td>
<td>.11</td>
<td>.09</td>
<td>.02</td>
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<td>Attract.</td>
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<td>.47</td>
<td>.23</td>
<td>**</td>
<td>3.35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8b</td>
<td>Anti.</td>
<td>-1.65</td>
<td>.65</td>
<td>-.55</td>
<td>-2.54</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Privacy Usage</td>
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<td>.51</td>
<td>-.28</td>
<td>-2.86</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Priv. x Anti.</td>
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<td>.24</td>
<td>.41</td>
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<td>*</td>
<td>5.82**</td>
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<td>Intercept</td>
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<td>2.54</td>
<td>3.72</td>
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<td>4.97</td>
<td>.11</td>
<td>.09</td>
<td>.00</td>
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<td>Attract.</td>
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<tr>
<td></td>
<td>Priv. x Act. x Anti.</td>
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<td>.08</td>
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<td>.45</td>
<td>4.97</td>
<td>.11</td>
<td>.09</td>
<td>.00</td>
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</tbody>
</table>

* Significant at .10 level
* Significant at .05 level
** Significant at .01 level

*Note.* H—Hypothesis; Act. x Anti. — Two-way interaction between activity level and antisocial cyber-behavior; Priv. x Anti. — Two-way interaction between privacy settings usage and antisocial cyber-behavior; Priv. x Act. x Anti. — Three-way interaction between privacy settings usage, activity level, and antisocial cyber-behavior; $b$—Unstandardized regression weight; SE—Standard error; Beta—Standardized regression weight; $t$—Independent samples $t$-test; $F$—$F$ statistic for the overall regression model; $R^2$—Amount of variance explained in the criterion by the interaction term; $R^2_{adj}$—Amount of variance explained in the criterion by the interaction term adjusted for the degrees of freedom; $\Delta R^2$—Change in the amount of variance explained in the criterion after the addition of the interaction term. The table displays the results of the regression analyses with employability as an outcome.
Table 7
Post Hoc Results Showing Individual Differences among Those Who Provided Their Facebook Account Links and Supervisor’s Email versus Those Who Did Not

<table>
<thead>
<tr>
<th>Information Provided</th>
<th>Variables</th>
<th>Dummy</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t^a</th>
<th>Cohen’s d</th>
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<tbody>
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<td></td>
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<td>Facebook Link</td>
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<td>3.72</td>
<td>.71</td>
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<tr>
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<td>.68</td>
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</tr>
<tr>
<td></td>
<td>GMA</td>
<td>0</td>
<td>831</td>
<td>9.25</td>
<td>3.34</td>
<td>9.35**</td>
<td>-.44</td>
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<td>951</td>
<td>10.52</td>
<td>2.40</td>
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<tr>
<td>Supervisor’s Email</td>
<td>GMA</td>
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<td>520</td>
<td>3.79</td>
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<td>4.97**</td>
<td>-.07</td>
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<td>3.84</td>
<td>.73</td>
<td></td>
<td></td>
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</tbody>
</table>

a. df = 1780

Note. 1—Provided information, 0—Did not provide information. Negative Cohen’s d values indicate that the participants that voluntarily provided either their Facebook links or their supervisor’s email scored higher on conscientiousness, openness, and GMA than their counterparts who did not provide this information.
Figure 1. Frequency of Published Articles in Peer-Reviewed Psychological Journals. In the interest of space, the figure displays the results for only four search terms. Similar trends were observed with other variations of the search terms. The articles were both quantitative and qualitative in nature.
Figure 2. A common antecedents model of cybervetting. The model predicts that personality and GMA would serve as common antecedents to the cyber-behaviors and the workplace criteria. The cyber-behaviors would influence the cybervetters’ judgments of the profile owner’s employability. These relationships would depend on the extent to which the user utilizes the privacy settings on their public profile (privacy settings usage) and the frequency with which the users engage in Facebook behaviors (activity level).
Figure 3. Interactional model of Facebook activity level and privacy settings usage. Both variables are continuous and range from ‘low’ to ‘high.’ It was hypothesized that each variable would individually and in combination moderate the relationship between the four types of cyber-behaviors and the cybervetters’ judgments of the profile owner’s employability.
APPENDIX C SURVEY FOR PARTICIPANTS

Do you have a Facebook profile?
1. Yes
2. No

**If Yes is selected, then skip to “Your first name.” If No is selected, then skip to the end of survey.

Your first name: ________________
Your last name: ________________
Your email address: ________________

How often do you use Facebook?
1. Never
2. Rarely
3. Sometimes
4. Often

To what extent do you use Facebook privacy settings?
1. Not at all
2. Very little
3. Somewhat
4. To a great extent

On the following pages, there are phrases describing people's behaviors. Please use the rating scale below to describe how accurately each statement describes you. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself in relation to other people you know of the same sex as you are and roughly the same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence. Please read each statement carefully.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am the life of the party</td>
<td>2. I sympathize with others' feeling</td>
<td>3. I get chores done right away</td>
<td>4. I have frequent mood swings</td>
<td>5. I have a vivid imagination</td>
<td>6. I don't talk a lot</td>
</tr>
</tbody>
</table>
Now we will ask you to remember the following list of words. Please try to use your memory for this exercise. You will have 30 seconds to study the list.

Blue
England
Sparrow
Yellow
Italy
Paris

Crow
Orange
Denver
Japan
Athens
Robin

Please list as many words as you can remember. _____________________________

Please list the words that were the names of COUNTRIES. _____________________________

Next, we would like you to fill in the following demographic information.

Gender
1. Male
2. Female

Age______________

Race/Ethnicity
1. White/Caucasian
2. Black/African American
3. Latino/Hispanic
4. Asian/Pacific Islander
5. American Indian
6. Other___________

Job Title______________

Please copy and paste the link to your Facebook profile as it appears in your browser. Make sure you are viewing your own timeline before copying the link. The link should appear as "https://www.facebook.com/username" or if you do not have a Facebook username as "https://www.facebook.com/5646212."

NOTE: Your profile will be reviewed as it appears to the public, NOT as it appears to your Facebook friends. Your confidentiality will be protected by being stored on password-protected computers of the researchers involved in the project. To further protect your confidentiality, after we link your responses from the self-reported questionnaires to the ratings of your public Facebook profile completed by the trained raters, we will assign you with a randomly generated code, which will not identify you in any way. In other words, your identity information will be removed from the dataset once the self-reported scores and the ratings of the profiles are matched. Finally, the results of this study will only report general trends and tendencies without mentioning names.
Can we contact your supervisor for additional research purposes?
1. Yes
2. No

If NO, redirect them to this page: Thank you for participating in the current study. If you have any questions or concerns please contact Dr. Michael Zickar, Professor of Psychology, at mzickar@bgsu.edu or (419)372-9984. If you have questions about your rights as a research participant, you may contact the Chairperson, Human Subjects Review Board at Bowling Green State University, at (419)372-7716 or at hsrb@bgsu.edu. If you would like to be entered in the gift card raffle, please enter your email address below. Your email address will not be associated with your responses, it will only be used to determine the winner of the giftcards.

If YES, please provide your supervisor's email address:______________

Thank you for participating in the current study. If you have any questions or concerns please contact Dr. Michael Zickar, Professor of Psychology, at mzickar@bgsu.edu or (419)372-9984. If you have questions about your rights as a research participant, you may contact the Chairperson, Human Subjects Review Board at Bowling Green State University, at (419)372-7716 or at hsrb@bgsu.edu. If you would like to be entered in the gift card raffle, please enter your email address below. Your email address will not be associated with your responses, it will only be used to determine the winner of the giftcards.
APPENDIX D SURVEY FOR SUPERVISORS

First name of your subordinate: _____________

Last name of your subordinate: _____________

Please indicate the level of your agreement with the following statements using the scale below.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
1                        2           3    4                 5

In the past 30 days, I would say that my subordinate:

1. Adequately completed the assigned duties.
2. Fulfilled all responsibilities specified in their job description.
3. Performed tasks that were expected of him or her.
4. Met formal performance requirements of the job.
5. Engaged in activities that directly affected his or her performance evaluation.
6. Neglected aspects of the job he or she was obligated to perform.
7. Failed to perform essential duties.

Please read each statement and indicate to what extent your subordinate engaged in each of the behaviors in the past year.

Never Once a year Twice a year Several times a year Monthly Weekly Daily
1                        2                     3                         4                              5                     6                    7

1. Made fun of someone at work.
2. Said something hurtful to someone at work.
3. Made an ethnic, religious, or racial remark at work.
4. Cursed at someone at work.
5. Played a mean prank on someone at work.
6. Acted rudely toward someone at work.
7. Publicly embarrassed someone at work.
8. Taken property from work without permission.
9. Spent too much time fantasizing or daydreaming instead of working.
10. Falsified a receipt to get reimbursed for more money than you spent on business expenses.
11. Taken an additional or longer break than is acceptable at your workplace.
12. Come in late to work without permission.
13. Littered your work environment.
14. Neglected to follow your boss's instructions.
15. Intentionally worked slower than you could have worked.
16. Discussed confidential company information with an unauthorized person.
17. Used an illegal drug or consumed alcohol on the job.
18. Put little effort into your work.
19. Dragged out work in order to get overtime.

*Here is a number of behaviors that may or may not apply to your subordinate, please indicate the level of your agreement with the following statements using the scale below.*

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

My subordinate is someone who:

1. Helps others who have been absent.
2. Punctual.
3. Volunteers for things that are not required.
4. Takes underserved breaks.
5. Orients new people even though it’s not required.
6. Attendance at work is above the norm.
7. Helps others who have heavy workloads.
8. Coasts toward the end of the day.
9. Gives advance notice if unable to come to work.
10. Spends a great deal of time on personal phone conversations.
11. Does not take unnecessary time off work.
12. Assists supervisor with his or her work.
15. Attends functions not required but that help company image.

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APPENDIX E CYBERVETTING FORM

Please review and rate the public Facebook profiles that have been provided to you by using the prompts presented in this survey. Use the prompts as well as other pertinent information (such as statuses, pictures, posts, likes, etc.) on the profile to answer the questions as fully as possible. I would like you to limit your review of the profiles to the year of 2014. Please rate the profiles to the best of your ability by using information visible on the page. If you cannot find the information that the prompts are asking, please leave that question or option blank.

WARNING: If for some reason you are presented with a profile of someone with whom you are acquainted, please DO NOT rate the profile and notify me. I will assign you a different profile. Failing to do so will result in a violation of the participants' privacy rights.

Enter YOUR first and last name: ____________

Enter the FIRST name of the profile owner you are rating: __________

Enter the LAST name of the profile owner you are rating:__________

The following questions refer to the Facebook owner ONLY!

<table>
<thead>
<tr>
<th>Gender:</th>
<th>Total number of groups:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Male</td>
<td>1. Enter the number below:</td>
</tr>
<tr>
<td>2. Female</td>
<td>2. N/A</td>
</tr>
<tr>
<td>3. N/A</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education:</th>
<th>Total number of photos:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Yes</td>
<td>1. Enter the number below:</td>
</tr>
<tr>
<td>2. No</td>
<td>2. N/A</td>
</tr>
<tr>
<td>3. N/A</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relationship status:</th>
<th>Total number of friends:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Yes</td>
<td>1. Enter the number below:</td>
</tr>
<tr>
<td>2. No</td>
<td>2. N/A</td>
</tr>
<tr>
<td>3. N/A</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total number of movies:</th>
<th>Total number of musical artists/bands:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Enter the number below:</td>
<td>1. Enter the number below:</td>
</tr>
<tr>
<td>2. N/A</td>
<td>2. N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total number of TV shows:</th>
<th>Total number of books:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Enter the number below:</td>
<td>1. Enter the number below:</td>
</tr>
<tr>
<td>2. N/A</td>
<td>2. N/A</td>
</tr>
</tbody>
</table>
**Based on photos available, how physically attractive would you rate the owner of the profile?**

1. Very unattractive
2. Unattractive
3. Neither Attractive nor Unattractive
4. Attractive
5. Very Attractive

**Please indicate how often the profile page contains each of the following:**

<table>
<thead>
<tr>
<th>Posts</th>
<th>Never</th>
<th>Rarely (1 or 2 posts)</th>
<th>Occasionally (3 or 4 posts)</th>
<th>Frequently (5 posts or more)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. References to doing illegal drugs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Posts of a sexual nature</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Use of profanity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Use of Internet slang</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Improper grammar, spelling, and punctuation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. References and photos related to alcohol consumption</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Posts and photos related to volunteer work and charity donations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Family oriented posts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Helpful posts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Criminal behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Gaming behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Rude or bullying posts and comments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Outdoor recreation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Sports</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Travel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Please indicate how often the profile page contains each of the following and the appropriateness of the content. NOTE: If you checked NEVER for a post, please leave the appropriateness boxes empty.

<table>
<thead>
<tr>
<th>Posts</th>
<th>Never</th>
<th>Rarely (1 or 2 posts)</th>
<th>Occasionally (3 or 4 posts)</th>
<th>Frequently (5 posts or more)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Political posts</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2. Religious posts</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. Humorous posts</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. Posts about coworkers, supervisor, and/or job</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5. Social activity</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>6. Personal/emotional disclosure</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>7. Intellectual posts</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>8. Posts about school, classes, and/or classmates</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>9. Cultural posts</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
Taking into account the entire Facebook profile as a whole, please answer the following questions.

What is your general impression of the owner of the Facebook profile?

1. Highly Negative
2. Moderately Negative
3. Neutral
4. Moderately Positive
5. Highly Positive

If you were hiring for your company, how likely would you be willing to hire this candidate?

1. Highly Unlikely
2. Unlikely
3. Neutral
4. Likely
5. Highly Likely

Pretend you are a recruiter for a Fortune 500 company with a variety of professional jobs to fill. How would this profile impact your evaluation of this person as a potential job candidate?

1. to a very small extent
2. to a small extent
3. to a moderate extent
4. to a large extent
5. to a very large extent

How likely is this a “top notch” candidate?

1. Highly Unlikely
2. Unlikely
3. Neutral
4. Likely
5. Highly Likely
APPENDIX F UNIVERSITIES

1. Bowling Green State University
2. Ohio University
3. Ohio State University
4. Miami University
5. University of Akron
6. Kent State University
7. Cleveland State University
8. University of Toledo
9. Bloomsburg University of Pennsylvania
10. Eastern Michigan university
11. Ferris State University
Informed Consent for Participants

The purpose of this research is to determine whether or not there is a relationship among general behavioral trends associated with the employees’ use of popular social networking websites like Facebook and the supervisory job performance ratings. This study is being conducted by Julia Berger, a doctoral student in the Psychology Department at Bowling Green State University (BGSU), for her dissertation project. This project is being advised by Dr. Michael Zickar.

Research in this area can help us identify broad categories, under which various online behaviors fall. Determining these broad categories may improve our understanding of the type of information individuals willingly share on the internet and the way this information relates to the supervisory job performance ratings. While you will not receive any direct benefits for participating in this research, you will be helping us increase our understanding about the association among the internet-based and workplace behaviors. The risks associated with participating in this study are no greater than those encountered in daily life.

This study consists of several steps. In the first step, you will be asked to complete a short survey and provide some demographics information, such as your age and gender. At the end of the survey you will be asked to provide the link to your public Facebook profile. The examination of the public Facebook profiles will allow me to determine broad behavioral categories, in which the internet users willingly engage on Facebook. In the second step, you will be asked to provide the first and last name of your supervisor and his or her work email address. Your supervisor will be contacted via email and asked to complete a short survey, which consists of several job performance evaluation questions. This step is necessary for the current study as it will allow me to determine whether or not there is a relationship among the broad behavioral categories observed on the public Facebook profiles and the supervisory job performance ratings.

NOTE: To ensure your confidentiality, I will NOT provide your supervisor with your responses to your survey at any point during this research project or after it is completed. I will provide your supervisor with ONLY your first and last name and will ask him or her to rate your job performance on several dimensions. NOTE: I will NOT use official performance evaluations for two reasons. First, studies have shown that official ratings of job performance are influenced by a variety of factors that limit their usefulness in a research study. Second, my study focuses on particular job-related factors that I will be measuring with the supervisory survey. The supervisory ratings will be treated confidentially and will be used strictly for research purposes. These ratings will NOT be released to anyone and are protected from disclosure under the Freedom of Information Act [FOIA, 5 U.S.C 552 (b)(c)(2)]. It should take you no more than 5 minutes to answer the survey questions. For your security, after you finish making and submitting your choices, please clear your browser history and page cache. In addition, you may want to complete the survey on a personal (non-public) computer.

In the third step of the study, the content of your public Facebook profile will be evaluated by our trained research team members. NOTE: Your Facebook profile will be reviewed as it appears to the public, NOT as it appears to your Facebook network (friends, friends of friends, etc.). The trained research assistant who will be rating the content of your profile will create a brand new Facebook profile, strictly for the purposes of this study. This will
allow them to view your profile just as it appears to the public without breaching your privacy settings. In other words, only the content of your profile that is NOT restricted by the privacy settings will be reviewed for the purposes of this research.

For our research team members to review and rate your profile, we would like to ask your permission. **NOTE:** You will NOT be asked at any time during the study or after it is completed to give us access to any parts of your profile that are currently set to 'private.' We will only be rating the parts of your profile that are set to 'public.' To grant us your permission, click ‘I agree’ at the bottom of this page.

To protect your confidentiality, I will store your survey responses on a password-protected computer, to which only I will have access. To further protect your confidentiality, after I link your responses from this survey to the ratings of your public Facebook profile completed by the trained raters and your supervisor's survey, I will assign you with a randomly generated code, which will not identify you in any way. In other words, your personally identifiable information will be removed from the dataset, once the survey responses are matched. Finally, the results of this study will only report general trends and tendencies without mentioning names.

**All participants will be entered into a drawing to win one of five $50 Amazon.com gift cards.**

You must be at least 18 years old to participate in this study and have a Facebook profile. Your participation in this study is completely voluntary, and you are free to discontinue participation in this study at any time. Deciding to participate or not will not affect any relationship you may have with Bowling Green State University. You may also freely decline to respond to any questions. Completing the survey indicates your consent to participate in this study.

I hope to use the results of this study to publish an article discussing whether or not there is a relationship among general behavioral trends associated with the employees’ use of popular social networking websites like Facebook and the supervisory job performance ratings, but no one person’s answers or names will be used—only a summary of data from many participants.

In addition, if you have any questions about the study, you may contact either myself, Julia Berger, at jlberger@bgsu.edu or (718)674-4698—or my faculty supervisor, Dr. Michael Zickar, Professor of Psychology, at mzickar@bgsu.edu or (419)372-9984. If you have questions about your rights as a research participant, you may contact the Chairperson, Human Subjects Review Board at Bowling Green State University, at (419)372-7716 or at hsrb@bgsu.edu.

By clicking ‘I agree,’ you are consenting to participate in this study.
Informed Consent for Supervisors

The purpose of this research is to determine whether or not there is a relationship among general behavioral trends associated with the employees’ use of popular social networking websites like Facebook and the supervisory job performance ratings. This study is being conducted by Julia Berger, a doctoral student in the Psychology Department at Bowling Green State University (BGSU), for her dissertation project. This project is being advised by Dr. Michael Zickar.

Research in this area can help us identify broad categories, under which various online behaviors fall. Determining these broad categories may improve our understanding of the type of information individuals willingly share on the internet and the way this information relates to the supervisory job performance ratings. While you will not receive any direct benefits for participating in this research, you will be helping us increase our understanding about the association among the internet-based and workplace behaviors. The risks associated with participating in this study are no greater than those encountered in daily life.

This study consists of several steps. In the first step, I asked your subordinate to fill out a short questionnaire. Upon completion, he or she was asked to provide your contact information (i.e., first and last name and work email address). In the next step, you will be asked to complete a short survey evaluating your subordinate’s job performance. This step is necessary to determine whether or not there is a relationship among the broad behavioral categories observed on your subordinate’s public Facebook profile and the supervisory job performance ratings.

NOTE: To ensure your subordinate’s confidentiality, I will NOT provide you with his or her responses to the questionnaire that he or she completed in the first step at any point during this research project or after it is completed. I will however provide you with your subordinate’s first and last name and will ask you to rate his or her job performance on several dimensions. NOTE: I will NOT use official performance evaluations for two reasons. First, studies have shown that official ratings of job performance are influenced by a variety of factors that limit their usefulness in a research study. Second, my study focuses on particular job-related factors that I will be measuring with this survey. The supervisory ratings will be treated confidentially and will be used strictly for research purposes. These ratings will NOT be released to anyone and are protected from disclosure under the Freedom of Information Act [FOIA, 5 U.S.C 552 (b)(c)(2)].

It should take you no more than 5 minutes to answer the survey questions. For your security, after you finish making and submitting your choices, please clear your browser history and page cache. In addition, you may want to complete the survey on a personal (non-public) computer.

I will protect the confidentiality of your data and your subordinate's data by storing them on a password-protected computer, to which only I will have access. To further protect your confidentiality, after I link your job performance evaluations with your subordinate’s survey responses, I will assign each participant with a randomly generated code and will delete all personally identifiable information from the dataset. In other words, your identity information will be removed from the dataset, once the survey responses are matched. Finally, the results of this study will only report general trends and tendencies without mentioning names.
All participants will be entered into a drawing to win one of five $50 Amazon.com gift cards.

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By clicking ‘I agree,’ you are consenting to participate in this study.