THE ROLE OF SENSE OF COHERENCE IN STRESSOR APPRAISAL

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ABSTRACT

According to the transactional theory of stress, cognitive individual differences impact stressor appraisal. Sense of Coherence (SoC) refers to an individual's generalized perception of environmental stimuli. Individuals with a strong SoC perceive the world as more comprehensible, manageable, and meaningful and may be more likely to appraise work-related stressors as having potential for opportunities (challenges) than for obstructing personal gain (hindrances) or causing harm (threats). This study assessed the role of SoC in the appraisal of work-related stressors as challenges, hindrances, and threats. Although an individual's SoC remains relatively stable upon reaching adulthood, there is a positive association between age and SoC across the lifespan. This study examined the moderating effect of age on the relationship between SoC and stressor appraisal. Two statistical techniques were applied, with one set of results supporting the hypothesis and the other set revealing significant relationships between stressor appraisal tendencies and the three SoC subdimensions.

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LIST OF ABBREVIATIONS

H1, Hypothesis 1

H2, Hypothesis 2

H3, Hypothesis 3

H4, Hypothesis 4

SoC, Sense of Coherence

Work-SoC, Work-Related Sense of Coherence

NIOSH, National Institute for Occupational Safety and Health

BLS, Bureau of Labor Statistics

SD, Standard Deviation

IRB, Institutional Review Board

USA, United States of America

SoC-29, 29-Item Sense of Coherence Scale

OLQ, Orientation to Life Questionnaire

SoC-C, Comprehensibility

SoC-Ma, Manageability

SoC-Me, Meaningfulness

ESEM, Exploratory Structural Equation Modeling

CFA, Confirmatory Factor Analysis

EFA, Exploratory Factor Analysis

SEM, Structural Equation Modeling

df, Degrees of Freedom

AIC, Akaike Information Criterion

BIC, Bayesian Information Criterion

RMSEA, Root Mean Square Error of Approximation

CI, Confidence Interval

CFI, Comparative Fit Index

TLI, Tucker-Lewis Index

SRMR, Standardized Root Mean Square Residual

LIST OF SYMBOLS

α , Cronbach's alpha

N , Total number of cases

r , Estimate of Pearson product-moment correlation coefficient

M , Mean

p , Probability

χ^2 , Chi square

$Adj. R^2$, adjusted proportion of variance accounted for in a multiple regression

F , the ANOVA test statistic

CHAPTER I

INTRODUCTION

Occupational stress researchers have long acknowledged that work-related stress can negatively impact physical and psychological health, employee attitudes, and work behaviors (e.g., Jex & Yankelevich, 2008), but a growing number of studies indicates that the impact of stress is not always consistently bad (Lepine, Podsakoff, & Lepine, 2005; Podsakoff, LePine, & LePine, 2007). Work stressors can positively or negatively impact work-related psychological and behavioral outcomes (e.g., motivation and actual job-related performance), even while being detrimental to personal physical health if chronic and persistent. The present study focused one mechanism by which these inconsistencies may be at least partially explained. Specifically, this study examined how the appraisal of work-related stressors may be influenced by a potent form of psychological individual difference known as Sense of Coherence (SoC).

Appraising Stressors: Challenges, Hindrances, Threats?

The notion that personal experiences with stress can be positive and/or negative is typically traced back to the concepts of eustress and distress, respectively (Selye, 1974). More recent work in this area suggests that stressors and the resulting experienced stress may take both positive and negative forms, as *challenges* and *hindrances* (Cavanaugh, Boswell, Roehling, & Boudreau, 2000). Within this model, common *challenge stressors* include demands such as high workload, time pressure, job scope, and high responsibility; employees tend to view these

demands as creating a challenge and/or opportunity for personal development and achievement. In contrast, *hindrance stressors* include demands such as organizational politics or bureaucracy, role ambiguity, and concerns related to job security; employees tend to view these demands as obstacles to task accomplishment and personal growth (Cavanaugh et al., 2000). Challenge stressors have been positively associated with job satisfaction (Beehr, Glaser, Canali, & Wallwey, 2001; Podsakoff et al., 2007), organizational loyalty (Boswell, Olson-Buchanan, & LePine, 2004), performance (Lepine et al., 2005; Pearsall, Ellis, & Stein, 2009), and retention (Podsakoff et al., 2007), whereas hindrance stressors have been negatively associated with these outcomes.

Recent research employing the challenge-hindrance perspective on work stressors often treats specific stressors as either inherently challenging or hindering, leading to the assumption that everyone interprets stressors as they are categorized in the research. However, little attention has been paid to the stressor appraisal process since the introduction of the taxonomy. To initially determine the categorization of certain stressors, Cavanaugh et al. (2000) jointly labelled 11 stressors as either challenges or hindrances and then requested four individuals (3 students and 1 professor) to report how they would appraise each stressor. Although the evaluators' categorization of the stressors agreed with the researchers' categorization in 93% of the cases, this method involved assumptions about how individual stressors are interpreted within a larger population (Cavanaugh et al., 2000). Instead, the challenge and hindrance appraisals of research participants themselves must be examined. While the challenge-hindrance stressor framework presents an improvement over previous and more simplistic attempts to create a taxonomy of stressors, it overlooks the role of individual differences in how individuals actually appraise different stressors. This is surprising given that the challenge-hindrance stressor model draws

heavily from the transactional theory of stress (Lazarus & Folkman, 1984), which emphasizes that an individual's appraisal of a stressor plays a crucial role in that individual's ultimate stress experience.

Transactional theory of stress. The most dominant framework for explaining the cognitive stressor appraisal process is Lazarus and Folkman's (1984) work with the transactional theory of stress. Stress results from a transaction between the environment and the individual, including the individual's perceptions, expectations, and coping behaviors. Central to the transactional theory of stress is the idea of cognitive appraisal, which involves an evaluative perception that one's well-being is implicated in the person-environment transaction (Lazarus & Folkman, 1984). Within the theory, Lazarus and Folkman identify two types of cognitive appraisal: *primary appraisal* and *secondary appraisal*.

Primary appraisal involves the initial evaluation of the significance of an encounter or transaction for a specific individual, and secondary appraisal involves the evaluation of one's capacity to cope with the situation (Lazarus & Folkman, 1984). They proposed that primary appraisals of stress can take three forms: (1) harm or loss already experienced; (2) the threat of future harm or loss, known as *threat appraisal*; or (3) the potential for mastery and gain, known as *challenge appraisal*. Following an individual's primary appraisal of a stressor, a secondary appraisal ensues in which the individual assesses what, if anything, can be done to improve the potential for benefits or prevent harm (Lazarus & Folkman, 1984). Thus, secondary appraisal involves the evaluation of various coping options (e.g., altering the situation, accepting the situation, seeking more information, or holding back from acting in a counterproductive

manner). Although secondary appraisal is part of the transactional theory, the focus in the present study is on the primary appraisal processes.

Regarding the role of primary appraisal in the transactional theory of stress, Lazarus and Folkman (1984) proposed that an individual can simultaneously perceive that a situation provides opportunities for mastery or growth (challenge appraisal) and opportunities for harm or loss (threat appraisal). Therefore, they emphasized the importance of measuring and understanding the extent to which an individual appraises the same situation as both a challenge and a threat (Lazarus & Folkman, 1984). In support of the transactional theory, recent research has demonstrated that stressors can be appraised along both dimensions simultaneously.

Several work-related stressors have been perceived as a challenge in one study, a hindrance in another study, and as both a challenge and a hindrance simultaneously. For example, workload is considered a challenge stressor in the management literature and has been linked to increases in job performance (Cavanaugh et al., 2000). However, other studies have shown that it can be perceived as a hindrance stressor, specifically in occupations in which the individual cares for others (Bakker & Sanz-Vergel, 2013; Drach-Zahavy & Freund, 2007), or that it can be appraised as both a challenge and a hindrance stressor (Webster, Beehr, & Love, 2011). Webster and colleagues (2011) also demonstrated that role ambiguity and role conflict, considered hindrance stressors in previous stressor frameworks, can be appraised as both challenge and hindrance stressors. Similarly, time pressure has been appraised as both a challenge and a hindrance stressor (Searle & Auton, 2015) and is associated with both positive and negative well-being (Widmer, Semmer, Kälin, Jacobshagen, & Meier, 2012). While studies using the challenge-hindrance stressor framework have begun to demonstrate that stressors can be classified into more than one category simultaneously, many researchers continue to overlook

the vital issue of how and why this is possible. Within the transactional theory of stress, one possibility is through the process of individual cognitive appraisal of stressors.

Measuring stressor appraisal. Lazarus and Folkman (1984) stated that an individual's cognitive appraisal should mediate the effects of the demand on strain and other outcomes. Indeed, studies have shown that the relationships between stressors and strains and between stressors and work-related outcomes are partially mediated by cognitive appraisal (Gomes, Faria, & Gonçalves, 2013; Searle & Auton, 2015; Webster et al., 2011). In addition to the effects of challenge and hindrance stressors, information about appraisals is useful in understanding affective states, coping behaviors, and task performance (Searle & Auton, 2015). However, there is a general lack of empirical evidence about the role of individual cognitive appraisal among research involving the challenge-hindrance stressor framework.

Although the challenge-hindrance stressor framework draws heavily from the transactional theory of stress, much of the research using this model is inconsistent with the core element of Lazarus and Folkman's (1984) theory. Recent meta-analyses on the topic (Crawford, LePine, & Rich, 2010; Podsakoff et al., 2007) indicate that many researchers have not directly measured participants' appraisals of stressors as challenges (i.e., having potential for mastery or growth) or hindrances (i.e., having potential for future harm or loss). Instead, stressors have been classified *a priori* by the researchers based on a majority of respondents classifying them in a certain way (see Cavanaugh et al., 2000) and/or based on the stressors' known relationships with certain outcomes. In other words, rather than recording participants' direct appraisal of specific stressors, researchers have asked participants to report either the experienced level of the work

stressors (e.g., Lepine et al., 2005) or the amount of stress caused by stressors (e.g., Cavanaugh et al., 2000; LePine, LePine, & Jackson, 2004).

This approach to stressor research applies pre-identified appraisal classifications and typically focuses on measuring either the prevalence of the stressor or the amount of stress arousal associated with a perceived stressor. Neither approach first directly measures whether a participant's appraisal of a stressor is actually of a challenge or threat form. This omission further perpetuates these theoretically, rather than empirically derived, stressor classifications. If common work-related stressors and other stimuli in a work environment can be appraised differently, either by different people in one context or by the same person in different contexts, then *a priori* categorization of stressors or stimuli should not be assumed to necessarily and accurately reflect an individual's appraisal of a stressor. Furthermore, prior to directly measuring an individual's appraisal of a stressor, distinctions must be made concerning more than just the two standard appraisal dimensions – indeed, there are three well-established and distinct forms of stressor appraisal that should be studied.

Challenge, hindrance, and threat appraisal. Lazarus and Folkman (1984) indicated that besides the appraisal of harm or loss already experienced, primary appraisal involves an individual's perception of a stressor as having potential for mastery or gain (challenge appraisal) and as having potential for future harm or loss (threat appraisal). In addition to these two forms of appraisal, Lazarus (1991) proposed a third type of primary appraisal, which involves frustration. Building on this idea, Tuckey and colleagues (2015) suggested that when the pursuit of a goal is blocked and frustration arises, this can be labeled as an additional form of primary appraisal, which they termed *hindrance appraisal*. In making this distinction, Tuckey et al.

argued that the potential for stressors to threaten the self adds an important dimension to the existing challenge-hindrance stressor framework.

As stated previously, within the framework stressors appraised as challenges enhance a person's opportunities for meaningful gains, and those appraised as hindrances prevent, restrict, or obstruct opportunities for such gains. However, Tuckey and colleagues (2015) pointed out that the potential for a stressor to threaten oneself does not fit into the framework's descriptions of either challenge or hindrance. They noted that previous researchers (e.g., Lepine et al., 2005, pp. 765, 767; Webster et al., 2011, p. 506) made assumptions by equating threat and hindrance, sometimes using "threat" or "threatening" in relation to hindrance stressors or the perception of hindrance (Tuckey et al., 2015). To distinguish threat stressors from the categories of challenge and hindrance stressors, Tuckey et al. (2015) drew upon Lazarus and Folkman's (1984) concept of threat appraisal and defined stressors appraised as threats to be "work-related demands or circumstances that tend to be directly associated with personal harm or loss" (p. 133). Ultimately, Tuckey et al. found that hindrance and threat were not only different categories of stressors but were also different categories of appraisals, thus providing empirical support for the differentiation among challenge, hindrance, and threat appraisals.

Although this distinction provides a starting place for future stress interventions, Tuckey et al. (2015) specifically noted that researchers should consider the mechanisms underlying the damaging effects of stress, such as how employees' personal resources influence the appraisal of work stressors. To understand how and why individuals appraise stressors in certain ways, it is critical to examine cognitive individual differences. Research on the appraisal of stressors as challenge, hindrance, or threat is still in its infancy; thus, there are few studies assessing the role that individual differences play in employees' cognitive appraisals of work-related stressors.

What is clear so far, is that people do differ in how they perceive, appraise, and respond to stressors. It is likely that these differences are due in large part to underlying differences in how individuals cognitively process stimuli that may become stressors and therefore trigger stress events (Lazarus & Folkman, 1984). What is not clear yet is which specific cognitive factors matter most for their influence over the primary appraisal processes detailed in the preceding material. However, one cognitive factor of particular relevance is a person's sense of coherence (SoC; Antonovsky, 1987b).

Sense of Coherence

The present study was designed to focus on one such cognitive individual difference, a person's SoC, and its role in stressor appraisal. This study, therefore, builds on previous work (e.g., Searle & Auton, 2015; Tuckey et al., 2015; Webster et al., 2011) by directing attention to how an individual's level of SoC may influence their appraisal of a stressor as a challenge or hindrance. While there is little doubt that cultural and social structures play a significant role in shaping individuals' thoughts, feelings, and behaviors, Lazarus and Folkman (1984) insisted that these variables alone cannot account fully for how people appraise stressors; the private thoughts and feelings that make up one's social reality can differ greatly from individual to individual. The complex stressor appraisal process is influenced by a number of individual differences that shape cognitive perceptions in every situation (Lazarus & Folkman, 1984).

Of direct relevance to this line of inquiry is Antonovsky's (1979, 1987b) work on the SoC construct and theory. He referred to SoC as an individual's generalized emotional-cognitive perception of stimuli in the environment. Antonovsky (1987b, 1991, 1993) proposed that SoC is a broadband health resource, rather than a particular coping style or specific personality trait,

which influences an individual's perceptions and coping behavior. It is a global orientation through which an individual perceives life as comprehensible, manageable, and meaningful. SoC is defined as:

a global orientation that expresses the extent to which one has a pervasive, enduring, though dynamic, feeling of confidence that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable (comprehensibility); (2) the resources are available to meet the demands posed by the stimuli (manageability); and (3) these demands are challenges, worthy of investment and engagement (meaningfulness) (Antonovsky, 1987b, p. 19).

SoC is associated with a wide variety of general health and well-being indicators, as demonstrated by a vast amount of research across multiple disciplines (see summary in Appendix A). For example, studies have shown that SoC is significantly and negatively related to anxiety and depression (Schnyder, Buchi, Sensky, & Klaghofer, 2000), cancer (Poppius, Virkkunen, Hakama, & Tenkanen, 2006), diabetes (Kouvonen et al., 2008), and mortality (Super, Verschuren, Zantinge, Wagemakers, & Picavet, 2014; Wainwright et al., 2008), and positively related to general health and well-being (Binkowska-Bury & Januszewicz, 2010; Feldt, 1997; Geyer, 1997; Kivimaki, Feldt, Vahtera, & Nurmi, 2000; Pallant & Lae, 2002), resilience (Hart, Wilson, & Hittner, 2006), and quality of life (Eriksson & Lindstrom, 2007; Pusswald et al., 2012; Tartas, Walkiewicz, Budzinski, Majkiewicz, & Wojcikiewicz, 2014).

Rather than approach health from a pathogenic perspective, which focuses on the origin of disease, Antonovsky (1979) developed a salutogenic theory, which places emphasis on the origin of health and staying well (e.g., why certain individuals are able to successfully cope with stressors) (Antonovsky, 1979, 1985, 1987b). He claimed that an individual's state of health is not

a dichotomy of health or disease, but is instead a continuum ranging from ease to disease throughout the course of one's life. SoC is a central variable in explaining an individual's movement toward the healthy end of this continuum (Antonovsky, 1987b). The central tenet in this theory is that individuals with a stronger overall SoC have a greater capacity for coping with stressors in a healthy manner (Antonovsky, 1987a). As such, SoC has been found to impact individuals' appraisal of stressful events, although seemingly without one's conscious awareness (Amirkhan & Greaves, 2003). Due to differences in one's perception of the comprehensibility, manageability, and meaningfulness of stimuli in the environment, the impact of stressful experiences may vary for individuals depending on their SoC (Bolger & Zuckerman, 1995; Cooper, 2001).

Antonovsky (1979, 1987b, 1993) referred to SoC as a relatively stable disposition that is shaped by a person's life experiences in childhood, adolescence, and early adulthood (e.g., marriage, work, lifestyle, set of social roles; Antonovsky, 1987b). Although SoC was once thought to be stable by the age of 30, this early idea has been challenged by a number of more recent longitudinal studies (e.g., Feldt, Leskinen, Kinnunen, & Mauno, 2000; Hakanen, Feldt, & Leskinen, 2007; Smith, Breslin, & Beaton, 2003). SoC is not necessarily fixed in adulthood; it has a dynamic nature and may change for individuals throughout the course of life as a result of major adaptations or development efforts in attempt to strengthen one's SoC (Antonovsky, 1979, 1987b, 1991). Antonovsky (1987b) theorized that, as in other significant life contexts, the work environment can contribute significantly to an individual's SoC.

In the workplace, consistent daily experiences enhance one's sense of *comprehensibility*, balancing of workload enhances *manageability*, and participation in socially valued decision-making enhances *meaningfulness* (Antonovsky, 1979, 1987b, 1991). Within the context of the

workplace, general SoC has proven to be a valuable construct. Many studies have shown the influences of the work environment on its manifestation (see summary in Appendix B).

Empirical evidence reveals that SoC (a) is influenced by different aspects of the workplace, (b) influences work-related outcomes, and (c) moderates the effects of adverse working conditions on health outcomes (Jenny, Bauer, Vinje, Vogt, & Torp, 2016).

Work-SoC. A coherent work experience is relevant to both the general SoC of employees and their appraisals of work-related stressors. Although Antonovsky (1979) viewed SoC as a non-context specific element in the makeup of an individual, he acknowledged that a context-based SoC replaces a purely individual perspective and refers to one's experiences dealing with external stimuli, challenges, and threats. A context-specific SoC can take into account one's social environment and the meaning of situational transactions (Antonovsky, 1979). Several authors have redefined SoC as a flexible and context-specific construct. Antonovsky and Sourani (1988) identified the construct of family SoC, which is the perceived coherence of family life; Artinian (1997) discussed situational SoC, which reflects one's present and specific orientation rather than a global life orientation; and Gräser (2003) developed a scale to measure university SoC, which is the extent to which university staff perceive their work situation as coherent. As such, it is reasonable to at least consider using a contextualized version of SoC when trying to understand its impact in a work-specific environment.

Bauer and Jenny (2007) proposed a work context-specific application of SoC, (Work-SoC), as a way to measure coherent work experiences. Work-SoC extends from the traditional framework for measuring SoC and focuses on an individual's current work situation. As contextualized within the Work-SoC model: (a) comprehensibility refers to the extent to which

employees perceive a work environment as ordered, predictable, and understandable; (b) manageability refers to the extent to which employees recognize available resources and have access to use them to cope with workplace demands; and (c) meaningfulness refers to the extent to which employees view the work environment to have importance and value, and that it is worthwhile to engage in dealing with workplace challenges (Bauer & Jenny, 2007). This is a very new construct in the literature, but already there is some evidence to support its value and utility within occupational stress research. Eberez, Becker, and Antoni (2015) interpreted Work-SoC as an individual meta-resource that moderates the work-health relationship by reducing the pathogenic effects of work stressors. Eberez et al. (2015) found evidence that Work-SoC appears to be a stronger predictor for work-related stress than global SoC.

The Present Study

Antonovsky (1984) stated that a strong SoC plays a significant role in influencing a person's tendency to appraise unavoidable stimuli as opportunities rather than stressors. Building on the theoretical and empirical work presented above, the present study examined the possible influence of general and work-specific SoC on individuals' appraisals of common work-related stressors as challenges, hindrances, and threats. Individuals with a high SoC tend to experience environmental stimuli in a way that enables them to perceive life events as coherent (Antonovsky, 1987b). This may lead to the perception of a more favorable working environment and the appraisal of stressors as challenges rather than hindrances or threats. The present study tested for the first time how the individual cognitive difference of SoC is associated with one's primary appraisal of common work stressors. Specifically, the present study tested the relationships illustrated in Figure 1.

Figure 1 Conceptual Model of Hypotheses 1 through 4

Hypotheses. Extending from the preceding figure and discussion, the following hypotheses were tested using various operationalizations of appraisal tendencies (as detailed in the Method section):

Hypothesis 1: There is a positive relationship between SoC and tendency to appraise work stressors as challenges.

Hypothesis 2: There is a negative relationship between SoC and tendency to appraise work stressors as hindrances.

Hypothesis 3: There is a negative relationship between SoC and tendency to appraise work stressors as threats.

Antonovsky (1987) predicted that SoC develops until about the age of 30, at which point it becomes relatively stable until retirement, after which a decrease is expected. However, this assumption has not found much support in subsequent empirical research. SoC seems to be relatively stable over time, but not as stable as Antonovsky assumed. Research shows that SoC steadily increases with age over the entire life cycle (Feldt et al., 2000; Nilsson, Leppert, Simonsson, & Starrin, 2010). In a longitudinal study with more than 18,000 Finnish respondents, SoC was shown to develop over time, continuously increasing with age (Feldt et al., 2011). Additionally, in a population-based, five-year follow-up study of 43,500 Swedish respondents aged 18-85, Nilsson and colleagues (2010) demonstrated that SoC increases with age in men and women. In the present study, it was anticipated that less stability in SoC among younger individuals would likely result in less clear and therefore weaker relations between SoC and cognitive appraisal in comparison to SoC among older individuals. Specifically,

Hypothesis 4: The relationships between SoC and stressor appraisals (H1-H3) are moderated by age, such that they are stronger for older individuals than for younger individuals.

Finally, as an important note to the preceding hypotheses, Antonovsky (1987) proposed that life experiences that shape SoC are characterized by consistency, participation in shaping outcomes, and balance. Due to the numerous life experiences that may be characterized in this way, in the present study the analyses testing the preceding hypotheses included certain variables due to their potential confounding effect on the relationships that were the focus of this research. Specifically, the covariates were: sex, marital status, race, ethnicity, number of children, number of dependents, social support, tenure in current position, number of years working full-time, and highest level of education.

CHAPTER II

METHODOLOGY

Participants

To ensure a basic level of exposure to common work-related stressors, participants for this study were either full-time graduate students with additional paid work responsibilities beyond classwork (e.g., Graduate/Teaching/Research Assistantship, Internship, part-/full-time work) or adults who were full-time employees working at least 34 hours per week (Bureau of Labor Statistics [BLS], 2016). Individuals who did not meet these inclusion criteria were excluded. Approximately 1876 potential participants were contacted and a total of 859 at least partially responded to the survey (45.8% response rate). After applying the inclusion/exclusion rules just described, removing respondents who completed less than 50% of the survey, and excluding respondents who did not provide critical demographic information, the final sample for analysis included 591 mostly complete survey records (response rate against overall target sample = 31.5%). All reported statistics past this point are based on this final sample.

Respondents ranged in age from 19-77 years, and the mean age was 36.31 years old ($SD = 13.26$). Of the respondents, 86.3% were full-time workers and 22% were full-time graduate students with paid work responsibilities in addition to school. Female respondents made up 68.1% of the sample, 27.5% of respondents indicated they were single adults, and 65.9% indicated they were married, living as married, or in a committed relationship. A majority of respondents identified their ethnicity as non-Hispanic (97.1%). The most prevalent race

represented in the sample was White (90%), followed by Black/African American (4.7%), Asian (1.2%), Middle Eastern/Arab (1.0%), and American Indian/Alaskan Native (0.3%); 2.7% of respondents represented two or more races.

Forty percent of respondents reported that they had at least one child, and 46.1% of respondents reported that they were responsible for at least one other person. Approximately 72% of respondents had obtained a Bachelor's degree or higher, and the mean number of hours worked per week was 44.29 ($SD = 11.65$). Roughly 55% of respondents reported that they function as a supervisor of at least one other individual. The mean number of years that respondents had been working in their current position was 5.66 ($SD = 7.54$), and the mean number of years that respondents had been working full-time was 13.58 ($SD = 12.93$). If in need of social support, participants indicated they could talk to their: spouse (16.1%), children (24.2%), relative (29.6%), close friend (21.3%), neighbor (6.4%), and coworker (1.7%). Out of these six total social support options that respondents could have selected, the median response was three. Approximately 40% of respondents worked in the Education and Health Services industry, and 15% worked in the Professional and Business Services industry.

Procedure

The university's Institutional Review Board (IRB) approved this research study prior to data collection. Participants were asked to respond to a securely managed, web-based structured survey delivered through the Qualtrics internet-survey system. The survey required about 30 minutes to complete and was administered to samples recruited using the following strategies: (1) via emails to all graduate students at a medium-sized, public university in the southeastern United States of America (USA), (2) via a membership email list to a young professionals

association, (3) via email list to the agency representatives of a community coalition, and (4) via direct and indirect personal appeal through professional social networking groups (e.g., LinkedIn, Facebook). No incentives were offered to encourage participation.

Measures

The data for this study were gathered using the measures detailed in this section. All measures are included in Appendix D along with a copy of the actual survey.

Sense of Coherence (SoC). Participants responded to the 29-item SoC scale (SoC-29), called the ‘Orientation to Life Questionnaire’ (OLQ) in its operational format (Antonovsky, 1993). The SoC-29 has been shown to be a reliable, valid, and cross culturally applicable instrument measuring how people manage stressful situations and stay well (Eriksson & Lindstrom, 2005). The SoC model encompasses three components: comprehensibility (SoC-C), manageability (SoC-Ma), and meaningfulness (SoC-Me), which are measured with 11, 10, and 8 items, respectively. Previous research has supported the multidimensional factorial structure of the SoC-29 (Eriksson & Lindstrom, 2005). Participants were instructed to respond to a variety of items along various rating scales all ranging from one to seven. An example is, “Do you have the feeling that you don’t really care what goes on around you?”, with responses ranging from 1 = “Very seldom to never” to 7 = “Very often”. Higher scores on the measure indicate a strong SoC, which manifests itself through an individual’s ability to perceive stressors as challenges rather than negative threats (Antonovsky, 1987b). Previous studies have shown high test-retest reliability for the SoC-29 measure (Feldt, Kivimaki, Rantala, & Tolvanen, 2004; Feldt et al., 2000; Feldt, Leskinen, & Kinnunen, 2005; Kivimaki et al., 2000; Schnyder et al., 2000). From a

review of 124 previous studies, this measure has demonstrated adequate internal consistency reliability, with values ranging from $\alpha = .70$ to $.95$ for the items overall and for the items linked to each of the subdimensions (Eriksson & Lindstrom, 2005). In the present study, the internal consistency reliability was $\alpha = .83$ for the overall SoC-29 and $\alpha = .79$, $.79$, and $.83$ for the three subdimensions (SoC-C, SoC-Ma, and SoC-Me), respectively.

Work-Related Sense of Coherence (Work-SoC). Bauer and Jenny (2007) proposed the concept of Work-SoC, which assumes that the participant's perception of comprehensibility, manageability, and meaningfulness is influenced by the interaction between individual characteristics and the characteristics of the work environment (Vogt, Jenny, & Bauer, 2013). Based on Antonovsky's (1987b) definition of SoC, Bauer and Jenny (2007) extracted adjectives and added matched counterparts, forming a scale of nine bipolar items. Individuals responded to the question, "How do you personally find your current job and work situation in general?" by selecting the extent to which they agreed with the presented opposing adjectives on a seven-point scale. For example, one item displays the bipolar items "unmanageable" and "manageable" on opposite ends of the seven-point scale. Previous validation studies have demonstrated good internal consistency for these items, $\alpha = .83$ (e.g., Bauer, Vogt, Inauen, & Jenny, 2015; Vogt et al., 2013) and have identified a three-factor structure of the scale with subdimensions of comprehensibility, manageability, and meaningfulness, and subdimension values ranging from $\alpha = .72$ to $.84$ (Vogt et al., 2013). In the present study, the internal consistency reliability of the overall Work-SoC scale was $\alpha = .81$; subdimensions for this scale were not considered in the present study because of the limited number of items per dimension and the focus of the hypotheses being tested.

Work information. Participants were informed that in this study, “work environment” refers to “the environment in which you are working for compensation or pay (e.g., part-/full-time work, internship, graduate/teaching/research assistantship, clinical hours)”. This definition was followed by a check item to assess participant understanding. The subsequent two items were used to gather participant information regarding job industry and job title. Job industry was categorized by the creation of ten industries from the United States Department of Labor.

Stressor prevalence. Although the research on work-related stress is vast, there is a subset of common or universal stressors that exists in a majority of work environments and appears in most research in this area (Wiegand et al., 2012). To reach a consensus in selecting practical psychosocial measures during the National Institute for Occupational Safety and Health (NIOSH) field investigations, an expert panel developed a taxonomy of psychosocial constructs. Panel members identified measures for each construct using existing taxonomies and criteria regarding the malleability, utility, and validity of constructs (Wiegand et al., 2012). The stressors were identified from the existing research and summarized in Table 1. For the present study, a comprehensive measurement item was formed for each of the 17 most commonly studied work-related stressors. Participants were again provided with the definition of “work environment” and received the following instructions: “Indicate the percentage of time for which each of the following statements is true about your current ‘work environment’ (as defined above).” To measure the prevalence of the 17 stressors in a participant’s workplace, each stressor was presented as a single item in first-person sentence format (e.g., “I have discretion in planning out my work and determining procedures in my work”). Participants were instructed to use a slider scale to indicate the prevalence of each of the 17 stressors in his or her work, with 0 indicating

that a specific stressor occurred 0% of the time and 100 indicating that a specific stressor occurred 100% of the time.

Table 1 Common Work-Related Stressors

Work-related stressor	Description
Job autonomy	Discretion in planning out the work and determining procedures in the work (Hackman & Oldham, 1980)
Participative decision-making	Input in the formulation of decisions for which one is responsible for implementing (Lowin, 1968)
Predictability of work	Unexpected events that occur at work (Tetrick & LaRocco, 1987)
Role ambiguity	Unclear information concerning one's work objectives and what is expected (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964; King & King, 1990)
Role conflict	Conflicting information or inconsistent demands concerning one's work or methods (Kahn et al., 1964; King & King, 1990)
Quantitative work overload	Too much work to do in a given time frame (Spector & Jex, 1998)
Qualitative work overload	The work is too difficult & exceeds one's abilities (Fisher, 1993)
Quantitative work underload	Not enough work to do (Fisher, 1993)
Qualitative work underload	The work is too simple and does not allow individuals to use their full abilities. (Fisher, 1993)
Responsibility for others	Responsibility for the work of others (e.g., their morale, division of labor) (Hurrell & McLaney, 1988)
Lack of social support from colleagues	Lack of help and support from colleagues (Pejtersen, Kristensen, Borg, & Bjorner, 2010)
Lack of social support from supervisors	Lack of help and support from supervisors (Pejtersen et al., 2010)
Interpersonal conflict among colleagues or peers	Negatively charged interactions in the work environment (Spector & Jex, 1998) among colleagues or peers
Interpersonal conflict involving one's supervisor	Negatively charged interactions in the work environment (Spector & Jex, 1998) involving one's supervisor
Bureaucratic constraints	Bureaucracy (e.g., rules, procedures) that prevent individuals from performing up to their capabilities; (refers to a subset of Spector & Jex's (1998) "Organizational Constraints Scale")
Material and technological constraints	Missing or lack of equipment at work that prevent individuals from performing up to their capabilities; (refers to a subset of Spector & Jex's (1998) Organizational Constraints Scale)
Job insecurity	Uncertainty about the security of one's job in the future (Greenhalgh, 1982; Hartley, Jacobson, Klandermans, & Van Vuuren, 1991)

Stressor appraisal. Stressor appraisals reflect individual experiences that vary within a person from one day to the next (Ohly & Fritz, 2010) and can be influenced by stable individual differences (Lazarus & Folkman, 1984). The scale used in the present study measured three types of primary appraisal tendencies: challenge and hindrance (Searle & Auton, 2015) and threat (Feldman, Cohen, Hamrick, & Lepore, 2004). These appraisal tendencies were operationalized in three ways: (1) challenge appraisal refers to the appraisal of a stressor as one that, although potentially stressful, has associated opportunities for personally meaningful gain (Cavanaugh et al., 2000) and may potentially challenge and engage the individual; (2) hindrance appraisal refers to the appraisal of a stressor that tends to restrict or obstruct opportunities for personally meaningful gains or interferes with an individual's work achievement (Cavanaugh et al., 2000); and (3) threat appraisal refers to the appraisal of a stressor that tends to be directly associated with ongoing exposure to the likelihood for personal harm or loss (Tuckey et al., 2015).

Participants' general challenge, hindrance, and threat appraisal tendencies, when confronted with work-related stressors, defined as stimuli in the work environment that require some adaptive response on the part of the individual (Jex & Britt, 2014), were measured with the items used by Tuckey, Searle, Boyd, Winefield, and Winefield (2015). In previous research (Searle & Auton, 2015), the challenge and hindrance items in this measure were found to converge with other appraisal measures and related constructs. These scales were developed from descriptions of challenge appraisal (Lazarus & Folkman, 1984) and frustration (hindrance) appraisal (Lazarus, 1991) and informed by definitions of challenge and hindrance stressors (e.g., Cavanaugh et al., 2000). They measure the growth and achievement aspects of anticipated personal gains (challenge appraisal) and obstacles (hindrance appraisal).

Four items were used to measure challenge appraisal (e.g., “They will help me to develop my skills”; $\alpha = .84$), and four items were used to measure hindrance appraisal (e.g., “They will restrict my capabilities”; $\alpha = .86$) (Searle & Auton, 2015). Similarly, three items were used to measure threat appraisal (e.g., “They will have a negative impact on me”; $\alpha = .85$) (Feldman et al., 2004). In the present study, the internal consistencies for challenge appraisal, hindrance appraisal, and threat appraisal were $\alpha = .84$, $.89$, and $.81$, respectively. In previous literature (Tuckey et al., 2015), appraisal scales were framed in relation to an event or situation (and/or a time frame in which events may occur) so that respondents understood what they were appraising and responses were indicated using a five-point Likert scale from 1 = Strongly disagree to 5 = Strongly agree. Similarly, in this study participants were presented with the operational definitions for “work environment”, defined as “the environment in which you are working for compensation or experience (for example, part-/full-time work, internship, graduate/research/teaching assistantship, clinical hours)” and “stressor”, defined as “a situation or event that requires some adaptive response on your part (for example, a difficult coworker, a work interruption, or a new management style)”. In the present study, participants were instructed to “assess how encountering ‘stressors’ in your ‘work environment’ is likely to affect you” and indicated their responses on a seven-point Likert scale (1 = Disagree strongly, 2 = Disagree moderately, 3 = Disagree, 4 = Neutral, 5 = Agree, 6 = Agree moderately, 7 = Agree strongly) to improve the overall sensitivity of this measure.

Stressor appraisal tendencies. As a secondary measure of participants’ stressor appraisal tendencies, the 17 common work-related stressors identified in Table 1 were then presented to participants as stimuli to which participants were asked to respond in three separate

ways, appraising likelihood of appraising each common stressor as a challenge, hindrance, and threat. These three sections were used to assess participants' appraisals of the specific stressors as challenge, hindrance, and threat, respectively. Each section began with a different set of instructions, which consisted of an explanation of appraisal type (either challenge, hindrance, or threat), a clearly-identified check item (Yes/No) to assess participants' comprehension, and a unique prompt. To avoid influencing responses, the words "stressor", "challenge", "hindrance", and "appraisal" were not used in this portion of the survey. Following the unique prompt in each of the three sections, the 17 work-related stressors were listed consecutively as single-item statements (e.g., "Having discretion in planning out my work and determining my work procedures").

These three sections were used to measure the extent to which an individual appraised an individual stressor as a challenge, a hindrance, and a threat, respectively. For each section participants indicated their response using a slider scale from 0 to 100 (0= "Not at all" and 100= "Completely") and were prompted with a question relating to that specific type of appraisal. The prompt for challenge appraisal tendencies was: "To what extent would the following situations in your work environment provide personal opportunities for you to learn, grow, or achieve?", the prompt for hindrance appraisal tendencies was: "To what extent would the following situations in your work environment restrict or obstruct personal opportunities to learn, grow, or achieve?", and the prompt for hindrance appraisal tendencies was: "To what extent would the following situations in your work environment pose a threat to you?".

Demographics. The following demographic information was gathered to fully understand and report on the sample: sex, age, marital status, ethnicity, race, education level,

number of children, number of dependents, social support, hours spent working per week, number of individuals supervised, tenure in current position, and years of full-time work. Social support was measured with the question: “If you have problems or are sad, is there anyone you can talk to?” Six alternatives were provided, from which participants could choose all that applied: spouse, children, relative, close friend, neighbor, coworker. An index ranging from zero to six was constructed for an individual’s total social support score, which was the number of options chosen from the six possible alternatives (Holmberg, Thelin, & Stiernström, 2004).

CHAPTER III

RESULTS

Prior to testing the hypotheses, the data were prepared for the analyses as follows.

Participants who were not eligible to participate (i.e., did not meet inclusion criteria), who did not complete at least 50% of the survey, and/or who did not provide most of the demographic information needed for their inclusion as covariates were excluded from the dataset.

Additionally, 28 participants who were missing 20 or more responses to the items measuring stressor appraisal tendencies were excluded, because a complete analysis of these individuals' tendencies to appraise stressors as challenges, hindrances, and threats could not be completed.

The following analyses were conducted with data collected from the remaining participants ($N = 591$). Descriptive statistics for and intercorrelations between all study variables are summarized in Tables 2 and 3, respectively. From these simple bivariate analyses, Sense of Coherence (SoC) was found to be significantly correlated with age ($r = .25$), education level, ($r = .09$), number of children ($r = .17$), number of individuals supervised ($r = .11$), years in current position ($r = .13$), years working full-time ($r = .25$), the number of individuals one felt they could count on for support ($r = .69$), and all six types of social support: spouse ($r = .15$), children ($r = .20$), relative ($r = .18$), close friend ($r = .15$), neighbor ($r = .20$), coworker ($r = .28$).

Table 2 Descriptive Statistics for all Study Variables

	<i>N</i>	<i>M</i>	<i>Median</i>	<i>SD</i>	<i>Minimum</i>	<i>Maximum</i>
Sex	590	1.68	2	0.47	1	2
Age	590	36.31	31	13.26	19	77
Marital Status	590	1.93	2	1.03	1	5
Ethnicity	591	1.97	2	0.17	1	2
Race	591	1.29	1	1.13	1	7
Education Level	591	5.91	6	1.39	1	8
Number of Children	585	0.84	0	1.34	0	12
Number of Dependents	585	0.76	0	1.85	0	34
Average Weekly Work Hours	587	44.29	45	11.65	0	90
Number of Individuals Supervised	585	9.77	0	69.23	0	1200
Years in Current Position	586	5.66	3	7.54	0	50
Years Working Full-Time	585	13.58	9	12.93	0	50
Social Support: Spouse	591	0.53	1	0.50	0	1
Social Support: Children	591	0.13	0	0.34	0	1
Social Support: Relative	591	0.71	1	0.46	0	1
Social Support: Close Friend	591	0.84	1	0.36	0	1
Social Support: Neighbor	591	0.10	0	0.30	0	1
Social Support: Coworker	591	0.50	1	0.50	0	1
Social Support Total	591	2.81	3	1.24	0	6
Challenge appraisal	591	21.66	22	4.40	4	28
Hindrance appraisal	591	12.09	12	5.44	4	28
Threat appraisal	591	10.20	10	3.89	3	21

Note: Sex (1 = Male, 2 = Female)

Table 3 Intercorrelations between all Study Variables

<i>Variables</i>	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Sex												
2. Age	.01											
3. Education Level	.04	.03										
4. Number of Children	.02	.59 **	-.08									
5. Number of Dependents	-.01	.18 **	-.08	.33 **								
6. Average Weekly Work Hours	-.02	.19 **	.06	.13 **	.05							
7. Number of Individuals Supervised	-.05	.13 **	.03	.14 **	.02	.07						
8. Years in Current Position	-.05	.62 **	.00	.37 **	.16 **	.11 *	.12 **					
9. Years Working Full-Time	-.02	.94 **	.00	.54 **	.20 **	.23 **	.14 **	.58 **				
10. Social Support: Spouse	-.02	.25 **	.05	.33 **	.14 **	.09 *	.09 *	.17 **	.26 **			
11. Social Support: Children	.06	.48 **	-.02	.47 **	.11 **	.10 *	.19 **	.23 **	.44 **	.17 **		
12. Social Support: Relative	.07	-.28 **	.04	-.19 **	-.04	-.06	.03	-.17 **	-.26 **	-.02	-.01	
13. Social Support: Close Friend	.17 **	-.17 **	.03	-.13 **	-.12 **	-.03	.01	-.16 **	-.16 **	-.20 **	-.01	.20 **
14. Social Support: Neighbor	-.03	.09 *	.02	.07	.02	.05	.07	.03	.06	.04	.13 **	.13 **
15. Social Support: Coworker	.02	.02	.09 *	.05	-.06	.07	.08	.04	.04	.06	.13 **	.27 **
16. Social Support Total	.09 *	.11 **	.08	.19 **	.02	.07	.15 **	.05	.11 **	.42 **	.42 **	.56 **
17. Sense of Coherence (SoC)	.00	.25 **	.09 *	.17 **	.04	.06	.11 **	.13 **	.25 **	.15 **	.20 **	.18 **
18. SoC: Comprehensibility	-.02	.27 **	.10 *	.16 **	.02	.03	.13 **	.16 **	.27 **	.13 **	.16 **	.10 *
19. SoC: Manageability	-.03	.15 **	.03	.13 **	.03	.05	.09 *	.07	.15 **	.12 **	.17 **	.22 **
20. SoC: Meaningfulness	.07	.22 **	.12 **	.15 **	.05	.08	.07	.10 *	.22 **	.13 **	.19 **	.14 **
21. Work-SoC	.01	.16 **	.03	.13 **	.00	.03	.06	.06	.15 **	.08	.14 **	.11 **
22. Stress in General (SIG)	-.05	-.05	-.04	-.07	-.05	-.21 **	-.09 *	-.12 **	-.07	-.04	.02	.08
23. Challenge appraisal	.01	-.11 *	.02	-.04	-.07	-.04	.02	-.11 *	-.09 *	.01	-.02	.16 **
24. Hindrance appraisal	.04	-.04	-.05	-.06	.04	.03	-.07	-.03	-.05	-.10 *	-.07	-.06
25. Threat appraisal	.03	-.08 *	-.01	-.09 *	-.03	.02	-.08 *	-.04	-.08 *	-.06	-.06	-.07

<i>Variables</i>	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.
14. Social Support: Neighbor	.11 **											
15. Social Support: Coworker	.28 **	.22 **										
16. Social Support Total	.42 **	.46 **	.69 **									
17. Sense of Coherence (SoC)	.15 **	.20 **	.28 **	.38 **								
18. SoC: Comprehensibility	.09 *	.12 **	.23 **	.28 **	.86 **							
19. SoC: Manageability	.16 **	.20 **	.24 **	.36 **	.91 **	.67 **						
20. SoC: Meaningfulness	.15 **	.21 **	.25 **	.35 **	.83 **	.52 **	.68 **					
21. Work-SoC	.10 *	.14 **	.15 **	.23 **	.63 **	.50 **	.58 **	.56 **				
22. Stress in General (SIG)	.07	.07	.01	.06	.23 **	.21 **	.25 **	.14 **	.34 **			
23. Challenge appraisal	.16 **	.09 *	.08	.16 **	.31 **	.14 **	.32 **	.35 **	.39 **	.17 **		
24. Hindrance appraisal	-.02	-.06	-.03	-.12 **	-.38 **	-.24 **	-.39 **	-.36 **	-.41 **	-.26 **	-.52 **	
25. Threat appraisal	-.07	-.09 *	.01	-.10 *	-.41 **	-.29 **	-.42 **	-.35 **	-.40 **	-.21 **	-.48 **	.67 **

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Hypothesis Tests

Several analytical approaches were used to test the study hypotheses. The first was a straightforward correlational approach and the second was a more advanced method using Exploratory Structural Equation Modeling (ESEM; Howard, Gagné, Morin, & Forest, 2016; Morin, Arens, & Marsh, 2015) and alternative regression-based techniques. The primary analytical tests involved participants' reports of their general stressor appraisal tendencies and general and work-specific SoC. The bivariate correlations reported in Table 3 demonstrate that Hypotheses 1 through 3 were clearly supported. In support of Hypothesis 1, 2, and 3, respectively, SoC was significantly positively correlated with tendency to appraise work stressors as challenges ($r = .31$), SoC was significantly negatively correlated with tendency to appraise work stressors as hindrances ($r = -.38$), and SoC was significantly negatively correlated with tendency to appraise work stressors as threats ($r = -.41$).

For a more comprehensive test of Hypotheses 1 through 3, a deeper assessment of appraisal and SoC relationships was conducted using an ESEM approach and the Mplus statistical software (v7.3; Muthén & Muthén, 2014). These analyses involved comparing a series of increasingly complex and more fully specified measurement models, ultimately ending with a seven factor model that also included a general factor to account for the likely influence of common method bias on the responses to the items included in the survey for this study. For these estimates, the ESEM method involved fixing the number of rotations to match the expected number of factors, as recommended by Morin et al. (2015), referencing Asparouhov and Muthén (2009) and Browne (2001). This approach makes it possible to conduct a confirmatory factor analysis (CFA), while also examining how items associated with one factor might cross-load onto or affect other factors.

The ESEM approach was conducted first without the covariates factored into the ESEM analyses and then again including the covariates. The fit statistics for these successive models are summarized in Tables 4 and 5, respectively. This alternative analysis approach was warranted to specify the items that loaded on each factor. The recent development of ESEM by Asparouhov and Muthén (2009) provides an inclusive framework that allows for the combination of CFA, exploratory factor analysis (EFA), and structural equation modeling (SEM) into a single model (Howard et al., 2016). One of the most common uses of ESEM has been to test theoretically established models that have a previously defined number and count of specified latent factors (Marsh, Morin, Parker, & Kaur, 2014). More specifically, in ESEM it is possible to test the loadings of indicators on their expected factors and on other factors that are also being tested as part of the overall model. In other words, there is the possibility to combine both confirmatory and exploratory analyses of items and their factor loadings. In the present study, the ESEM approach with targeted oblique rotation made it possible to more comprehensively test the specified hypotheses, while also testing for the presence of a common or shared factor. A conceptual diagram of this approach is represented by the structural models in Figures 2 and 3.

Figure 2 Conceptual Model of ESEM Analysis of Factor Correlations for Five Factor + General Factor Model (2c).

Note: For each observed variable (squares), the items 1-k denote all the items for a given scale; the actual number of items in each scale are noted in the Methodology section. Ovals represent latent factors and rectangles represent observed variables (measured with the relevant scales). Full unidirectional arrows linking ovals and rectangles represent the item uniqueness. Dotted unidirectional arrows linking ovals and rectangles represent the cross-loadings. (With ESEM, all items are permitted to load on all factors.

Figure 3 Conceptual Model of ESEM Analysis of Factor Correlations for Seven Factor + General Factor Model (2e)

Note: For each observed variable (squares), the items 1-k denote all the items for a given scale; the actual number of items in each scale are noted in the Methodology section. Ovals represent latent factors and rectangles represent observed variables (measured with the relevant scales). Full unidirectional arrows linking ovals and rectangles represent the item uniqueness. Dotted unidirectional arrows linking ovals and rectangles represent the cross-loadings. (With ESEM, all items are permitted to load on all factors.)

Table 4 Measurement Model of Fit Statistics without Covariates

<i>Model</i>	χ^2	<i>df</i>	AIC	BIC	RMSEA	90% CI	CFI	TLI	SRMR
1a. Single factor model	6131.79 **	1127	96978.62	97622.75	0.09 *	(0.085, 0.089)	0.53	0.51	0.09
1b. Five factor model	2454.40 **	941	93005.52	94464.66	0.05	(0.050, 0.055)	0.86	0.82	0.04
1c. Five factor + 1 General Factor model	1910.52 **	897	92575.91	94227.85	0.04	(0.041, 0.046)	0.91	0.88	0.03
1d. Seven factor model	1664.41 **	854	92381.83	94222.19	0.04	(0.037, 0.043)	0.92	0.90	0.03
1e. Seven factor + 1 General Factor model	1542.01 **	812	92274.76	94299.15	0.04	(0.036, 0.042)	0.93	0.90	0.03

** $p < .001$

* *Probability RMSEA* $\leq .05$

χ^2 = Chi square; *df* = degrees of freedom; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; RMSEA = Root Mean Square Error of Approximation; CI = Confidence Interval; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; SRMR = Standardized Root Mean Square Residual

Note: Covariates not factored into analysis were sex, marital status, race, ethnicity, number of children, number of dependents, social support, tenure in current position, number of years working full-time, and highest level of education

Table 5 Measurement Model of Fit Statistics with Covariates

<i>Model</i>	χ^2	<i>df</i>	AIC	BIC	RMSEA	90% CI	CFI	TLI	SRMR
2a. Single factor model	7099.95 *	1559	117053.32	117965.54	0.08 *	(0.077, 0.081)	0.58	0.56	0.09
2b. Five factor model	3563.34 *	1337	113125.55	115002.11	0.05 *	(0.052, 0.056)	0.83	0.79	0.04
2c. Five factor + 1 General Factor model	2564.21 *	1248	112675.97	114782.75	0.04	(0.039, 0.044)	0.90	0.88	0.03
2d. Seven factor model	2289.55 *	1232	112483.07	114815.73	0.04	(0.036, 0.041)	0.92	0.89	0.03
2e. Seven factor + 1 General Factor model	2107.18 *	1181	112359.46	114913.66	0.04	(0.035, 0.040)	0.93	0.90	0.03

** $p < .001$

* *Probability RMSEA* $\leq .05$

χ^2 = Chi square; *df* = degrees of freedom; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; RMSEA = Root Mean Square Error of Approximation; CI = Confidence Interval; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; SRMR = Standardized Root Mean Square Residual

Note: Covariates factored into analysis were sex, marital status, race, ethnicity, number of children, number of dependents, social support, tenure in current position, number of years working full-time, and highest level of education

Based on the model comparisons summarized in Tables 6 and 7, the factor correlations from the models including covariates are displayed for the five factor model (2b) and five factor with one general factor model (2c) and for the seven factor model (2d) and seven factor with general factor model (2e). It is important to note that the ESEM results of Hypotheses 1 through

3 displayed in Table 6 differed from the bivariate correlation results of Hypotheses 1 through 3 displayed in Table 3. In the ESEM analyses, the five factor models included the three types of stressor appraisal tendencies (challenge, hindrance, and threat), Work-SoC, and SoC (total), and the seven factor models included the three stressor appraisal tendencies, Work-SoC, and the three SoC subdimension measures: comprehensibility (SoC-C), manageability (SoC-Ma), and meaningfulness (SoC-Me).

Specifically, Model 2b showed a significant correlation in the hypothesized direction between SoC and hindrance appraisal tendency but not for challenge or threat appraisal tendencies. Model 2c, which included a general factor, did not show significant correlations between SoC and any of the stressor appraisal tendencies. It did show a significant negative correlation between Work-SoC and hindrance appraisal tendency. Model 2d showed significant positive correlations between challenge appraisal tendency and the three subdimensions of SoC and with Work-SoC. There were significant negative correlations between hindrance appraisal tendency and SoC-C and SoC-Me as well as Work-SoC. There was an unexpected positive relationship between threat appraisal tendency and SoC-Ma. Model 2d, which included a general factor, showed two additional surprising results: a significant negative relationship between challenge appraisal tendency and SoC-C and a significant positive relationship between hindrance appraisal tendency and SoC-Ma. Model 2d showed significant negative relationships between threat appraisal tendency and the subdimensions SoC-C and SoC-Me, but there were no significant relationships between any of the three appraisal tendencies and Work-SoC.

Table 6 Factor Correlations for Five Factor (2b) and Five Factor + General Factor (2c) Models

	Model 2b		Model 2c	
	SoC	Work-SoC	SoC	Work-SoC
Challenge	.302	.280	-.093	.091
Hindrance	-.369	-.283	-.050	-.139
Threat	.172	.035	.036	-.035

Note: Covariates included sex, marital status, race, ethnicity, number of children, number of dependents, social support, tenure in current position, number of years working full-time, and highest level of education.

Table 7 Factor Correlations for Seven Factor (2d) and Seven Factor + General Factor (2e) Models

	Model 2d				Model 2e			
	SoC-C	SoC-Ma	SoC-Me	Work-SoC	SoC-C	SoC-Ma	SoC-Me	Work-SoC
Challenge	.105	.127	.262	.371	-.198	-.056	.026	.002
Hindrance	-.209	-.085	-.242	-.358	.115	.113	.028	-.060
Threat	.066	.091	-.063	.029	-.163	-.092	-.165	-.054

Note: Covariates included sex, marital status, race, ethnicity, number of children, number of dependents, social support, tenure in current position, number of years working full-time, and highest level of education.

Hypothesis 4 tested whether the relationships between SoC and stressor appraisal tendencies (H1-H3) were moderated by age, such that they were stronger for older individuals than for younger individuals. To test this hypothesis, a three-stage hierarchical multiple regression analysis was conducted for each of the three stressor appraisal tendencies. In step one, the standardized values (i.e., z-scores) for the demographic covariates of sex, education level, number of children, number of dependents, average weekly work hours, tenure in current position, tenure working full-time, and social support total were entered, given previously observed relationships between these variables and other study variables of interest. In step two, the standardized values for age and SoC were entered to test the interaction of these two variables. In step three, the product of the standardized age and SoC values was entered. Results

indicated that the interaction term did not significantly contribute to the variance explained by these regression models and, therefore, failed to support Hypothesis 4. Results of this analysis are presented in Table 8. Table 9 shows the effects of age on the relationship between Work-SoC and stressor appraisal tendencies. A three-stage hierarchical multiple regression analysis was conducted in the same manner as for SoC, but in step three, the product of age and Work-SoC was entered to test the interaction of these two variables. Results indicated that the interaction term did not significantly contribute to the regression model.

The information summarized in Table 8 and Table 9 does not support Hypothesis 4. However, the results summarized in Table 9 reveal that age did significantly predict challenge appraisal, as shown by the main effects. Additionally, Table 8 shows main effects of SoC on stressor appraisal, suggesting that SoC was a significant predictor of challenge, hindrance, and threat appraisal tendencies. Table 9 shows the main effects of Work-SoC on stressor appraisal, suggesting that Work-SoC was a significant predictor of challenge and hindrance appraisal.

Table 8 Challenge, Hindrance, and Threat Appraisals Explained by Age and Sense of Coherence

	Challenge Appraisal			Hindrance Appraisal			Threat Appraisal		
	<i>Beta</i>			<i>Beta</i>			<i>Beta</i>		
<i>Predictors</i>	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Sex	-0.01	0.00	0.00	0.05	0.04	0.04	0.04	0.03	0.03
Average Weekly Work Hours	-0.03	-0.03	-0.02	0.05	0.05	0.05	0.05	0.04	0.04
Years in Current Position	-0.08	-0.05	-0.05	0.00	-0.02	-0.02	0.01	0.00	0.00
Years Working Full-Time	-0.06	0.06	0.07	-0.04	-0.06	-0.06	-0.09	-0.03	-0.03
Social Support Total	0.17 *	0.05	0.05	-0.12 *	0.02	0.02	-0.10 *	0.05	0.06
Sense of Coherence (SoC)		0.33 *	0.33 *		-0.40 *	-0.39 *		-0.43 *	-0.43 *
Age		-0.22	-0.23		0.11	0.13		0.04	0.06
Age x SoC			0.04			-0.04			-0.07
ΔR^2	0.03	0.12	0.12	0.02	0.13	0.00	0.02	0.15	0.00
ΔF	4.81 *	30.90 *	1.18	2.33 *	42.90 *	0.86	2.33 *	52.16 *	2.99
Adjusted R^2	0.03	0.12	0.12	0.01	0.14	0.14	0.01	0.16	0.16
F	4.81 *	12.62 *	11.20 *	2.33 *	14.16 *	12.50 *	2.33 *	16.86 *	15.18 *

$N = 591$; * $p < .05$

Table 9 Challenge, Hindrance, and Threat Appraisals Explained by Age and Work-SoC

	Challenge Appraisal			Hindrance Appraisal			Threat Appraisal		
	<i>Beta</i>			<i>Beta</i>			<i>Beta</i>		
<i>Predictors</i>	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Sex	-0.01	0.00	0.00	0.05	0.04	0.04	0.04	0.04	0.04
Average Weekly Work Hours	-0.03	-0.03	-0.03	0.05	0.05	0.05	0.05	0.04	0.04
Years in Current Position	-0.08	-0.04	-0.04	0.00	-0.03	-0.03	0.01	-0.01	-0.01
Years Working Full-Time	-0.06	0.10	0.11	-0.04	-0.10	-0.10	-0.09	-0.07	-0.08
Social Support Total	0.17 *	0.08 *	0.08	-0.12 *	-0.03	-0.03	-0.10	-0.02	-0.01
Work-SoC		0.40 *	0.39 *		-0.40 *	-0.40 *		-0.39	-0.39
Age		-0.24 *	-0.27 *		0.13	0.13		0.04	0.06
Age x Work-SoC			0.06			0.00			-0.04
ΔR^2	0.04	0.15	0.01	0.02	0.15	0.00	0.02	0.14	0.00
ΔF	4.81 *	52.90 *	3.33	2.33 *	52.65 *	0.01	2.33 *	48.89 *	1.17
Adjusted R^2	0.03	0.18	0.18	0.01	0.16	0.16	0.01	0.15	0.15
F	4.81 *	19.17 *	17.26 *	2.33 *	17.00 *	14.85 *	2.33 *	15.91 *	14.07 *

$N = 591$; * $p < .05$

CHAPTER IV

DISCUSSION AND CONCLUSION

Individual differences shape cognitive perceptions and influence the complex stressor appraisal process (Lazarus & Folkman, 1984). According to the theory of salutogenesis, which focuses on the origin of health instead of the origin of disease (i.e., pathogenesis), SoC is an emotional-cognitive resource that influences an individual's perceptions of stimuli in the environment and is central to explaining an individual's progress towards health and well-being over the course of life (Antonovsky, 1979, 1987b). Individuals with a stronger SoC perceive their environment as more comprehensible, manageable, and meaningful and are better able to cope with stressors in a healthy way (Antonovsky, 1987b). The present study expands the understanding of factors that impact the way in which individuals appraise stressors in their work environment. It was designed to assess the role of the generalized emotional-cognitive individual difference, SoC, in the appraisal of work-related stressors as challenges, hindrances, and threats (H1-H3) and to examine the moderating effect of age on the relationship between individuals' SoC and their appraisal of common work-related stressors (H4).

Hypotheses 1 through 3 were tested using both a correlational approach and Exploratory Structural Equation Modeling (ESEM) and alternative regression-based techniques. The results of the bivariate correlations supported these hypotheses, revealing that SoC was significantly positively correlated with challenge appraisal tendency and significantly negatively correlated with hindrance and threat appraisal tendencies. There were also significant correlations in the

same directions between the work-specific measure of SoC (Work-SoC) and challenge, hindrance, and threat appraisal tendencies. These initial results suggest that individuals with a stronger SoC are more likely to appraise stressors as challenges and that individuals with a weaker SoC are more likely to appraise stressors as hindrances and threats. Similarly, the initial results suggest that individuals with a stronger Work-SoC are more likely to appraise stressors as challenges and individuals with a weaker Work-SoC more likely to appraise stressors as hindrances and threats. Although the two statistical methods used to test Hypotheses 1 through 3 did not yield identical results, the results of the ESEM analyses do suggest that there are some significant relationships between specific subdimensions of SoC (SoC-C, SoC-Ma, and SoC-Me) and the tendency to appraise stressors as challenges, hindrances, and threats.

The results of Model 2d reveal several significant relationships after a general factor was added to the model. As shown in Table 7, individuals who viewed their world as more comprehensible appeared to be significantly less likely to appraise stressors in their work environment as challenges and as threats; individuals who viewed their world as more manageable appeared to be significantly more likely to appraise stressors in their work environment as hindrances; and individuals who viewed their world as more meaningful appeared to be significantly less likely to appraise stressors in their work environment as threats. These interesting findings have not previously emerged in research involving the SoC construct and its subdimensions.

Hypothesis 4 was tested using a three-stage hierarchical multiple regression analysis, which added in the standardized values for the included variables. These results indicated that the interaction term did not significantly account for additional variance and therefore failed to support Hypothesis 4. A similar three-stage hierarchical multiple regression analysis was used to

examine the interaction of age and Work-SoC on stressor appraisal tendencies but did not reveal a significant contribution. It is important to note that SoC and Work-SoC significantly predicted challenge, hindrance, and threat appraisal and that age played a significant role as a predictor of challenge appraisal in both the analyses involving SoC and Work-SoC.

Although these results indicate that the interactions (age x SoC; age x Work-SoC) did not significantly account for variance, the interaction of age and Work-SoC on challenge appraisal did approach significance ($Beta = .06, p = .069$). Figure 4 summarizes the relationship between challenge appraisal and Work-SoC as moderated by age in the present study. Antonovsky (1984) considered a strong SoC to be a significant factor in the appraisal of unavoidable stimuli as opportunities, and research has shown that SoC increases with age throughout the lifespan (Feldt et al., 2000; Nilsson et al., 2010). Thus, in the present study the hypothesis was that age would have a positive effect on the relationship between individuals' work-specific SoC and the tendency to appraise stressors as challenges. Figure 4 demonstrates that as individuals in the sample get older they are more likely to appraise stressors as challenges, which is in line with some of the previous literature. Unexpectedly, however, the results demonstrated in Figure 4 suggest that individuals with a high Work-SoC are less likely to perceive stressors in their environment as challenges than those with a low Work-SoC, across all ages. Additionally, there is a pattern of results associated with age among participants in this study, but further testing is needed to determine this relationship.

Figure 4 Relationship between Challenge Appraisal and Work-SoC Moderated by Age

Limitations and Future Research

One limitation with the present study concerns the study design. Although attention check items and other instructional attempts were made to guide participants to think in terms of their “work environment”, the use of a single self-report questionnaire may have contributed to common method bias in the sample. Future research on this topic should examine the role of SoC in stressor appraisal tendencies by using a variety of methods and multiple testing periods. Research should also investigate the psychometric properties of the SoC and Work-SoC measures. This is particularly evident, given the very different results pertaining to Hypotheses 1 through 3 between the two analytical methods employed in this study.

Another limitation in this study may be the generalizability of the findings to populations that differ from the one represented by the present sample, a summary of which is provided in

Table 2. Within the sample, there appeared to be a bias in the stressor appraisal tendencies of individuals within the sample, which may have resulted in a restriction of range. In other words, the sample as a whole was more likely to appraise stressors as challenges than as hindrances or threats, and this may have contributed to a low range restriction for threat appraisal. Future research in this area should broaden the sampling strategy and consider targeting populations that might be more likely to appraise stressors as threats, which might allow for greater generalizability of the results.

Implications

The present study increased our understanding of the role of the cognitive individual difference, SoC, in the stressor appraisal process. It was unique in that it examined the role that SoC plays in an individual's appraisal of stressors as challenges, hindrances, and threats. The literature in this area suggests a positive relationship between SoC and challenge stressor appraisal and a negative relationship between SoC and hindrance and threat appraisals (Antonovsky, 1987a). While the initial analyses in the present study further confirmed this, a newer and more sophisticated statistical approach did not. The non-significant relationships between SoC and stressor appraisal tendencies indicate that in the large body of research around SoC, which has not previously involved more advanced analytical techniques, the identification of another factor, unrelated to individual cognitive differences and more related to the methodology, may have been overlooked. Including a general factor in the model that treated SoC as a single construct did not show the expected results, but including a general factor in the model that separated SoC into its three subdimensions surprisingly revealed significant results between these subdimensions and specific stressor appraisal tendencies.

Although Model 2c provides the clearest test of Hypotheses 1 through 3, Model 2e was used to examine the subdimensions of SoC. The ESEM results revealed unexpected significant relationships between each of the stressor appraisal tendencies and the SoC subdimensions of comprehensibility (SoC-C), manageability (SoC-Ma), and meaningfulness (SoC-Me). According to (Antonovsky, 1987a), individuals who score high in the SoC-C dimension perceive events in their lives to be consistent, clear, and known, as opposed to unpredictable or confusing. Individuals who score high on the challenge appraisal items perceive work-related stressors as helping them to learn, develop, and do well, whereas individuals who score high on the threat appraisal items perceive work-related stressors as resulting in negative outcomes and negative personal experiences. The results of the present study show that individuals who scored higher on the SoC-C subdimension were significantly less likely to appraise stressors in their work environment as either challenges or threats. These unanticipated results may suggest that individuals who feel that their lives are consistent and predictable are less likely to perceive that stressors in their work environment will help them grow and develop and are also less likely to perceive that stressors in their work environment will cause them personal harm. However, these results may also suggest that individuals who feel that their lives are consistent and predictable are less likely to perceive stressors in their work environment as inconsistent or unpredictable and, therefore, are less likely to perceive stressors in their work environment as something that might have an impact on them at all, whether that be a positive impact (challenge) or a negative impact (threat). Further research is needed to better understand the mechanisms through which SoC-C operates, and these seemingly contradictory stressor appraisal results may provide some insight.

A relationship was also found between the manageability dimension of SoC and hindrance appraisal tendency. According to (Antonovsky, 1987a), individuals who score high in the SoC-Ma subdimension perceive that their capacity to deal with events in their lives leads to fair, resolvable, and controllable situations. Tuckey et al. (2015) stated that individuals who score high on the hindrance appraisal items perceive that stressors in their work environment could obstruct or restrict their capabilities and achievements, and they suggested that this type of appraisal occurs when the pursuit of a goal is blocked and frustration arises. The results of the present study show that individuals who scored higher in the SoC-Ma subdimension were more likely to appraise stressors in their work environment as hindrances. This suggests that individuals who feel that they can rely on themselves or others to manage and control events in their environment may be more likely to appraise work-related stressors as frustrations than as providing opportunities for personal harm or personal gain. One possible explanation for this puzzling result is that while these individuals perceive stressors as obstacles that block their goals and cause frustration, they may still feel that they have the resources needed to manage these stressors. A possible intervention for individuals high in SoC-Ma may involve the reduction of obstacles and other items in their work environment that contribute to frustration, but future research is needed to investigate this.

Antonovsky (1987a) suggested that individuals who score high in the SoC-Me subdimension perceive events in their lives as interesting, meaningful, and satisfying. Individuals who score high on the threat appraisal items perceive that stressors in their work environment will result in negative outcomes, such as personal loss or harm. The results of the present study show that individuals who scored higher in the SoC-Me subdimension were less likely to appraise stressors in their work environment as threats. These results suggest that individuals

who feel that their lives are fascinating, purposeful, and pleasurable are less likely to appraise work-related stressors as having a negative impact and causing negative experiences for them. This is in line with the SoC theory itself and may have important implications within the workplace. Further research should examine the possibility that an individual's tendency towards threat appraisal might be impacted by an underlying emotional cognitive mechanism that relates to one's view of the world as meaningful.

While the results of Hypothesis 4 indicated that age did not moderate the relationship between SoC and an individual's tendency to appraise stressors as challenges, hindrances, or threats, age did have a main effect on challenge appraisal. This suggests that, as individuals age, they are more likely to perceive stressors in their work environment as providing opportunities to learn and develop, which is in line with previous research. However, these results also indicate that individuals who perceive their work environment as incoherent are more likely to appraise work-related stressors as challenges than individuals who perceive their work environment as coherent. This finding is contrary to the literature in this area, and future research is needed to further understand this relationship. The advanced statistical analyses used in this study allowed for the identification of a general method factor common to all measured items, which calls into question the psychometric properties of the measure used in the study. Future research on SoC using an ESEM approach is needed to investigate this possibility. Another area for future research could be based on evaluating how these results might differ in a more diverse sample.

Conclusion

The present study was designed to examine the role of SoC on an individual's perception of stressors in their work environment as having potential for allowing personal gain (challenges)

than for obstructing personal gain (hindrance) or causing personal harm (threat), and to examine age as a moderator of these relationships. While a large body of literature on SoC supports the hypothesized relationships in this study, these results indicate that SoC may play a different role in an individual's perception of their environment than has been previously demonstrated. The results also indicate that age may not contribute to an individual's SoC, despite prior research that suggests otherwise. Researchers should further investigate the effects of age on an individual's perception of their work environment before using age as an indicator of stressor appraisal.

Prior to this study, research had not demonstrated the individual relationships between each of the subdimensions of SoC and the three types of stressor appraisal. Thus, it is important to highlight that the general SoC measure may not be as useful as the SoC subdimension scales for determining how an individual appraises stressors in their work environment. Researchers should aim to understand the mechanisms through which the subdimensions of SoC operate and should further investigate how individuals' perceptions of their work environment as manageable, comprehensible, or meaningful may independently impact their appraisal of work-related stressors. This information could prove valuable in future interventions aimed at impacting how individuals appraise stressors in their work environment.

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APPENDIX A

SoC AND NON-WORK OUTCOMES

VARIABLE	REFERENCE	RELATIONSHIP TO SoC
Alcohol consumption	Neuner et al. (2006)	- SoC negatively associated to increased alcohol consumption (as a result of failed coping strategies)
Anxiety and depression	Schnyder et al. (2000)	- SoC negatively associated with anxiety/depression
Cancer	Poppius et al. (2006)	- Those with weak SoC had higher relative risk of cancer (1.52) than those with strong SoC (8-year follow-up) Strong SoC associated with delayed onset of cancer (men >55 years)
Chronic stress	Wolff and Ratner (1999)	+ Weak SoC as adults associated with experiences of childhood stressors (<i>chronic stress</i>) (parental divorce, family stress, physical abuse, and parental alcohol or drug abuse)
Coping strategies	Sarenmalm, Browall, Persson, Fall-Dickson, and Gaston-Johansson (2013)	+ (Weaker SoC were more likely to use unhealthy coping strategies)
Depression	Feldt (1997)	-
Diabetes	Kouvonen et al. (2008)	- Weak SoC associated with 46% higher risk of diabetes
Eating (health behavior)	Morita et al. (2014)	Morita et al. (2014)+ Strong SoC individuals more likely to eat at slow or moderate speed
General health/Well-being	Binkowska-Bury and Januszewicz (2010), Feldt (1997), Geyer (1997), Jorgensen, Frankowski, and Carey (1999), Pallant and Lae (2002), Poppius, Tenkanen, Kalimo, and Heinsalmi (1999), Kivimäki et al. (2000), Kivimäki (2002), Cederblad and Hansson (1996)	+

General living conditions	Holmberg et al. (2004)	+ between SoC and general living conditions
Healthy coping strategies	Pusswald et al. (2012)	- SoC associated with depressive coping styles
Health (in ages 65-69)	Read, Aunola, Feldt, Leinonen, and Ruoppila (2005)	+ Good cognitive functioning, physical activity, marital status (in men) and SoC + SoC and physical, social, & mental health
Healthy coping strategies	Mcsherry and Holm (1994)	+ Strong SoC individuals used more approach coping strategies
Healthy coping strategies	Amirkhan and Greaves (2003)	+ Higher SoC associated with non-avoidant coping styles Higher SoC associated with problem-focused responses Higher SoC associated with attempts to resolve problems
Healthy coping strategies	Pallant and Lae (2002)	+ Strong SoC individuals are more likely to respond to stressor with adaptive strategies SoC is positively correlated with physical and psychological well-being
Healthy coping strategies	Tomotsune et al. (2009)	+ Higher SoC individuals use problem-focused coping Lower SoC individuals use emotion-focused coping
Healthy coping strategies	Surtees, Wainwright, and Khaw (2006)	+ Higher SoC showed better preparation to handle stressors of everyday life and use resources at their disposal to counter those stressors
Healthy coping strategies	Amirkhan and Greaves (2003)	+ Higher SoC individuals adopted more problem-solving and less avoidant behavior
Healthy lifestyle (in Japanese workers)	Morita et al. (2014)	+ Those with stronger SoC were more likely to: walk for at least 1 hour a day, eat slowly/moderate pace, and sleep for at least 6 hours/night

Life satisfaction	Binkowska-Bury and Januszewicz (2010), Kalimo and Vuori (1990)	+
Locus of control	Johnson et al. (2004)	+ SoC and locus of control
Locus of control	Bengtsson-Tops and Hansson (2001)	+ SoC and locus of control
Mortality	Super et al. (2014)	- Weak SoC (compared with intermediate SoC) associated with higher all-cause mortality risk (13.5-year follow-up)
Mortality	Wainwright et al. (2008)	- Strong SoC associated with 20% reduced risk of all-cause mortality (8-year follow-up)
Mortality	Surtees, Wainwright, Luben, Khaw, and Day (2003)	- Strong SoC associated with 30% reduction in mortality from all causes, cardiovascular disease, and cancer
Negative Affectivity measures (e.g., anxiety and neuroticism)	Bowman (1996), Flannery and Flannery (1990)	-
Perceived health	Eriksson and Lindstrom (2006)	+ Association positive - SoC and perceived health (especially mental health); stronger SoC = better perceived health in general (for those with initial high SoC)
Perceived health	Nilsson, Holmgren, and Westman (2000), Suominen (2001), Apers et al. (2013)	+ Low SoC associated with poor perceived health + SoC at T1 positively predicted all domains of generic perceived health (physical, emotional, social, and school functioning) at T2 SoC at T1 positively predicted three out of five domains of disease-specific perceived health (symptoms, physical appearance, and cognitive problems) at T2
Perceived stress (in psychotherapy subjects)	Frenz, Carey, and Jorgensen (1993)	- SoC scores and self-reports of perceived stress

Physical activity	Kuuppelomaki and Utriainen (2003)	+ Physical activity related to strength of SoC
Physical activity	Morita et al. (2014)	+ People with stronger SoC more likely to walk for at least 1 hour/day
Physiological distress	Mcsherry and Holm (1994)	- Low SoC individuals displayed more psychological and physiological distress
Psychological and physical health	Flensburg-Madsen, Ventegodt, and Merrick (2005)	+ Lit review: concluded that SoC is highly related to psychological aspects of health but that there is not a strong association with physical health
Psychological health indicators	Eriksson and Lindstrom (2005)	+ SoC and self-esteem, quality of life, and optimism - SoC and anxiety and depression
Psychosocial health	Benz, Angst, Lehmann, and Aeschlimann (2013)	- SoC and psychosocial health dimensions
Quality of Life	Pusswald et al. (2012)	+ SoC is above all a predictor for QoL, well-being, and coping
Quality of life	Eriksson and Lindstrom (2007)	+ SoC and quality of life Predictor - SoC predicts quality of live (review)
Quality of life	Tartas et al. (2014)	+ Med students with high SoC had highest quality of life later on
Reality of human existence	Skaggs & Barron (2006)	+ SoC associated with a person's sense of social consciousness, sense of order, sense of personal identity, a reason for existence, sense that life is meaningful, belief that life is manageable, and stable understanding of others, self and life (p. 562)
Religiosity (Post-Critical Belief) in women and men in early, middle, and late adulthood (18-79 years)	Zarzycka and Rydz (2014)	+ The salutogenic function of religiosity is related to age and gender <ul style="list-style-type: none"> • In women it is most strongly marked in late adulthood • In men it is most strongly marked in middle adulthood

Resilience	Hart et al. (2006)	+ SoC positively associated with measures of psychological resilience
Sleep (health behavior)	Morita et al. (2014)	+ Strong SoC individuals more likely to sleep for at least 6 hours/night
Social support	Strang and Strang (2001)	+ Positive effect of social support on SoC Social support increases people's ability to cope with potential stressors in life (by providing people with belief that their life has more meaning and is more manageable)
Social support	Volanen, Lahelma, Silventoinen, and Suominen (2004)	+ Likely reciprocal relationships strong SoC and social relationships and support (with good social relationships and support contributing to a strong SoC and a strong SoC facilitating the acquisition of social support and relationships)
Social support/anchorage	Krantz and Ostergren (2004)	- Low social support and a lack of social anchorage were predictors of low SoC in adult women
Stability	Feldt et al. (2011)	+ Continuous increase in SoC over time, irrespective of age of adult; High SOC, rather than higher age, seems to determine a stable development of the SOC.
Stability	Luyckx et al. (2012)	+ SoC increased with age through teens and twenties; High school and college students did not differ on mean SoC scores, but employed young adults scored significantly higher
Stability	Volanen, Suominen, Lahelma, Koskenvuo, and Silventoinen (2007)	- Negative life events decreased level of SoC (irrespective of timing of event; the more recent the life event, the lower the SoC) - Strong SoC did not protect SoC from declining at 15 year follow up - SoC related to negative changes in people's environment Initially strong SoC was not more stable than initially mediocre or weak SoC

Stability	Hakanen et al. (2007)	Stability demonstrated in those with a high SoC level (Finnish, ages 44-57)
Stability	Larsson, Kallenberg, Setterlind, and Starrin (1994)	Stability demonstrated in those with an initial high SoC when experienced loss of family member
Stability	Alm (2001)	Stability demonstrated in those with an initial high SoC when experienced unemployment
Stability	Antonovsky (1979, 1987b)	Major later life crises are more likely to undermine the SoC of those with an initially weak or mediocre SoC than those with an initially strong SoC
Stability (from teenage to young adulthood)	Wurtz, Fonager, and Mortensen (2015)	SoC increased significantly and mostly in girls - SoC -7 may serve as a predictor for social life event outcomes and facilitate early identification and selective approach to support teenage girls with a weak SoC - From adolescence to young adulthood, SoC -7 was relatively unstable
Stress responses	Urakawa, Yokoyama, and Itoh (2012)	- SoC was inversely associated with tension, fatigue, anxiety, depression and subjective symptoms in males, and tension, depression and subjective symptoms in females.
Stressful life events (in people >30 years, after 1 year)	Richardson and Ratner (2005)	Buffer - SoC buffers the impact of recent stressful life events on self-rated health
Stroke Incidence	Surtees et al. (2007)	- SoC associated with 25% reduced rate of stroke; Strong SoC associated with 40% reduced rate of stroke
Support	Nilsson et al. (2000)	- Low SoC associated with low social support and low emotional support Association negative - SoC scores and poor perceived health
Test Anxiety	Cohen, Ben-Zur, and Rosenfeld (2008)	-
Vulnerability	Hart et al. (2006)	- SoC negatively associated with measures of psychosocial vulnerability
Weight (health behavior)	Morita et al. (2014)	- Strong SoC individuals less likely to be overweight

APPENDIX B

SoC AND WORK-RELATED OUTCOMES

VARIABLE	REFERENCE	RELATIONSHIP TO SoC
Absence rate	Kivimäki et al. (1997)	- SoC and negative life events predicted forthcoming absence rates
Achievement (in social workers)	Baker, North, and Smith (1997)	+ SoC positively related to sense of personal achievement
Burnout	Kalimo, Pahkin, and Mutanen (2002); Kalimo, Pahkin, Mutanen, and Toppinen-Tanner (2003), Palsson (1996), Tselebis (2001)	-
Burnout/emotional exhaustion (in social workers)	Gilbar (1998)	- Strong SoC causes less experience of burnout than those with weak SoC
Burnout (in nurses)	Basinska, Andruszkiewicz, and Grabowska (2011)	- SoC negatively associated with burnout behavior in nurses
Burnout (in social workers)	Baker, North, and Smith (1997)	- Strong SoC causes less experience of burnout than those with weak SoC
Conscientiousness	Strumpfer (2001)	+ SoC positively associated with conscientiousness
Career Movement	Liukkonen et al. (2010)	+ SoC and upward career movement; effects of employment trajectory on SoC were strongest among employees <30 years
Engagement	Vogt, Hakanen, Jenny, and Bauer (2016)	+ SoC predicts work engagement
Engagement	Van der Colff (2009)	+ Strong SoC predicted work engagement
Exhaustion (in social workers)	Baker et al. (1997)	- SoC inversely related to emotional exhaustion and depersonalization
Exhaustion, depersonalization, and burnout (nurses)	Levert, Lucas, and Ortlepp (2000)	+ SoC and all factors of the work environment correlated with emotional exhaustion and depersonalization *Multiple regression analyses showed SoC and work load to explain a large proportion of both emotional exhaustion and depersonalization

Financial health	Barnard, Peters, and Muller (2010)	+
Healthy coping strategies	Daderman and De Colli (2014)	+ SoC is a significant variant in resources used by police officers to cope with stress
Income		+ Med students with high SoC have higher income later on
Job commitment	Strumpfer (2001)	+ SoC positively associated with job commitment
Job commitment	Strumpfer & Mlonzi (2001)	+
Job control	Holmberg, Thelin, & Stiernstrom (2004)	+ between SoC and job control
Job demand	Holmberg, Thelin, & Stiernstrom (2004)	- between SoC and job demand (Job demand was consistently correlated to both a strong and weak SoC)
Job demands	Fourie et al. (2008)	- SoC predicts perceived low job demands
Job insecurity	Feldt et al. (2000)	- Low job insecurity related to strong SoC
Job resources	Vogt et al. (2016)	+ SoC predicts job resources (reciprocal relationship) *Mediator – SoC mediates relationship between job resources and work engagement
Job resources	Fourie et al. (2008)	SoC positively predicts perceived high availability of job resources
Job satisfaction	Strumpfer (2001)	+ SoC positively associated with job satisfaction
Job satisfaction	Rothmann (2001)	+
Job satisfaction	Strumpfer et al. (2003)	+
Job stressors	Kinman (2008)	- Those with stronger SoC reported lower levels of all types of job stressors Moderator - employees with stronger SoC might be protected from negative effects of some job-related stressors

Mental Health and work characteristics (male employees 20-40)	Togari & Yamazaki (2012)	Mediator - SoC mediated relationship of psychological work characteristics on mental health; *SoC is enhanced by a positive psychosocial work environment (i.e., flexibility, opportunity to increase one's skills and decision-making)
Organizational climate	Feldt et al. (2000)	+ Good organizational climate related to strong SoC
Personal achievement	Baker, North, and Smith (1997)	+
Physical and psychological health	Kinman (2008)	- Those with stronger SoC were in better psychological and physical health than those with weaker SoC
Psychiatric events (in context of organizational merger)	Pahkin et al. (2011)	- Weaker SoC at premerger = at higher risk of perceiving org change negatively and had elevated risk of postmerger psychiatric events Stronger SoC at premerger was a protective factor for mental health when the employee experiences negative changes during an org change
Sense of burden	Hiyoshi-Taniguchi, Becker, & Kinoshita et al. (2013)	- High SoC substantially mitigated caregivers' sense of burden (which could ultimately reduce burnout, neglect, and abuse of homebound elderly)
Social network	Holmberg, Thelin, & Stiernstrom (2004)	+ between SoC and social support
Strain	Kalimo et al. (2002)	- SoC protects workers from strain and thus maintains well-being
Stress symptoms	Albertsen et al. (2001)	- Those with higher SoC experience fewer stress symptoms Mediating effect of SoC was supported Moderating effect of SoC was found, suggesting that people with higher SoC coped better with work environmental strain than those w/ lower SoC * SoC in part explained association between work environment and stress symptoms

Vigor	Urakawa et al. (2012)	+ SoC was positively associated with vigor in both males and females *Conclusions: Having a strong SoC may reduce worker's negative job stress responses and increase their vigor
Well-being (overall and occupational)	Feldt et al. (2000)	+ Strong SoC related to high general and occupational well-being Mediator - SoC mediates psychosomatic symptoms in employees in organizations with a poor climate Predictor - SoC level predicted less psychosomatic symptoms and emotional exhaustion after a year Stability - found moderate stability over 12-month period
Well-being at work	Feldt (1997)	+ The stronger the SoC, the lower the level of psychosomatic symptoms and emotional exhaustion SoC moderated the relationship between perceived work characteristics and well-being Strong SoC subjects seem to be better protected from the adverse effects of certain work characteristics (e.g., pressure of time) Good social relations at work emphasized well-being in people with a weak SoC (and less so in people with a stronger SoC)
Work characteristics	Feldt et al. (2004)	+ SoC at T1 predicted work characteristics at T2 High SoC predicts good organizational climate (over 3-year follow-up)
Work characteristics	Toppinen-Tanner & Kalimo (2003)	SoC moderated the relation of autonomy to competence and psychological symptoms (but more strongly among designers and assisting personnel than among top-level designers) Autonomy was beneficial for those with high SoC

Work stress	Feldt (1997)	-
Work stress	Ryland & Greenfeld (1991)	-
Work violence	Hogh & Mikkelsen (2005)	- Employees subjected to violence have a weaker SoC SoC is a mediator (and not a moderator) of relationships between exposure to violence and psychological, psychosomatic, cognitive stress reactions
Work wellness	Fourie (2008)	+ SoC positively predicts work wellness (low burnout and high work engagement) Stronger SoC led to more work wellness than a weaker SoC
Work wellness	Rothmann (2005)	A strong SoC mediated relationship between job stress and work wellness (low burnout and high work engagement)
Workplace incidents/accidents	Kotze et al. (2013)	- SoC level negatively associated with involvement in workplace incidents/accidents
Work-related conflict	Albertsen et al. (2001)	Mediator - SoC is partial mediator of relationships between work-related conflicts and various stress symptoms/reactions Moderator (some support) - higher SoC = better coping with work environment strain Association negative - high SoC and number of stress symptoms
Work-related stress	Albertsen et al. (2001)	- High SoC negatively related to number of stress symptoms

APPENDIX C
IRB APPROVAL LETTER

Institutional Review Board
Dept. 4915
615 McCallie Avenue
Chattanooga, TN 37403-2598
Phone: (423) 425-5867
Fax: (423) 425-4052
instrb@utc.edu
<http://www.utc.edu/irb>

MEMORANDUM

TO: Lisa Brady
Dr. Chris Cunningham

IRB # 16-157

FROM: Lindsay Pardue, Director of Research Integrity
Dr. Amy Doolittle, IRB Committee Chair

DATE: 11/1/2016

SUBJECT: IRB #16-157: The role of sense of coherence in stressor appraisal

The IRB Committee Chair has reviewed and approved your application and assigned you the IRB number listed above. You must include the following approval statement on research materials seen by participants and used in research reports:

<i>The Institutional Review Board of the University of Tennessee at Chattanooga (FWA00004149) has approved this research project # 16-157.</i>
--

Since your project has been deemed exempt, there is no further action needed on this proposal unless there is a significant change in the project that would require a new review. Changes that affect risk to human subjects would necessitate a new application to the IRB committee immediately.

Please remember to contact the IRB Committee immediately and submit a new project proposal for review if significant changes occur in your research design or in any instruments used in conducting the study. You should also contact the IRB Committee immediately if you encounter any adverse effects during your project that pose a risk to your subjects.

For any additional information, please consult our web page <http://www.utc.edu/irb> or email instrb@utc.edu

Best wishes for a successful research project.

APPENDIX D
INFORMED CONSENT FORM

Informed Consent Form

Purpose of the Study:

This study is being conducted by Lisa Brady, a graduate student in the Industrial and Organizational Psychology program at The University of Tennessee at Chattanooga. This research is being conducted under the supervision of Dr. Chris Cunningham. The purpose is to examine the role of individual differences in appraising work-related stressors.

What will be done:

If you agree to participate you will be asked to respond to a brief internet-based survey (requiring approximately 25 minutes of your time). This survey includes questions about your appraisal of common work-related stressors and your sense of coherence. Several demographic questions are also included so that the characteristics of the final sample can be accurately described.

Benefits of this Study:

You will be contributing to a growing base of knowledge regarding the role of an individual difference in the appraisal of common work-related stressors.

What are the risks to me?

The risks of this study are anticipated to be limited to the potential inconvenience of taking the survey. If you feel uncomfortable with a question in the survey, you can withdraw from the study at any time. If you decide to quit at any time before you have finished the questionnaire, your answers will NOT be recorded. Please note, however, that we can only make use of fully complete surveys, so we greatly appreciate your full participation and cooperation.

What about my privacy?

You are able to participate in this study confidentially; no names or personal contact information will be requested from you. In addition to this protection, all data will be securely gathered and stored in password protected files accessible only by the researchers.

Voluntary participation:

It is your choice to participate in this research and you may withdraw from this study at any time. If you decide to quit any time before you have finished the questionnaire, however, your answers will NOT be recorded. We can only make use of fully complete surveys, so we greatly appreciate your full participation.

How will the data be used?

The results of the study will be used for research purposes only. Group-level (not personally identified) results from the study will be presented in educational settings and at professional conferences, and the results may be published in a professional journal in the field of psychology.

Contact information:

If you have concerns or questions about this study, please contact the chair of UTC's Institutional Review Board, Dr. Amy Doolittle, at amy-doolittle@utc.edu or 423-425-5563 or the

faculty supervisor for this study, Dr. Christopher Cunningham, at chris-cunningham@utc.edu or 423-425-4264. By completing and returning this survey, you acknowledge that you have read this information and agree to participate in this research, with the knowledge that you are free to withdraw your participation at any time without penalty.

Thank you in advance for your assistance and participation.

Sincerely,
Lisa Brady
Christopher J. L. Cunningham, Ph.D.
The University of Tennessee Chattanooga

*The Institutional Review Board of the University of Tennessee at Chattanooga (FWA00004149)
has approved this research project # **-****

I have reviewed the information above and am willing to participate in this survey.

Yes No

Inclusion/Exclusion Criteria

Are you currently enrolled as a full-time graduate student with additional responsibilities (e.g., Graduate/Research/Teaching Assistantship, part-/full-time work, etc.)

Yes

No

Are you currently a full-time employee (working at least 34 hours per week)?

Yes

No

APPENDIX E
MEASURES

Orientation to Life Questionnaire (OLQ) (SoC-29)

Please respond to the following statements.

C1r	When you talk to people, do you have the feeling that they don't understand you? (C) R	1 = Never 2 = 3 = 4 = 5 = 6 = 7 = Always
Ma1	In the past, when you had to do something which depended upon cooperation with others, did you have the feeling that it: (Ma)	1 = Surely would not get done 2 = 3 = 4 = 5 = 6 = 7 = Surely would get done
C2	Think of the people with whom you come into contact daily, aside from the ones to whom you feel closest. How well do you know most of them? (C)	1 = You feel that they are strangers 2 = 3 = 4 = 5 = 6 = 7 = You feel that you know them very well
Me1r	Do you have the feeling that you don't really care about what goes on around you? (Me) R	1 = Very seldom or never 2 = 3 = 4 = 5 = 6 = 7 = Very often
C3r	Has it happened in the past that you were surprised by the behavior of people whom you thought you knew well? (C) R	1 = Never happened 2 = 3 = 4 = 5 = 6 = 7 = Always happened
Ma2r	Has it happened that people whom you counted on disappointed you? (Ma) R	1 = Never happened 2 = 3 = 4 = 5 = 6 =

		7 = Always happened
Me2r	Life is: (Me) R	1 = Full of interest 2 = 3 = 4 = 5 = 6 = 7 = Completely routine
Me3	Until now your life has had: (Me)	1 = No clear goals or purpose at all 2 = 3 = 4 = 5 = 6 = 7 = Very clear goals and purpose
Ma3	Do you have the feeling that you're being treated unfairly? (Ma)	1 = Very often 2 = 3 = 4 = 5 = 6 = 7 = Seldom or never
C4	In the past ten years your life has been: (C)	1 = Full of changes 2 = 3 = 4 = 5 = 6 = 7 = Completely consistent and clear without you knowing what will happen next
Me4r	Most of the things you do in the future will probably be: (Me) R	1 = Completely fascinating 2 = 3 = 4 = 5 = 6 = 7 = Completely boring
C5	Do you have the feeling that you are in an unfamiliar situation and don't know what to do? (C)	1 = Very often 2 = 3 = 4 = 5 = 6 = 7 = Very seldom or never

Ma4r	What best describes how you see life: (Ma) R	1 = One can always find a solution to painful things in life 2 = 3 = 4 = 5 = 6 = 7 = There is no solution to painful things in life
Me5r	When you think about your life, <u>you very often</u> : (Me) R	1 = Feel how good it is to be alive 2 = 3 = 4 = 5 = 6 = 7 = Ask yourself why you exist at all
C6	When you face a difficult problem, the choice of a solution is: (C)	1 = Always confusing and hard to find 2 = 3 = 4 = 5 = 6 = 7 = Always completely clear
Me6r	Doing the things you do every day is: (Me) R	1 = A source of deep pleasure and satisfaction 2 = 3 = 4 = 5 = 6 = 7 = A source of pain and boredom
C7	Your life in the future will probably be: (C)	1 = Full of changes without knowing what will happen next 2 = 3 = 4 = 5 = 6 = 7 = Completely consistent and clear
Ma5	When something unpleasant happened in the past your tendency was: (Ma)	1 = "To eat yourself up" about it 2 = 3 = 4 = 5 = 6 = 7 = To say "ok that's that, I have to live with it" and go on

C8	Do you have very mixed-up feelings and ideas? (C)	1 = Very often 2 = 3 = 4 = 5 = 6 = 7 = Seldom or never
Ma6r	When you do something that gives you a good feeling: (Ma) R	1 = It's certain that you'll go on feeling good 2 = 3 = 4 = 5 = 6 = 7 = It's certain that something will happen to spoil the feeling
C9	Does it happen that you have feelings inside you would rather not feel? (C)	1 = Very often 2 = 3 = 4 = 5 = 6 = 7 = Very seldom or never
Me7	You anticipate that your personal life in the future will be: (Me)	1 = Totally without meaning or purpose 2 = 3 = 4 = 5 = 6 = 7 = Full of meaning and purpose
Ma7r	Do you think that there will always be people whom you'll be able to count on in the future? (Ma) R	1 = You are certain there will be 2 = 3 = 4 = 5 = 6 = 7 = You doubt there will be
C10	Does it happen that you have the feeling that you don't know exactly what's about to happen? (C)	1 = Very often 2 = 3 = 4 = 5 = 6 = 7 = Very seldom or never
Ma8r	Many people – even those with a strong character – sometimes feel	1 = Never 2 =

	like sad sacks (losers) in certain situations. How often have you felt this way in the past? (Ma) R	3 = 4 = 5 = 6 = 7 = Very often
C11	When something happened, have you generally found that: (C)	1 = You overestimated or underestimated its importance 2 = 3 = 4 = 5 = 6 = 7 = You saw things in the right proportion
Ma9r	When you think of the difficulties you are likely to face in important aspects of your life, do you have the feeling that: (Ma) R	1 = You will always succeed in overcoming the difficulties 2 = 3 = 4 = 5 = 6 = 7 = You won't succeed in overcoming the difficulties
Me8	How often do you have the feeling that there's little meaning in the things you do in your daily life? (Me)	1 = Very often 2 = 3 = 4 = 5 = 6 = 7 = Very seldom or never
Ma10	How often do you have feelings that you're not sure you can keep under control? (Ma)	1 = Very often 2 = 3 = 4 = 5 = 6 = 7 = Very seldom or never

Scoring instructions:

(C) = comprehensibility component

(Ma) = manageability component

(Me) = meaningful component

R = reverse scored

Work-related Sense of Coherence

How do you personally find your current job and work situation in general?									
1r	manageable	☐	☐	☐	☐	☐	☐	☐	unmanageable
2	meaningless	☐	☐	☐	☐	☐	☐	☐	meaningful
3r	structured	☐	☐	☐	☐	☐	☐	☐	unstructured
4r	easy to influence	☐	☐	☐	☐	☐	☐	☐	impossible to influence
5	insignificant	☐	☐	☐	☐	☐	☐	☐	significant
6r	clear	☐	☐	☐	☐	☐	☐	☐	unclear
7r	controllable	☐	☐	☐	☐	☐	☐	☐	uncontrollable
8	unrewarding	☐	☐	☐	☐	☐	☐	☐	rewarding
9r	predictable	☐	☐	☐	☐	☐	☐	☐	unpredictable

Comprehensibility: Items 1, 3, 6 and 9

Manageability: Items 4 and 7

Meaningfulness: Items 2, 5, and 8

Stress in General

Do you find your job stressful? For each of the following words or phrases below select:

Y for “Yes” if it describes your job;

N for “No” if it does not describe your job;

? for “?” if you cannot decide.

Demanding	Yes No ?
Pressured	Yes No ?
Calm (R)	Yes No ?
Many things stressful	Yes No ?
Hassled	Yes No ?
Nerve-racking	Yes No ?
More stressful than I'd like	Yes No ?
Overwhelming	Yes No ?

General Appraisal of Work-Related Stressors

The “work environment” includes your environment as an employee of an organization and/or your environment as a student (including any time spent in class, studying or doing homework, or working for pay outside of class).

A “stressor” represents a situation or events in the work environment that requires some adaptive response on the part of the individual (Jex & Britt, 2014). For example: a difficult coworker, a work interruption, a new management style, or a project deadline.

Instructions: Think about your current work environment. Please now assess how encountering “stressors” (as defined above) is likely to affect you.

They will help me to learn a lot.	1 = Disagree strongly 2 = Disagree moderately 3 = Disagree 4 = Neither agree nor disagree 5 = Agree 6 = Agree moderately 7 = Agree strongly
They will help me develop my skills.	1 = Disagree strongly 2 = Disagree moderately 3 = Disagree 4 = Neither agree nor disagree 5 = Agree 6 = Agree moderately 7 = Agree strongly
They will show me I can do something new.	1 = Disagree strongly 2 = Disagree moderately 3 = Disagree 4 = Neither agree nor disagree 5 = Agree 6 = Agree moderately 7 = Agree strongly
They will keep me focused on doing well.	1 = Disagree strongly 2 = Disagree moderately 3 = Disagree 4 = Neither agree nor disagree 5 = Agree 6 = Agree moderately 7 = Agree strongly
They will hinder any achievements I might have.	1 = Disagree strongly 2 = Disagree moderately 3 = Disagree 4 = Neither agree nor disagree

	5 = Agree 6 = Agree moderately 7 = Agree strongly
They will restrict my capabilities.	1 = Disagree strongly 2 = Disagree moderately 3 = Disagree 4 = Neither agree nor disagree 5 = Agree 6 = Agree moderately 7 = Agree strongly
They will limit how well I can do.	1 = Disagree strongly 2 = Disagree moderately 3 = Disagree 4 = Neither agree nor disagree 5 = Agree 6 = Agree moderately 7 = Agree strongly
They will prevent me from mastering difficult aspects of the work.	1 = Disagree strongly 2 = Disagree moderately 3 = Disagree 4 = Neither agree nor disagree 5 = Agree 6 = Agree moderately 7 = Agree strongly
They may be a negative experience for me.	1 = Disagree strongly 2 = Disagree moderately 3 = Disagree 4 = Neither agree nor disagree 5 = Agree 6 = Agree moderately 7 = Agree strongly
They will result in negative outcomes.	1 = Disagree strongly 2 = Disagree moderately 3 = Disagree 4 = Neither agree nor disagree 5 = Agree 6 = Agree moderately 7 = Agree strongly
They are going to have a negative impact on me.	1 = Disagree strongly 2 = Disagree moderately 3 = Disagree 4 = Neither agree nor disagree 5 = Agree 6 = Agree moderately 7 = Agree strongly

Prevalence of Specific Work-Related Stressors

The “work environment” includes your environment as an employee of an organization and/or your environment as a student (including any time spent in class, studying or doing homework, or working for pay outside of class).

Instructions: Please rate the extent to which each of the following statements is true concerning your current “work environment”.

Work-related characteristic	Rate the extent to which each statement is true in your current work environment.
<u>Job autonomy</u> I have discretion in planning out my work and determining procedures in my work.	1 = Not at all 2 = A little 3 = Somewhat 4 = Moderately 5 = Quite a bit 6 = Very 7 = Completely
<u>Participative decision-making</u> I have input in the formulation of decisions that I am responsible for implementing.	1 = Not at all 2 = A little 3 = Somewhat 4 = Moderately 5 = Quite a bit 6 = Very 7 = Completely
<u>Predictability of work</u> I experience unexpected events in my work.	1 = Not at all 2 = A little 3 = Somewhat 4 = Moderately 5 = Quite a bit 6 = Very 7 = Completely
<u>Role ambiguity</u> I receive unclear information concerning my work objectives and what is expected of me.	1 = Not at all 2 = A little 3 = Somewhat 4 = Moderately 5 = Quite a bit 6 = Very 7 = Completely
<u>Role conflict</u> I receive conflicting information or inconsistent demands concerning my work or work methods.	1 = Not at all 2 = A little 3 = Somewhat 4 = Moderately 5 = Quite a bit

	6 = Very 7 = Completely
<u>Quantitative work overload</u> I have too much work to do within a given time frame.	1 = Not at all 2 = A little 3 = Somewhat 4 = Moderately 5 = Quite a bit 6 = Very 7 = Completely
<u>Qualitative work overload</u> My work is too difficult and exceeds my abilities.	1 = Not at all 2 = A little 3 = Somewhat 4 = Moderately 5 = Quite a bit 6 = Very 7 = Completely
<u>Quantitative work underload</u> I do not have enough work to do.	1 = Not at all 2 = A little 3 = Somewhat 4 = Moderately 5 = Quite a bit 6 = Very 7 = Completely
<u>Qualitative work underload</u> My work is too simple and does not allow me to use my full abilities.	1 = Not at all 2 = A little 3 = Somewhat 4 = Moderately 5 = Quite a bit 6 = Very 7 = Completely
<u>Responsibility for others</u> I am responsible for the work of others (e.g., others' morale, division of labor).	1 = Not at all 2 = A little 3 = Somewhat 4 = Moderately 5 = Quite a bit 6 = Very 7 = Completely
<u>Lack of social support from colleagues</u> There is a lack of help and support from my colleagues.	1 = Not at all 2 = A little 3 = Somewhat 4 = Moderately 5 = Quite a bit 6 = Very 7 = Completely
<u>Lack of social support from supervisors</u>	1 = Not at all

<p>There is a lack of help and support from my supervisors.</p>	<p>2 = A little 3 = Somewhat 4 = Moderately 5 = Quite a bit 6 = Very 7 = Completely</p>
<p><u>Interpersonal conflict among colleagues or peers</u> My work environment consists of negatively charged interactions between colleagues and peers in the work environment.</p>	<p>1 = Not at all 2 = A little 3 = Somewhat 4 = Moderately 5 = Quite a bit 6 = Very 7 = Completely</p>
<p><u>Interpersonal conflict among involving one's supervisor</u> My work environment consists of negatively charged interactions involving my supervisor.</p>	<p>1 = Not at all 2 = A little 3 = Somewhat 4 = Moderately 5 = Quite a bit 6 = Very 7 = Completely</p>
<p><u>Bureaucratic constraints</u> The company bureaucracy (e.g., rules and procedures) at my organization prevent me from performing up to my capabilities.</p>	<p>1 = Not at all 2 = A little 3 = Somewhat 4 = Moderately 5 = Quite a bit 6 = Very 7 = Completely</p>
<p><u>Material and technological constraints</u> The missing and/or lack of equipment and supplies at work prevents me from performing up to my capabilities.</p>	<p>1 = Not at all 2 = A little 3 = Somewhat 4 = Moderately 5 = Quite a bit 6 = Very 7 = Completely</p>
<p><u>Job insecurity</u> I am uncertain about the security of my job in the future.</p>	<p>1 = Not at all 2 = A little 3 = Somewhat 4 = Moderately 5 = Quite a bit 6 = Very 7 = Completely</p>

Appraisal of Specific Work-Related Stressors

The “work environment” includes your environment as an employee of an organization and/or your environment as a student (including any time spent in class, studying or doing homework, or working for pay outside of class).

Instructions: Please report the extent to which you encountering each of the following work-related characteristics in your current work environment affects you.

Work-related characteristic	To what extent does encountering this have potentially meaningful gains for you?	To what extent does encountering this tend to constrain or interfere with your individual work achievement?	To what extent does encountering this post a threat to you?
<u>Job autonomy</u> I have discretion in planning out my work and determining procedures in my work.	1 < ---- > 100	1 < ---- > 100	1 < ---- > 100
<u>Participative decision-making</u> I have input in the formulation of decisions that I am responsible for implementing.	1 < ---- > 100	1 < ---- > 100	1 < ---- > 100
<u>Predictability of work</u> I experience unexpected events in my work.	1 < ---- > 100	1 < ---- > 100	1 < ---- > 100
<u>Role ambiguity</u> I receive unclear information concerning my work objectives and what is expected of me.	1 < ---- > 100	1 < ---- > 100	1 < ---- > 100
<u>Role conflict</u> I receive conflicting information or inconsistent demands concerning my work or work methods.	1 < ---- > 100	1 < ---- > 100	1 < ---- > 100
<u>Quantitative work overload</u> I have too much work to do within a given time frame.	1 < ---- > 100	1 < ---- > 100	1 < ---- > 100
<u>Qualitative work overload</u> My work is too difficult and exceeds my abilities	1 < ---- > 100	1 < ---- > 100	1 < ---- > 100
<u>Quantitative work underload</u> I do not have enough work to do	1 < ---- > 100	1 < ---- > 100	1 < ---- > 100

<u>Qualitative work underload</u> My work is too simple and does not allow me to use my full abilities.	1 < ---- > 100	1 < ---- > 100	1 < ---- > 100
<u>Responsibility for others</u> I am responsible for the work of others (e.g., others' morale, division of labor)	1 < ---- > 100	1 < ---- > 100	1 < ---- > 100
<u>Lack of social support from colleagues</u> There is a lack of help and support from my colleagues.	1 < ---- > 100	1 < ---- > 100	1 < ---- > 100
<u>Lack of social support from supervisors</u> There is a lack of help and support from my supervisors.	1 < ---- > 100	1 < ---- > 100	1 < ---- > 100
<u>Interpersonal conflict among colleagues or peers</u> My work environment consists of negatively charged interactions between colleagues and peers in the work environment.	1 < ---- > 100	1 < ---- > 100	1 < ---- > 100
<u>Interpersonal conflict among involving one's supervisor</u> My work environment consists of negatively charged interactions involving my supervisor.	1 < ---- > 100	1 < ---- > 100	1 < ---- > 100
<u>Bureaucratic constraints</u> The company bureaucracy (e.g., rules and procedures) at my organization prevent me from performing up to my capabilities.	1 < ---- > 100	1 < ---- > 100	1 < ---- > 100
<u>Material and technological constraints</u> The missing and/or lack of equipment and supplies at work prevents me from performing up to my capabilities.	1 < ---- > 100	1 < ---- > 100	1 < ---- > 100
<u>Job insecurity</u> I am uncertain about the security of my job in the future.	1 < ---- > 100	1 < ---- > 100	1 < ---- > 100

Demographics

1. What is your sex?
 - 1 = Male
 - 2 = Female
2. What is your current age? (enter only the number, example: 31)
3. What is your marital status?
 - 1 = Married or living as married
 - 2 = In a committed (serious) relationship but not married
 - 3 = Single, never married
 - 4 = Single, divorced
 - 5 = Single, widowed
4. What is your ethnicity? (select ethnicity with which you most closely identify)
 - 1 = Hispanic/Latino
 - 2 = Non-Hispanic/Non-Latino
5. What is your race? (select race with which you most closely identify)
 - 1 = White
 - 2 = Black/African American
 - 3 = Asian
 - 4 = American Indian/Alaskan Native
 - 5 = Native Hawaiian/Pacific Islander
 - 6 = Middle Eastern/Arab
6. What is the highest education level you have received?
 - 1 = Some high school
 - 2 = Completed high school
 - 3 = Some college
 - 4 = Associate's degree
 - 5 = Bachelor's degree
 - 6 = Some graduate school
 - 7 = Master's degree
 - 8 = Doctoral degree
7. To how many children are you considered a parent? (report just the number of children, example: 3)
8. How many children and adults depend on you for their care? (report just the number of children, example: 3)
9. How many individuals currently reside in your household, including yourself (report just the number of children, example: 3)

10. If you have problems and are sad, is there anyone you can talk to? (You may select more than one option). *An index ranging from zero to six will be constructed, depending on how many persons the participant has for potential intimate talk.*
- 1 = Spouse
 - 2 = Children
 - 3 = Relative
 - 4 = Close friend
 - 5 = Neighbor
 - 6 = Coworker
11. Please enter your annual household income. (round to the nearest thousand)
12. Please identify the industry in which you currently work. If the industry is not listed, please identify within the “other” box.
- 1 = Manufacturing
 - 2 = Retail
 - 3 = Wholesale
 - 4 = Transportation and Warehousing
 - 5 = Information
 - 6 = Financial Activities
 - 7 = Professional & Business Services
 - 8 = Education and Health Services
 - 9 = Leisure & Hospitality
 - 10 = Other: _____
13. What is your current job title?
14. Enter the average number of hours you work in a week. “Work” refers to any time spent working as an employee of an organization or as a student (including time spent in class, studying or doing homework, or working for pay). If you have multiple “work” roles, add the hours together. (Please round to the nearest amount of hours).
15. How many individuals work directly under your leadership or supervision in your **current position**?
16. How many years have you been working in your **current position**? “Work” refers to any time spent working as an employee of an organization or as a student (including time spent in class, studying or doing homework, or working for pay). If you have multiple “work” roles, add the hours together. (Please round to the nearest amount of hours).
17. If you are not in school, how many years have you been working full-time (i.e., at least 34 hours per week)? (round to the nearest year)

Copy of Actual Survey

Default Question Block

INFORMED CONSENT LETTER

Purpose of the Study:

This study is being conducted by Lisa Brady, a graduate student in the Industrial and Organizational Psychology program at The University of Tennessee at Chattanooga. This research is being conducted under the supervision of Dr. Chris Cunningham. Please note that participants in this study must be at least 18 years of age. The purpose is to examine the role of individual differences in appraising work-related stressors.

What will be done:

If you agree to participate you will be asked to respond to a brief internet-based survey (requiring approximately 25 minutes of your time). This survey includes questions about your appraisal of common work-related stressors and your sense of coherence. Several demographic questions are also included so that the characteristics of the final sample can be accurately described.

Benefits of this Study:

You will be contributing to a growing base of knowledge regarding the role of an individual difference in the appraisal of common work-related stressors.

What are the risks to me?

The risks of this study are anticipated to be limited to the potential inconvenience of taking the survey. If you feel uncomfortable with a question in the survey, you can withdraw from the study at any time. If you decide to quit at any time before you have finished the questionnaire, your answers will NOT be recorded. Please note, however, that we can only make use of fully complete surveys, so we greatly appreciate your full participation and cooperation.

What about my privacy?

You are able to participate in this study confidentially; no names or personal contact information will be requested from you. In addition to this protection, all data will be securely gathered and stored in password protected files accessible only by the researchers.

Voluntary participation:

It is your choice to participate in this research and you may withdraw from this study at any time. If you decide to quit any time before you have finished the questionnaire, however, your answers will NOT be recorded. We can only make use of fully complete surveys, so we greatly appreciate your full participation.

How will the data be used?

The results of the study will be used for research purposes only. Group-level (not personally identified) results from the study will be presented in educational settings and at professional conferences, and the results may be published in a professional journal in the field of psychology.

Contact information:

If you have concerns or questions about this study, please contact the chair of UTC's Institutional Review Board, Dr. Amy Doolittle, at amy-doolittle@utc.edu or 423-425-5563 or the faculty supervisor for this study, Dr. Christopher Cunningham, at chris-cunningham@utc.edu or 423-425-4264. By completing and returning this survey, you acknowledge that you have read this information and agree to participate in this research, with the knowledge that you are free to withdraw your participation at any time without penalty.

Thank you in advance for your assistance and participation.

Sincerely,

Lisa Brady

Christopher J. L. Cunningham, Ph.D.

The University of Tennessee Chattanooga

*The Institutional Review Board of the University of Tennessee at Chattanooga
(FWA00004149)*

has approved this research project # 16-157

I have read the preceding information and am willing to participate fully in this research.

☐ Yes

☐ No

Please answer the following questions about yourself:

	Yes	No
Are you currently a full-time employee (i.e., working at least 34 hours per week) for an organization?	☐	☐
Are you currently enrolled as a full-time graduate student with additional paid work responsibilities (e.g., Graduate/Research/Teaching Assistantship, internship, part-/full-time work)?	☐	☐

When you talk to people, do you have the feeling that they don't understand you?

1=Never ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7=Always ☐

In the past, when you had to do something which depended upon cooperation with others, did you have the feeling that it:

1=Surely would not get done ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7=Surely would get done ☐

Think of the people with whom you come into contact daily, aside from the ones to whom you feel closest. How well do you know most of them?

1=You feel that they are strangers ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7=You feel that you know them very well ☐

Do you have the feeling that you don't really care about what goes on around you?

1=Very
seldom or
never
☐

2
☐

3
☐

4
☐

5
☐

6
☐

7=Very often
☐

Has it happened in the past that you were surprised by the behavior of people whom you thought you knew well?

1=Never
happened
☐

2
☐

3
☐

4
☐

5
☐

6
☐

7=Always
happened
☐

Has it happened that people whom you counted on disappointed you?

1=Never
happened
☐

2
☐

3
☐

4
☐

5
☐

6
☐

7=Always
happened
☐

Life is:

1=Full of
interest
☐

2
☐

3
☐

4
☐

5
☐

6
☐

7=Completely
routine
☐

Until now your life has had:

1=No clear
goals or
purpose at all
☐

2
☐

3
☐

4
☐

5
☐

6
☐

7=Very clear
goals and
purpose
☐

Do you have the feeling that you're being treated unfairly?

1=Very often
☐

2
☐

3
☐

4
☐

5
☐

6
☐

7=Seldom or
never
☐

In the past ten years your life has been:

1=Full of
changes
without you
knowing what
will happen
next
☐

2
☐

3
☐

4
☐

5
☐

6
☐

7=Completely
consistent and
clear
☐

Most of the things you do in the future will probably be:

1=Completely fascinating	2	3	4	5	6	7=Deadly boring
☐	☐	☐	☐	☐	☐	☐

Do you have the feeling that you are in an unfamiliar situation and don't know what to do?

1=Very often	2	3	4	5	6	7=Very seldom or never
☐	☐	☐	☐	☐	☐	☐

What best describes how you see life:

1=One can always find a solution to painful things in life	2	3	4	5	6	7=There is no solution to painful things in life
☐	☐	☐	☐	☐	☐	☐

When you think about your life, you very often:

1=Feel how good it is to be alive	2	3	4	5	6	7=Ask yourself why you exist at all
☐	☐	☐	☐	☐	☐	☐

When you face a difficult problem, the choice of a solution is:

1=Always confusing and hard to find	2	3	4	5	6	7=Always completely clear
☐	☐	☐	☐	☐	☐	☐

Doing the things you do every day is:

1=A source of deep pleasure and satisfaction	2	3	4	5	6	7=A source of pain and boredom
☐	☐	☐	☐	☐	☐	☐

Your life in the future will probably be:

1=Full of changes without knowing what will happen next	2	3	4	5	6	7=Completely consistent and clear
☐	☐	☐	☐	☐	☐	☐

When something unpleasant happened in the past your tendency was:

1="To eat yourself up" about it	2	3	4	5	6	7=To say "OK that's that, I have to live with it" and go on
☐	☐	☐	☐	☐	☐	☐

Do you have very mixed-up feelings and ideas?

1=Very often	2	3	4	5	6	7=Seldom or never
☐	☐	☐	☐	☐	☐	☐

When you do something that gives you a good feeling:

1=It's certain that you'll go on feeling good	2	3	4	5	6	7=It's certain that something will happen to spoil the feeling
☐	☐	☐	☐	☐	☐	☐

Does it happen that you have feelings inside you would rather not feel?

1=Very often	2	3	4	5	6	7=Very seldom or never
☐	☐	☐	☐	☐	☐	☐

You anticipate that your personal life in the future will be:

1=Totally without meaning or purpose	2	3	4	5	6	7=Full of meaning and purpose
☐	☐	☐	☐	☐	☐	☐

☐ ☐ ☐ ☐ ☐ ☐ ☐

Do you think that there will always be people whom you'll be able to count on in the future?

1=You are certain there will be ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7=You doubt there will be ☐

Does it happen that you have the feeling that you don't know exactly what's about to happen?

1=Very often ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7=Very seldom or never ☐

Many people – even those with a strong character – sometimes feel like sad sacks (losers) in certain situations. How often have you felt this way in the past?

1=Never ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7=Very often ☐

When something happened, have you generally found that:

1=You overestimated or underestimated its importance ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7=You saw things in the right proportion ☐

When you think of the difficulties you are likely to face in important aspects of your life, do you have the feeling that:

1=You will always succeed in overcoming the difficulties ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7=You won't succeed in overcoming the difficulties ☐

How often do you have the feeling that there's little meaning in the things you do in your daily life?

1=Very often 2 3 4 5 6 7=Very seldom or never

☐ ☐ ☐ ☐ ☐ ☐ ☐

How often do you have feelings that you're not sure you can keep under control?

1=Very often 2 3 4 5 6 7=Very seldom or never

☐ ☐ ☐ ☐ ☐ ☐ ☐

How do you personally find your current job and work situation in general?

manageable	☐	☐	☐	☐	☐	☐	☐	unmanageable
meaningless	☐	☐	☐	☐	☐	☐	☐	meaningful
structured	☐	☐	☐	☐	☐	☐	☐	unstructured
easy to influence	☐	☐	☐	☐	☐	☐	☐	impossible to influence
insignificant	☐	☐	☐	☐	☐	☐	☐	significant
clear	☐	☐	☐	☐	☐	☐	☐	unclear
controllable	☐	☐	☐	☐	☐	☐	☐	uncontrollable
unrewarding	☐	☐	☐	☐	☐	☐	☐	rewarding
predictable	☐	☐	☐	☐	☐	☐	☐	unpredictable

Do you find your job stressful? For each of the following words or phrases below, select the option that best matches your response:

	Yes, it describes my job.	No, it does not describe my job.	?, I cannot decide.
Demanding	☐	☐	☐
Pressured	☐	☐	☐
Calm	☐	☐	☐
Many things stressful	☐	☐	☐
Hassled	☐	☐	☐
Nerve-racking	☐	☐	☐
More stressful than I'd like	☐	☐	☐
Overwhelming	☐	☐	☐

"Work environment" = the environment in which you are working for compensation or experience. (For example: part-/full-time work, internship, graduate/research/teaching assistantship, clinical hours)

I understand how "work environment" is defined and applies to me.

Yes
☐

No
☐

Please identify the industry of your current "work environment" (as defined above). If the industry is not listed, please identify within the "other" box.

☐ 1 = Manufacturing

☐ 2 = Retail

☐ 3 = Wholesale

☐ 4 = Transportation and Warehousing

☐ 5 = Information

☐ 6 = Financial Activities

☐ 7 = Professional & Business Services

☐ 8 = Education and Health Services

☐ 9 = Leisure & Hospitality

☐ 10 = Other:

In your current "work environment" (as defined above), what is your job title?

"Stressor" = a situation or event that requires some adaptive response on your part. (For example: a difficult coworker, a work interruption, or a new management style)

Please assess how encountering "stressors" (as defined above) in your "work environment" (as defined above) is likely to affect you.

	Disagree strongly	Disagree moderately	Disagree slightly	Neutral	Agree slightly	Agree moderately	Agree strongly
They will help me to learn a lot.	☐	☐	☐	☐	☐	☐	☐
They will help me develop my skills.	☐	☐	☐	☐	☐	☐	☐
They will show me I can do something new.	☐	☐	☐	☐	☐	☐	☐

	Disagree strongly	Disagree moderately	Disagree slightly	Neutral	Agree slightly	Agree moderately	Agree strongly
They will keep me focused on doing well.	☐	☐	☐	☐	☐	☐	☐
They will hinder any achievements I might have.	☐	☐	☐	☐	☐	☐	☐
They will restrict my capabilities.	☐	☐	☐	☐	☐	☐	☐
They will limit how well I can do.	☐	☐	☐	☐	☐	☐	☐
They will prevent me from mastering difficult aspects of the work.	☐	☐	☐	☐	☐	☐	☐
They may be a negative experience for me.	☐	☐	☐	☐	☐	☐	☐
They will result in negative outcomes.	☐	☐	☐	☐	☐	☐	☐
They are going to have a negative impact on me.	☐	☐	☐	☐	☐	☐	☐

"Work environment" = the environment in which you are working for compensation or experience. (For example: part-/full-time work, internship, graduate/research/teaching assistantship, clinical hours)

Indicate the **PERCENTAGE OF TIME** for which each of the following statements is **TRUE** about your current "work environment" (as defined above).

Click on the rating bar or move the slider to the position that indicates your response along a continuum ranging from 0% of the time (left) to 100% of the time (right).

	0	10	20	30	40	50	60	70	80	90	100
I have discretion in planning out my work and determining procedures in my work.											

I have input in the
formulation of
decisions that I am
responsible for
implementing.

I experience
unexpected events
in my work.

I receive unclear
information
concerning my work
objectives and what
is expected of me.

I receive conflicting
information or
inconsistent
demands concerning
my work or work
methods.

I have too much
work to do within a
given time frame.

My work is too
difficult and exceeds
my abilities.

I do not have
enough work to do.

My work is too
simple and does not
allow me to use my
full abilities.

"Work environment" = the environment in which you are working for compensation or experience. (For example: part-/full-time work, internship, graduate/research/teaching assistantship, clinical hours)

Indicate the PERCENTAGE OF TIME for which each of the following statements is TRUE about your current "work environment" (as defined above).

Click on the rating bar or move the slider to the position that indicates your response along a continuum ranging from *0% of the time (left)* to *100% of the time (right)*.

	0	10	20	30	40	50	60	70	80	90	100
I am responsible for the work of others (e.g., others' morale, division of labor).											
There is a lack of help and support from my colleagues.											
There is a lack of help and support from my supervisors.											
My work environment consists of negatively charged interactions between colleagues and peers.											
My work environment consists of negatively charged interactions involving my supervisor.											
The company bureaucracy (e.g., rules and procedures) at my organization prevents me from performing up to my capabilities.											
The missing and/or lack of equipment and supplies at work prevents me from performing up to my capabilities.											
I am uncertain about the security of my job in the future.											

Opportunities to learn, grow, or achieve

Responding to the next set of items will help us understand your opportunities for learning, growing, and/or otherwise achieving through your experiences at work. Before you proceed, please respond to the following question (so we know you're paying some attention):

I understand that this set of items is referring to situations in my work environment that would **provide personal opportunities to learn, grow, or achieve**.

Yes

☐

No

☐

To what extent would the following situations in your work environment **provide personal opportunities to learn, grow, or achieve?**

Click on the rating bar or move the slider to the position that indicates your response along a continuum ranging from: *0=Not at all (left) to 100=Completely (right)*

	0	10	20	30	40	50	60	70	80	90	100
Having discretion in planning out my work and determining my work procedures											
Having input in the formulation of decisions that I am responsible for implementing											
Experiencing unexpected events in my work											
Receiving unclear information concerning my work objectives and what is expected of me											

Receiving conflicting
information or
inconsistent
demands concerning
my work or work
methods

Having too much
work to do within a
given time frame

Having work that is
too difficult or
exceeds my abilities

Not having enough
work to do

Having work that is
too simple or does
not allow me to use
my full abilities

Opportunities to learn, grow, or achieve (continued)

**To what extent would the following situations in your work environment
provide personal opportunities to learn, grow, or achieve?**

Click on the rating bar or move the slider to the position that indicates your response along a
continuum ranging from: *0=Not at all (left) to 100=Completely (right)*

0 10 20 30 40 50 60 70 80 90 100

Having responsibility
for the work of
others (e.g., others'
morale, division of
labor)

Lacking help and
support from my
colleagues

Lacking help and
support from my
supervisors

Experiencing
negatively charged
interactions between
colleagues and
peers

Experiencing
negatively charged
interactions involving
my supervisor

Experiencing
company
bureaucracy (e.g.,
rules and
procedures) that
prevents me from
performing up to my
capabilities

Missing or lacking
equipment and
supplies that
prevents me from
performing up to my
capabilities

Having uncertainty
about my job
security in the future

Restriction or obstruction of opportunities to learn, grow, or achieve

Responding to the next set of items will help us understand the level of restrictions you perceive to your opportunities for learning, growing, and/or otherwise achieving through your experiences at work. Before you proceed, please respond to the following question (so we know you're paying some attention):

I understand that this set of items is referring to situations in my work environment that would **RESTRICT OR OBSTRUCT** my opportunities to learn, grow, or achieve.

Yes
☐

No
☐

To what extent would the following situations in your work environment **RESTRICT OR OBSTRUCT** personal opportunities to learn, grow, or achieve?

Click on the rating bar or move the slider to the position that indicates your response along a continuum ranging from: *0=Not at all (left) to 100=Completely (right)*

Having work that is
too simple or does
not allow me to use
my full abilities

Restriction or obstruction of opportunities to learn, grow, or achieve (continued)

To what extent would the following situations in your work environment RESTRICT OR OBSTRUCT personal opportunities to learn, grow, or achieve?

Click on the rating bar or move the slider to the position that indicates your response along a continuum ranging from: *0=Not at all (left) to 100=Completely (right)*

	0	10	20	30	40	50	60	70	80	90	100
Having responsibility for the work of others (e.g., others' morale, division of labor)											
Lacking help and support from my colleagues											
Lacking help and support from my supervisors											
Experiencing negatively charged interactions between colleagues and peers											
Experiencing negatively charged interactions involving my supervisor											

Experiencing
company
bureaucracy (e.g.,
rules and
procedures) that
prevents me from
performing up to my
capabilities

Missing or lacking
equipment and
supplies that
prevents me from
performing up to my
capabilities

Having uncertainty
about my job
security in the future

Threats at work

Responding to the next set of items will help us understand the level of potential threats (i.e., of harm, loss, or negative experience) you perceive at work. Before you proceed, please respond to the following question (so we know you're paying some attention):

I understand that this set of items is referring to situations in my work environment that would **"POSE A THREAT"** (e.g., cause future harm, loss, or negative experiences) to me.

Yes
☐

No
☐

To what extent would the following situations in your work environment **POSE A THREAT** to you?

Click on the rating bar or move the slider to the position that indicates your response along a continuum ranging from: *0=Not at all (left) to 100=Completely (right)*

0 10 20 30 40 50 60 70 80 90 100

Having discretion in
planning out my
work and
determining my work
procedures

Having input in the
formulation of
decisions that I am
responsible for
implementing

Experiencing
unexpected events
in my work

Receiving unclear
information
concerning my work
objectives and what
is expected of me

Receiving conflicting
information or
inconsistent
demands concerning
my work or work
methods

Having too much
work to do within a
given time frame

Having work that is
too difficult or
exceeds my abilities

Not having enough
work to do

Having work that is
too simple or does
not allow me to use
my full abilities

Threats at work (continued)

To what extent would the following situations in your work environment POSE A
THREAT to you?

Click on the rating bar or move the slider to the position that indicates your response along a continuum ranging from: *0=Not at all (left) to 100=Completely (right)*

	0	10	20	30	40	50	60	70	80	90	100
Having responsibility for the work of others (e.g., others' morale, division of labor)											
Lacking help and support from my colleagues											
Lacking help and support from my supervisors											
Experiencing negatively charged interactions between colleagues and peers											
Experiencing negatively charged interactions involving my supervisor											
Experiencing company bureaucracy (e.g., rules and procedures) that prevents me from performing up to my capabilities											
Missing or lacking equipment and supplies that prevents me from performing up to my capabilities											
Having uncertainty about my job security in the future											

Finally, please respond honestly and completely to the following questions. This information helps us understand and describe the overall sample of people who respond to this survey. *These last few pages of questions really are the last part of this survey!*

What is your sex?

Male
☐

Female
☐

What is your current age? (enter only the number, example: 31)

What is your marital status?

- 1 = Married or living as married ☐ 2 = In a committed (serious) relationship but not married ☐ 3 = Single, never married ☐ 4 = Single, divorced ☐ 5 = Single, widowed ☐

What is your ethnicity? (select ethnicity with which you most closely identify)

1 = Hispanic/Latino
☐

2 = Non-Hispanic/Non-Latino
☐

What is your race? (select race with which you most closely identify)

- 1 = White ☐ 2 = Black/African American ☐ 3 = Asian ☐ 4 = American Indian/Alaskan Native ☐ 5 = Native Hawaiian/Pacific Islander ☐ 6 = Middle Eastern/Arab ☐ 7 = Two or More Races ☐

What is the highest education level you have received?

- ☐ 1 = Some high school
☐ 2 = Completed high school
☐ 3 = Some college
☐ 4 = Associate's degree
☐ 5 = Bachelor's degree
☐ 6 = Some graduate school
☐ 7 = Master's degree
☐ 8 = Doctoral degree

To how many children are you considered a parent? (report just the number of children, example: 3)

How many children and adults depend on you for their care? (report just the number of children, example: 3)

Please enter your annual household income (round to the nearest thousand; do not include commas).

If you have problems and are sad, is there anyone you can talk to? (You may select more than one option).

☐ 1 = Spouse

☐ 4 = Close friend

☐ 2 = Children

☐ 5 = Neighbor

☐ 3 = Relative

☐ 6 = Coworker

Enter the average number of hours you work each week. "Work" includes working for compensation or experience. (For example: part-/full-time work, internship, graduate/research/teaching assistantship, clinical hours)

If you have multiple "work" roles, add the hours together (round to the nearest amount of hours, example: 30).

How many individuals work directly under your leadership or supervision in your current position? (report just the number, example: 5)

Enter the average number of years you have been working *in your current position*.

"Work" includes working for compensation, job experience, or course credit.

(For example: part-/full-time work, internship, graduate/research/teaching assistantship, clinical hours)

(Please round to the nearest number of years, example: 2)

How many years have you worked full-time (i.e., at least 34 hours per week)? (round to the nearest year)

If you have never worked full-time, please enter 0.

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VITA

Lisa Brady was born in Covington, Louisiana on November 1, 1990 to Claude and Rose Brady. Her brother and sister are Danny and Laura Brady. She was raised in Folsom, LA and attended Saint Peter Catholic School for elementary school and Saint Scholastica Academy for high school. Upon graduation, she attended The University of Alabama in Tuscaloosa, AL where she studied Psychology and minored in Spanish. While at UA, Lisa conducted research on the psychological effects of physical activity in fifth-graders, which eventually impacted her decision to pursue a master's degree. After graduating in 2013, she worked for two years before attending The University of Tennessee at Chattanooga for graduate school. At UTC Lisa worked as a graduate assistant for the Counseling Center and the Graduate School. She graduated in May 2017 with a Masters of Science degree in Industrial-Organizational Psychology.