

SOCIAL NETWORKING USE AS A COUNTERPRODUCTIVE BEHAVIOR

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## ABSTRACT

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by Anna E. Brown

During the past 16 years, information technology has expanded to include social networking sites. The rising popularity of social networking sites has created a new problem, because an individual can harm the organization or its employees through damaging or counterproductive social networking behaviors. In this work, counterproductive social networking behaviors are examined as being a part of the previously established counterproductive workplace behaviors construct. Employed adults ( $n = 247$ ) and their supervisors ( $n = 283$ ) responded to an online survey. Results indicated that counterproductive social networking behaviors were best conceptualized as a separate, but related construct to other counterproductive work behaviors. Based on attribution theory, results also demonstrated that workplace hostile attribution style mediated the relationships between organizational justice, organizational constraints, and negative social networking behaviors. Additionally, narcissism, which has been previously shown to relate to social networking behaviors, was found to moderate the relationship between workplace hostile attribution style and counterproductive social networking behavior.

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## **Introduction**

### **Overview**

In the 21st century, it is not uncommon to find organizations that use information technology as a means to accomplishing daily tasks (e.g., computers and cellular devices). Information technology has been previously found to have a direct influence on an organization's performance levels (Heintze & Bretschneider, 2000). This pairing of technology and organizations has also been accompanied by technology-based behaviors that can be harmful to the organization. These behaviors have been found to contribute to decreases in productivity and influence aggression between coworkers (e.g., Mills et. al., 2001; Weatherbee, 2010). In organizational research, these types of workplace behaviors are commonly referred to as counterproductive work behaviors (CWBs), which are actions that harm or are intended to harm the organization or its employees (Fox & Spector, 2005). Organizational researchers started to develop and measure CWB during the 1980s (e.g., Robinson & Bennett, 1995), coincidentally at the same time that computers were beginning to be mainstreamed for personal use and the internet infrastructure we use today was being developed (Leiner et. al., 1997). It is likely that there was no reason for researchers to include information technology as a form of CWB because the development of computers for social networking use (SNS) and research on CWBs started at the same time. However, as we have grown to use SNSs, it has become apparent by researchers that SNS use may represent a form of CWB (Klotz & Buckley, 2013).

Previous CWB research has found they have a negative impact on an organization's finances, with approximately \$200 billion being lost annually from theft and fraud alone (Flaherty & Moss, 2007), and are estimated to cause 20 percent of failed organizations in the

U.S. (Coffins, 2003). CWB's effect on organization finances has made CWB an important area of study by both organizations and researchers (Penney & Spector, 2002). A significant amount of this research has focused on antecedents of CWBs (e.g., Hershcovis et. al., 2007; Robinson, 2008; Spector & Fox, 2002). A search for scholarly research on SNS use as a potential CWB found that research on this topic is a neglected area. However, the impact of SNSs on organizations should be taken seriously by both organizations and researchers. One reason that SNS use should not be taken lightly is that they may increase the losses from CWBs and reduce productivity, but further research is needed to confirm this.

Despite little research on SNS, many organizations have started to take an aggressive stance against internet abuse by employees. A 2007 survey by the American Management Association found that 30% of organizations have fired employees for internet misuse and 28% have fired employees over email misuse. As well, 50% of organizations surveyed were found to block SNSs on work computers (American Management Association, 2007). It is apparent that there is a strong influence by technologies, such as email and SNSs, on organizations. Despite these actions by organizations, there is little research on SNS as a potentially threatening CWB.

**The Current Study.** In this study, counterproductive social networking behaviors (CSNBs) are researched as being a part of the previously established CWB construct. This is done initially via factor analysis combining previously-studied CWBs with CSNBs. It is also tested by looking at CSNBs relationship with common antecedents and outcomes associated with CWBs. Furthermore, we test a moderated mediation between work stressors and organizational justice, and SNBs to demonstrate the close relation they share with CWBs (please see Figures 1, 2, 3, and 4). Specifically, this work examines (1) possible antecedents of CSNBs, (2) how the

workplace hostile attributional style (WHAS) mediates this relationship, and (3) how the personality trait narcissism moderates workplace hostile attributional style and CSNBs. We base this on equity theory, the stressor-strain model, attribution theory and past research on narcissism. In summary, the goal of this study is to extend the definition of CWB to include CSNBs and lay the groundwork for future research in the area of SNBs as a CWB.

## **Literature Review**

### **Counterproductive Work Behaviors**

CWBs are characterized as harmful, intentional acts against an organization as a whole and individuals affiliated with it (Spector & Fox, 2002). It should be noted that CWBs do not need to harm the organization directly (Spector, 2011). A search of workplace literature reveals that the CWB construct overlaps with several other constructs, such as aggression (Neuman & Baron, 1999), deviance (Robinson & Bennett, 1995), revenge (Bies & Tripp, 2005), retaliation (Skarlicki & Folger, 1997), and bullying (Rayner & Keashly, 2005). Because of this, CWBs include a wide range of behaviors, for example, absenteeism, incivility, and theft.

Past research has found that perceptions of injustice at work (Skarlicki & Folger, 1997), negative emotions (Spector and Fox, 2002), and workplace stressors (e.g., high workload and constraints; Bayram, Gursakal & Bilgel, 2009; Hershcovis et. al., 2007) predict CWBs. As well, CWBs have been found to have substantial impacts on an organization (e.g., Collins, 2003; Flaherty & Moss, 2007). This harm to the organization can either be directed at the whole organization or at individuals within the organization. For this reason, CWB often includes two sub-factors, which are typically used to differentiate CWBs based on target. Specifically, CWB-interpersonal (CWB-I) involves CWBs that are directed towards other people at work whereas CWB-organizational (CWB-O) involves CWBs that are directed at the organization as a whole.

**Deviance via Information Technology.** CWBs are not limited to the physical world. They can also occur on the internet through various information technologies (e.g., computers and cell phones). To date, research on the effects of counterproductive information technology behaviors on organizations has investigated general cyber deviancy and misuse of technology through counterproductive computer use and non-productive computer use (Mastrangelo, Everton, & Jolton, 2006), specific behaviors of email usage (e.g., Weatherbee & Kelloway, 2006), and reports on SNS's negative effect on organizations (e.g., Clapham, 2010). However, research on why these behaviors occur, which employees are most likely to take part in them, and possible antecedents to them has not been conducted from an organizational perspective.

One possible reason that research has lagged behind is that the SNS use is a recent phenomenon that started in 1997 (Boyd & Ellison, 2007). From its start until today, the use of SNSs has expanded greatly, with Facebook alone now having an estimated 1.15 billion current users (Smith, 2013). It is, therefore, likely that SNSs will be used by some of an organization's employees. However, deciding whether this use will be positive, negative, or neutral for organization's warrants further review by organizational researchers. It may be that SNS impact will be dependent on the individual and the situation. We expect that SNSs will have some negative impacts on organizations, which would fit the definition of CWB.

As explained above, it has been found that CWBs can have financial consequences for an organization. However, there has been limited research on deviance via internet technology use by employees. One reason for the lack of research on internet based forms of deviance may be that it is harder to track, especially with many smart phones now providing wireless access to the internet at any time. Additionally, internet deviance by employees does not have to only occur at

work. At work, an employee is able to do a number of CWBs (e.g., theft), but when they leave work their chances of conducting a CWB, such as theft, is limited. However, SNSs allow for an employee to conduct a CWB both at work and outside of work. SNS use also differs from other CWBs in that it is not always a CWB. It is only considered a CWB when an employee harms or intends to harm the organization or its employees (e.g., complaining about coworkers on SNS). When an employee chooses to use SNSs in a benign manner, no harm comes to the organization or its employees. When they choose to use SNSs in a negative manner, as with the intention to harm the organization, it can lead to conflict between employees and denigrate the reputation for an organization.

As mentioned above, research has focused on two areas relating to internet technology deviance in the workplace. First, general cyber deviancy and misuse of technology through counterproductive computer use and non-productive computer use has been studied (e.g., Weatherbee, 2010; Mastrangelo, Everton, & Jolton, 2006). Counterproductive computer use involves behaviors that represent a threat to the organization, such as illegally downloading music (Mills et. al., 2001). Non-productive computer use, on the other hand, represents nonthreatening behaviors that result in decreased productivity (Mastrangelo, Everton, & Jolton, 2006). Non-productive computer use, when comparing it to other CWBs, falls under that category of production deviance (Robinson & Bennet, 1995). A common example of this is cyberloafing, which refers to the access of the internet by employees when they are working (Lim, 2002).

A second area, aggression against coworkers through information and communication technologies (ICTs), has become more common in the workplace literature. Commonly referred

to as cyberaggression or cyberbullying, it involves acts of aggression and hostility by employees when communicating virtually. Although similar to general cyber deviancy, discussed above, it has been studied as a separate construct (Weatherbee & Kelloway, 2006). This form of aggression can take place through various means, such as email and on SNSs. Cyberaggression represents another form of aggression that can involve intimidation, harassment and bullying of others. For this reason, it should be taken as serious, if not more, as other aggressive CWBs because it expands the scope that an individual can aggress.

Current research demonstrates that researchers are taking more of an interest on cyberdeviancy and cyberaggression. However, this is not the case for SNSs, which has had limited research. To date, most research on SNSs has focused on their relation to personality variables (e.g., McKinney, Kelly & Duran, 2012; Campbell, 2011; Ryan & Xenos, 2011). A number of personality variables have been found to be significantly related to SNS use. One variable that has been found to have a strong relation with SNS users is narcissism, which is commonly found to associate with other CWBs (O'Boyle, Foryth, Banks & McDaniel, 2012). Specifically, narcissism has been found to be associated with increases in self-presentation on SNSs (Carpenter, 2011), having many SNS friends (Bergman et. al., 2011), and self-focused status updates (McKinney, Kelly & Duran, 2012).

Recently, it was proposed that SNSs are a plausible source of CWBs for the organization, but there has been no research to date to confirm this (Klotz & Buckley, 2013). One possible way that SNSs can serve the function as a CWB is through cyberloafing. Here, employees can use their SNS while working (e.g., browsing of news feeds, chatting with friends and complaining about work). This can lead to losses in production, decreases in the quality of work,

and harm to public image. It is also possible that SNSs offer another avenue for cyberaggression, where intimidation and harassment can take place. Because research on SNSs is limited, there is a need to research it from an organizational standpoint.

A good starting point is to establish if CSNBs are part of the same factor structure as CWBs. More specifically, we hope to demonstrate that CSNBs should be included within the previously established CWB construct. This will be done by conducting two confirmatory factor analyses (CFA). In the first CFA, both CSNBs and CWBs will be combined under one single factor to demonstrate that they belong to a single construct. The second CFA will break-up CSNBs and CWBs into two separate factors to show that they belong to two different but closely related constructs. We expect that the more parsimonious one factor model will show better fit than the two factor model, indicating that it is more appropriate to consider CSNBs and CWBs as a single construct, rather than two separate constructs.

*Hypothesis 1:* A one factor model combining the CSNB and CWB items will have better fit than a two-factor model representing CSNB and CWB separately.

### **Organizational Justice**

Injustices in the organization are believed to function as one of the strongest antecedents to CWBs (Flaherty & Moss, 2007). According to Spector and Fox (2002), unfair environments induce high levels of stress and increase the likelihood of detrimental and aggressive behaviors. Similar to CWBs, we expect that injustice at work will lead to CSNBs. Specifically, procedural and distributive injustices are believed to induce these CSNBs.

**Procedural Justice.** Procedural justice is the perception by employees that an organization follows fair processes (Cropanzano & Wright, 2010). Processes and procedures are

normally determined at the organizational level (Aquino et al., 1999), which can lead to harmful acts aimed at the organization (Skarlicki & Folger, 1997). Based on equity theory, employees choose to retaliate because they want to restore balance to the ratio of their inputs into the organization and the fairness of processes in the organization, often through the withholding of effort (decreased inputs) or taking more from the organization (such as stealing; Adams, 1963). In fact, past research has found that procedural justice moderately correlates with some CWBs, such as withdrawal behaviors ( $r = -.36$ ) and negative reactions (e.g., employee theft,  $r = -.27$ ; Colquitt, et. al., 2001). Therefore, it is expected that CSNBs will function in the same way as CWBs (e.g., getting on SNS while at work) when low procedural justice is perceived.

*Hypothesis 2a:* Perceptions of procedural justice will be negatively related to CSNBs.

**Distributive Justice.** Distributive justice is the perceived fairness that the outcomes obtained for the effort put into something is of equal value (Cropanzano & Wright, 2010; Flaherty & Moss, 2007). This injustice, according to Adams (1963) equity theory, would cause employees to seek a balance between work input and rewards through harmful behaviors. Past research has found distributive justice to be negatively related to CWB-O (Skarlicki & Folger, 1997) and CWB-I (Aquino, Lewis & Bradfield, 1999; Skarlicki & Folger, 1997). When an individual perceives distributive injustices it can affect their behavior, such as changes in performance (Cohen-Charash & Spector, 2001). A meta-analysis of 183 justice studies found that distributive justice negatively correlated with withdrawal behaviors ( $r = -.41$ ) and negative reactions ( $r = -.26$ ) (Colquitt et. al., 2001). These changes in behavior might be the employees attempt to hurt the organization because they perceived distributive injustices. Based on this, it is

expected that CSNB will function in the same way as CWBs (e.g., getting on SNS to complain about work) when low distributive justice is perceived.

*Hypothesis 2b:* Perceptions of distributive justice will be negatively related to CSNBs.

## **Workplace Stressors**

**Organizational Constraints.** Organizational constraints are workplace stressors that interfere with an individual accomplishing their work goals. These constraints place strain on employees and cause frustration. This can lead to the withholding of effort as a way of retaliating against the organization and other employees. The relationship between organizational constraints and CWBs has been found to be a significant positive relationship (Fox, Spector, & Miles, 2001; Hershcovis et. al., 2007). Specifically, existing research often posits that constraints function as a stressor and CWBs are the behavioral responses to that stress placed on the employee (Fox, Spector, & Miles, 2001). Additionally, constraints are found to significantly relate to minor forms of CWBs (e.g., wasting supplies) versus serious CWBs (e.g., purposely damaging valuable work equipment) (Fox & Spector, 1999). Thus, CSNBs, such as complaints about work, would likely increase when there are high constraints present in the workplace

*Hypothesis 3a:* Organizational constraints will be positively related to CSNBs.

**Quantitative Workload.** Quantitative workload (QWL) involves the amount of work an employee is expected to complete as opposed to the quality of the work. Research on QWL and CWB has revealed that, in some instances, there is a significant relationship (e.g., Chen & Spector, 1992). A study on a group of workers in Turkey found that there was a significant relationship between QWL, and abuse and withdrawal CWBs (Bayram, Gursakal & Bilgel, 2009). Another study by Balducci, Schaufeli, and Fraccaroli (2011) also found that workload and

hostility/abuse were positively related when mediated by a work related negative effect. This may be an indication that more serious CWBs, such as theft, are not as likely when the stressor is high QWL. However, a nonsignificant relationship between workload and CWBs was found by Sprung and Jex, (2012). Overall, though, we feel there is substantial evidence indicating a link between QWL and CWB, thus we posit the following:

*Hypothesis 3b:* Quantitative workload will be positively related to CSNBs.

### **Workplace Hostile Attribution Style**

According to attribution theory, a person explains another person's intentions or a situation by making attributions (Martinko, 1995). Sometimes these attributions can include suspicions about that person or situation. A person can conclude that another person's intentions are aggressive in nature, even when their intentions are actually benign (Douglas & Martinko, 2001). This may suggest that how people respond to a situation may be dependent on how they interpret causality. If they attribute the cause of the situation as being intentional and malicious they are more likely to act aggressively (Martinko & Zellars, 1998). Douglas and Martinko (2001) found that individuals who had more hostile attribution styles were more likely to report a higher incidence of workplace aggression. As well, past research on aggression indicates that attributions of hostile intent are likely to lead to aggressive retaliation (e.g., Dodge & Somberg, 1987; VanOostrum, 1997). These aggressive retaliation actions by individuals may lead to a higher incidence of CWBs.

A recent construct, workplace hostile attributional style, describes when an individual has the tendency to ascribe information or characteristics about coworkers or situations at work as being aggressive. For example, a person high on workplace hostile attributional style might

assume that missing work items (e.g., office supplies) were stolen instead of misplaced. Past research has found that workplace hostile attributional style was positively related to both CWB-O ( $r = .52$ ) and CWB-I ( $r = .51$ ; Bal & O'Brien, 2009). One reason for this is that stressors in the workplace increase the likelihood of making negative attributions about a person or situation, which can then lead to CWBs (Spector & Fox, 2002). Today, these negative responses may be conducted through SNSs (e.g., harassment of coworkers and complaints about work).

This increased likelihood to make negative attributions occur as a result of perceptions of injustice in the workplace. Based on Martinko (1995) attribution theory, perceptions of these injustices may include suspicion about the reason behind why fair processes or distributions were not found. It is typical for people to ascribe blame for the events in their lives to various sources (e.g., themselves, coworkers) or causes (e.g., intentional or accidental, stable versus variable). Justice is no different, and people may interpret injustices to be aggressive acts against them. For example, an employee might conclude that a person's intentions or a situation is aggressive and intentional (Douglas & Martinko, 2001). Past research has found that ascribing a person's actions or a situation as intentional and malicious increased their likelihood of acting aggressively (Martinko & Zellars, 1998). Because some injustices allow for the interpretation as hostile attributions, which will then in turn lead to harmful work behaviors, it is proposed that workplace hostile attributional style will mediate the relationship between justice in the workplace (both procedural and distributive) with CSNBs.

*Hypothesis 4a:* Workplace hostile attributional style will mediate the relationship between procedural justice and CSNBs.

*Hypothesis 4b:* Workplace hostile attributional style will mediate the relationship between distributive justice and CSNBs.

Another antecedent to CSNBs, workplace stressors, may result in more CWBs by individuals who have a tendency towards hostile attributions at work. Past research has found a positive relationship between workplace hostile attributional style and CWBs (e.g., Bal & O'Brien). Organizational constraints and workload have also been found to be associated with CWBs. Specifically, past research on organizational constraints has found it be associated with CWBs (Fox & Spector, 1999). As well, workload has been found to lead to acts of CWBs. For example, Balducci, Schaufeli, and Fraccaroli (2011) found that workload is associated with CWBs, specifically abuse and hostility. According to Spector and Fox (2002), increases in stress by the work environment can lead to negative attributions that can lead to CWBs. Therefore, it may be possible that individuals experiencing stressors (e.g., high workload) may interpret the stressors as having a malicious cause (e.g., from individuals or the organization). This interpretation may then lead to CWBs. Because some workplace stressors may be attributed as being hostile in nature, it is proposed that workplace hostile attributional style will mediate the relationship between workplace stressors (both organizational constraints and quantitative workload) and CSNBs.

*Hypothesis 4c:* Workplace hostile attributional style will mediate the relationship between organizational constraints and CSNBs.

*Hypothesis 4d:* Workplace hostile attributional style will mediate the relationship between quantitative workload and CSNBs.

## **Narcissism**

Narcissism is a personality trait characterized by a grandiose and inflated self-concept. It is commonly associated with an exaggerated self-view of one's self. This view can include intelligence, attractiveness (Brown & Zeigler-Hill, 2004; Campbell, Rudich, & Sedikides, 2002; Gabriel, Critelli, & Ee, 1994), and an opinion that one is unique in comparison to others (Emmons, 1984). In social psychology, narcissists have been found to thrive with the help of social relationships that help maintain their grandiose opinions about themselves (Morf & Rhodewalt, 2001). Because narcissists are concerned with their self-image/ego, threats to this image can lead to acts of violence and negative behaviors (Baumeister, Smart & Boden, 1996).

Narcissists thrive when there are opportunities to boast about themselves to others. For example, they are eager to discuss themselves (Buss & Chiodo, 1991), more likely to appear on reality television shows (Young & Pinsky, 2006), and experience gains in their esteem from public exhibition of themselves (Wallace & Baumeister, 2002). Investigating narcissism in relation to SNBs, it seems that these sites provide the ideal place for a narcissist to thrive. Research has already shown that there is a relationship between narcissists and SNS use (Buffardi & Campbell, 2008; Ryan & Xenos, 2011). More specifically, it has been found that narcissists have high levels of self-presentation on SNS (Carpenter, 2011), have statuses that usually only focus on themselves (McKinney, Kelly & Duran, 2012), and have a high number of SNS friends (Bergman et. al., 2011).

Based on this, it proposed that narcissism will have a moderating effect on the relationship between workplace hostile attributional style and CSNBs. This is because workplace hostile attributional style increases negative attributions about individuals and situations at work,

and people who are higher in narcissism will be more likely than people lower in narcissism to respond to these hostile attributions via social media. Conversely, individuals high on workplace hostile attributional style but low on narcissism will not choose to act out through CSNBs.

*Hypothesis 5:* The relationship between workplace hostile attributional style and CSNBs will be moderated by narcissism, such that those high in workplace hostile attributional style will commit more CSNBs when they are also higher in narcissism, rather than lower. Those low in workplace hostile attributional style will not be affected by narcissism.

### **Exploratory Analyses**

In addition to testing the above hypotheses, exploratory analysis will be conducted via moderated mediation. A moderated mediation model that includes the combined results of the above Hypotheses (2-5) will be analyzed (see Figures 1, 2, 3, and 4). This will determine whether the mediation, which is proposed above, will depend on the moderation of narcissism. More specifically, we are interested in the indirect effect of workplace hostile attributional style on the relationship between the four antecedents (distributive justice, procedural justice, organizational constraints, and QWL) and CSNBs is present for individuals at three different levels (low, moderate, and high) of the moderator (narcissism). It may be that for some individuals, such as individuals moderate on narcissism, the effect of the four antecedents on CSNBs may be mediated by other mechanisms, be a direct relationship or have no relationship at all.

*Research Question:* Will the relationship between workplace stressors and organizational justice, and CSNBs be significant when being looked at as a moderated-mediation?

## Methodology

### Participants and Procedure

This study will use data collected from a larger study. The entire study contained 34 variables, such as personality traits and supervisor performance ratings (Appendix A). Participants and their supervisors were recruited through the Syracuse University Study Response Project. Participants were paid \$30 for completion of the survey, and supervisors \$10. 50% of the participants were male, with 61% being White. Participants' ages ranged from 23 to 67 ( $M = 39.56$ ,  $SD = 10.18$ ). They worked in a wide range of industries and averaged 40 hours per week. Supervisors were primarily White (57%), with 43% being male, and 18% not disclosing their sex. The mean age of supervisors was 45 years ( $SD = 10.28$ ) (range 24-75).

Data was collected in three waves. The first two waves collected data directly from employees, and the last wave collected both employee ratings and supervisor ratings on employees. At Time 1, 1,527 employees responded to the survey. 390 participants remained after removing participants who indicated they worked less than 20 hours a week or had substantial missing data. Time 1 included measures of workplace hostile attributional style and narcissism. At Time 2, 357 employees filled out the survey, which included measures of procedural justice, distributive justice, organizational constraints, and quantitative workload were taken. At Time 3, 312 employees filled out the survey. Time 3 included measures of Facebook behaviors. An additional 13 cases were removed because participants reported they did not use a SNS. Also at Time 3, 283 supervisors filled out a separate survey regarding their employees CWBs. For all waves of the study, respondents were removed because of non-purposeful responding or

excessive missing data. Thus, the final sample size for employees was 247 and for supervisors was 276.

## **Measures**

**Counterproductive Work Behaviors.** CWB was measured with a 19 item scale (Bennett & Robinson, 2000). Both employees self-reports and their supervisor's ratings of CWBs were conducted. The scale was broken up with two sub-facets, CWB-I (e.g. "made fun of someone at work") and CWB-O (e.g., "Taken property from work without permission"). The response scale was 1 (never) to 7 (daily) for both sub-scales. The alphas for the two employee self-reported subscales are .95 and .97, respectively. The total Cronbach's alpha was .97 and the scale was measured during the third wave of administration. The alphas for the two supervisor rated subscales are .95 and .97, respectively. The total Cronbach's alpha was .98. The scale was measured during the supervisor wave of administration.

**Procedural Justice.** Procedural justice was measured with a seven item scale (Moorman, 1991; Neihoff & Moorman, 1993). The items were representative of perceptions of processes as being unbiased and ethical (e.g., "collect accurate information necessary for making decisions"). The response scale was 1 (strongly disagree) to 7 (strongly agree). Cronbach's alpha for the scale was .95. Procedural justice was measured during the second wave of administration.

**Distributive Justice.** Distributive Justice was measured with a five item scale (Moorman, 1991; Neihoff & Moorman, 1993). The items were representative of perceptions of fairness of rewards for work put in (e.g., "fairly rewarded considering the responsibilities"). The response scale was 1 (strongly disagree) to 7 (strongly agree). Cronbach's alpha for the scale was .96 and was measured during the second wave.

**Organizational Constraints.** Organizational Constraints were measured with an 11 item scale (Spector & Jex, 1998). This item was representative of how often aspects in the workplace make it difficult to carryout job duties and tasks (e.g., “poor equipment or supplies”). The response scale was 1 (less than once per month or never) to 5 (several times per day). Cronbach’s alpha for the scale was .92. Organizational constraints were measured during the second wave.

**Quantitative Workload.** Quantitative workload was measured with a five item scale (Spector & Jex, 1998). This item was representative of how often job tasks are difficult to accomplish (e.g., “how often does your job leave you with little time to get things done?”). The response scale was 1 (less than once per month or never) to 5 (several times per day). Cronbach’s alpha for the scale was .89 and was measured during the second wave.

**Workplace Hostile Attributional Style.** Workplace hostile attributional style was measured with a seven item scale (Bal & O’Brien, 2010). This item was representative of perceptions of workplace hostility based on individual inferences about coworkers. An example item is “if coworkers do not appreciate me enough, it is because they are self-centered.” The response scale was 1 (strongly disagree) to 7 (strongly agree). Cronbach’s alpha for the scale was .89. Workplace hostile attributional style was administered during the first wave of administration.

**Narcissism.** Narcissism was measured with a 16 item scale (Ames et. al., 2006). This item was measured by asking participants to select one of two statements that were representative of them (e.g., “I know what I am good because everybody keeps telling me so” or “when people compliment me I sometimes get embarrassed”). Cronbach’s alpha for the scale was .86 and the scale was administered during the first wave of administration.

**Counterproductive Social Networking Behaviors.** CSNBs was measured with five items that were selected from an overall Facebook behavior scale that consisted of 67 items (Weidner, Wynne, & O'Brien, 2012), listed in Appendix B. These items were chosen because they represented the use of Facebook for expressing work-related discontent and grievances (e.g., "How often do you use your SNS to complain about your job?" and "Have you ever posted something negative about your boss on a SNS?"). The response scale for two of these items was 1 (never) to 7 (very often). If a question did not apply to a participant they were able to select 8 (not applicable), and these responses were removed. The response scale for the last three items was "yes," "no," or "unsure." Cronbach's alpha for the scale was .79, and the scale was administered during the third wave of administration.

Because CSNBs is a new measure, an exploratory factor analysis was conducted. Two factors were retained using a principal axis factoring with direct oblimin rotation, based on a scree plot and eigenvalues over one (Table 1). The two frequency items ("How often do you use your SNS to complain about your job?" and "How often do you use your SNS to complain about a coworker?") factored together with factor loadings above .94 and no cross loadings. The three items regarding negative postings about supervisors, coworkers, and the organization factored together with factor loadings above .84 with no cross loadings. The alphas for the two subscales are .96 and .85, respectively. The two sub-factor scales correlate at .47, and item intercorrelations ranged from .36 to .94 (Table 2). Despite the fact that the scales have better psychometric properties when used separately, the factors seem to be based on artifactual characteristics of the items (i.e., response type), and thus the overall scale score for the seven items was used in

analyses to fit the theoretical justification. Choosing only one sub-facet would likely result in content deficiency.

## **Data Analysis**

**Factor Analyses.** To test Hypothesis 1, confirmatory factor analysis (CFA) was conducted with LISREL 9.1. To evaluate the model fit several fit indices were chosen based on Kline (1998) recommendations. The first type of fit indices we reviewed were absolute fit indices, which demonstrate how effective the data fits the proposed model (McDonald & Ho, 2002). Absolute fit indices include chi-squared, root mean square error of approximation (RMSEA), and standardized root mean residual (SRMR). Chi-squared tests the difference between observed and expected covariance matrices, with a better fitting model being indicated by values that are closer to zero (Gatignon, 2010). However, chi-squared is impacted by sample size. For this reason we also reviewed RMSEA because it is not affected by sample size (Hooper, Coughlan & Mullen, 2008). RMSEA ranges from 0 to 1, with better model fit being indicated by smaller values. RMSEA, however, also has drawbacks. Specifically, RMSEA scores are artificially low when there are fewer degrees of freedom and smaller sample sizes (Kenny, Kanistan, & McCoach, 2014). As such, we also looked at SRMR as an additional fit indicator. SRMR is the square root of the discrepancy between the covariance matrix obtained from the sample and the model covariance matrix (Hooper, Coughlan & Mullen, 2008). For SRMR, better fit is indicated by smaller values.

We also reviewed relative fit indices which compare the proposed model chi-square to a null models chi-square through various methods depending on the specific fit index (Hooper, Coughlan & Mullen, 2008). We reviewed the comparative fit index (CFI), normed fit index

(NFI) and the non-normed fit index (NNFI) to determine model fit. The NFI compares the differences between the ratio of the chi-squared and degrees of freedom of the proposed model with the chi-squared and degrees of freedom of the null model (Bentler, 1990). A drawback of the NFI is that it is found to be sensitive to sample size (Bentler, 1990). Because of this we also reviewed the NNFI, which is similar to the NFI, except it is considered less sensitive to sample size (Bentler, 1990). Both the NFI and NNFI range from 0 to 1, with a good fitting model being indicated by values of .95 and higher. In contrast, the CFI compares the fit of a proposed model to a null model. More specifically, the CFI compares the difference between the proposed and null models covariance matrices (Bentler, 1990). Unlike other fit indices, the CFI is not as dependent or affected by sample size because it adjusts for sample size (Fan, Thompson, & Wang, 1999). It ranges from 0 to 1, with values higher than .90 indicating good fit.

**Moderated Mediation.** Moderated mediation, for Hypothesis 5, will be tested using PROCESS by Hayes (2012). PROCESS is an SPSS macro that uses a logistic regression-based framework to estimate direct, indirect, and conditional indirect effects in moderated mediation models. PROCESS program provides: 1) a summary of the independent variable regressed on the mediating variables; 2) a summary of the independent and mediating variables regressed on the outcome variable; 3) direct effects of the independent variable on the outcome variable; and 4) conditional indirect effects of the independent variable on the outcome variable at different values of the moderator. In this work, four models were analyzed, with the independent variable being procedural justice, distributive justice, quantitative workload or organizational constraints. For each model the outcome variable was CSNBs, the mediating variable was workplace hostile attributional style, and the moderating variable was narcissism.

## Results

### Factor Analyses

CFA results are available in Tables 3 and 4, and Figures 5 through 10. In Table 3 fit indices for one and two factor CSNB scale and CFAs that used results from supervisor reported CWBs are presented. In Table 4 fit indices that used employee reported CWBs are presented. We chose to compare the fit between supervisor and employee reported CWBs in order to test discrepancies between the two. We found that there were discrepancies between the two, but the differences were minimal. The largest differences were found for Chi-square, which is most likely the result of the differences in sample size between supervisors and employees.

In order to test Hypothesis 1, we compared the one factor model where CWBs and CSNBs loaded onto a single factor with a two-factor model where they loaded onto separate factors (please see Figures 5, 6, 7, and 8). We proposed that the one-factor model combining CSNB and CWB items would have better fit than a two-factor model representing CSNB and CWB separately. In contrast to what we proposed, neither factor structure showed good fit. For the supervisor reported CWB models, the one-factor model fit worst ( $\chi^2 = 2177.57$ , NFI = .92, NNFI = .93, CFI = .93, SRMR = .09, and RMSEA = .18) than the two-factor model ( $\chi^2 = 1712.32$ , NFI = .93, NNFI = .94, CFI = .94, SRMR = .12, and RMSEA = .15). Fit for the CFAs conducted with the employee self-reported CWBs was found to fit similar to the models that used supervisor reported CWBs. Specifically, no fit was still found for the one-factor employee model ( $\chi^2 = 1665.29$ , NFI = .92, NNFI = .92, CFI = .93, SRMR = .09, and RMSEA = .15) or the two factor employee model ( $\chi^2 = 1201.54$ , NFI = .94, NNFI = .95, CFI = .95, SRMR = .11, and

RMSEA = .12). Thus, there was no evidence to support or contradict Hypothesis 1 because neither model fit well for either employee or supervisor ratings.

In addition to testing the above CFA models, several exploratory models were also tested. Fit indices for all exploratory models are available in Tables 3 and 4. These exploratory models looked at CWBs and CSNB models separately from each other, as well as three-factor, four-factor, and higher order models. When reviewing CWB models fit, we found that for both employee and supervisor reported CWB models only differed slightly on their fit. When comparing one and two factor models for CSNBs, we found that the one factor model had significantly worse fit ( $\chi^2 = 291.12$ , NFI = .64, NNFI = .28, CFI = .64, SRMR = .22, and RMSEA = .48) than the two factor model ( $\chi^2 = 11.90$ , NFI = .99, NNFI = .98, CFI = .99, SRMR = .02, and RMSEA = .08). This provides initial support that CSNBs has two sub-factors, seemingly distinguished by response type (Likert vs. yes/no/unsure). In addition, we found that the three factor model (please see Figures 9 and 10) with two factors for CSNB and one factor for CWB had the best fit out of all of the models that combined CWB and CSNB together for both supervisor reported CWBs ( $\chi^2 = 1397.59$ , NFI = .95, NNFI = .95, CFI = .96, SRMR = .05, and RMSEA = .13) and employee self-reported CWBs ( $\chi^2 = 1161.41$ , NFI = .94, NNFI = .95, CFI = .96, SRMR = .11, and RMSEA = .12). Thus, providing additional support that SNB is consists of two factors.

### **Main Effects**

Means, standard deviations, correlations, and Cronbach's alpha reliabilities are presented in Table 5. Results for the two forms of organizational justice (procedural and distributive) offered some support for our hypotheses. Procedural justice was found to have a negative

relationship with CSNBs ( $r = -.12, p < .05$ ), providing support for Hypothesis 2a. In contrast, perceptions of distributive justice were found to have a nonsignificant relationship with CSNBs, providing no support for Hypothesis 2b. When looking at the relationship between workplace stressors (organization constraints and QWL) and CSNBs, results also found some support for our hypotheses. More specifically, organizational constraints were found to be positively related to CSNBs ( $r = .28, p < .01$ ), providing support for Hypothesis 3a. However, our results revealed a nonsignificant relationship between QWL and CSNBs, providing no support for Hypothesis 3b.

### **Mediation**

Mediation analysis was conducted with the mediation procedure by Hayes (2012) using 5000 bootstrap samples. Results for each of the four models are summarized in Table 6, Figure 11, 12, 13, and 14. It was proposed that workplace hostile attribution style would mediate the relationship between organizational justice (procedural justice and distributive justice), workplace stressors (organizational constraints and QWL), and the outcome, CSNBs. For procedural justice, mediation was found to be significant, as shown in Figure 11 and Table 6 (Direct Effect =  $-.08$ , 95% percentile CI =  $-.15$  to  $-.04$ ). As well, the relationship between distributive justice and CSNBs was also found to be mediated by workplace hostile attribution style, as shown in Figure 12 and Table 6 (Direct Effect =  $-.04$ , 95% percentile CI =  $-.09$  to  $-.01$ ). Based on this support was found for Hypotheses 4a and 4b.

When looking at whether workplace stressors relationship with CSNBs would be mediated by workplace hostile attribution style results were mixed. More specifically, organizational constraints relationship with CSNBs was found to be mediated, as shown in Figure 13 and Table 6 (Direct Effect =  $.12$ , 95% percentile CI =  $.05$  to  $.22$ ), thus providing

support for Hypothesis 4c. However, quantitative workload model was found to have nonsignificant mediation (see Figure 14 and Table 6); providing no support for Hypothesis 4d.

Mediation analyses were repeated using age as a covariate because age has been known to predict workplace aggression (e.g., Murphy, 1993). We found that all analyses had the same results as previously found when age was not included as a covariate. Further review of the CSNB construct found that it was positively skewed. Because of this, a logarithmic transformation was done on the CSNB construct and all of the mediation analyses were retested. We found that all of the mediation analyses, following the logarithmic transformation, had the same results. More specifically, for the first three analyses (procedural justice, distributive justice, and organization constraints) mediation was found, and no mediation was found for QWL.

### **Moderation**

Our moderation hypothesis was tested using hierarchical regression; results are shown in Table 7. The first step examined the relationship of our predictor (workplace hostile attribution style) and moderator (narcissism) with our criterion (CSNBs). In the second step, the interaction, workplace hostile attribution style crossed with narcissism, was added. We examined the change in  $R^2$  and the significance of the  $\beta$  for the interaction term at each step. For Hypothesis 5, we predicted that workplace hostile attribution style would interact with narcissism to predict CSNBs. As seen in Table 7, the workplace hostile attribution style and narcissism interaction predicted significant incremental variance in CSNBs ( $\Delta R^2 = .03, p < .01$ ), providing support for Hypothesis 5. To illustrate the significant moderation effects, the interactions for participants who had higher narcissism (1 *SD* above the mean narcissism score) and lower narcissism (1 *SD*

below the mean narcissism score) between their workplace hostile attribution style and CSNBs were graphed (see Figure 15). The results indicate higher narcissism enhances the relationship between workplace hostile attribution style and CSNBs (the relationship is more positive) compared to lower narcissism scores.

### **Exploratory Analysis**

**Moderated-Mediation Analyses.** Based on the results of the mediation and moderation analysis, supplementary analysis of a moderated-mediation was conducted (see Table 8). To test this we used PROCESS by Hayes (2012). For each model the outcome variable was CSNBs, the mediating variable was workplace hostile attributional style, and the moderating variable was narcissism. The independent variable was either procedural justice, distributive justice, quantitative workload or organizational constraints. Please see Table 8 for the conditional indirect effects of the relationship between workplace hostile attributional styles and CSNBs at varying levels of narcissism (low, moderate, and high).

For the first model, the indirect effects of procedural justice through workplace hostile attributional style were negative for individuals moderate (1.41, 95% CI: -.10 to -.02) and high (1.68, 95% CI: -.19 to -.06) on narcissism. However, a nonsignificant indirect effect was found for individuals low on narcissism (1.12, 95% CI: -.05 to .06). This means that the indirect effect of workplace hostile attributional style on the relationship between procedural justice and CSNBs only exists for people who have medium to high levels of the moderator (narcissism).

For the second model, the indirect effects of distributive justice through workplace hostile attributional style were also negative for individuals moderate (1.41, 95% CI: -.06 to -.01) and high (1.68, 95% CI: -.10 to -.02) on narcissism. Similar to procedural justice, a

nonsignificant indirect effect was found for individuals low on narcissism (1.12, 95% CI: -.03 to .02). This indicates that the indirect effect of workplace hostile attributional style on the relationship between distributive justice and CSNBs is only present for people who have medium to high levels of the moderator (narcissism).

For the third model, the indirect effects of organizational constraints through workplace hostile attributional style were positive for individuals moderate (1.41, 95% CI: .01 to .17) and high (1.68, 95% CI: .07 to .31) on narcissism. Similar to measures of organizational justice, a nonsignificant indirect effect was found for individuals low on narcissism (1.12, 95% CI: -.13 to .06). This suggest that the indirect effect of workplace hostile attributional style on the relationship between organizational constraints and CSNBs is only present for people who have medium to high levels of narcissism.

Unlike the first three models, the fourth model, which looked at the indirect effect of QWL through workplace hostile attributional style, was nonsignificant at all levels of narcissism (low, moderate, and high). This indicates that for individuals at all levels of narcissism the effect of QWL on CSNBs is mediated by other mechanisms or a direct relationship.

### **Discussion**

More adults today are using SNSs (Smith, 2013). However, little research has investigated how employee's usage of SNSs can impact the organization. Research has shown that SNS use can have negative consequences for organizations (e.g., Weatherbee & Kelloway, 2006) and a relationship with personality (e.g. Buffardi & Campbell, 2008). Because there is growing interest and use of SNSs in the world it is vital that they be researched from an organizational perspective in order to determine their possible impact on organizations. SNSs

provide an outlet for both benefits and consequences for an organization. This study addressed the current gaps by researching CSNBs as being a part of the previously established CWB construct.

When investigating whether CSNBs should be integrated into the previously established CWB construct we found some support. Our hypothesis that a single factor would have better fit than a two factor model was not supported. However, we still found evidence that CSNBs belong in the previously established CWB construct. For example, using a t-test, we found that base rates were not significantly different between CSNBs and CWBs, which indicates similarities between the two constructs. It should also be noted that this study was limited in that results were based on data that had already been collected. More specifically, we were unable to include additional work-related SNBs. Therefore, it will be beneficial if research is conducted on CSNBs that can include a wider scope of SNBs related to diminished work performance by employees.

In contrast to our CFA results, we did find that some results were consistent with past research on CWBs relationship with procedural justice (Skarlicki & Folger, 1997) and organizational constraints (e.g., Hershcovis et. al., 2007). Specifically, CSNBs were found to have the same relationship (e.g., negative or positive) with these constructs as previous research has found for CWBs. However, we found a nonsignificant relationship between distributive justice and CSNBs. It should be noted that the relationship trended in the proposed direction (negative). Unlike past research (e.g., Balducci, Schaufeli & Fraccaroli, 2011), our results found that QWL and CSNBs relationship differed from what has been previously found. Overall, this provides limited support that CSNBs may be similar to CWBs.

The mediation analysis also revealed promising results for workplace hostile attribution style as a mediator between organization justice (procedural justice and distributive justice), workplace stressors (organization constraints and QWL), and CSNBs. Based on attribution theory, perceptions of injustices (both procedural justice and distributive justice) may include suspicion about organizational justice, which could lead to higher CSNBs. In addition, this increased likelihood to make these attributions may also relate to organizational constraints. This is because increases in stress by the work environment can lead to negative attributions that can lead to negative behaviors, such as CSNBs (Spector & Fox, 2002). In contrast to what we predicated, based on past research, workplace hostile attribution style did not mediate the relationship between QWL and CSNBs. This may be because the type of stressor that QWL is differs from the other three antecedents (procedural justice, distributive justice, and organizational constraints).

It may be that organizational justice and organizational constraints may be considered hindrance stressors and QWL is a challenge stressor. Hindrance stressors are found to have a negative impact on performance because they prevent employees from completing work tasks, while challenge stressors are found to have the opposite effect on performance (LePine, Podsakoff, & LePine, 2005). Therefore, it may be that individuals who are experiencing QWL might not experience strain the same way, and thus not complain on SNS. In contrast, individuals who are experiencing hindrance stressors (e.g., procedural justice, distributive justice, and organizational constraints) are unable to work through the stressors and may choose to behave negatively through SNSs.

Results also found that high narcissism attenuated the relationship between workplace hostile attribution style and CSNBs. These results align with past research on narcissism and CSNBs, where individuals higher on narcissism are more likely to have higher levels of self-presentation on SNS (Carpenter, 2011) and use SNS more often in general (Buffardi & Campbell, 2008; Ryan & Xenos, 2011). These individuals, who are already more likely to use SNS, when also high on workplace hostile attribution style, are more likely to post negatively about their workplace and coworkers via social media. This is because higher workplace hostile attributional style, as discussed above, means an individual is more likely to suspect that the causes of events and situations at work (e.g., higher organizational constraints) are malicious in nature (Bal & O'Brien, 2010).

Based on the results of our separate mediation and moderation analysis, we conducted a moderated-mediation. We found that for three out of the four models tested a moderated mediation was present. More specifically, moderated-mediation was found at moderate to high levels of narcissism for procedural justice, distributive justice and organizational constraints. This provided support that the indirect effect of workplace hostile attributional style on the relationship between the three antecedents (procedural justice, distributive justice, and organization constraints) and CSNBs is only found for individuals who have moderate to high levels of narcissism. However, we did not find support of a moderated mediation for individuals low in narcissism. It may be that individuals low in narcissism are less likely to commit CSNBs. Past research has already shown that individuals low on narcissism are less likely to use SNS (e.g., Buffardi & Campbell, 2008) and less likely to report CWBs when workplace stressors are present (Penney & Spector, 2002). Therefore, they may not use SNS to express their

dissatisfaction about work (e.g., workplace stressors and organizational justice) and commit CSNBs (e.g., complaining about work on SNS) in order to hurt their employer.

However, similar to other results, we did not find support for a moderated-mediation when including quantitative workload as the antecedent. This, again, brings into question whether QWL differs from the other three antecedents looked at (procedural justice, distributive justice, and organizational constraints). In contrast to what we hypothesized for QWL, we found no support for it in any of our analyses. This may indicate, that future research looking at CSNBs, should look at stressors that will hinder an employee's performance and overall ability to accomplish tasks.

### **Limitations and Research Implications**

Although this research provided promising results, the study has its limitations, such as the methods used for data collection and the composition of the sample. First, most measures were self-reported, which means that there could be concerns about common method bias and rater bias (Podsakoff, MacKenzie, & Podsakoff, 2012). This concern was most likely lessened in the present study because the data collection was done at more than one point in time, so that transient response biases would have been lessened (Podsakoff, MacKenzie, & Podsakoff, 2012). In addition, CWBs were reported by both participants and their supervisor, which helps mitigate the impact of common method bias. However, the use of two reporting sources of CWB ratings does not completely lessen this concern because of the high correlation between self-reported and supervisor reported CWBs ( $r = .80$ ). This high correlation between these two sources indicates that both supervisor and self-reports of CWBs are providing very similar information. A lower correlation between two sources collecting data on the same construct (e.g., supervisor

and employee) is considered ideal by researchers because it suggests that each source is providing unique information about that construct (e.g., Berry, Carpenter, & Barratt, 2012). One possible way to minimize this concern in future research may be to obtain a third source of CWB data (e.g., an employee's coworkers) or objective ratings in order to gain an additional and unique perspective.

Second, the use of online samples raises concerns about the quality and usefulness of the data. Although there has been research that has provided support for the use of online samples (e.g., Paolacci, Chandler, & Ipeirotis, 2010) there is still skepticism related to dropout rates of these samples (e.g., Manfreda, Berzelak, Vehovar, Bosnjak, & Haas, 2008). However, this concern can be mitigated by having a well thought out study design (Barger, Behrend, Sharek, & Sinar, 2011). For this project we utilized a multi-phase and multi-method design in order to alleviate some of the issues from using online samples. In addition, prior to analyzing our data we screened for nonpurposeful and uneffortful responding to further reduce concerns.

Based on these limitations, there are several items that should be taken into consideration when conducting future research. Even though we have provided initial support for CSNBs as a CWB through development of a CSNB scale, this scale is far from perfect. There is a need for this scale to be validated through future research. One reason for the strong need for validation, as mentioned above, is that our research was limited in the scope of work-related CSNBs that we could analyze in relation to CWBs. As a result, there may be a need for additional items to be included in the scale. In addition, the items that we included in our scale used two different response formats (Likert versus yes/no/unsure response options). This, in turn, may have impacted our findings. Therefore, it is recommended that future research include more work-

related CSNB items and use the same response format for all items. As well, it may be interesting to study positive SNBs (e.g., “I like my organizations social networking page”) to gauge a broader range of these behaviors. Future research on CSNBs that does not use online samples should also be conducted in order to compare the two sample types and determine if any discrepancies exist.

There is also a need for additional research beyond scale validation. Research on CSNBs will be limited more than CWBs because of the added layer of privacy that protects SNS users (e.g., private profiles). This means that we will be more dependent on self-reports of these behaviors. However, this may be overcome by including peer reviews of CSNBs by employee’s coworkers and supervisors (similar to CWB research’s use of supervisor ratings). For example, asking how often a coworker or subordinate complains about their work or coworkers on SNSs. In addition, instead of participants rating themselves or their coworkers they could rate others on their SNS. For example, asking how often they see friends posting negative things about their job on a SNS and rating those individuals based on other important constructs (e.g., personality). By doing this an individual would not feel like they need to lie about how often they do it. As well, obtaining consent to review participants SNS profiles in order to rate their level of certain behaviors could also be used, as has been done in past research (e.g., Mehdizadeh, 2010). A similar method would be to have participants consent to add the researcher as a friend on a SNS for period of time (e.g., one month) in order to measure their frequency of CSNBs from the sidelines. However, these methods may raise ethical concerns by research review boards.

Also, since CSNBs may represent a CWB, there is a possible need for a revised CWB scale. This is because the CWB construct was developed before the advent of the first SNS in

1997 (Boyd & Ellison, 2007), which meant there was no reason for researchers to include them as a form of CWB. A revised CWB scale should include a wide range of information technology items that include aggressive email use between coworkers, CSNBs, and overall internet use that can be counterproductive towards an organizations success. As well, revised integrity tests that include CSNBs and email use should be considered as a possible way to screen out potential employees.

Similar to CWBs, it would also be beneficial to understand the financial impact CSNBs have on organizations in comparison to more traditional CWBs. For example, CSNBs may damage an organizations public image and reduce its customer base. This is because CSNBs are able to reach a wide range of individuals, which may have a larger effect than just complaining to a group of friends. CSNBs may also decrease productivity depending on how much time an individual spends, while working, on their SNS. However, this will need to be answered with future research.

Lastly, there may be other factors that affect how likely an individual will use a SNS as a means to express discontent about their workplace that should be researched in the future. This may include differences based on age and cohort effects, organization level, and perceptions of control. When considering this in regards to age and cohort effects, it may be that younger individuals are more likely to post on a SNS. This is because they grew up with this technology readily available and widely used, and may be more comfortable with using it for expressing their feelings and concerns about their workplace. In contrast, older employees who did not grow up with this technology may be less likely to use SNSs for this purpose. However, we found no effects of age in this study when including age as a covariate.

Additionally, individuals who are lower in an organization hierarchy may also be more likely to use their SNS as a way to lash out at their organization because they have less of a vested interest in the organization. In comparison, an individual who has moved up to a higher level may be less likely to do this because of fear that there would be repercussions from their actions. As well, these individuals who are in a lower position may perceive less control over their work. For example, these individuals may be experiencing strain because of their work but feel that they have no control over the cause of that stress. Therefore, they will try to equal out the stress they are experiencing by doing negative behaviors via their SNS. This is because CSNBs, in comparison to CWBs, can harm the organization or their coworkers with little concern or worry about suffering repercussions from their actions. Because of these various factors that may play a role in why individuals decide to or decide not to conduct CSNBs it is important that this be investigated in the future.

### **Practical Implications**

Research about employees is very extensive from an organizational or business perspective. But it is limited in that little research from these perspectives has included CSNBs and how they can impact organizational effectiveness. Here we have focused on CSNBs from an organizational perspective, and how they can be considered a CWB. Even though CSNBs most likely should be considered a CWB, coping with them will require different methods than what is normally employed to decrease CWBs (e.g., monitoring). This is because CSNBs allow an employee to commit devious acts secretly (e.g., at home or on a cell phone while at work). Therefore, it would be almost impossible for an organization to monitor their employee's online use, especially when it can be done outside of an organizations internet network. Instead,

organizations have started providing policies and guidelines regarding employee's behaviors on SNS (e.g., IBM Social Computing Guidelines). However, it has not been shown whether these are practical methods for reducing CSNBs. Commonly, integrity testing is often employed to reduce future CWBs (e.g., MacLane & Walmsley, 2010). It may be beneficial if CSNB items were included in these test (e.g., "do you ever post negatively about your place of employment via social networking sites"). This way it may be possible to reduce hiring individuals who are more likely to commit CSNBs.

### **Conclusion**

Little research has examined the possibility that SNS offer employees an additional opportunity to commit CWBs. This study provide initial insight into this under studied area by demonstrating that CSNBs are best conceptualized as a separate, but related construct to other CWBs. However, future research on the topic is recommended. More specifically, future research needs to focus on further developing and validating a CSNB scale. As well as using more objective measures of CSNBs (e.g., peer ratings of SNS usage). There is also a need to further test how similar these CSNBs relates to CWBs, and whether additional SNBs should be included in a CSNBs scale.

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Table 1

*Factor loadings for counterproductive social networking items*

Item	Factor 1	Factor 2
Have you ever posted something negative about a coworker on a SNS?	.84	.09
Have you ever posted something negative about our boss on a SNS?	.92	-.02
Have you ever posted something negative about your workplace on a SNS?	.89	-.05
How often do you use your SNS to complain about a coworker?	-.02	.99
How often do you use your SNS to complain about your job?	.03	.97

*Note: N = 247.*

Table 2

*Inter-item correlations between counterproductive social networking items*

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Complain about job	2.57	2.09	-				
2. Complain about coworker	2.52	2.12	.94*	-			
3. Post something negative about coworker	-.70	.69	.46*	.45*	-		
4. Post something negative about boss	-.69	.71	.43*	.38*	.74*	-	
5. Post something negative about workplace	-.67	.72	.38*	.36*	.61*	.69*	-

*Note:*  $N = 247$ . \* $p < .01$ .

Table 3

*Goodness of fit summary - supervisor reported counterproductive work behaviors*

Model	$\chi^2$	NFI	NNFI	CFI	SRMR	RMSEA
One Factor (CWB)	1149.07	.95	.95	.95	.05	.16
Two Factor (CWB-I and CWB-O)	1143.73	.95	.95	.95	.05	.16
One Factor CSNB	291.12	.64	.28	.64	.22	.48
Two Factor CSNB	11.90	.99	.98	.99	.02	.08
One Factor CSNB and CWB	2177.57	.92	.92	.93	.09	.18
Two Factor (CSNB and CWB)	1712.32	.93	.94	.94	.12	.15
Two Factor (CWB/CSNB1 and CSNB2)	1912.62	.93	.93	.94	.07	.16
Two Factor (CWB/CSNB2 and CSNB1)	1689.95	.94	.94	.94	.07	.15
Three Factor (CSNB1, CSNB2, and CWB)	1397.59	.95	.95	.96	.05	.13
Three Factor (CWB-I, CWB-O, and CSNB)	1696.43	.93	.94	.94	.12	.15
Four Factor (CWB-I, CWB-O, CSNB1, and CSNB2)	1381.76	.95	.95	.96	.04	.13
Higher Order	1875.65	.93	.93	.94	.08	.16

*Note.*  $N = 273$ . NFI = Normed Fit Index, NNFI= Non-Normed Fit Index, CFI= Comparative Fit Index, SRMR = Standardized Root Mean Residual, RMSEA = root mean square error of approximation, CWB = Counterproductive Work Behaviors, CSNB = Counterproductive Social Networking Behaviors.

Table 4

*Goodness of fit summary - employee reported counterproductive work behaviors*

Model	$\chi^2$	NFI	NNFI	CFI	SRMR	RMSEA
One Factor (CWB)	694.15	.96	.96	.97	.06	.12
Two Factor (CWB-I and CWB-O)	630.27	.96	.97	.97	.05	.11
Two Factor (CSNB and CWB)	1201.54	.94	.95	.95	.11	.12
Two Factor (CWB/CSNB1 and CSNB2)	1399.92	.93	.94	.94	.07	.14
Two Factor (CWB/CSNB2 and CSNB1)	1180.47	.94	.95	.95	.07	.12
Three Factor (CSNB1, CSNB2, and CWB)	888.08	.97	.97	.97	.05	.10
Three Factor (CWB-I, CWB-O, and CSNB)	1161.41	.94	.95	.96	.11	.12
Four Factor (CWB-I, CWB-O, CSNB1, and CSNB2)	845.92	.96	.97	.97	.04	.10
Higher Order	1349.80	.94	.94	.95	.06	.13

*Note.*  $N = 247$ . NFI = Normed Fit Index, NNFI= Non-Normed Fit Index, CFI= Comparative Fit Index, SRMR = Standardized Root Mean Residual, RMSEA = root mean square error of approximation, CWB = Counterproductive Work Behaviors, CSNB = Counterproductive Social Networking Behaviors.

Table 5

*Means, standard deviations, intercorrelations, and reliabilities of all variables*

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1. Distributive Justice	4.85	1.57	<i>.95</i>								
2. Procedural Justice	5.17	1.21	<i>.70**</i>	<i>.96</i>							
3. Organizational Constraints	1.93	.80	<i>-.33**</i>	<i>-.38**</i>	<i>.92</i>						
4. Quantitative Workload	2.92	1.04	<i>-.13*</i>	<i>-.04</i>	<i>.43**</i>	<i>.89</i>					
5. WHAS	2.01	.77	<i>-.19**</i>	<i>-.30**</i>	<i>.45**</i>	<i>.08</i>	<i>.89</i>				
6. Narcissism	1.38	.28	<i>.11</i>	<i>.00</i>	<i>.13*</i>	<i>-.19**</i>	<i>.22**</i>	<i>.86</i>			
7. CSNB	.60	1.05	<i>-.01</i>	<i>-.13*</i>	<i>.28**</i>	<i>-.07</i>	<i>.30**</i>	<i>.37**</i>	<i>.78</i>		
8. CWB - Supervisor	1.84	1.20	<i>-.14*</i>	<i>-.29**</i>	<i>.51**</i>	<i>.16*</i>	<i>.52**</i>	<i>.26**</i>	<i>.49**</i>	<i>.97</i>	
9. CWB - Employee	1.84	1.10	<i>-.17*</i>	<i>-.33**</i>	<i>.45**</i>	<i>.05</i>	<i>.48**</i>	<i>.28**</i>	<i>.48**</i>	<i>.80**</i>	<i>.98</i>

*Note.*  $N = 247$ . \*  $p < .05$ . \*\* $p < .01$ . Cronbach's alpha reliability coefficients are italicized and on the diagonal. Raw means and standard deviations are presented. WHAS, Workplace Hostile Attribution Style; CSNB, Counterproductive Social Networking Behaviors; CWB, Counterproductive Work Behaviors.

Table 6

*Indirect effects of organizational justice and workplace stressors on counterproductive social networking behaviors through workplace hostility attribution style*

Independent Variables	Indirect Effect	Standard Error	95% Confidence Interval	
			Lower Limit	Upper Limit
Procedural Justice	-.08	.03	-.15	-.04
Distributive Justice	-.04	.02	-.09	-.01
Organization Constraints	.12	.04	.05	.22
Quantitative Workload	.01	.02	-.02	.06

*Note.*  $N = 247$  for procedural justice, distributive justice, organizational constraint, and quantitative workload analyses.

Table 7

*Hierarchical multiple regression analysis counterproductive social networking behaviors from workplace hostile attribution style and narcissism*

	Counterproductive Social Networking Behaviors	
	$\Delta R^2$	$\beta$
Step 1	.19***	
Workplace Hostile Attribution Style		.24**
Narcissism		.32**
Step 2	.03*	
Workplace Hostile Attribution Style X Narcissism		1.22*
Total $R^2$	.22*	

*Note.*  $N = 247$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$

Table 8

*Conditional indirect effects of organizational justice and workplace stressors on counterproductive social networking behaviors through workplace hostile attribution style at different levels of narcissism*

Independent Variables	Narcissism	Conditional Effect	Standard Error	95% Confidence Interval	
				Lower Limit	Upper Limit
Procedural Justice					
	Low (1.12)	.00	.03	-.05	.06
	Moderate (1.41)	-.06	.02	-.10	-.02
	High (1.68)	-.11	.03	-.19	-.06
Distributive Justice					
	Low (1.12)	-.00	.01	-.03	.02
	Moderate (1.41)	-.03	.01	-.06	-.01
	High (1.68)	-.05	.02	-.10	-.02
Organization Constraints					
	Low (1.12)	-.03	.05	-.13	.06
	Moderate (1.41)	.08	.04	.01	.17
	High (1.68)	.18	.06	.07	.31
Quantitative Workload					
	Low (1.12)	.00	.01	-.01	.02
	Moderate (1.41)	.01	.01	-.01	.04
	High (1.68)	.02	.03	-.03	.09

*Note.*  $N = 247$  for procedural justice, distributive justice, organizational constraint, and quantitative workload analyses.

Table 9

*Summary of hypotheses results*

Hypothesis		Support
Hypothesis 1	A one factor model combining the CSNB and CWB items will have better fit than a two-factor model representing CSNB and CWB separately.	No
Hypothesis 2a	Perceptions of procedural justice will be negatively related to CSNBs.	No
Hypothesis 2b	Perceptions of distributive justice will be negatively related to CSNBs.	Yes
Hypothesis 3a	Organizational constraints will be positively related to CSNB.	Yes
Hypothesis 3b	Quantitative workload will be positively related to CSNBs.	No
Hypothesis 4a	Workplace hostile attributional style will mediate the relationship between procedural justice and CSNBs.	Yes
Hypothesis 4b	Workplace hostile attributional style will mediate the relationship between distributive justice and CSNBs.	Yes
Hypothesis 4c	Workplace hostile attributional style will mediate the relationship between organizational constraints and CSNBs.	Yes
Hypothesis 4d	Workplace hostile attributional style will mediate the relationship between quantitative workload and CSNBs.	No
Hypothesis 5	The relationship between workplace hostile attributional style and CSNBs will be moderated by narcissism.	Yes
Research Question	Combined model, of the mediation and moderation above, will be significant.	Partial

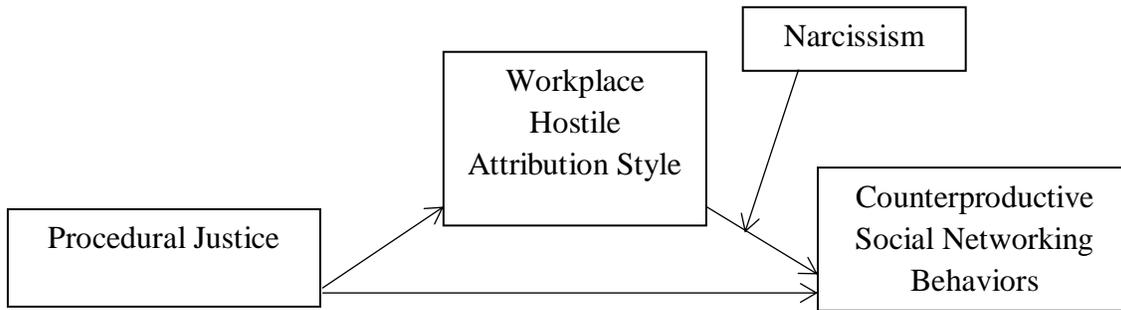


Figure 1. *Proposed moderated-mediation model for the relationship between procedural justice and counterproductive social media behaviors.*

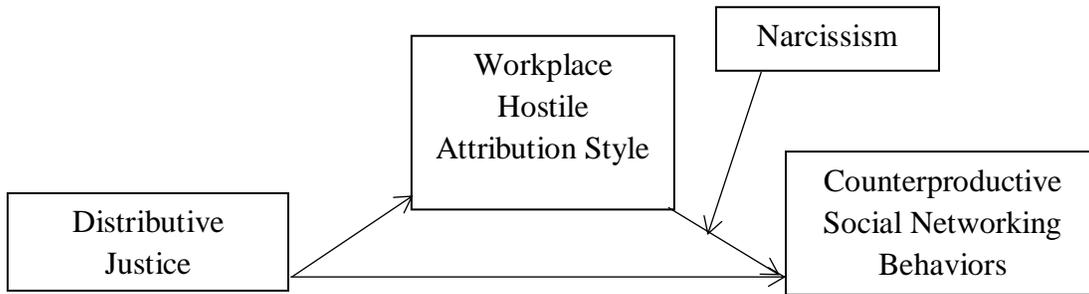


Figure 2. *Proposed moderated-mediation model for the relationship between distributive justice and counterproductive social media behaviors.*

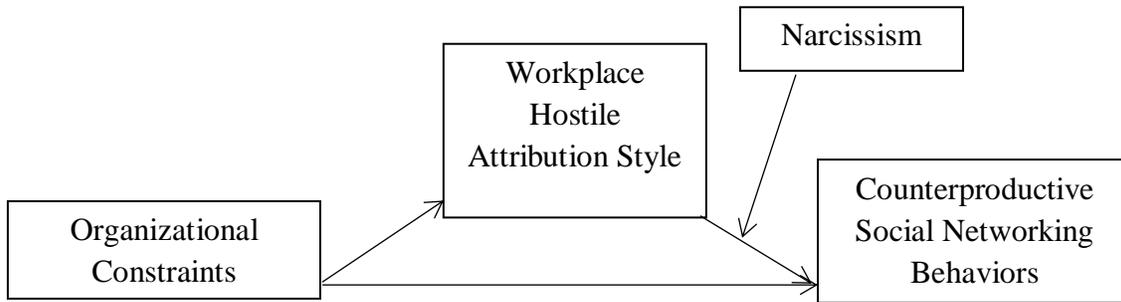


Figure 3. *Proposed moderated-mediation model for the relationship between organizational constraints and counterproductive social media behaviors.*

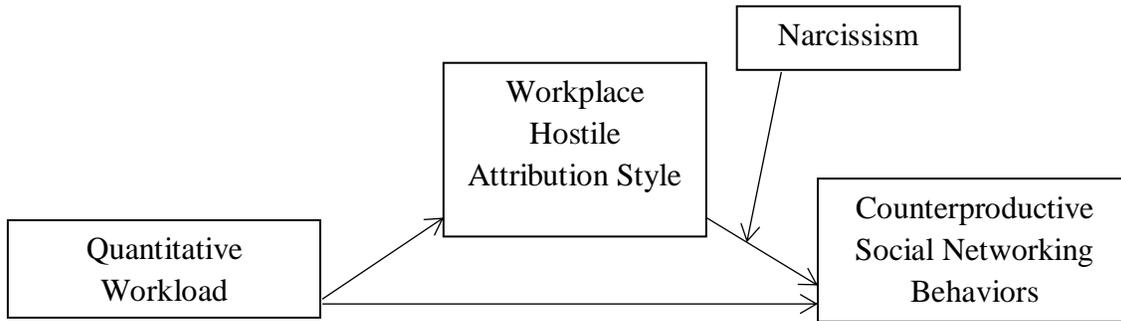


Figure 4. *Proposed moderated-mediation model for the relationship between quantitative workload and counterproductive social media behaviors.*

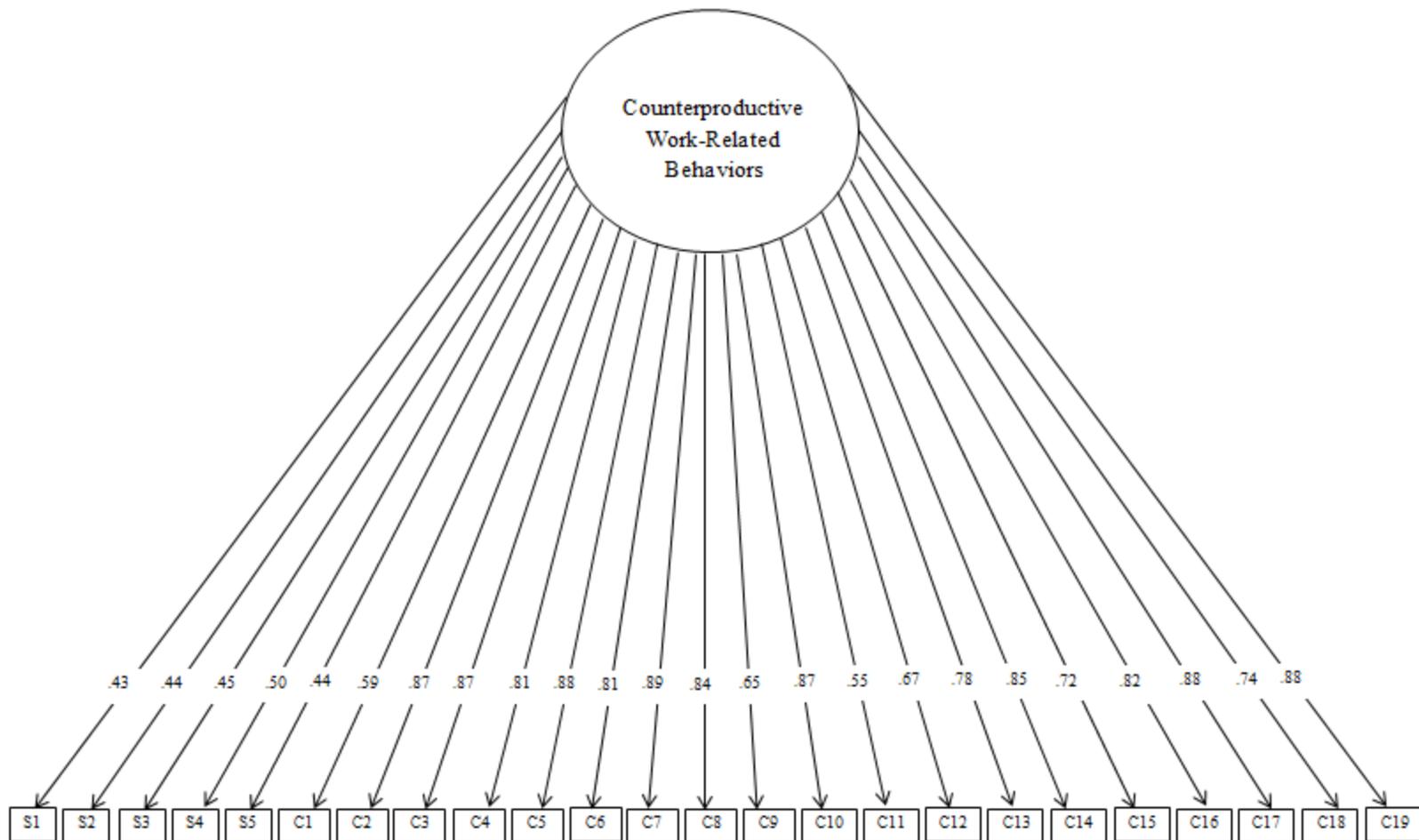


Figure 5. One factor confirmatory factor analysis using employee data, showing the factor loadings for the nineteen counterproductive work behavior (CWB) and five counterproductive social networking behavior (CSNB) items onto a global CWB construct.

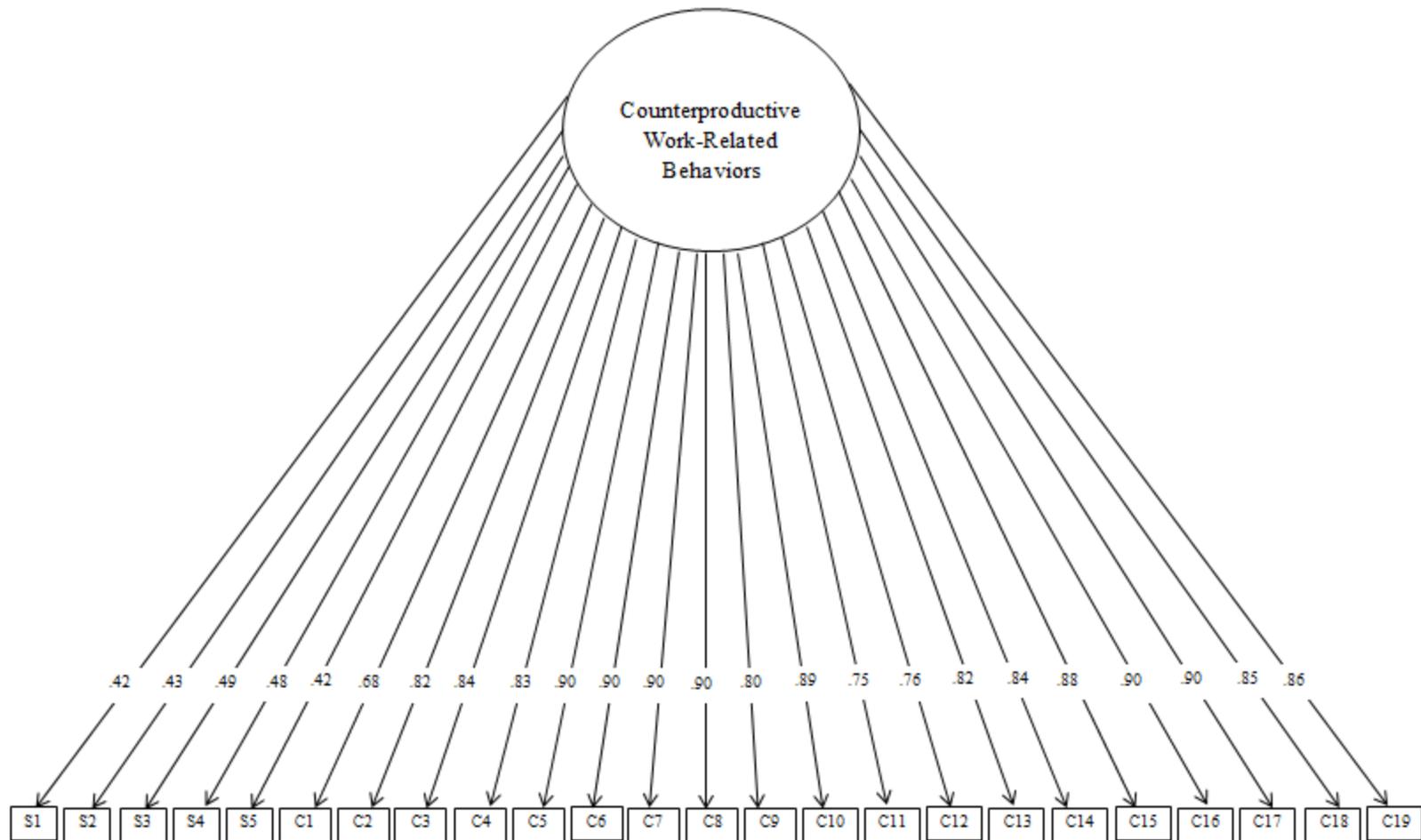


Figure 6. *One factor confirmatory factor analysis using supervisor data, showing the factor loadings for the nineteen counterproductive work behavior (CWB) and five counterproductive social networking behavior (CSNB) items onto a global CWB construct.*

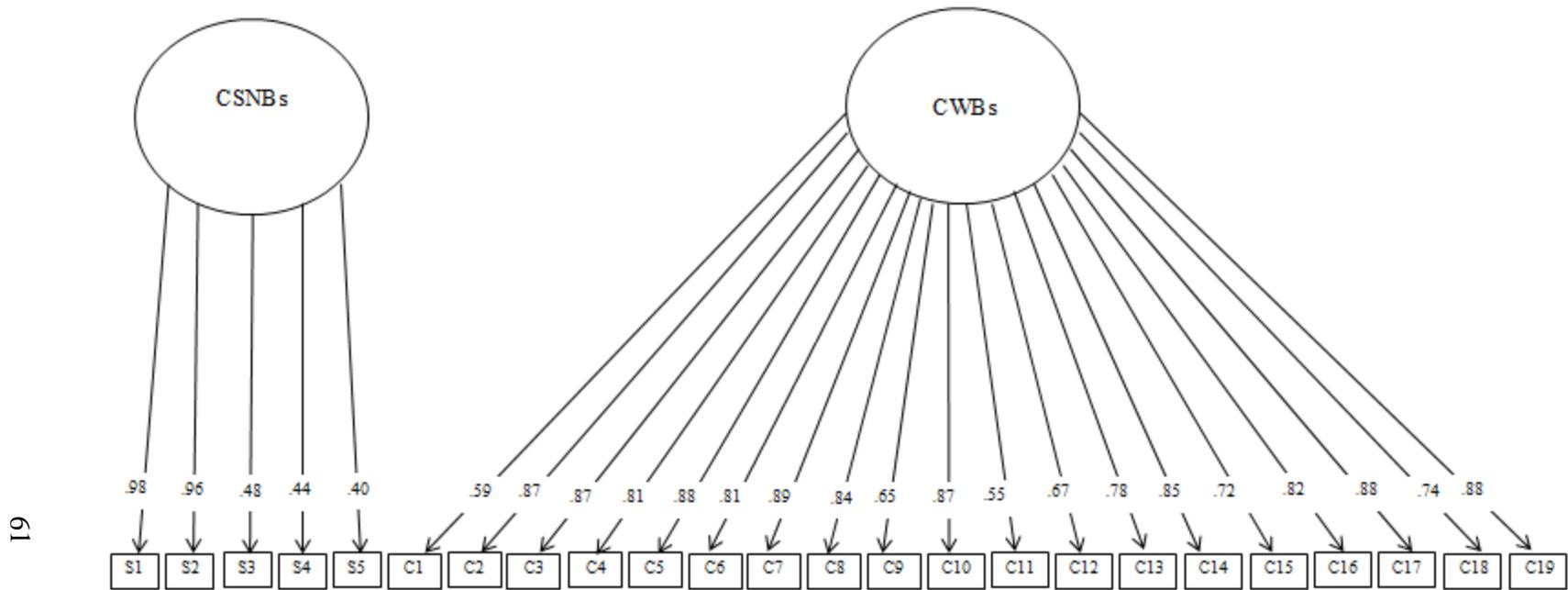


Figure 7. Two factor confirmatory factor analysis using employee data, showing the factor loadings for the nineteen counterproductive work behavior (CWB) and five counterproductive social networking behavior (CSNB) items onto two separate constructs.

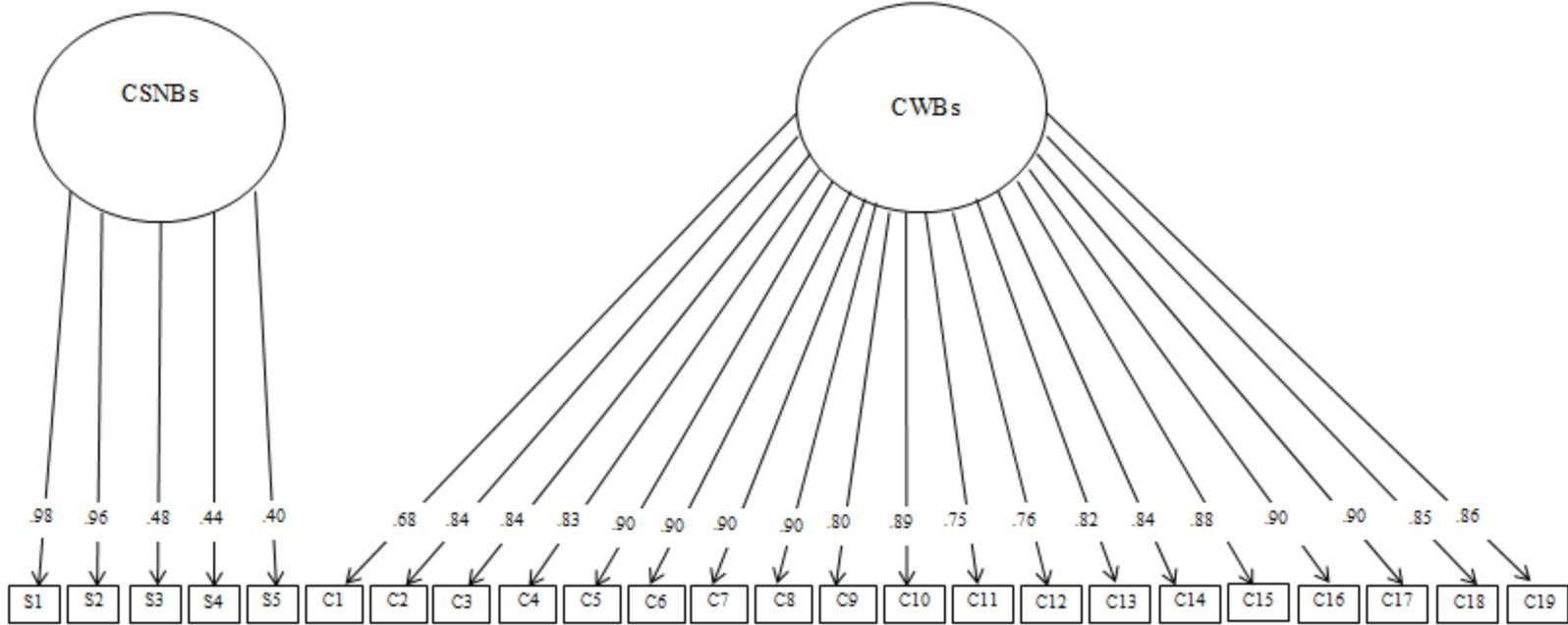


Figure 8. Two factor confirmatory factor analysis using supervisor data, showing the factor loadings for the nineteen counterproductive work behavior (CWB) and five counterproductive social networking behavior (CSNB) items onto two separate constructs.

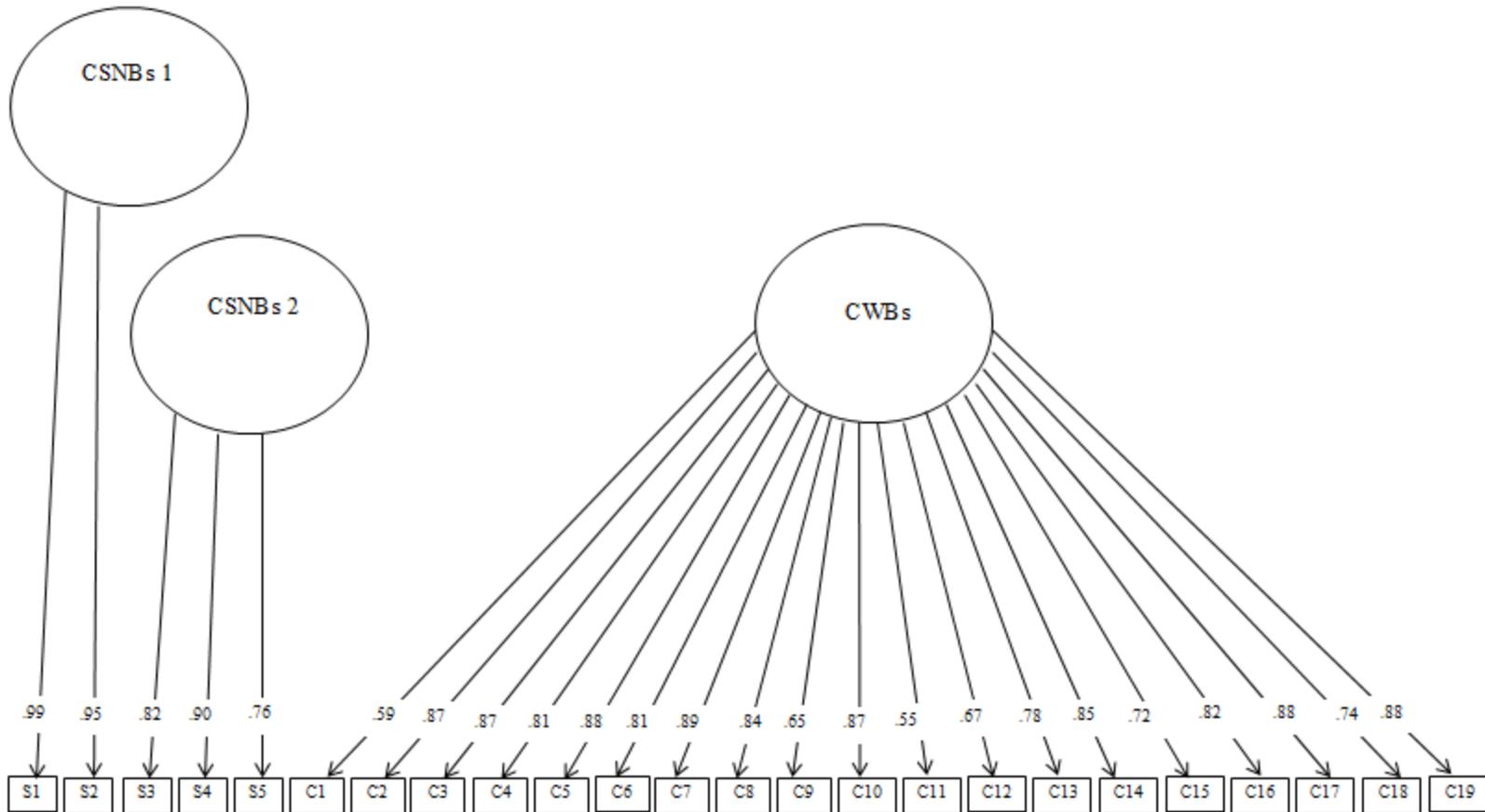


Figure 9. Three factor confirmatory factor analysis using employee data, showing the factor loadings for the nineteen counterproductive work behavior (CWB) and five counterproductive social networking behavior (CSNB) items onto three separate constructs.

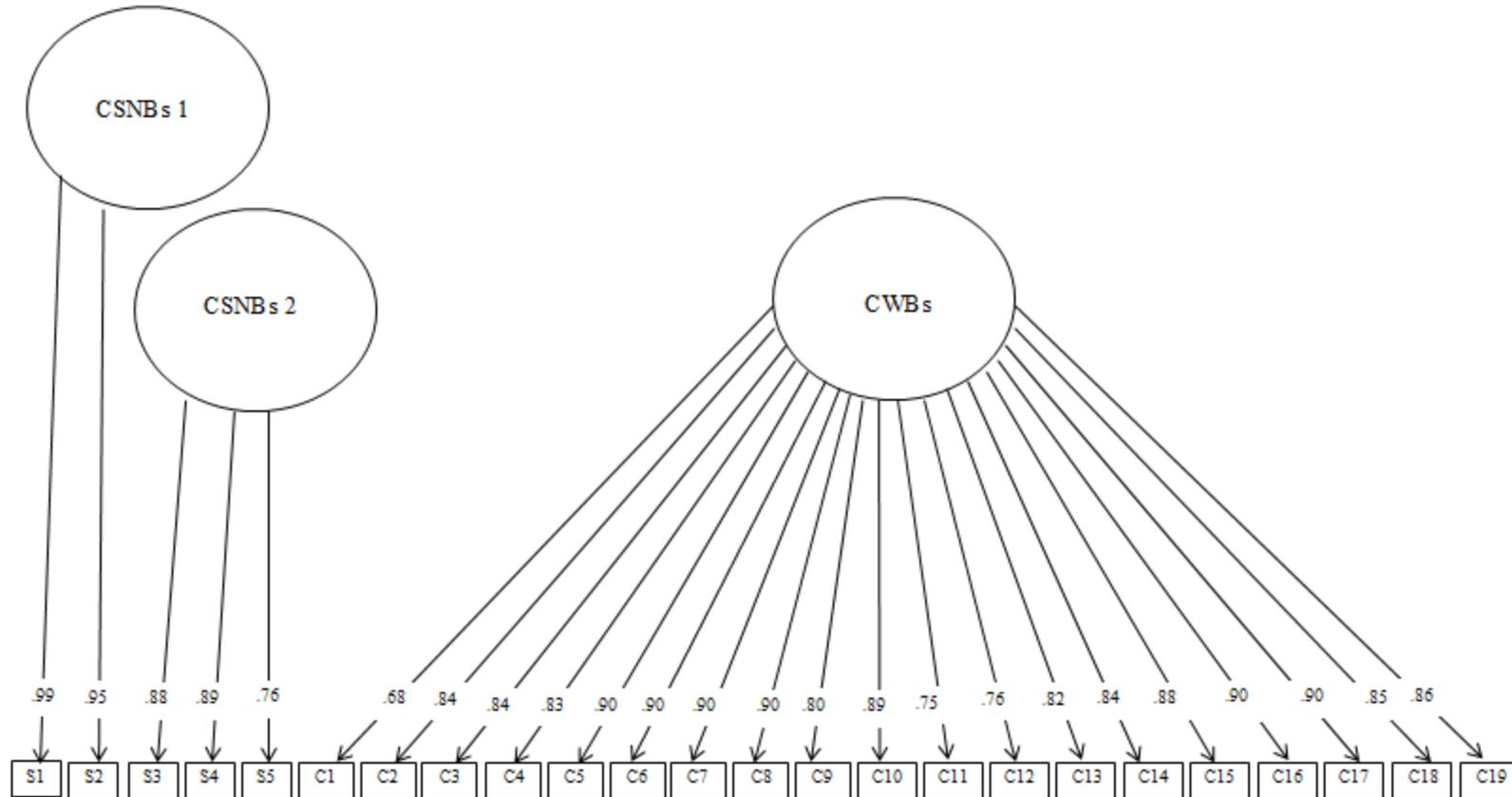


Figure 10. Three factor confirmatory factor analysis using supervisor data, showing the factor loadings for the nineteen counterproductive work behavior (CWB) and five counterproductive social networking behavior (CSNB) items onto three separate constructs.

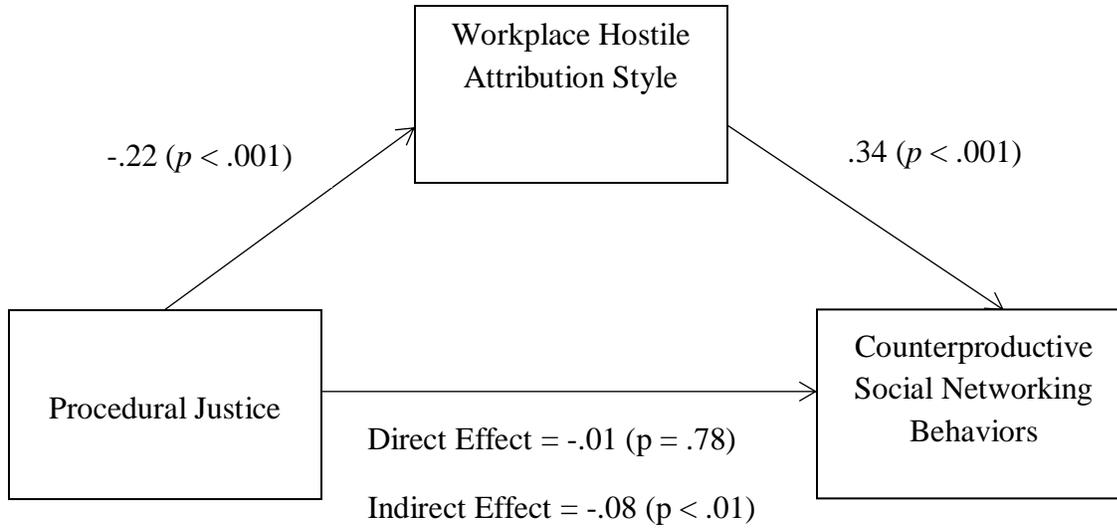


Figure 11. Path coefficients for a simple mediation analysis of the direct and indirect effects of procedural justice on counterproductive social networking behaviors.

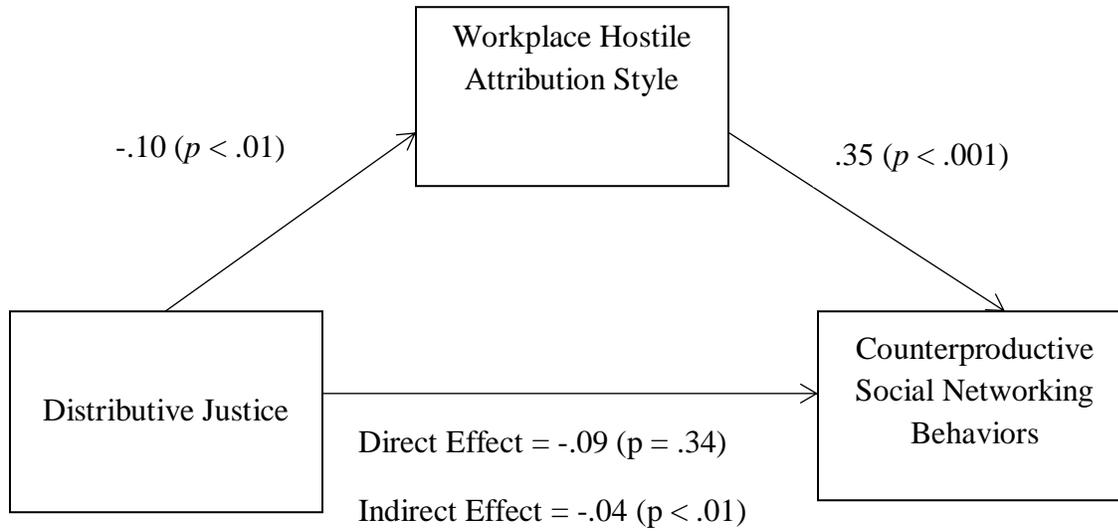


Figure 12. Path coefficients for a simple mediation analysis of the direct and indirect effects of distributive justice on counterproductive social networking behaviors.

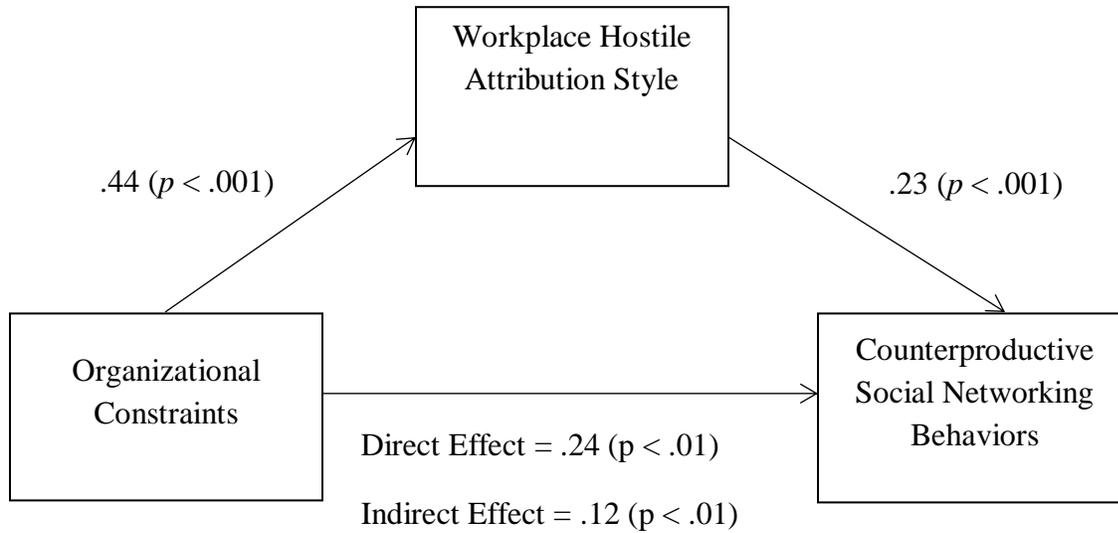


Figure 13. Path coefficients for a simple mediation analysis of the direct and indirect effects of organizational constraints on counterproductive social networking behaviors.

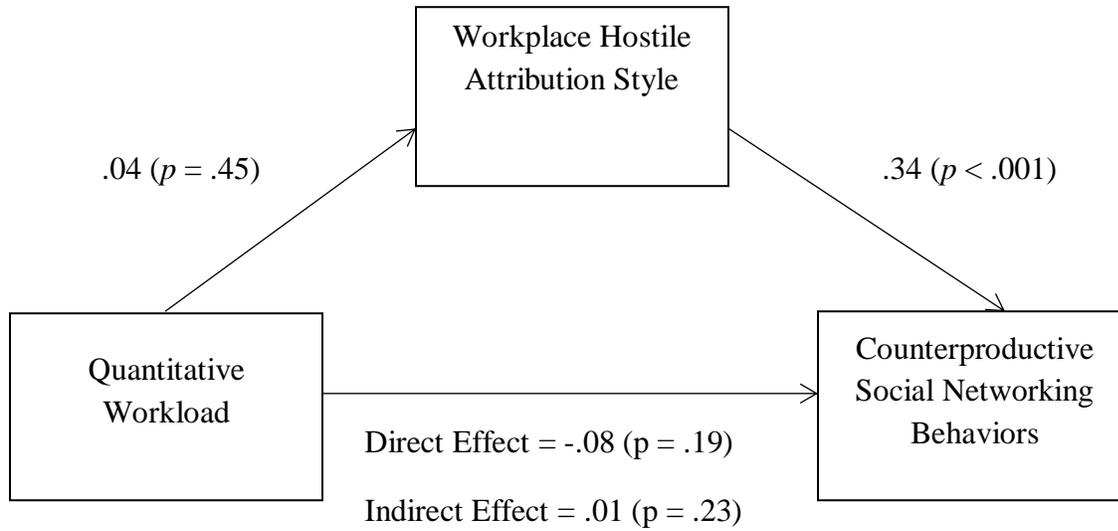


Figure 14. Path coefficients for a simple mediation analysis of the direct and indirect effects of quantitative workload on counterproductive social networking behaviors.

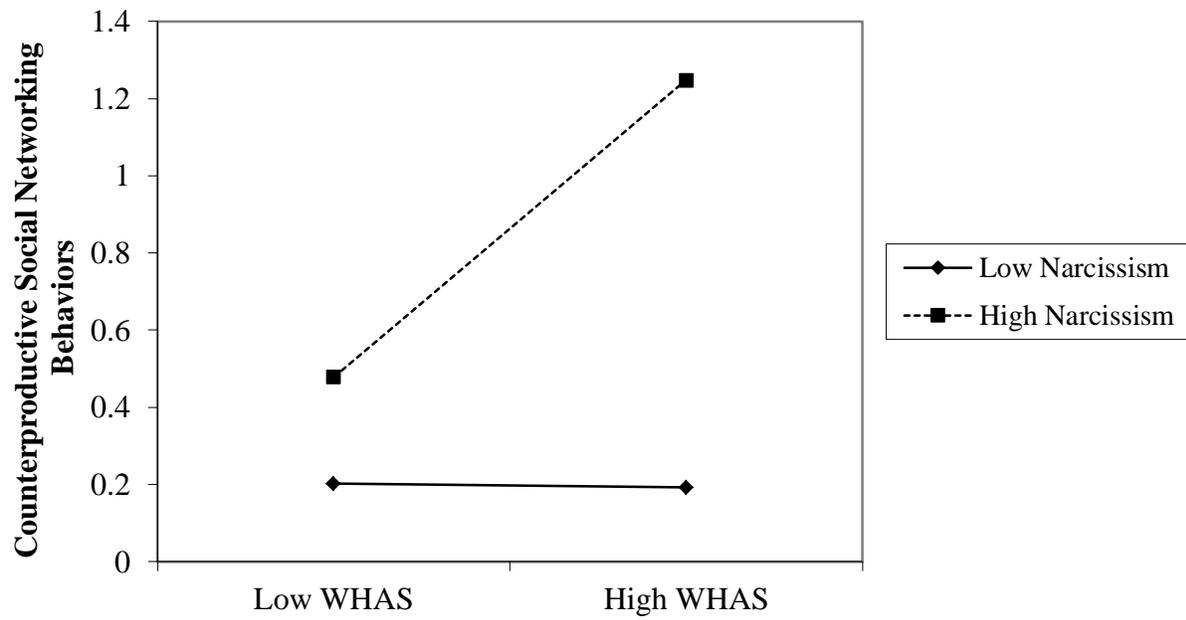


Figure 15. *Narcissism moderates the relationship between workplace hostile attribution style (WHAS) and counterproductive social networking behaviors.*

APPENDIX A

WAVE SCALES

*Wave 1 Scales*

Name of Construct	Number of Items
Generalized Self-Efficacy	10
Social dominance orientation	16
Right wing authoritarianism	15
Protestant Work Ethic	19
Negative Affectivity	10
Workplace Hostile Attributional Style*	7
Allocentrism / Idiocentrism	18
Collective Self-Esteem	25
Emotion Regulation	12
Hostility	8
Narcissism*	16
Agreeableness	10
Neuroticism	10

*Note:* Asterisks denotes items used in the current study. Items were rated by employees.

*Wave 2 Scales*

Name of Construct	Number of Items
Theory X/Theory Y: Subordinates	17
Corporate Social Responsibility	18
Organizational Identification	10
Interpersonal Conflict	4
Quantitative Workload*	5
Organizational Constraints*	11
Transformational/Full Range Leadership	45
Transformational/Full Range Leadership	45
Distributive Justice*	5
Procedural Justice*	7
Interactional Justice	6
Incivility	22

*Note:* Asterisks denotes items used in the current study. Items were rated by employees.

*Wave 3 Scales*

Name of Construct	Number of Items
Organizational Citizenship Behavior	14
Counterproductive Workplace behavior*	19
Physical Symptoms Inventory	18
Demographics	10
Social Networking Behaviors*	67

*Note:* Asterisks denotes items used in the current study. Items were rated by employees.

*Wave 3 Scales - Supervisor Reported*

Name of Construct	Number of Items
Demographics	10
Organizational Citizenship Behavior	14
Counterproductive Workplace behavior*	19
Theory X/Y	17

*Note:* Asterisks denotes items used in the current study. Items in this section were rated by the employees' supervisor.

## APPENDIX B

### SOCIAL MEDIA USE SCALE (Weidner, Wynne, & O'Brien, 2012)

- 
1. Are you a member of any Social Networking Sites (SNS) such as Facebook, Myspace, LinkedIn, Twitter or others?
  2. Do you have a Facebook account?
  3. Do you have a LinkedIn account?
  4. Do you have a Myspace account?
  5. Do you have a Twitter account?
  6. What other SNS do you use?
  7. What is your primary SNS?
  8. Do you have more than one account for any single SNS you use (e.g., two Facebook profile, etc.)?
  9. About how many "friends" or contacts are you connected with through your SNS?
  10. How often do you actively use your LinkedIn account?
  11. How often do you update your resume or C.V.?
  12. How often do you post status updates on LinkedIn?
  13. Have you been recommended by your current manager/supervisor on LinkedIn?
  14. Have you ever been recommended by a previous manager/supervisor on your LinkedIn account?
  15. Have you been recommended on LinkedIn by a current Coworker?
  16. Have you ever been recommended on LinkedIn by a previous coworker?
  17. How often do you actively use your Facebook account?
  18. How often do you actively use your MySpace account?
  19. How often do you actively use your Twitter account?
  20. How often do you post messages/status updates on your SNS?
  21. How often do you post pictures / videos on your Sites?
  22. How often do you edit your profile information?
  23. How often do you change your profile photos?
  24. How often do you check your SNS while at work?
  25. How often do you post status updates that relate to what is going on at your work?
  26. \*How often do you use your SNS to complain about your job?
  27. \*How often do you use your SNS to complain about a coworker?
  28. How often do you seek out/add new friends or contacts?
  29. How often do you play games available through your SNS?
  30. Do you check your SNS while at work?
  31. Does your workplace limit access to your SNS while at work?
  32. Are you in contact through your SNS with any of your coworkers?

33. Do you generally feel comfortable adding your coworkers as “friends?”
34. Do you feel comfortable adding your supervisor as a “friend”?
35. Do you have any pictures of you while at your workplace on your SNS?
36. Have you ever posted something negative about someone else on a SNS?
37. \*Have you ever posted something negative about a coworker on a SNS?
38. \*Have you ever posted something negative about your boss on a SNS?
39. \*Have you ever posted something negative about your workplace on a SNS?
40. Do you have pictures posted of you consuming alcoholic beverages on SNS?
41. Do you have pictures posted of you using illegal drugs on SNS?
42. Do you have any pictures posted in which you are performing illegal activities?
43. Do you have any pictures posted in which you are wearing revealing clothing?
44. Do you have any pictures posted in which you are acting in a way that you would not want your coworkers to see?
45. Do you limit or block your profile?
46. Are you in contact with your supervisor or manager through your SNS?
47. Do you associate with your manager/supervisor outside of the workplace?
48. How long have you worked under your current manager/supervisor?
49. How long have you been connected with your manager/supervisor through your SNS?
50. How often does your manager comment on your posts on your SNS?
51. How often do you comment on your manager’s posts on your SNS?
52. How often do you send messages to each other via your SNS?
53. How often do you have direct contact with your manager/supervisor?
54. How much do you trust your current manager/supervisor?
55. Please rate the extent to which you block or limit your profile from your boss?
56. Please rate the extent to which you block or limit your profile from coworkers?
57. Please rate the extent to which you block or limit your profile from known clients or customers (of your workplace)?
58. Please rate the extent to which you block or limit your profile from someone who works at an organization that you are interested in applying to
59. Have you sent a "friend" request to a supervisor?
60. If yes, was it accepted?
61. Have you ever sent a "friend" request to a coworker?
62. Have you ever received a "friend" request from a coworker?
63. Have you ever sent a "friend" request to a supervisor?
64. If yes, was it accepted?
65. Do you feel that having an SNS has benefited you at work?
66. Do you feel that having an SNS has been a risk factor for your work?
67. Do you feel that you waste time on your SNS while at work?

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*Note.* Asterisks denotes items used in the current study.