Living to Work: The Effects of Occupational Calling on Mental Health at Work

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ABSTRACT

While many employees work to live, others live to work. Those who experience work this way are described as having a calling. Occupational calling refers to employees who feel emotional ties to their work, viewing their work as both important and rewarding resulting from a transcendent summons, having purposeful work, or a prosocial orientation. Many positive outcomes have been linked to calling, but less is known about the potential negative outcomes that may also occur. Although a few studies have begun to investigate the negative effects of having a calling, less research has focused on distinguishing when positive versus negative outcomes may occur for these employees. The present study investigated whether individuals with a calling may experience either positive or negative consequences based on the type of demand they are faced with or the number of hours worked. Results indicated that the relationships between hindrance stressors and mental health symptoms were magnified when participants reported higher levels of occupational calling, whereas calling did not influence the outcomes of challenge stressors. Occupational calling was also associated with increased rates of working excessively and working compulsively, and these workaholism dimensions were linked to increased mental health symptoms and work-family conflict. A multiple mediation model was examined where the three dimensions of occupational calling were related to mental health symptoms and work-family conflict through the two dimensions of workaholism. Findings indicated that the three calling dimensions were indirectly related to worse mental health through working excessively. The present study builds on recent research that has shown that while calling provides
numerous positive outcomes, negative effects may also occur. Given the passion and drive to work in one’s career path, employees with a calling can be an organization’s best resource. The results of the present study hold potential for interventions to minimize the negative outcomes that can result from possessing an occupational calling.
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CHAPTER ONE
OVERVIEW AND THEORETICAL FRAMEWORK

Introduction

With work encompassing a substantial amount of time in people’s lives, it is not surprising that employees seek to find meaning and purpose behind the work that they do. Americans have reported that meaningful work is the job feature they value most; above promotions, income, job security, and work hours (Cascio, 2003). One approach to meaningful work that scholars have researched is occupational calling (referred to as calling for the remainder of this manuscript). Calling refers to the perception of personal meaning, dedication, and involvement tied to one’s career (Dik & Duffy, 2007). In response to this perception, individuals can experience beneficial outcomes such as increased career and life satisfaction (Duffy, Bott, Allan, Torrey, & Dik, 2012; Xie et al., 2016).

However, calling may pose as a double-edged sword to an individual’s mental health. Those employees who perceive emotional ties to their work tend to devote longer hours and make personal sacrifices to live out their calling (Bunderson & Thompson, 2009; Serow, 1994). Such sacrifices can induce increased rates of burnout, workaholism, and organizational exploitation (Bunderson & Thompson, 2009). Although the literature has primarily highlighted the benefits of possessing an occupational calling, less research has looked into the potential pitfalls that these employees also face. The present study seeks to understand how employees who are highly invested in their work respond to different types of stressors in their work environment. Employees with a calling
orientation may respond to stressors in a way that increases the likelihood of mental health symptoms.

Stress in today’s workplace results from many factors. Job stress can occur from demanding work schedules, emotional labor, or the working environment. According to a survey by Northwestern National Life, 40% of workers report their job is “very or extremely stressful” (Northwestern National Life, 1991). Similarly, in another report, 35% of respondents reported their job was negatively affecting their physical or emotional well-being and 42% state that job pressures interfered with their family or personal life (Harris Interactive, 2001). Stress is an inevitable feature of the work environment. However, the type of stressor that an employee is faced with may influence their mental health. For example, workplace pressure can be overwhelming for some, but not as stressful for others. These individuals may view the stressor as a challenge to overcome.

It may be that some employees are more influenced by workplace pressures than others. For example, previous studies have shown that individual personality characteristics moderate the job stressor-strain relationships (Spector & O’Connell, 1994). Negative affectivity, locus of control, and two components of Type A personality (impatience-irritability and achievement striving) predicted the magnitude of the stressor-strain relationship (Spector & O’Connell, 1994). The relationship between hindrance stressors and anger has also been shown to vary based on an individual’s level of neuroticism. Higher levels of hindrance stressors were related to increased anger, and this relationship was amplified by higher levels of neuroticism (Rodell & Judge, 2009).
Similarly, a three-way interaction among stressors, neuroticism, and job autonomy explained variance in exhaustion and disengagement. The interaction of challenge stressors, neuroticism and job autonomy explained 3% of the variance in exhaustion and 2% of disengagement. Specifically, autonomy effected the relationship between challenge stressors and exhaustion and disengagement only when an individual had high levels of neuroticism. Hindrance stressors, neuroticism, and job autonomy had a three-way interaction effect only on disengagement, account for 2% of the variance (Tai & Liu, 2007).

Personality characteristics may not be the only explanation for differences in the way employees respond to stress. Another explanation could be that some employees have differing perspectives on their careers. Employees who dedicate more time and effort to the work that they do may increase the outcomes of stress. Calling is rooted in an individual’s values and identity, and so is likely to evoke strong emotions when events interfere with the pursuit of those values (Dik & Duffy, 2009). Individuals with a calling report that work comprises a central aspect of their lives (Wresniewski et al., 1997). Therefore, those employees reporting a calling may respond more positively to challenge stressors that motivate their performance, but may also respond more negatively to hindrance stressors that interfere with their ability to perform to their expectations. Feeling enjoyment from one’s calling can enhance positive mental health through increased satisfaction and positive affect. However, too much dedication by working long hours may also reverse this effect, increasing mental health symptoms and work-family
conflict for employees. Dedication may result in positive outcomes in the short-term, but long-term dedication to work can be harmful for one’s mental health.

**Purpose of the Present Study**

The current study seeks to provide a comprehensive understanding of how calling is related to engagement and mental health symptoms in both positive and negative ways. This study aimed to present evidence that an employee’s orientation toward their work could impact their mental health in two divergent ways.

First, the current study examined how certain levels of occupational calling may magnify the relationship of challenge and hindrance stressors assessed at Time 1 on engagement and mental health outcomes symptoms 3 months later. Figure 1 demonstrates the proposed model of the moderating effect of occupational calling on the stressor-strain relationship. A high level of calling at Time 1 was expected to magnify the positive relationship between challenge stressors at Time 1 and engagement at Time 2, such that the relationship between challenge stressors and engagement will be stronger for employees with a high degree of calling. Additionally, the positive relationship between challenge stressors at Time 1 and mental health symptoms at Time 2 was hypothesized to be stronger for those who report a higher degree of calling. Challenge and hindrance-related stressors have been shown to be positively related to anxiety and emotional exhaustion in the same direction and magnitude (Boswell, Olson-Buchanan, & LePine, 2004). Thus, the positive relationship between challenge stressors and mental health symptoms was predicted to be stronger for employees with a high degree of calling.
Similarly, the relationship between hindrance stressors at Time 1 and mental health symptoms at Time 2 was predicted to be stronger for those who report a higher degree of calling at Time 1. While hindrance stressors have been traditionally negatively related to engagement (LePine, LePine & Jackson, 2004), the effect of calling was hypothesized to weaken this relationship, such that a high degree of calling will minimize the relationship between hindrance stressors and engagement. Employees with a high degree of calling were predicted to not let hindrance stressors reduce their engagement in pursuing their goals thus engagement will not be decreased as much as someone with a low degree of calling.

In addition to understanding how occupational calling may influence the stressor-strain relationship, the current study also examined the different mechanisms linking calling to mental health symptoms and work-family conflict. Prior research suggested that high levels of calling should be related to lower mental health symptoms (Treadgold, 1999). However, the current study examined the possible inconsistent mediation between occupational calling, mental health symptoms, and work-family conflict through work hours and workaholism (Figure 6). With the proposed model, I hypothesized that while calling at Time 1 will have a direct negative relationship with mental health symptoms and work-family conflict at Time 2, those effects were expected to be diminished through higher levels of calling being related to increased work hours and workaholism, which are positively related to mental health symptoms and work-family conflict. These questions were addressed by incorporating longitudinal analyses to strengthen conclusions about what influences the presence of strains over time.
The following chapters will review relevant literature to address the present research questions. Chapter 2 provides a broad review of the occupational calling literature. This will include the theoretical development of the calling work orientation, distinction between perceiving a calling and living a calling, how calling is assessed, as well as the recent literature on the dark side of calling. In Chapter 3, the distinction between challenge and hindrance stressors will be discussed, along with empirical research on the constructs. Chapter 4 will provide a comprehensive list of the proposed hypotheses addressing the prediction of occupational calling as a potential moderator as well as a target for inconsistent mediation. Next, Chapter 5 will introduce the methods of the current study, discussing the participants, procedure, and proposed analyses to test the hypotheses. Finally, Chapter 6 will provide the results of the data analyses relative to each hypothesis. Then in Chapter 7, I will conclude with a discussion, summary, implications, and limitations of the findings as well as future directions for research.
Theoretical Development of Occupational Calling

Researchers have been studying how employees view their work for decades. The concept of having a work orientation was first theorized by Bellah and colleagues (1986). In a book about finding meaning in life, the authors dedicated one chapter to how individuals are drawn to ‘make something of themselves’ through work. The chapter discussed the different perspectives of how employees view their work and its subsequent effects on one’s life. Bellah et al. (1986) proposed three different perspectives that individuals take on their work; viewing work as a job, career, or calling.

A job orientation to work refers to working to make a living, focusing on financial success. Those who identify as having a job orientation find meaning in work through financial security, with work providing resources necessary to pursue non-work activities (Bellah et al., 1986). For employees with a job orientation, work does not constitute a major part of an individual’s identity. For example, an employee who has a job orientation, may love to travel, and finds work meaningful because the job provides a large salary giving her the opportunity to travel.

In contrast, employees with a career orientation find meaning in their work through accounts of organizational success. Employees with a career orientation work for achievement and status within their organization and derive meaning from organizational accomplishments (Bellah et al., 1986). For example, an employee who finds work meaningful because of numerous promotions she has attained, has a career orientation.
Bellah and colleagues (1986) briefly defined the prior distinctions of having a job or career orientation, but focused their work on emphasizing the importance of living a calling.

Bellah et al. (1986) defined a calling orientation as “a practical ideal of activity and character that makes a person’s work morally inseparable from his or her life (p. 66).” The concept of calling refers to the activity of work having meaning within itself, irrespective of the outcomes that occur from doing one’s job. Thus, it is “what we “do” that translates to what we “are” that is meaningful, such as how an individual may say, “I am a teacher” rather than “I teach math” (Bellah et al., 1986, p. 66).

Bellah et al. (1986) described calling as working for the personal meaning and value for its own sake. Wresniewski et al. (1997) argued that calling goes beyond personal significance to include greater good intentions, having the desire to make the world a better place. These scholars were the first to develop and empirically test the work orientation framework within the occupational psychology literature (see the following section for measure description).

Respondents were instructed to read three different paragraphs that described each of the orientations (job, career, and calling) and indicated to what degree they identified with the description. Results demonstrated that participants were able to easily distinguish between the different orientations and identify with one orientation over another, as there was minimal overlap in the ratings by each participant. In other words, if a participant reported that they related ‘very much’ to the career paragraph, the same individual responded that they related ‘not at all’ or ‘a little like me’ to the calling and job
paragraphs. These results imply that participants were able to determine which paragraph most described how they felt about their work as well as show three distinct classifications of work orientations.

After an empirical distinction was made between the work orientations, research grew on what it meant to have a calling. Despite interest in the distinctions of the three work orientations, job and career orientations were not investigated as much as having a calling. Many scholars published books, chapters, and articles describing what it means to have a calling, discussing the construct in a theoretical sense but predominantly from the counseling perspective (Baumeister, 1991; Brennfleck & Brennfleck, 2005; Colozzi & Colozzi, 2000; Guinness, 1998; Hall & Chandler, 2005; Hardy, 1990; Holderness & Palmer, 2000; Levoy, 1998; Novak, 1996; Schuurman, 2004). These authors provided practical recommendations for the pursuit of finding one’s calling but lacked a concrete uniform definition of what it meant to have a calling and whether there was empirical research evidence to support actual benefits of having a calling. Hunter et al. (2010) noted that authors have lacked answers to questions such as where does a calling come from (higher power, intrinsic motivation, etc.)?, does scientific evidence exist on the benefits of a calling (does calling really make you happy)?, and whether calling can be measured.

The definitions of calling include aspects such as a purpose or direction toward bettering oneself or society, sometimes referencing a higher power guiding an individual to pursue a career, and other times referencing a passion or drive within one’s being, as if an individual was meant to do a certain line of work (Dik & Duffy, 2007; Dobrow, 2006).
Calling has also adapted from being an orientation (Wrzesniewski, McCauley, Rozin, & Schwartz, 1997) to referring to a variety of constructs, including one’s purpose (Hall & Chandler, 2005), a place one is destined to work (Bunderson & Thompson, 2009), an external motivation (Dik & Duffy, 2009; Duffy & Sedlacek, 2007), and a consuming passion experienced toward a domain (Dobrow, 2006). Dik and Duffy (2007) sought to clarify the calling literature by combining relevant elements and identifying a universal concise definition of occupation calling in order to advance research. Occupational calling was defined as: “a transcendent summons, experienced as originating beyond the self, to approach a particular life role in a manner oriented toward demonstrating or deriving a sense of purpose or meaningfulness and that holds other-oriented values and goals as primary sources of motivation” (Dik & Duffy, 2009, p. 427). The goal of this definition was to include the individual’s perception of their motivation in pursuing a particular role, as well as include the source of meaning behind the efforts put into work. Dik and Duffy (2009) noted the importance of developing an established measure that could accurately and reliably measure an employee’s search and presence of a calling. Researchers have theorized that individuals can experience either a presence or search of a calling. When an individual has the presence of a calling, career clarity is high as the occupation they want to pursue is known. On the other hand, individuals can be actively searching for a calling, having yet to discover what their occupational purpose is. The present study only analyzed individuals with a presence of a calling as the purpose of the paper was to address potential harms that employees face at their current work (that is
their calling) and individuals who are searching for a calling may experience mental
health symptoms for other reasons than the hypothesized predictions.

Another conceptualization of calling was provided by Pratt et al. (2013). Working
off Bellah’s (1986) original definition, the authors argued there were three important
features that were part of the original concept of work orientation. First, work
orientations are evaluative, meaning individuals make judgements of what is good from
bad leading to standards of what is worth doing (Pratt, Pradies, & Lepisto, 2013). Second,
work orientations are internalized, despite originating from sociocultural definitions. The
authors state that these are dispositional traits that are fairly stable over time within an
individual, thus change is not likely. Third, work orientations are conceptualized as a life
domain, thus work orientations are not about a specific job one may hold but what makes
work worthy or good overall (Pratt et al., 2013).

Pratt, and colleagues (2013) also expanded the calling orientation, noting that
Bellah et al.’s (1986) definition contained three key factors. One factor of calling,
craftsmanship, described the involvement of submersing oneself within work; where
work takes meaning in itself. For this dimension, an individual derives meaning from the
experience of work in that the skill and expertise helps “evaluate work as worth doing
when it is done well for its own sake” (Pratt et al., 2013, p. 178). Another factor of
calling, kinship, described the connection that is developed with the people who the
individual surrounds themselves with at work. Within the kinship element of calling, an
individual evaluates work as worth doing when it creates bonds with others. An example
of this can be found in the military, where some soldiers are motivated more to protect
their friends fighting next to them rather than for the ideal of the war (Wong, Kolditz, Millen, & Potter, 2003). The third factor of calling, a serving orientation, described meaningfulness through helping others, having the sense of contributing to the good of all people. This element of calling implies that workers are motivated to make a positive difference in the lives of others.

Pratt et al. (2013) argued that conceptualizations of calling typically address two of the three elements, craftsmanship and serving, but lack the kinship element. Interestingly, the authors stated that although these elements all contribute to the calling orientation, it may be that the three sub-orientations may not necessarily resemble one construct and instead represent three distinct dimensions or constructs of their own. Although these authors provided sound evidence for these three elements, no measure to date has addressed this theory.

In a similar attempt to define the construct of calling, Schabram and Maitlis (2016) examined how individuals negotiate the challenges of calling over time with 50 animal shelter workers. The researchers proposed a model of three different “calling paths” that unfold over time. Calling paths were defined as “emotional, psychological, and behavioral experiences common to a set of individuals (and different from other sets) pursuing a calling, starting from their entry into that calling” (p. 4). The researchers interviewed only employees who reported having a calling. Interviews suggested that while all interviewees reported perceiving a call to their work, and encountered the same obstacles as others, some individuals diverted to different ‘calling paths’ by interpreting job demands differently and thus had different emotional responses.
The ‘identity-oriented’ calling path described individuals who continued to pursue their talents for caring for animals. However, because they perceived work demands as too high, the employees left the shelter to pursue their calling through less difficult kinds of animal work. In contrast, ‘contribution-oriented’ paths were associated with individuals who used their skills in order to continue to have a positive impact on the world; leaving the shelter to do work that they felt reached a broader aspect of society.

The final path, ‘practice-oriented’, referred to how individuals pursued knowledge and additional skill attainment to develop themselves as practitioners in the field. These individuals remained at the shelter to continue their work and increase the perceived wellbeing of the shelter (Schabram & Maitlis, 2016). Schabram and Maitlis’s (2016) conceptualization of calling demonstrates how individuals with a calling may respond to obstacles differently and provides support for the proposed hypotheses.

Throughout the literature many conceptualizations of calling have been developed. The definitions of calling have included aspects such as a purpose or direction toward bettering oneself or society, sometimes referencing a higher power guiding an individual to pursue a career, and other times referencing a passion or drive within one’s being, as if an individual was meant to do a certain line of work. The present study utilizes Dik and Duffy’s (2009) conceptualization of calling, using a multidimensional approach of three subscales in order to account for the different experiences individuals may have living out their calling.
Unanswered Callings

Through the development of theory and research on occupational calling, research has distinguished between perceiving a calling and living out a calling. Researchers have shown that across differences in age, social class, education attainment, gender, race/ethnicity, and employment status, approximately half of American adults perceive they have a calling (Duffy, Autin, Allan, & Douglass, 2015). It is surprising then to discover that many studies find only a small portion of respondents that identify as living their calling. The inconsistency between those who report perceiving a calling but potentially are not able to live it out demonstrates a potential disconnect of desire and opportunity. Researchers have shown that the correlation between perceiving and living out one’s calling is approximately .50 (Duffy, Allan, & Autin, 2013; Duffy, Allan, Autin, & Douglass, 2014; Duffy, Bott, Allan, Torrey, & Dik, 2012). Many researchers have investigated why the perception of calling is so high, when reports of the number of employees with a calling are so low (Duffy & Autin, 2013; Duffy, Allan, & Autin, 2013; Duffy, Bott, Allan, Torrey, & Dik, 2012).

Perceiving a calling is analogous to a lifelong goal (Duffy, Douglass, & Autin, 2015). Scholars have described this feeling as something an individual has, such as “my calling is to help animals.” The experience of having a calling provides individuals with a purpose. This purpose is beneficial to the extent that the individual can pursue its means. That is, whether an individual has a calling or not, the benefits only arise with the opportunity to do something about it. ‘Unanswered callings’ cause a paradox for individuals, where individuals sense a purpose but lack the opportunity to fulfill it.
Berg, Grant, and Johnson (2010) were one of the first to recognize the disconnect between employees who perceived a calling but reported not living a calling, referred to as having an ‘unanswered calling’. Based on interview data from 31 employees across a variety of occupations, individuals often had regret for not pursuing their calling. Interviewees reported feelings of stress in attempting to pursue their purpose but had faced obstacles in obtaining their calling, such as not having the appropriate resources or education. Similarly, Duffy, Dik, and Steger (2011) found that career commitment mediated the link between calling and withdrawal intentions. Individuals who perceived a calling but were not committed to their careers were more likely to withdraw from the organization. This occurred as a result of employees who had a calling but their current work was not in industry they felt called to.

In another study, both perceiving a calling and living a calling were positively correlated with career commitment, work meaning and job satisfaction (Duffy et al., 2012). However, living a calling moderated the relation of perceiving a calling with career commitment and work meaning, where relationships between these variables were strengthened for those who reported they were actually living their calling (Duffy et al., 2012). Interestingly, work meaning and career commitment fully mediated the relationship between perceiving a calling and job satisfaction. The results demonstrated that living a calling was an important link between perceiving a calling and job satisfaction. These results were shown through the indirect effects of work meaning and career commitment only having an effect for individuals with high levels of living a calling (Duffy et al., 2012). These results were replicated in a follow-up study where
living a calling also fully explained the relationship between perceiving a calling and life satisfaction (Duffy et al., 2013). Perceiving a calling was unrelated to life satisfaction if the employee was not currently living out their calling.

Numerous researchers have investigated the relationship between perceiving a calling and living a calling. Duffy et al. (2012) found that employed individuals were more likely to report living out their calling than unemployed individuals, despite equal reports of perceiving a calling. It is no surprise that being employed would be a prerequisite for the ability to perceive and live out a calling. Similarly, social status has been related to whether individuals are able to live out their calling, as high socioeconomic classes have greater opportunities of education and ability to relocate for work. Employed individuals who were living out a calling reported higher educational attainment, higher yearly incomes, and more freedom of choice in selecting their desired occupations (Duffy et al., 2013; Duffy & Autin, 2013).

**Development of Measures to Assess Calling**

As a result of the different definitions of calling, many measures of calling exist. The first researchers to examine and test the distinguishable differences in work orientations through an individual’s ability to identify with one work orientation accurately and consistently were Wrzesniewski and colleagues' (1997) Work Life Questionnaire. The scale assessed calling as a unidimensional construct, and was generalizable to all occupations. The researchers presented three distinct paragraphs, representing the job, career, and calling orientations. The paragraphs were developed based on the writings of Bellah et al. (1986) and Schwartz (1986; 1994). The paragraphs
did not include the words, ‘job,’ ‘career,’ and ‘calling’ to avoid priming participants. The participants who were then asked to indicate how much they identified with the paragraph on a scale ranging from, ‘very much,’ ‘somewhat,’ ‘a little,’ to ‘not at all like me.’

Participants also responded to 18 true or false questions to assess behaviors and feelings related to work (i.e., “my work makes the world a better place”). Then, self-report measures of life satisfaction, job satisfaction, and health satisfaction from Campbell et al. (1976). Self-ratings of health and occupational status were also examined. Finally, participants ranked categories of activities (i.e. hobbies, work, and friends) based upon the amount of satisfaction they received from each.

The respondents were university and health care industry employees that worked at least 35 hours per week. The results showed that there was a presence of each dimension of work orientation represented, nearly equally (44 individuals reported having a job orientation, 43 individuals reported having a career orientation, and 48 individuals reported having a calling orientation). In order to examine whether there was an equal distribution of work orientations within a specific industry, the researchers analyzed one specific job title (administrative assistants) and found similar results. Within the sample, participants reported an equal distribution of the three work orientations. These authors stated that work orientations are not dependent on occupation. In other words, all three orientations may exist in any industry, because an individual’s rationale for the importance of work is what identifies which orientation is present; any occupation could be classified as a job, career, or calling depending on the employee.
Findings also showed the job and calling paragraphs were strongly inversely related to each other, while the career orientation was not correlated with any other orientation (Wrzesniewski et al., 1997). Importantly, individuals high on calling reported work as relatively more important in comparison to hobbies and friends than did job or career respondents. The true-false questions supported these findings, providing the same relationships between the dimensions.

Wrzesniewski et al. (1997) found interesting results regarding the demographic characteristics related to the work orientations, specifically distinguishing the calling orientation from the job and career dimensions. Compared with job and career orientations, those who identified as having a calling were more likely to be better paid, better educated, had occupations higher in both self-perceived status and objective prestige level (Wrzesniewski et al., 1997). However, there were no significant differences between job and career dimensions other than age; with those individuals who scored high on the career orientation being on average 6 years younger than job respondents (Wrzesniewski et al., 1997). Similarly, following their predictions, calling was associated with significantly higher life and job satisfaction and with better health (Wrzesniewski et al., 1997). Differences between job and career orientations on life, job, and health satisfaction were small and nonsignificant. Additional findings showed that individuals with a calling missed significantly fewer days of work than individuals who reported having either a job or career orientation. Job and career respondents did not differ significantly in days missed (Wrzesniewski et al., 1997). The authors interpreted the amount of days missed from work as sick days, stating that individuals with a calling had
better health. However, individuals who reported a calling did not have higher self-reported health than job or career respondents. This contradiction suggests that the lack of days off from work may have been misinterpreted. Individuals with a calling may be more likely to continue working without taking a day off despite feeling ill or fatigue. This provides further evidence for the increase in risk of mental health symptoms for individuals with a calling.

In another measurement of calling, Bunderson and Thompson (2009) attempted to return the assessment of calling back to the classical conceptualization of personal duty. The researcher’s Neoclassical Calling Scale focused on the role of destiny in calling, rather than self-actualization and personal passion. The scale assessed calling on a single dimension with 6 items. The measure was domain specific to zookeepers; however, a context-free version also exists that was tested and validated. The researchers first conducted semi-structured exploratory interviews to investigate what brought the workers to the industry, how they thought and felt about work, as well as interactions they had with coworkers (Bunderson & Thompson, 2009). After coding interviews into categories of topical areas, the researchers found that the motivation to work was not for monetary reasons but for commitment to the animals. The findings encouraged the researchers to understand why employees in this industry were so dedicated to a low paying, limited status job (Bunderson & Thompson, 2009). The researchers developed a scale based on the interviews using relevant concepts and language that were obtained from job incumbents. A sample item is, “It sometimes feels like I was destined to work with animals.”
Following Bunderson and Thompson’s (2009) footsteps, Dobrow and Tosti-Kharas, (2011) developed a 12-item Integrated Calling Scale (ICS). Similar to prior developments, the Calling Scale assessed a unidimensional construct aimed for use in any industry. Scale development began with a panel of experts who reviewed a pool of 48 potential items. These initial items were developed based on the literature of calling orientation by Wrzesniewski et al. (1997), flow by Csikszentmihalyi (1990), and work engagement by Kahn (1990) and May, Gilson, and Harter (1999), as well as interview data from classical musicians. The researchers validated the new 12-item scale’s psychometric properties by assessing the scale against six other measures of calling to establish convergent validity. Discriminant validity was established through assessment of other career-related scales, such as career orientation, intrinsic motivation, and optimism. The results were replicated and cross-validated with multiple samples. The scale was used for longitudinal and cross-sectional analyses of four separate samples of 1,500 participants in domains of music, art, business, and management. The researchers stated the scale was a diagnostic tool that enabled career counselors and people making career decisions to help guide career decisions.

Arguing that the majority of prior research had been limited to unidimensional, industry specific measures of calling, Dik and his colleagues (2012) developed the Calling and Vocation Questionnaire (CVQ), a multidimensional scale aimed to be generalizable to many occupations. The goal of the new scale was to encompass a wider scope of calling, as well as target the complexity in how people express or experience a sense of calling (Dik & Duffy, 2009). The three dimensions included in the CVQ were
transcendent summons, purposeful work, and prosocial orientation. These dimensions originated from the three-part definition proposed by Dik and Duffy (2009), describing calling as, “(1) a transcendent summons, experienced as originating beyond the self, to (2) approach a particular life role in a manner oriented toward demonstrating or deriving a sense of purpose or meaningfulness and (3) that holds other-oriented values and goals as primary sources of motivation (p. 427, numbers added).” This definition proposed that there were two distinctions within having a calling; presence and a search, resulting in 6 dimensions assessed within the measure (Dik et al., 2012). The presence subscale referred to an individual having a calling, whereas the search subscale referred to individuals who reported actively seeking to discover their calling (Dik et al., 2012).

The development of the CVQ incorporated a split-sample, cross validation approach to validate the scale. The researchers developed an initial item pool consisting of 180 items. Each item was paired with a four-level response scale. A neutral midpoint response was eliminated to minimize the central tendency response bias (Dik et al., 2012). An expert and a team of undergraduate students screened the items for clarity and redundancy, reducing the scale to 156 items. The items were then administered at Time 1 to 456 student participants at a large university. To establish evidence of construct validity and test-retest reliability, respondents were contacted to participate again one month later. At Time 2, participants responded to the initial item pool and other related measures, including the relevance of calling in one’s life, intrinsic and extrinsic work motivation, career decision self-efficacy, and life satisfaction.
The six dimensions of CVQ were verified using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), and evidence was provided for the reliability and validity of scale scores. Nine factors were indicated to be present, explaining 60.42% of the variance (Dik et al., 2012). These factors included five of the six proposed dimensions from Dik and Duffy’s (2009) definition as well as four factors deemed as outcomes of the content area (spirituality, financial concerns, family legacy, and materialist views). The final four irrelevant factors were deleted, leaving 91 items remaining. In order to increase the usability of the scale as well as produce equal number of items for each dimension, the scale was shortened. Items with factor loadings that were less than .60 were eliminated. The researchers then assessed the items for redundancy and the deletion of items stopped when Cronbach Alphas decreased below .85 for a scale, this process reduced the scale down to 24 items. Final revisions to the scale were made by adding reverse scored items, increasing the measure to 32 items. A final CFA was conducted to eliminate items contributing to poor model fit, standardized factor loadings less than .60, and summed modification indices greater than 25.00, reducing the scale down to 24 items. After the final analyses, the researchers had established empirical support for the 6 factor CVQ to assess the multidimensional construct of calling.

During the development of the CVQ, the researchers simultaneously provided a psychometric evaluation of the Brief Calling Scale (BCS; Dik et al., 2012). The BCS consisted of four items, two aimed to assess the presence of a calling, and two items to assess the search for a calling. The BCS reverted back to the commonly used unidimensional assessment of calling, collapsing the three components into a total score.
for presence and a search. The BCS defined calling as “a person’s belief that she or he is called upon (by the needs of society, one’s own inner potential, by God, by a Higher Power, etc.) to do a particular kind of work” (Dik et al., 2012, p. 253). The researchers developed the BCS in order to accommodate other scholars who are interested in examining calling but not interested in examining the underlying dimensions.

Similar to the CVQ, Hagmaier and Abele (2012) developed a multidimensional calling scale. The Multidimensional Calling Measure (MCM) also incorporated three similar dimensions of calling. The MCM differed from Dik et al.’s (2012) measure through assessment of employed adults (rather than university students). The researchers first interviewed German professionals to gain insight into their perceptions of 'calling' by means of the laddering interview technique, which produced five categories about the experience of a calling; (1) Identification With One's Work (referring to performing work to maximize one’s own potential), (2) Sense and Meaning (representing the personal significance of work and work as a source providing purpose and meaning to one’s life), (3) Person-Environmental-Fit (referring to the fit between individual abilities, talents and qualifications and the requirements of the job) (4) Value-driven Behavior (referring to moral and ethical values that impact an employee's work-related behavior), and (5) Transcendent Guiding Force (referring to a call received by a higher force or an internal voice that tells the person what to do and that gives him/her security and certainty about what to do). The measure was then reduced down to three dimensions after confirmatory factor analysis. 'Identification' and 'P-E-Fit' as well as 'Sense and Meaning' and 'Value-driven Behavior' collapsed into one dimension each, producing the final three dimensions
of Identification & Person-Environment-Fit (IP), Transcendent Guiding Force (TGF), and Sense and Meaning & Value-Driven-Behavior (SMVB). The measure was validated across English and German samples during its development.

Another measure assessing calling as a multidimensional construct was the Career Calling Scale by Praskova, Creed, and Hood (2015). The scale was created in order to target the goal-directed nature of career development in emerging adults. The developers argued that the literature required a developmental aspect of measuring calling for young adults who “have complex exploratory behaviors and a willingness to experiment and engage in activities that have potential to develop into a calling” (Praskova et al., 2015, p. 94). The three-dimensional scale included other-oriented meaning (referring to a sense of satisfaction through helping others), personal meaning (referring to career choice as intrinsically rewarding), and active engagement elements (referring to pursuing a drive for fulfillment and enjoyment of work). The scale was developed through two studies.

Study 1 consisted of the development of the new multidimensional scale of career calling for emerging adults and tested its factor structure using item and exploratory analysis. The researchers conducted extensive literature reviews and focus groups to create the initial pool of 62 items. The initial pool consisted of both positively and negatively worded items. After a group of six experts from career development and test construction areas reviewed the items for phrasing, readability, and response format, the measure was reduced to 52 items. The researchers removed 18 additional items that were redundant, ending with 32 items.
The researchers used principle axis analysis to determine the factorial structure of the measure. The Eigenvalues suggested a five-factor model, however the scree plot, Velicer’s minimum average partial test, and parallel analysis indicated a three-factor model. Praskova et al. (2015) accepted the three-factor solution and removed 4 items that loaded strongly on two weaker factors. Additional items were removed through examination of factor loadings (less than .40), or high cross loadings, reducing the scale to 15 items. In Study 2, the three-dimensional structure of the scale was supported through a confirmatory factor analysis along with analyses of criterion-related, convergent, and discriminant validity with related constructs, such as existing measures of career calling and goal setting. Moderate, positive correlations were found between the Career Calling Scale and presence of calling (indicating similar but unique scales) and weak, negative correlations with search for calling (indicating those higher on career calling are not searching for a calling).

Following prior scholars, Zhang and colleagues (2015) created a new multidimensional calling scale intended to increase generalizability to an international sample. The Chinese Calling Scale (CCS) was based off prior research on how the Chinese understand having a calling (Zhang, Dik, Wei, & Zhang, 2015). Previous findings suggested that the Chinese measure calling differently than prior authors, as the items from prior authors typically represent individualistic ideologies of work that contrasts with the Chinese collectivistic culture. Four dimensions were proposed: (1) guiding force (referring to the big-picture mission that one must discern, accept, and endeavor to fulfil), (2) meaning and purpose (referring to the association between one’s
career and one’s life purpose, value, meaning, and interest), (3) altruism (referring to its benefits to others, having a generally positive impact and serving the nation), and (4) active tendency (referring to an active engagement in pursuing one’s career path). An initial pool of 29 items (7 items for the first three dimensions, 8 items for active tendency) was subjected to content review for wording, clarity, and content validity. Items were then assessed through exploratory and confirmatory factor analysis to reduce the item pool to 11 items.

Factor analytic results supported a three-dimensional scale composed of guiding force, meaning and purpose and altruistic contribution subscales. The CCS, like many of the previous scales, was developed in order to be generalizable to all occupations. Within two studies, the researchers established convergent and criterion validity of the CCS in a large Chinese sample. The CCS was found to be strongly related to an existing calling measure, the BCS, and moderately related to life meaning and life satisfaction, replicating prior findings (Dik et al., 2012; Duffy, Bott, Allan, Torrey, & Dik, 2012).

The most recent development in the calling assessment literature is the Integrated Multidimensional Calling Scale (IMCS; Dalla Rosa & Vianello, 2017). Dalla Rosa and Vianello (2017) merged several working definitions of calling to propose an integrated and exhaustive measure of the dimensions of calling. These authors proposed a model of calling based on seven themes found in the literature: identification with the calling domain, pervasiveness of thoughts regarding the calling domain, purposefulness, transcendent summons, prosociality, sacrifice, and passion. Items were generated based on these seven themes and included adapted versions of existing items from the
Integrated Calling Scale (ICS; Dobrow & Tosti-Kharas, 2011) and Calling and Vocation Questionnaire (CVQ; Dik et al., 2012). Items were translated to Italian and back-translated by three independent experts in order to ensure cross understanding of the language used in each item. 4,305 students participated in the first data collection point in order to test the factorial structure of the measure.

The principal axis EFA identified seven problematic items with high cross loadings. As a result of the cross loadings, the researchers modified the wording of the items to make them clearer and uniform with other items in the factor. Tests of reliability, exploratory (EFA) and confirmatory factor analysis (CFA) were conducted at Time 2 (N = 1700). The initial sample of participants were randomly split into two data sets, one was used for the EFA, and the other was used for the CFA. The eigenvalues suggested a 5-factor solution, whereas the parallel analysis suggested a 6-factor solution and the scree plot suggested 7 factors. The measure was tested with 4 to 7 factors, with the 7-factor model explaining the most variance (69.15%). The seven proposed factors were passion, purpose, sacrifice, pervasiveness, prosociality, transcendent summons, and identity. The CFA supported these findings, having the best model fit. Three waves of data were collected over 3 years (N = 434), measurement invariance was assessed and model fit was acceptable. Items loaded on the same first order and second order factors across observations.

In conclusion, the many conceptualizations of occupational calling have sparked the development of various measures to assess calling. Just as the definitions of calling have included a wide variety of components such as a purpose or direction toward
bettering oneself or society, a higher power guiding an individual to pursue a career, and/or a passion or drive within one’s being, the multitude of measures of calling seek to investigate each perspective. While all the measures contain relevant aspects that encompass the calling dimension, the present study utilizes Dik and Duffy’s (2009) Calling and Vocational Questionnaire, which uses a multidimensional approach of three subscales in order to account for the different experiences individuals may have living out their calling.

**Calling’s Association with Positive Outcomes**

In this section, the effects of calling orientation on the individual, work group, and organization are examined. In contrast to job or career orientations, those with a calling differ in the behavioral, attitudinal, and emotional experiences that result from pursuing one’s calling. Despite differences in conceptualizations made by many researchers, the results are largely consistent. Calling is associated with many positive outcomes for individuals and the organizations they work for.

Individuals higher in calling tend to be happy, engaged, and committed (Duffy et al., 2014; Duffy & Sedlacek, 2007; Steger, Pickering, Shin, & Dik, 2010), and also report higher meaning in life (Duffy et al., 2012; Duffy & Dik, 2013). Prior research has also found links between calling and higher career and life satisfaction (Dobrow, 2006; Duffy et al., 2012; Duffy & Sedlacek, 2007; Peterson, Park, Hall, & Seligman, 2009; Torrey & Duffy, 2012; Wrzesniewski et al., 1997; Xie, Xia, Xin, & Zhou, 2016). Individuals with a calling also have more positive job attitudes (Zhang, et al., 2015), greater self-reflection (Hirschi, 2011), and fewer mental health symptoms (Treadgold, 1999).
Researchers have also linked calling to the reduced likelihood of suffering from stress, depression, and conflict between work and nonwork domains (Oates, Hall, & Anderson, 2005; Treadgold, 1999). Researchers have found negative relationships between calling and stress and depression, such that individuals with high levels of calling were less stressed and were less likely to have depressive symptoms (Treadgold, 1999). Calling was also positively correlated with clarity of self-concept, where an individual’s beliefs about themselves is clearly and confidently defined, internally consistent and stable (Treadgold, 1999). Furthermore, calling has been correlated positively with problem-focused coping and negatively with avoidance and emotion-focused coping (Treadgold, 1999).

Calling has also been related to positive outcomes for organizations. Calling has been shown to be positively related to an employee’s career adaptability (Hall & Chandler, 2005), work engagement (Hirschi, 2011; Rothmann & Hamukang’andu, 2013), and career satisfaction (Xie et al., 2016). Adaptability refers to an individual’s performance under changing conditions, as employees who are adaptable have the ability and willingness to modify their behaviors in order to continue effective performance (Cullen, Edwards, Casper, & Gue, 2014).

Stronger perceptions of calling have also been linked to higher levels of affective commitment (Cardador, Dane, & Pratt, 2011), decreased absenteeism (Wrzesniewski et al., 1997), and lower turnover intentions (Dik et al., 2012). Significant positive correlations have been found between calling and employee job involvement (Dobrow & Tosti-Kharas, 2011; Hirschi, 2012; Horvath, 2015; Seco & Lopes, 2013), career
development; career decision making and career clarity (Duffy & Sedlacek, 2007; Hirschi, 2011), and job expectations, job efficiency and job motivation (Dik et al., 2012; Dik, Sargent, & Steger, 2008).

Rothmann and colleagues (2013) examined the relationship between calling and engagement through work-role fit and psychological meaningfulness. The researchers found a strong positive relationship between calling and work engagement. However, their prediction of work-role fit and psychological meaningfulness explaining the relationship between calling and engagement was not supported. The results suggest that calling explains additional variance over and beyond work-role fit and meaningfulness.

Additionally, researchers have linked calling to job performance. Hall and Chandler (2005) proposed the Calling Model of Psychological Success, where a strong sense of calling was linked to self-confidence and increased effort, which led to better performance. Performance was defined through objective and subjective success. Objective success referred to income, rewards and recognition (Hall & Chandler, 2005). Subjective success, or psychological success, referred to the result of setting and attaining challenging, personally meaningful goals (Hall & Chandler, 2005). Goals are more likely to be attained when an individual understands the purpose for the goal. Individuals with a calling have increased goal focus because their calling is perceived as their purpose, therefore they will exert the effort needed to succeed in their calling. By achieving goals, the individual experiences increased objective success, leading to increased subjective success of competence.
The theoretical model stated that calling increases performance through goal setting and increased effort on the job. Hall and Chandler (2005) described the model as an ongoing, positive cycle in which calling increases self-confidence, goal setting, and effort through reflection of success. Reflection of success then provides feedback for individuals, allowing individuals to modify their behavior to increase performance. Individuals high on calling were proposed to not only have increased willingness to work harder, but also a higher tolerance for setbacks and risks, allowing them to achieve better performance (Chandler & Hall, 2005).

In a similar study, calling was associated with more faith in management and better work team functioning (Wrzesniewski, 2003). In order to examine the effects of work orientation on work group functioning, Wrzesniewski (2003) found that in groups with more employees who identified as having a calling, groups reported stronger overall identification with the team, less conflict, more faith and trust in management, more commitment to the team itself, and healthier group processes (i.e., more communication). Additionally, individuals reported more satisfaction with their coworkers and the work itself. Having more employees with callings yielded benefits for all members of the group.

Some researchers have argued that calling is related to work itself and not the organization of employment (Hall & Chandler, 2005). However, in their study of healthcare workers, Cardador et al. (2011) found evidence for the association between calling and organizational identification and turnover intentions. The researchers argued that individuals with a calling identify with their organization because it is “instrumental
to the fulfillment of their calling” (Cardador et al., 2011, p. 374). By increasing the perception that the organization is necessary to complete one’s goals, organizational attachment may be enhanced.

**Dysfunctional Outcomes Resulting from Calling**

Although research has shown an increase in positive organizational outcomes as a result of an employee’s calling, these behaviors may come at the cost of the employee’s health. High levels of calling have been associated with greater work satisfaction, leading employees to spend more discretionary, unpaid hours working (Wrzesniewski et al., 1997). While this may be beneficial for the organization, an employee’s mental health may be at risk. Employees who work regardless of the economic reasons, and primarily for a passion towards their work, may feel as though their work is more important than the hardships they face doing their jobs, and thus sacrifice their own well-being (Bunderson & Thompson, 2009).

Despite the vast research on the positive outcomes of calling, less focus has been on the potential harmful consequences that may also occur. In other words, under what conditions do high levels of calling stop being beneficial and begin to harm employees? Duffy and colleagues (2015) theorized two sources of concern. First, individuals who are able to live their calling can experience harmful outcomes that either minimize the degree to which living out a calling is fulfilling or add additional burdens in order to live their calling (Duffy, Douglass, et al., 2015). Although living a calling may lead to employees doing work that helps people and is meaningful in nature, it may also draw individuals to work in highly emotional and demanding environments.
Hirschi (2011) proposed that being excessively engaged in one’s work can be “all-consuming and never ending” (p. 436). Living a calling can provide feelings of fulfillment and satisfaction for an employee, leading the individual to want to strive for higher performance goals. However, increased devotion to one’s work can become a burden, as individuals feel so absorbed in their job, wanting to achieve more, that they may feel as though they have never done enough. The desire to constantly achieve higher levels of performance can result in dissatisfaction with one’s job, as the employee may feel that goals are never reached. Individuals with a calling are thought of as being ‘hungry,’ never fully content with what is currently done but always searching for more. While an organization may benefit from this strive to achieve, it can come at the cost of the employee’s mental health. Constantly pushing for more and setting high expectations for one’s work and self could result in increased job dissatisfaction, as performance standards may never be met.

In his typology of calling, Hirschi (2011) proposed another concern regarding high levels of calling. He stated that the necessity of excellence or effectiveness in engaging in one’s calling can be problematic for an individual’s mental health. The conceptualization of calling implies a dedication and duty to pursue a particular line of work and the sense of mission can result in unrealistic expectations and pressure to be effective and successful (Hirschi, 2011). These subjective evaluations may lead individuals with a calling to set unrealistic goals. Hirschi (2011) states that even though calling is conceptually related to having increased engagement, the inability to achieve one’s goals can result in feelings of incompetence. Feelings of incompetence (i.e. not
meeting expectations for oneself and others) may prompt feelings of doubt, guilt, and fear that the employee’s work is not having a positive impact. Having a positive impact is an important factor of having a calling, thus negative self-evaluations regarding one’s contribution may increase mental health symptoms.

Cardador and Caza (2012) presented a theoretical framework of the negative impact calling may have on relationships with others using relational and identity perspective theory. The researchers proposed that calling can strengthen interpersonal relationships both within and outside of work through inspiring and relating with others. Having a calling can show passion and dedication, creating a positive self-image towards others. On the other hand, having such a specific identity to work may cause an employee to distance oneself in the process of pursuing a calling. The researchers proposed that individuals with a calling may only think, talk, and act on things relating to their calling, making it hard to relate to others with different interests, or disengagement in activities not related to their calling. The researchers proposed that work-identity flexibility theory explains this relationship.

Work-identity has been defined as the various roles that a person identifies with at work and the flexibility of those identities, demonstrating plasticity in response to life events (Cardador & Caza, 2012). In other words, the greater the identity flexibility, the greater amount of resilience the employee has to adapt or bounce back from obstacles, as only a small portion of the self is affected by an event. The researchers stated that individuals with high work-identity flexibility, who are pursuing a calling, experience
enriching relationships through bonding with others with a similar passion or inspiring others because of their passion.

However, individuals who have low work-identity flexibility experience depleting relationships, as they do not relate to others because of their strong sense of passion. Cardador and Caza (2012) explained that because calling refers to an individual’s ideal relationship to work, when faced with obstacles, individuals will make necessary adjustments to overcome these challenges, disregarding the consequences. This can be difficult on one’s mental health and social life, but it is the flexibility of an individual’s work identity that allows an individual to respond appropriately with their relationships with others. Thus, flexibility of one’s work identity determines whether pursuing the calling is beneficial or detrimental to one’s social wellbeing.

Qualitative Research Addressing Negative Consequences of Calling

Hartnett and Kline (2005) examined how a calling can be detrimental to one’s wellbeing by studying teachers. Teachers report high levels of calling, and yet have elevated rates of turnover during the beginning years of their career (Hartnett & Kline, 2005; Hewitt, 1993, Serow, 1994). In order to investigate the causes of this phenomenon, Hartnett and Kline (2005) reviewed existing studies that examined teacher’s self-reports of the source and extent of their exhaustion. The accumulation of studies points to the responsibility teachers feel for their students, taking on the shame and guilt for students who do not succeed. These authors state that teachers believed they were not being ideal teachers if they were not doing everything they could to connect with their students. It was the paradox that directly relating and connecting to their students that provided the
teachers with fulfillment, and yet drained their mental resources, taking up time and energy as they strived to reach self-perceived ideal performance levels. Hartnett and Kline (2005) described this phenomena as the ‘fall from the call.’

Similarly, nurses help patients recover from injuries, improve overall health, and save lives. This profession is extremely rewarding, as individuals feel they are helping others, and yet nurses have the highest rates of burnout across occupations (Sherman, 2004). These employees are positively impacting others’ lives but are also exposed to suffering and death, which may cause strain on individuals over time. Vinje and Mittelmark (2007) used qualitative data from extensive interviews with community health nurses to highlight reasons why individuals living a calling may be prone to burnout. The majority of the nurses expressed their calling in terms of having special talents or skills that are required to help those in need, providing the nurses with a sense of mission (Vinje & Mittelmark, 2007). The narratives suggested that calling came with a strong sense of responsibility and duty (Vinje & Mittelmark, 2007). The increased sense of responsibility led nurses to have increased expectations and standards for themselves and others, feeling responsible for not only their own work but their coworkers as well. The nurses reported that they did not trust others to put forth the same quality of effort and thus the nurses took on more duties despite symptoms of fatigue (Vinje & Mittelmark, 2007).

The tendency to have high standards of performance led nurses to evaluate others as underperformers. Perceiving others as less-qualified led nurses to take on the additional tasks of others, increasing vulnerability to overload, fatigue, and burnout.
(Vinje & Mittelmark, 2007). One nurse said, “I have learnt that doing a job too well can actually be negative” (Vinje & Mittelmark, 2007, p. 110). The narratives supported role theory, that when individuals have a high investment in a particular job, there is an increased likelihood of high standards for that position and those associated with it (Ashforth, 2001). Exceedingly high standards make it difficult to trust colleagues. Employees distrusting their coworker’s abilities results in nondelegation of tasks and hinders optimal team functioning (Porter, 1996; Spence & Robbins, 1992).

These high standards for oneself and others can cause stress, undermine worker cohesion (Johnstone & Johnston, 2005), create hostile work relationships, and result in ineffective work teams (Scott, Moore, & Miceli, 1997). The high investment and devotion to complete quality work also comes at a price for other stakeholders (i.e. coworkers and patients) associated with the job (Scott et al., 1997). However, the nurses were able to overcome symptoms of burnout and poor team functioning with the development of skills for introspection and reflection.

Vinje and Mittelmark’s (2007) study supported Hallsten’s (1993) model of burnout. Hallsten’s (1993) model stated that too much absorption with work can lead to harmful consequences. When individuals are absorbed in work, they exert increased mental and physical effort towards a task, which leads to frustrated strivings (the feeling of inability to attain one’s goals) resulting in burnout. The stories obtained from nurses demonstrate the passion towards putting forth quality work, however, too much of this effort can lead to detrimental outcomes.

Quantitative Research Addressing Negative Consequences of Calling
In a study of 527 teacher-certification candidates, Serow (1994) analyzed interview and survey data to assess the personal identification and commitment an individual felt towards their work. Nearly half of the sample perceived they were called to teach. Based on prior research and a pilot study, the researchers developed a survey to assess career decision-making factors (i.e., “my teachers inspired me”), aspects of the teaching role (i.e., “teaching demands too much self-sacrifice”), and three values that were most important in their lives (friends, religion, helping others, etc.; Serow, 1994). A sample of the survey respondents was recruited to answer additional interview questions to provide insight into specific factors that contributed to how employees found meaning in the teaching profession. The individuals who reported being called to teach, on average, maintained a higher-grade point average, providing an initial source of evidence for the high investment and engagement these individuals have compared to those who did not report a calling.

The researchers provided additional evidence to demonstrate the increased enthusiasm and commitment to the occupation through high responses of determination for pursuing a teaching career verses viewing it as a fallback decision. Calling was associated with being more aware and mindful of the potential impact that the job had on others. The researchers suggested that it is this awareness that influences the individuals to be less concerned about the sacrifices that the career might entail, and more willing to accept the extra duties and roles (Serow, 1994). These individuals were significantly more likely to agree to statements such as, “teaching is a job that demands too much self-sacrifice.” Serow (1994) was one of the first to make a clear link between calling and the
likelihood of sacrificing personal time for work. Devoting time, effort, and energy to pursuing one’s calling may involve personal sacrifice that diminishes personal wellbeing over time and increases mental health symptoms.

Bunderson and Thompson (2009) also used a mixed method approach with both qualitative and quantitative analyses to examine the negative outcomes of calling. Similar results were found in a very different sample of participants. Experienced zookeepers and aquarium employees from 157 facilities in the U.S. and Canada were surveyed regarding their perceptions of calling and related outcomes. Bunderson and Thompson (2009) sought to evaluate the rationale of why these employees work in their industry, as these positions tend to have minimal opportunities for advancement, receive small pay, require additional volunteer hours, and can be considered “dirty work” (Ashforth & Kreiner, 1999). Through extensive research on the calling orientation alongside the themes presented within the interviews with employees, the researchers used the qualitative evidence to support the development of their own measure of the Neoclassical Calling Scale.

The initial interviews provided a foundation for the researchers to understand the double-edged sword of calling, however the analysis of the survey results further bolstered the evidence presented. Overall, the employees in the sample reported high rates of calling and increased levels of occupational identification, transcendent meaning, and occupational importance. Calling was also associated with increased kinship among zookeepers. The kinship provided increased perceptions of connection between workers and promoted zookeepers to embrace beliefs and ideologies of the community as their
own (Bunderson & Thompson, 2009). The authors predicted that occupational identification would mediate the relationship between calling and perceived societal importance. The hypothesis was partially supported; occupational identification did not fully explain the relationship, suggesting that calling uniquely explained perceived societal importance of work more than just identification with one’s occupation.

While the results of the experiences of employees showed many beneficial outcomes that had been previously found within the literature, it seemed they came at a cost. The interviews also suggested an unbending duty, personal sacrifice, and heightening vigilance came along with a calling. Bunderson and Thompson (2009) deemed this paradox as the ‘double edged sword of calling.’ Along with a strong sense of occupational commitment, zookeepers reported that a calling “implies a moral duty to leverage one’s unique gifts and passion to help humankind” (Bunderson & Thompson, 2009, p. 41). Moral duty was defined as, “willingness to make whatever personal sacrifices are required to perform their work” (Bunderson & Thompson, 2009, p. 44). The employees felt a strong responsibility to take care of the animals, feeling as though if they did not, nobody would.

The interviews suggested that a sense of moral duty implied zookeepers should be willing to make whatever personal sacrifices are required to perform their work. Sacrifices included not making enough money to live off, experiencing physically demanding, dangerous and uncomfortable work, and spillover into nonwork time and relationships. The authors predicted that because zookeepers report that their work is a moral duty, moral duty should explain the relationship between calling and willingness to
sacrifice and perceived organizational duty. The relationship between calling and perceived organizational duty was fully explained by moral duty. However, calling did remain a significant predictor of willingness to sacrifice, mediated by moral duty, suggesting partial mediation.

The mental health of employees is not only a concern for an individual, but for overall organizational functioning too. With a willingness to sacrifice one’s pay and wellbeing, these employees were vulnerable to exploitation by management. One account of a zookeeper reported that management knew of his commitment to the animals, and knew what he was willing to do for them and so there was no incentive to pay him more. The risk of exploitation was identified in multiple interview accounts, where workers recognized their dedication to their calling, stating that there was nothing management could do that would make them leave. Furthermore, calling increased the expectations and standards towards management. Individuals with a high level of calling had an increased sense of moral duty, which increased the zookeeper’s perception that the facility was morally and socially responsible to the animals. Specifically, the employees reported evaluating the organization’s decisions regarding animal welfare against their own perceptions of the right decision. In other words, the zookeepers made judgements of the quality of care that the facility was providing in comparison to their own high standards.

Evaluating the organization’s decisions against one’s own standard of quality of care builds upon previous literature examining the association of calling and increased expectations for oneself and others (Hartnett & Kline, 2005; Vinje & Mittelmark, 2007).
Interestingly, the perceived mistreatment of the animals made the employees more inclined to stay rather than leave the organization. One participant said, “if there was any gross misconduct of an animal…it would make me try and work harder to try and solve the problem” (Bunderson & Thompson, 2009, p. 44). The perception that the employees could not count on the organization to take care of the animals increased the strength of moral duty the employees felt towards their careers. The findings demonstrated that calling was associated with higher levels of workaholism, burnout, and organizational exploitation, as those employees were willing to do whatever it took to do their job, despite the perceptions of mistreatment.

Dobrow and Tosti-Kharas (2012) were the first to examine the negative effects of calling over time. The authors examined two summer high school music programs in a four-wave, longitudinal study over seven years. Amateur musicians ($N = 450$) responded to a survey at the beginning of the program, and then at three-time points after the program had ended: six weeks, three and a half years, and seven years later. Over the seven-year period, the researchers followed participants through several educational and career stages, including high school, college, graduate school, and employment, where applicable. Participants responded to the researchers’ 12-item Calling Scale and a receptivity to negative career advice scale during each assessment period. Receptivity to negative career advice measured the extent to which respondents reported they would follow or ignore their teachers’ career advice with the item, “If my private music teacher discouraged me from becoming a professional musician, I would follow his/her advice and do something else.”
The results demonstrated that increased levels of calling were associated with ignoring potentially useful career advice from their music teachers. In contrast, low levels of calling were associated with following the teacher’s advice. These results were repeated with business students and endured over time and across career stages. The results indicated a negative link between calling and receptivity of career advice from trusted mentors that threatened their sense of calling, pointing to the risk of career foreclosure or “tunnel vision” that may accompany a calling (Dobrow & Tosti-Kharas, 2012). This evidence also points to the potential lack of career adaptability in work transitions or roles.

Keller, Spurk, Baumeler, and Hirschi (2016) examined the relationships between working in a competitive work climate with individuals with a calling and workaholism with a German online panel service. The researchers predicted that a competitive work environment would affect individuals with a calling because the environment would be perceived as a threat to their ability to live out their calling. A competitive work climate implies that desired jobs, positions, and tasks are more difficult to obtain or maintain, resulting in uncertainty. Keller and colleagues (2016) hypothesized that employees with a calling may start to feel the need to work longer and harder to be able to obtain or maintain the jobs, positions, and tasks that allow them to be able to live their calling. The authors’ hypothesis was supported, in that employees who perceived a work environment characterized by frequent performance comparisons also reported higher levels of workaholism. Furthermore, this relationship was stronger among those who reported having a calling, suggesting that people who reported a calling may be sensitive to
workplace norms for higher levels of performance (Keller, Spurk, Baumeler, & Hirschi, 2016). Therefore, competitive climates may foster feelings of guilt and discomfort when not working and lead to working harder among employees with a calling. The present study extends this idea by proposing that workaholism may explain the relationship between calling and poor mental health.

In a recent study examining the complex effects of having a calling, Clinton and colleagues (2017) tested an inconsistent multiple-mediation model accounting for the intensity of one’s calling (i.e. high level of calling) that may simultaneously boost work behavior but also diminish the daily recovery processes that are important to sustaining that energy. The researchers studied 193 church ministers in a daily diary study. Building on prior studies, Clinton et al. (2017) proposed that calling is related to increased energy to pursue work, which increases vigor at the start of the work day. However, their main contribution to the literature was their hypothesis that a secondary path between calling and work hours may also exist in which longer work hours inhibits psychological detachment at the end of a work day. This detachment then affects sleep quality and next day morning vigor.

Clinton et al. (2017) stated that psychological detachment and sleep quality are important in the recovery from work experiences. These two factors protect employees from work-related strain through resource attainment for next day functioning. They further suggested that calling leads employees to work longer hours, which limits their ability to detach from work and subsequently recover from work-related strain. In turn,
employees are faced with less recovered resources, affecting work-related vigor on subsequent days.

Using four items from Dobrow and Tosti-Kharas’ (2011) Calling Scale, Clinton et al. (2017) adapted the items to reflect the sample (e.g. “Ministry is always in my mind in some way”). Participants were sent daily diary surveys via email for one week, and were instructed to complete them once they had completed their work for the day. Results supported all hypotheses. Interestingly, the direct effects between calling and morning vigor were non-significant until the mediators were included, in which case there was a positive association between calling and vigor observed. These results provided evidence for inconsistent mediation, where the increased effect size from a suppression effect demonstrated the positive as well as negative pathways from calling to vigor. The mediators acted as suppressor variables, and only once their negative indirect effect was accounted for was a positive relationship between calling intensity and morning vigor observed.

Clinton et al. (2017) also found evidence for the relationship between calling intensity and longer work hours in that individuals with higher calling intensity reported working longer hours than those with a low calling intensity. Employees with high calling intensity were also more likely to report lower levels of psychological detachment. Significant indirect effects were identified from calling intensity to evening psychological detachment via work-hours. Additional outcomes demonstrated the relationship between longer work hours and poor sleep quality through reduced psychological detachment uniquely affected next day morning vigor.
Clinton et al.’s (2017) study extends the literature on the implications of having a calling by showing employees who reported a greater calling intensity, worked longer hours, which was related to negative effects on mental health through a failure to detach from work. Clinton et al. (2017) provided evidence for the ‘double edged sword’ of calling via a dual path model following the work of Bunderson and Thompson (2009). In other words, these researchers presented how calling can have concurrent positive and negative influences on the same outcome, but through differing pathways.

In summary, researchers have found that while individuals may experience many positive outcomes resulting from having a calling, the increased devotion to work can have reversed effects. The recent literature on the dark side of calling has demonstrated that individuals who are willing to work longer, later, and harder than their coworkers, make additional sacrifices that can outweigh the benefits of a calling. Bunderson and Thompson (2009) demonstrated the sacrifices of pay and opportunity for organizational exploitation, Keller et al. (2016) demonstrated calling’s association with increased work hours, sacrificing time away from work, and Clinton and colleagues (2017) demonstrated the inability for these individuals to detach from work, sacrificing recovery time and sleep. The current study builds upon the findings of previous scholars and demonstrates that while in the short term, the habits such as increased work hours may feel enjoyable as the individual feels fulfilled by work, working longer and harder consistently can result in workaholic tendencies, increasing the chances of negative outcomes to occur for individuals high on calling.
Calling and Workaholism

Prior research has begun to examine the workaholic tendencies of those with a calling; however, little attention has been given to addressing the consequences that follow. Oates (1971) described a workaholic as someone who has an “uncontrollable need to work incessantly” (p.1). The distinction between a workaholic and someone with a calling stems from the motive of why they work. Specially, an individual with a calling feels fulfillment and enjoys their work, which may lead them to work more, whereas a workaholic simply feels compelled to work, whether or not they enjoy it. Additionally, workaholism implies that the need to work “becomes so excessive that it creates noticeable disturbance or interference with [an individual’s] bodily health, personal happiness, and interpersonal relations” (p.4). Empirical research has found support for this definition and found that workaholism has been associated with poor mental and physical health, as well as poor social relationships and performance concerns (Ng, Sorensen, & Feldman, 2007). Individual investment in work can strain nonwork roles by depleting energy, resources, and time (Eckenrode & Gore, 1990). Dedicating an immense amount of mental and physical energy towards work can come at the expense of other obligations of roles or relationships (Carlson, Witt, Zivnuska, Kacmar, & Grzywacz, 2008; Greenhaus & Beutell, 1985), reduce work life balance (Bakker, Demerouti, & Burke, 2009), and decrease one’s satisfaction with social relationships (Piotrowski & Vodanovich, 2006).

In summary, prior research has demonstrated that in some circumstances, calling may increase mental health symptoms for employees. The tendency for individuals with a
calling to make significant personal sacrifices for work is a growing concern within the field (Bunderson & Thompson, 2009; Keller et al., 2016; Serow, 1994). Prior studies have suggested that individuals have a sense of responsibility and increased obligation to their occupational duties, that when faced with demands, these employees may respond more to stressors than their coworkers. Employees with a calling may end up working longer and harder, thereby increasing strain. The current study examined whether the relationship between calling and workaholism is related to greater mental health symptoms and higher work-family conflict. In the next section, a discussion of how calling may interact with different types of stressors to influence engagement and mental health symptoms will be presented.
CHAPTER THREE
CHALLENGE VERSES HINDRANCE STRESSORS

Stress at Work

Research on unfavorable work conditions influencing psychological and physical strain for employees and organizations is abundant. Workplace stress has been linked to the six leading causes of death (heart disease, accidents, cancer, liver disease, lung ailments, suicide; Schneiderman, Ironson, & Siegel, 2005). Within the occupational stress literature, stressors have been linked to absenteeism from work, increased medical expenses, loss of productivity (Atkinson, 2004; Sauter, Murphy, Hurrell, & Levi, 1998; Schneiderman et al., 2005); cognitive impairment, depression, (Hammen, 2005; Schwabe, Wolf, & Oitzl, 2010) and aggression with family members (Bodenmann, Meuwly, Bradbury, Gmelch, & Ledermann, 2010).

Given these negative consequences, researchers have sought to identify a theoretical understanding of the stress process. Jex (1998) proposed the job-related stressor-strain frame which described stress as a process in which employees respond to threatening conditions. The conditions or demands that induce the stress process are referred to stressors, while the harmful outcomes of these stressors such as anxiety, depression and burnout, are referred to as strains (Jex, 1998; Lazarus & Folkman, 1984).

Theoretical Development of Challenge Hindrance Stressor Distinctions

Despite the origin of the stress literature seeking to understand ways to prevent the negative consequences of stress, research has also shown that stressors can also have desirable outcomes. Findings have demonstrated that not all stress is necessarily bad. Selye (1976,1982) originated the distinction between good stress, eustress, and bad stress,
distress. He defined eustress as obstacles that pose as a challenge and provide feelings of fulfillment or achievement when overcome (Seyle, 1982). In his original classification, Selye (1976, 1982) proposed that differences between eustress and distress arise from the type of demand, rather than the degree to which the demand is presented. Selye only briefly mentioned eustress as an explanation for why positive attitudes sometimes resulted from increased rates of stress.

Within their Transactional Theory of Stress, Lazarus et al. (1984, 1987) suggested that people appraise demands as either potentially threatening or potentially promising personal growth. Using a metatheoretical approach, the scholars proposed individuals evaluate demands by two types of appraisal. Within the primary appraisal, individuals assess whether their well-being is at stake. The authors suggested three evaluations may occur; harm already experienced, threat in which harm is anticipated, or challenge where there is potential for personal growth. The primary appraisal process influences how an individual reacts to demands with beneficial or problematic responses.

In this distinction, Lazarus et al. (1984, 1987) suggested that challenge and threat appraisals are co-mingled in that they can occur simultaneously. Lazarus et al. (1984, 1987) stated that challenge appraisals of demands trigger positive emotions and active problem-solving coping. Even though challenge appraisals typically produce positive outcomes, they still require emotional resources that drain energy. In contrast, threat appraisals trigger negative emotions and passive emotion style coping. While these researchers began to provide evidence for different ways individuals appraise demands,
their purpose was to examine how individuals’ cope rather than address how each
distinction affected motivation in workplace settings.

Lazarus (1994) suggested that psychological stress should be studied at the
individual level. Individuals assess stressors differently and thus the same stressor could
be viewed as a challenge to one individual and a hindrance to another. Lazarus (1994)
argued, “to describe and understand stress in the workplace requires that…individual
patterns be studied to generate knowledge about the kinds of persons who are more or
less vulnerable to divergent sources of stress” (p. 9). However, other occupational stress
researchers have argued that although stress occurs at the individual level, it is important
to examine the working conditions which adversely affect most workers.

In their review of Lazarus’s (1984) theory, Brief and George (1995) argued that
work demands have a fairly consistent effect and meaning for individuals who experience
them. Consequently, individuals tend to assess and respond to work stressors in fairly
consistent ways. In the present study, this perspective is recognized in identifying work
stressors that trigger responses that most individuals experience, considering categories
of stressors rather than individual appraisals of each stressor.

Furthering the work of Lazarus et al., (1984, 1987), Cavanaugh and her
colleagues (2000) studied the effect of stressors with 1,886 U.S. managers. The
researchers examined two dimensions of stressors; ‘challenge-related self-reported stress’
and ‘hindrance-related self-reported stress.’ Cavanaugh et al. (2000) suggested that stress
is differentially related to work outcomes depending on the stressors that are being
evaluated. In contrast to previous methodologies, where participants would report their
appraisal of the stressor as either a challenge or hindrance, Cavanaugh et al. (2000) developed a measure of challenge and hindrance stressors without relying on participant evaluation of the stressor. Specifically, the researchers determined which items were challenge stressors and which items were hindrance stressors and then tested the level of work stress associated with those stressors.

To test their theory, Cavanaugh et al. (2000) examined the relationships between challenge vs. hindrance-related self-reported stressor items with job satisfaction, job search, and voluntary turnover measures. The researchers developed the challenge- and hindrance-related self-reported stressor scale based off existing measures of stressors. Items were evaluated by multiple raters, along with a confirmatory factor analysis to investigate the two-factor structure. The measure asked participants to respond to how much stress each of the work-related items caused them using a 1 (produces no stress) to 5 (produces a great deal of stress) rating scale. The final measure consisted of six challenge-related items (e.g., “The number of projects and or assignments I have”) and five hindrance-related (e.g., “The amount of red tape I need to go through to get my job done”) items.

The results of the study found two underlying factors of stressors; one factor involved high workload, time pressure, job scope, and high responsibility. This factor was referred to as challenge stressors because the demands were viewed by managers as obstacles to be overcome to learn and achieve. The second factor consisted of items referring to organizational policies, red tape, role ambiguity, and concerns about job security which was labeled hindrance stressors because the stressors were viewed as
unnecessarily thwarting personal growth and goal attainment. A regression analysis supported their hypotheses, showing that challenge-related stressors were positively associated with job satisfaction and negatively with job search. Inversely, hindrance-related stressors were negatively associated with job satisfaction and positively associated with job search.

Cavanaugh et al. (2000) also found evidence for challenge and hindrance stressors being related to retention criteria. Relationships between hindrance stressors, job control, and loyalty were significantly negative, while hindrance stressors and job search and intention to quit were significantly positive. Although significantly different from the hindrance stressor–work outcomes relationships, the correlations between challenge stressors and loyalty, job search, and intention to quit were not significant.

To test whether the findings were generalizable to more than just executives, Boswell et al., (2004) replicated these findings with lower level employees. The study hypothesized that challenge and hindrance-related stressors would have an opposite relationship with attachment-related variables, such as organizational loyalty, work withdrawal, job search activity, and intention to quit. The same challenge and hindrance-related stress items developed by Cavanaugh et al. (2000) were used. In addition to replicating prior results, Boswell and colleagues (2004) found that a measure assessing the amount of challenge a participant felt (‘felt job challenge’; e.g., “I feel somewhat over-challenged”) was a mediator explaining the link between challenge stressors and desirable outcomes.
The findings demonstrated that challenge stressors occur not only by facing a challenging demand but also through feeling a great deal of challenge in overcoming that demand as well. In other words, individuals gain a sense of accomplishment through overcoming an obstacle. In addition to these results, the researchers found the stressor dimensions had similar relations with strain. Challenge and hindrance-related stressors were related to anxiety and emotional exhaustion in the same direction and magnitude. The relationships between the stress dimensions and psychological strain were also significantly larger than those with felt challenge and job control. The results demonstrated support for the relationships between challenge-related stressors and desirable work outcomes, such as enhanced loyalty, less withdrawal behaviors, job search, and intent to quit. On the other hand, the relationships between hindrance-related stressors and undesirable work outcomes were also shown, such as less loyalty, increased job search and intent to quit.

Cavanaugh et al. (2000) and Boswell et al.’s (2004) analysis of employee stress demonstrated the distinguishable factors of challenge versus hindrance stressors. While the results provided clear evidence for the distinctions, the literature lacked a theoretical explanation for how the distinction occurred. LePine and colleagues (2005) provided the first theoretical explanation in their meta-analysis of 82 manuscripts obtained from 101 samples. The researchers proposed the two-dimensional work-stressor framework. The scholars aimed to extend the Transaction Theory of Stress (Lazarus & Folkman, 1984) by combining elements of Expectancy Theory (Vroom, 1964) to develop a theoretical explanation to account for the distinction and prediction of various outcomes. The
Transactional Theory of Stress (Lazarus & Folkman, 1984) proposes that individuals evaluate stressors, judge their ability to overcome them and based on those judgements cope in various ways. The authors suggested that within the primary appraisal, stressors are associated with a belief regarding the relationship between the expected degree of effort spent on the task having a certain probability of succeeding in meeting the demand.

Through the combination of the two theories, the researchers suggested that both challenge and hindrance stressors were related to motivation. However, the relationship between the variables differ in direction and magnitude. Specifically, the relationship between challenge stressors and motivation is stronger than the relationship between hindrance stressors and motivation, also providing implications for differences in job performance.

LePine et al., (2005) hypothesized that challenge stressors would be associated with high motivation because individuals believe that the effort expended on coping with demands is related to meeting those demands, thus resulting in valued outcomes. In contrast, hindrance stressors were hypothesized to have an opposing effect because individuals are less likely to believe that the effort expended on coping with the demand will result in success in meeting the demand. In other words, when individuals have no reason to believe that the effort will be adequate to meet the demand they will have less motivation to overcome it.

LePine and colleagues (2005) also predicted that challenge and hindrance stressors should be indirectly and differentially related to performance through motivation because motivation is a proximal antecedent of performance. The researchers
accounted for the underlying factors, emotional and cognitive effort, that are associated with the appraisal and coping process. These factors complicate the outcomes because fatigue and exhaustion detract from performance, reducing energy put forth on tasks (Cohen, 1980). Addressing this, additional hypotheses were presented.

LePine et al. (2005) predicted that neither challenge or hindrance stressors would be associated with increased performance. Hindrance stressors were predicted to negatively relate to performance based on the indirect effects of decreased motivation and increased strains. In other words, the relationship between hindrance stressors and performance would be a result of the lack of motivation and increase in strains resulting from experiencing a hindrance stressor. Although the researchers expected a positive relationship between challenge stressors and motivation, implying a potential for increased performance, this relationship would be weakened due to the positive indirect effects of motivation combined with the positive indirect effect of strains. In other words, the relationship between challenge stressors and performance would be countered due to the increase in motivation and an increase in strain.

LePine et al.’s (2005) study, the hypotheses were partially supported. Challenge and hindrance stressors were moderately related to each other. Stressors explained 6 percent of the variance in motivation in that challenge stressors were positively, and hindrance stressors were negatively, associated with motivation. Stressors explained 8 percent of variance in performance; challenge stressors had a positive relationship with performance whereas hindrance stressors had a negative relationship with performance. Motivation and strains (fatigue and exhaustion) explained 22 percent variance in
performance, with challenge and hindrance stressors adding an additional 3 percent explained variance. As predicted, positive indirect effects were found between challenge stressors and performance through motivation as well as a negative indirect effect of challenge stressors and performance through strains. The indirect effects of hindrance stressors on performance through motivation and strains were also both significant and negative.

Further developing the literature, Webster and colleagues (2011) assessed four demands that are typically classified as either challenge or hindrance stressors in order to provide additional evidence of the two-dimensional framework. Participants responded to measures of responsibility, workload, role conflict and role ambiguity, as well as providing the primary appraisal of those demands (whether they considered the demand as a challenge or a hindrance). Participants were presented with each demand twice, as one item inquired whether they viewed the demand as a challenge and another item asked their appraisal of that same item as a hindrance.

Webster et al. (2011) challenged prior classifications of stressors by hypothesizing that all four demands would be related to challenge appraisals and all four demands would be related to hindrance appraisals. Results showed that all four demands: role ambiguity, role conflict, workload and responsibility, were positively related to challenge appraisals. Hindrance appraisals were correlated with role ambiguity, role conflict, and workload but not with increased responsibility. This is concerning to the validity of prior studies as past research has classified role conflict and role ambiguity as strongly related to hindrance appraisals rather than challenge appraisals. Increased
workload and responsibility were more strongly associated with challenge appraisals rather than hindrance appraisals.

As hypothesized, role conflict had a significantly stronger relationship with hindrance appraisals while increased responsibility was more strongly related to challenge appraisals. Results revealed that two of the appraisals, role ambiguity and increased workload, were not related to one type of appraisal more than another. The lack of a relationship to the appraisals is concerning, as role ambiguity is typically assessed as a hindrance and workload is typically assessed as a challenge, suggesting content validity issues in measurement of these stressors. The results show that these two demands were not considered more like one appraisal over another. A final hypothesis was provided to demonstrate the mediation of the primary appraisal process (evaluating a demand as either a challenge or hindrance) on the relationship between work demands and outcomes. Within all four models including each demand, the partially mediated models were a better fit than the fully mediated models. Challenge and hindrance appraisals accounted for part of the relationship between demands and outcomes, providing evidence for the challenge and hindrance appraisal of stressors.

It is important to note that throughout the development of the challenge/hindrance literature, there is controversy regarding a potential three-dimensional framework. Traditionally, scholars have treated threat stressors as equivalent to hindrance stressors (LePine et al., 2005; Van den Broeck, De Cuyper, De Witte, & Vansteenkiste, 2010; Webster, Beehr, & Love, 2011). These scholars defined hindrance stressors as “job demands [that] are considered to be threatening obstacles that drain employees’ energy”
(Van den Broeck et al., 2010, p. 738); “threatening or hindering stressors, because they are appraised as having the potential to harm personal growth or gain, trigger negative emotions and a passive or emotional style of coping” (LePine et al., 2005, p. 765); or “stressors that people experience as having the ability to threaten personal goals” (Webster et al., 2011, p. 68).

In contrast, other scholars have debated the synonymous use of hindrance and threat distinctions and took a stance that these are in fact two different types of stressors (Searle & Tuckey, 2017; Tuckey, Searle, Boyd, Winefield, & Winefield, 2015). Searle and Tuckey (2017) define threat stressors as stressors that are perceived as risking personal harm and loss (e.g. expecting something bad to happen as a result of the stressor). For example, job insecurity or harassment pose a threat to personal well-being. On the other hand, hindrance stressors are stressors that are perceived to be an obstruction to the accomplishment of personally relevant goals (e.g. expecting to be delayed or demands that make goals more difficult to obtain). An example is organizational constraints that pose as a barrier to working efficiently. Within this perspective, the individual is not concerned about personal risk or opportunity but barriers to progress. Although it is important to acknowledge the debate in recent literature regarding the differences between hindrance and threat stressors, threat stressors are not assessed in the present study.

In summary, researchers have shown that stressors are differentially related to work outcomes depending on the stressors that are being evaluated. Challenge stressors are conceptualized as being perceived positively, as they are a source of personal
development such as having increased responsibility. It is theorized that if an employee can handle the high responsibility, the individual experiences a sense of achievement resulting from overcoming the demand. In contrast, hindrance stressors, such as red-tape, pose as a barrier for an employee to succeed in goal attainment. Hindrance stressors require a solution to overcome out of one’s personal control which is theorized to result in the negative outcomes associated with demands. The development of the challenge/hindrance stressor framework has provided a foundation for research to examine the positive and negative outcomes resulting from various stressors.

**Stressor Outcomes**

The theoretical development of work stressors provided a foundation for understanding the diverse outcomes that can occur depending on the type of stressor present. Challenge stressors can be perceived positively, as they are a source of personal development such as having increased responsibility. If an employee can handle the high responsibility, the individual experiences a sense of achievement resulting from overcoming the demand. In contrast, hindrance stressors, such as red-tape, pose as a barrier for an employee to succeed in goal attainment. Hindrance stressors require a solution to overcome out of one’s personal control, thus, decreased motivation can result from hindrance stresses but once the hindrance stressor is overcome, it is assumed the individual will return to work at a normal rate. Based on this theory, researchers have found differences in employee’s reactions as a result of experiencing either a challenge or a hindrance stressor with various individual and organizational outcomes.
LePine, LePine and Jackson (2004) examined differences in engagement and performance as a result of challenge and hindrance stressors in a sample of 696 learners. Participants responded to a survey that assessed experiences of challenge and hindrance stressors, motivation to learn, exhaustion and learning performance. Learning performance was assessed through semester grade point average as well as an overall grade point average prior to the semester of data. Thus, the researchers controlled for past learning performance in order to rule out individual differences.

LePine and colleagues (2004) found evidence for the positive relationship of challenge stressors and learning performance. In contrast, hindrance stressors had a negative relation to learning performance. Challenge stressors were also associated with increased motivation to learn, whereas hindrance stressors were negatively related to motivation to learn. Similar to previous findings, both forms of stressors were positively related to exhaustion, and exhaustion was negatively related to learning performance.

Additional analysis found evidence that exhaustion and motivation to learn mediated the relationship between stressors and learning performance. The indirect effects of stressors on learning performance through motivation to learn and exhaustion were both significant. There was a positive indirect relationship between challenge stressors and learning performance and a negative indirect relationship between hindrance stressors and learning performance. These findings challenge the previous findings of LePine et al. (2005), who found a weakened relationship between challenge stressors and performance. However, the researchers found support for the negative relationship between hindrance stressors and performance. While many studies within the
literature have assessed engagement, LePine, LePine, and Jackson’s (2004) research highlights the importance of stressors on motivation to learn as well as actual performance.

Podsakoff et al. (2007) built upon this foundation by examining a meta-analysis of 183 independent samples. The researchers aimed to further the literature by examining the mediation of job attitudes on the relationship between stressors and retention criteria. To test the hypotheses, the researchers first analyzed the demands together as one general stress construct. By doing so, Podsakoff et al. (2007) were able to demonstrate the differential effects of stressors on these outcomes by comparing a model with both distinctions combined and a second model where the two stressor distinctions were accounted for.

Consistent with past research, in the model utilizing a single dimension of stressors (not accounting for whether the demand was a challenge or hindrance stressor) the stressors were positively related to strain, turnover intentions, turnover, and withdrawal behavior. The stressors were negatively related to job satisfaction and organizational commitment. The researchers found the Q statistic, a test of heterogeneity in meta-analysis, was significant, providing additional evidence for the inconsistent findings in the stress literature. Thus, challenge and hindrance stressors were separated in the following analyses.

Following predictions, both challenge and hindrance stressors were positively related to stains and had opposing relations with other organizational outcomes. Additional support was found for the negative relationship between hindrance stressors
and job satisfaction and organizational commitment, and a positive relationship was shown with turnover intentions, turnover, and withdrawal behavior. While predictions for challenge stressors suggested the opposite relationships than those of hindrance stressors, challenge stressors had insignificant relationships with the outcomes, and only a small significant negative relationship with turnover intentions. Podsakoff et al. (2007) demonstrated that the relationship between hindrance stressors and organizational outcomes is stronger than the relationship between challenge stressors and outcomes. The study also supports previous theory that strains suppress the positive effects of challenge stressors (LePine et al., 2005).

Podsakoff et al. (2007) also found that job attitudes mediated the relationship between challenge and hindrance stressors with withdrawal behavior and turnover. Hindrance stressors had strong negative relationships with job satisfaction and organizational commitment through job attitudes. Positive relationships were found between hindrance stressors and turnover intentions, objective turnover, and withdrawal intentions through job attitudes. Challenge stressors had a positive relationship with job satisfaction and organizational commitment, and negative relationships with turnover intentions and objective turnover through job attitudes. However, no evidence supported a relationship between challenge stressors and withdrawal behavior. Despite these findings, Podsakoff et al. (2007) justified the differential relationship of challenge and hindrance stressors on withdrawal behavior through the confidence intervals around the regression not overlapping.
In order to further establish an understanding of the differential relationships between stressors and outcomes, Podsakoff et al. (2007) examined turnover and withdrawal behavior in an additional model. The results indicated that the differential effects of challenge and hindrance stressors on turnover were attributed to the indirect effects of strain, job satisfaction and organizational commitment. In other words, the total indirect effect of hindrance stressors on employee turnover was due to positive indirect effects through strain, job satisfaction, and organizational commitment.

In contrast, challenge stressors had a negative relationship with turnover through positive indirect relationships with strain and negative indirect effects through job satisfaction and organizational commitment. These indirect effects were replicated with both stressors and withdrawal behaviors, and an additional direct effect for hindrance stressors on withdrawal behavior was found. The results indicated that challenge stressors explained incremental variance in retention outcomes beyond the variance accounted for by hindrance stressors. Finally, the importance of considering the stressors in isolation of one another demonstrates the impact of variance in turnover intentions, turnover, and withdrawal behavior as a result of indirect effects through strain, job satisfaction, and organizational commitment.

Considering the stressor distinction within the context of burnout, in a sample of 311 first-line employees and supervisors belonging to a service department of 42 enterprises, Tai and Liu (2007) found that both challenge and hindrance stressors were positively related to increased emotional exhaustion. However, the stressors differed in that challenge stressors were negatively related to disengagement while hindrance
stressors had a positive association with disengagement. The researchers’ hypothesis of a three-way interaction of neuroticism and job autonomy moderating the relationship between challenge stressors and emotional exhaustion was supported. The results showed that individuals who were high on neuroticism and high on challenge stressors had lower rates of exhaustion and disengagement when autonomy was high. Another interaction among hindrance stressors, neuroticism, and autonomy showed a significant effect on disengagement from work but not with exhaustion. Individuals who were high on neuroticism and who also experienced high hindrance stressors had lower rates of disengagement when autonomy was high.

To further understand the impact of challenge and hindrance-stressors on employee outcomes, Rodell and Judge (2009) sought to address the unique impact of personality on positive and negative organizational outcomes. Participants responded to a daily survey for 10 consecutive work days. Each daily survey assessed challenge and hindrance stressors, positive and negative emotions, and citizenship and counter-productive behaviors. Rodell and Judge (2009) found that within individuals, perceptions of challenge stressors were significantly associated with attentiveness on a daily basis. In contrast, the perception of hindrance stressors was associated with feelings of anger on a daily basis. Both challenge and hindrance stressors were related to anxiety.

Challenge stressors also had a positive indirect relationship with organizational citizenship behaviors through attentiveness. However, this relationship was reversed when anxiety was added to the model, such that a negative indirect relationship between challenge stressors and citizenship behaviors through anxiety was found. These findings
suggest that the degree to which challenge stressors are beneficial depends on the extent
to which challenge stressors affect attentiveness and anxiety. Depending on which
challenge stressor is present, employees may be more likely to respond with attentiveness
or anxiety and thus have varying outcomes. A similar relationship was found with
hindrance stressors in that hindrance stressors were related to anxiety, which led to
decrease in citizenship behaviors.

Likewise, a positive indirect relationship between challenge stressors and
counterproductive behaviors was found through anxiety. Rodell and Judge (2009)
suggested that although challenge stressors tend to take on the role of ‘good stress,’
researchers should be cautious when making inferences about the effect of stressors on
certain behaviors. For example, when individuals feel anxious, the action tendency (i.e.
coping response) is avoidance. Avoidance refers to behaviors such as withdrawal from
the organization. The researchers warn that a challenge stressor provoking anxiety would
no longer lead to ‘good outcomes’ but avoidance coping such as withdrawal.

Rodell and Judge (2009) also found that hindrance stressors had a positive
indirect relationship with counterproductive behaviors through anger and anxiety, thus
increasing counterproductive behaviors. These findings suggested that individuals
experiencing work demands as a hindrance can also have important consequences for the
organization.

Multilevel moderating effects were also tested between stressors and personality
variables. Rodell and Judge (2009) predicted that extraversion would moderate the
challenge stressors–attentiveness relationship and the challenge stressors–anxiety
relationships. However, the challenge-extraversion interaction term did not predict attentiveness nor anxiety. The researchers also examined the effects of neuroticism on outcomes relevant to hindrance stressors. The hypothesized relationship between the hindrance*neuroticism term predicting anxiety was not significant. However, neuroticism moderated the relationship between hindrance stressors and anger. The interaction provided evidence that neuroticism amplified the effects of hindrance stressors on anger. These findings provide evidence for the distinction between stressors and emotional responses and the behaviors that can fluctuate on a daily basis.

In a conceptually related study, Crawford, LePine, and Rich (2010) found relationships between work stressors and engagement. Using a meta-analytic strategy, the researchers obtained 55 manuscripts and articles reporting relationships from 64 various samples. The researchers suggested that because challenge stressors are associated with active coping behaviors, this would stimulate greater investment and increased job-related effort in increasing engagement, hypotheses that are similar to those of Rodell and Judge (2009). Results showed that both stressors were linked to increased exhaustion and burnout (Crawford et al., 2010). However, the stressors had opposing relationships with engagement; challenge stressors were linked to increased engagement, whereas hindrance stressors are related to decreased engagement, replicating existing literature (Crawford et al., 2010).

Webster and colleagues (2010) furthered these results by examining organizational outcomes. The researchers obtained multi-source data from 143 employees along with supervisor ratings. Participants responded to items assessing stressors, job
satisfaction, work self-efficacy, and strains. The researchers contacted the participant’s supervisors and obtained reports of organizational citizenship behaviors (OCBs) and job performance ratings. Webster and colleagues (2010) predicted that challenge/hindrance stressors would be related to citizenship behaviors and counterproductive behaviors through job satisfaction, self-efficacy, and strains. The researchers proposed that hindrance and challenge stressors would be differentially related to self-efficacy. The researchers suggested that hindrance stressors should be negatively related to self-efficacy, because of the conceptual definition, hindrance stressors hinder individuals from achieving their goals and thus individuals are not likely to believe that they are capable of meeting these types of demands. On the other hand, challenge stressors should have a positive relationship with self-efficacy because people are likely to think that, although a high level of effort will be required, they may be capable of meeting these types of job demands through extra effort.

Challenge and hindrance stressors were related to both job satisfaction and work self-efficacy, in opposing directions. Hindrance stressors were negatively related to job satisfaction and self-efficacy, while challenge stressors were positively related to the outcomes. Supporting existing literature, both stressors were positively associated with psychological strain; however only hindrance stressors were related to physical symptoms. The researchers suggested that employees who are exposed to challenge stressors are mainly at risk for psychological strain, whereas hindrance stressors induce both psychosocial and physical strain for employees.
In relation to work behaviors, the hypothesized model was partially supported. The researchers hypothesized that strains and job satisfaction would predict OCBs, while strains and self-efficacy were associated with job performance. Challenge stressors did not significantly predict OCBs through increased job satisfaction. The analyses also did not find support for work self-efficacy as the link between challenge stressors and job performance (Webster et al., 2010). The results did, however, show that challenge and hindrance stressors were negatively related to OCBs and job performance through physical symptoms. Contrary to the hypotheses, frustration was positively related to performance.

To further examine these relationships, Webster et al. (2011) examined the challenge/hindrance stressor relationships with strains, job dissatisfaction, and turnover intentions. In contrast to their previous findings (Webster et al., 2010), the researchers proposed that hindrance stressors would be positively related to strains and challenge stressors would be negatively related to strains. Overall, the results did not support the relationship between challenge stressors and emotional exhaustion and physical symptoms. However, two of the challenge stressors, workload and increased responsibility, were positively associated with physical symptoms. Results indicate that particular challenge stressors may be more likely to result in physical strain than others.

In contrast, significant results were found for the relationships between hindrance stressors and strain. Hindrance stressors were associated with increased emotional exhaustion and physical symptoms. Results suggested that hindrance stressors can lead to damaging outcomes for an employee’s health and wellbeing. Additionally, Webster et al.
(2011) proposed that challenge stressors would be negatively related to job dissatisfaction (essentially more satisfaction) and negatively related to turnover intentions. Results did not support this hypothesis. On the other hand, the researchers proposed hindrance stressors would have a positive relationship with job dissatisfaction and be positively related to turnover intentions. Partial support was found for this final hypothesis. Hindrance stressors were positively related to job dissatisfaction, but only two hindrance stressors were related to turnover intentions (role conflict and workload). The results of Webster et al.’s (2011) study demonstrated that employees who experience hindrance stressors are more likely to experience undesirable outcomes whereas challenge stressors had little effect.

Van Den Broeck et al., (2010) investigated the relationship between challenge and hindrance-stressors on symptoms of burnout and engagement. The researchers examined a sample of Dutch call center agents, investigating the relationship between challenge and hindrance stressors with resources and various outcomes. The researchers suggested that since hindrance stressors reflect additional obstacles to be overcome, these stressors would relate negatively to employee optimal functioning in terms of well-being, favorable attitudes, and constructive behavior. Challenges, on the other hand, stimulate opportunity, and thus should show a positive relation with optimal functioning. Van Den Broek et al. (2010) found that challenge stressors were associated with vigor, yet were unrelated to exhaustion. As expected, hindrance stressors were positively related to exhaustion and negatively related to vigor. The results were replicated in a follow-up
study with police officers. In the second study, challenge stressors were found to be associated with exhaustion.

Additional outcomes of challenge and hindrance stressors were also assessed examining the work-home conflict, emotional demands, workload, cognitive demands, autonomy, and social support. Van Den Broek et al., (2010) suggested that work-home conflict and emotional demands would be associated with hindrances stressors more than challenge stressors. Workload and cognitive demands were hypothesized to be associated with challenge stressors as they related to engagement. Correlations among challenge stressors with workload and cognitive demands were positive. Support was obtained for the hypothesis that hindrance stressors would be related to the work-home conflict and emotional demands. Job resources were negatively associated with hindrance stressors, yet not associated with challenge stressors.

Further contributing to the study of the challenge/hindrance distinction, Sacramento et al. (2013) examined individual self-regulatory approaches in the relationship of challenge/hindrance stressors and creativity. The researchers suggested that individuals would consider their working environment when responding to challenge stressors. The authors proposed that if employees are faced with challenges that are aimed to be avoided (essentially hindrance stressors), then they are unlikely to be creative in their responses. On the other hand, if employees perceive challenge stressors, sensing opportunity, they are more likely to be creative. Sacramento et al. (2013) argued that challenge stressors are related to creativity through regulatory focus.
Regulatory focus theory states that two motivational orientations exist. Motivation with a promotion focus orientation is aimed towards ideals and achieving gains. In contrast, prevention orientation focuses on ensuring security and avoiding losses (Higgins, 1997). Using a sample of 75 students, the researchers gathered data on experience of demands, trait regulatory focus, and creativity. Results showed that under high work demands, students with a stronger promotion focus were more creative than employees with a weaker promotion focus. The highest creativity scores were consistently associated with high work demands within the promotion focus condition, while the lowest creativity scores occurred in the high work demands prevention focus condition. Analysis of the simple slopes showed that promotion focus strengthened the positive relationship between challenge stressors and creativity. However, the simple slope was not significant when promotion focus was low. Under high work demands, employees with a stronger promotion focus were more creative than employees with a weaker promotion focus. Prevention focus orientations were not significant in moderating the relationship between the different stressors and creativity. The results were replicated in a field R&D sample along with additional findings of team promotion focus moderating the effect of challenge stressors on team creativity.

Challenge stressors have also been linked to reduced distress and increased dedication (Tuckey et al., 2015). Higher reports of challenge stressors were associated with the experience of high intensity positive moods such as enthusiasm and excitement. In Tuckey et al.’s (2015) study, the researchers obtained longitudinal data from 609 retail workers, 220 of whom responded six months later. Results of a structural equation model
were consistent with their hypotheses, finding that threat stressors predicted distress, exhaustion, and reduced dedication to work. Hindrance stressors showed inconsistent results in that they were not associated with exhaustion and distress when the effect of threat stressors was accounted for (Tuckey et al., 2015). Increased hindrance stressors were associated with higher levels of fatigue. Increased threat stressors were associated with higher levels of anger and anxiety. The results were replicated in a study by Tadić, Bakker, and Oerlemans (2015a).

Prior studies consistently report that both challenge and hindrance stressors are positively linked to exhaustion or burnout. However, Min, Kim, and Lee (2015) argued that challenge stressors have not been examined thoroughly, proposing the potential of challenge stressors to offset the stressor-burnout relationship. Min et al. (2015) examined the role of individual differences in the challenge/hindrance stressor model.

The researchers examined psychological capital as a moderator of the relationship of challenge and hindrance stressors with engagement and burnout. Psychological capital is defined as positive psychological states characterized by self-efficacy, optimism, hope and resilience (Luthans, Avolio, Avey, & Norman, 2007). Using a sample of 232 hotel employees in South Korea, Min et al. (2015) proposed that the relationship between challenge and hindrance stressors with job engagement and burnout varies based on the degree of an employee’s psychological capital.

In contrast to prior findings, results showed that both challenge and hindrance stressors were negatively related to engagement. In prior studies challenge stressors had a positive association with engagement rather than negative. However, both stressors were
positively correlated with burnout, consistent with prior studies. Psychological capital was positively correlated with engagement and negatively correlated with burnout, as predicted.

An employee’s psychological capital buffered the negative relationship between both stressors and job burnout. Results also showed that for those employees high in psychological capital, work engagement increased or remained the same with higher challenge stressors. However, employees with low psychological capital tended to decrease work engagement when they experienced higher levels of challenge stressors. The challenge stressor-psychological capital interaction term contributed unique variance to the outcomes in both analyses.

Moderation effects were examined in order to test whether psychological capital moderated the relationship between hindrance stressors and work engagement; however, results were insignificant. While there were direct effects between hindrance stressors and engagement (negatively), the interaction term was not significant. The interaction of hindrance stressors and psychological capital on burnout was significant, and provided incremental variance. The positive relationship between hindrance stressors and burnout was much weaker for individuals high on psychological capital. Min et al. (2015) showed the buffering impact of psychological capital on the relationship between work stressors and burnout. Employees with increased psychological capital were more likely to have increased engagement and decreased burnout when faced with challenge stressors. Although no relationship was found with hindrance stressors and psychological capital on
engagement, burnout was affected demonstrating the benefits of having high levels of psychological capital.

Further detailing how challenge and hindrance stressors are related to performance, Lu, Du, and Xu (2016) examined the challenge-hindrance stressor framework with salespersons and their supervisors at an insurance company in China. Using a self-administered questionnaire, the researchers found that challenge stressors were positively related to job performance while hindrance stressors were negatively related to job performance. Moreover, general self-efficacy magnified the positive relationship between challenge stressors and job performance. General self-efficacy interacted with challenge-hindrance stressors to influence employees’ job performance, explaining 2% of the variance. On the other hand, the diminishing effect of self-efficacy on the negative relationship of hindrance stressors on job performance was nonsignificant. The insignificant findings could be a result of hindrance stressors being are out of one’s control and thus self-efficacy may not necessarily be related to outcomes. The results indicated the importance of individual differences in the challenge-hindrance framework. Lu et al. (2016) findings support prior research linking the challenge-hindrance stressors to job performance and contribute to the literature with the examination of self-efficacy.

In summary, many studies have assessed the relationship between challenge/hindrance stressors on individual and organizational outcomes. The compilation of literature has highlighted the positive outcomes associated with challenge stressors, such as increased engagement, attentiveness, and enthusiasm, along with
numerous organizational benefits such as increased job satisfaction and organizational citizenship behaviors and decreases in turnover intentions. Additionally, the outcomes associated with hindrance stressors have been even more prominent. Studies have shown the increase disengagement and disconnection from work including withdrawal and counterproductive work behaviors, and expressing turnover intentions. Hindrance stressors have lead individuals to be less satisfied, committed and loyal to their work. Because individuals with a calling have strong emotional ties to work, this may increase the energy and time devoted to overcoming obstacles faced at work. These individuals may feel more obligated to overcome these stressors with more perseverance despite facing a challenge or hindrance stressor.

Continuously throughout the literature, research has shown that both stressors, while evoking different responses, are related to increased anxiety, exhaustion and psychological and physical strain (Webster et al., 2011). Even though researchers have demonstrated that challenge appraisals typically produce positive outcomes, they still require emotional resources that drain energy. Continued exposure to both challenge and hindrance stressors could trigger more intensified feelings for those with higher calling and thus lead to more negative outcomes. These findings have implications for the current study as these intensified feelings may be threatening to an individual’s health and thus increase the risk of mental health symptoms when experiencing both challenge and hindrance stressors. The present study aims to expand the literature on the stressor distinctions in examining how occupational calling may magnify the relationship between challenge and hindrance stressors on engagement and mental health symptoms. Prior
research has demonstrated the impact that stressors can have on employee’s cognitive functioning and thus provides a rationale for the potential intensified relationship that could exist as a result of high levels of occupational calling.
CHAPTER FOUR

HYPOTHESES AND RATIONALE

The previous literature review has addressed research on the conditions under which calling may be associated with negative outcomes as well as the relationships between challenge and hindrance stressors with both positive and negative outcomes. The present study integrated these topics to determine the different ways calling is related to engagement, mental health symptoms and work-family conflict.

The present study had two major sets of hypotheses. The first set of hypotheses investigated the influence of calling on the relationship of challenge and hindrance stressors with mental health symptoms and engagement. The three dimensions of calling (transcendent summons, purposeful work, and prosocial orientation) were all expected to interact with challenge and hindrance stressors to predict the outcomes.

Research has suggested that the sense of duty towards one’s occupation may induce resiliency; and willingness to overcome obstacles that employees face (Duffy & Sedlacek, 2007). Challenge stressors may motivate an employee with a calling to be more engaged and work harder at overcoming the stressor. Because individuals with a calling have emotional ties to their work, finding the work they do interesting, important, and worthy, they may devote increased energy and time to work, suggesting that challenges faced on the job would evoke stronger emotional responses (Berg et al., 2010; Vallerand et al., 2003).

Similarly, despite hindrance stressors typically being associated with disengagement, individuals may feel more obligated to overcome these stressors with
more perseverance, leading to increased effort weakening the negative effect of hindrance stressors on engagement (Dik & Duffy, 2007; Podsakoff et al., 2007; Tadić et al., 2015). Continued exposure to challenge and hindrance stressors could trigger more intensified feelings for those with a calling and thus lead to more negative outcomes.

Having increased identification with work can lead to high expectations for the quality of work (Schabram & Maitlis, 2016; Vinje & Mittelmark, 2007). High expectations may lead individuals to be especially vulnerable to obstacles that impede the pursuit of a calling, increasing mental health symptoms for both challenge and hindrance stressors. Given the existing literature on the positive associations between challenge and hindrance stressors with exhaustion, all three dimensions of calling were expected to increase the strength of the relationships between the two types of stressors and mental health symptoms. If challenge/hindrance interactions with more than one dimension of calling were found, both were examined simultaneously in the same multiple regression to examine unique variance contributed by each dimension.

Prior theory has demonstrated the potential downside of being too invested. According to Hallsten’s (1993) framework of burnout, too much absorption can be threatening to an individual’s health, as increased investment leads to fatigue, a symptom of burnout. Prior research has provided evidence that individuals with high levels of calling have high levels of investment, dedication, and willingness to work without consideration of the sacrifices to their own wellbeing (Bunderson & Thompson, 2009; Serow, 1994; Vinje & Mittelmark, 2007). Therefore, the following hypotheses are proposed and depicted in Figure 1:
Hypothesis 1: Challenge stressors at Time 1 will be associated with higher levels of engagement at Time 2.

Hypothesis 2: Challenge stressors at Time 1 will be associated with higher levels of mental health symptoms at Time 2.

Hypothesis 3: Hindrance stressors at Time 1 will be associated with lower levels of engagement at Time 2.

Hypothesis 4: Hindrance stressors at Time 1 will be associated with higher levels of mental health symptoms at Time 2.

Hypothesis 5(a-c): Increased perceptions of occupational calling; (a) Transcendent summons, (b) Purposeful work, and (c) Prosocial orientation, at Time 1 will be associated with higher levels of engagement at Time 2.

Hypothesis 6(a-c): Increased perceptions of occupational calling; (a) Transcendent summons, (b) Purposeful work, and (c) Prosocial orientation, at Time 1 will be associated with lower levels of mental health symptoms at Time 2.

Hypothesis 7(a-c): Occupational calling; (a) Transcendent summons, (b) Purposeful work, and (c) Prosocial orientation, will moderate the relationship between challenge stressors assessed at Time 1 with engagement assessed at Time 2; the relationship between challenge stressors and engagement will be stronger for those who report a calling.

Hypothesis 8(a-c): Occupational calling; (a) Transcendent summons, (b) Purposeful work, and (c) Prosocial orientation, will moderate the relationship between challenge stressors assessed at Time 1 with mental health symptoms assessed at Time 2;
the relationship between challenge stressors and mental health will be stronger for those who report a calling.

Hypothesis 9(a-c): Occupational calling; (a) Transcendent summons, (b) Purposeful work, and (c) Prosocial orientation, will moderate the relationship between hindrance stressors assessed at Time 1 with engagement assessed at Time 2; the relationship between hindrance stressors and engagement will be weaker for those who report a calling.

Hypothesis 10(a-c): Occupational calling; (a) Transcendent summons, (b) Purposeful work, and (c) Prosocial orientation, will moderate the relationship between hindrance stressors assessed at Time 1 with mental health symptoms assessed at Time 2; the relationship between hindrance stressors and mental health symptoms will be stronger for those who report a calling.

Additionally, high investment in work can lead to workaholic tendencies. While high investment may enhance satisfaction and productivity in the short term, there may be consequences associated with habitually working long hours (Sparks, Cooper, Fried, & Shirom, 1997). Therefore, the effects of workaholism and work hours may change the negative relationship between occupational calling and mental health symptoms to be positive, resulting in inconsistent mediation. Inconsistent mediation models occur when the direct and mediated effect of an independent variable on a dependent variable have opposite signs (MacKinnon, Fairchild, & Fritz, 2007; MacKinnon, Krull, & Lockwood, 2000). The direct relationship between calling and the outcomes was predicted to be negative however, this relationship is counteracted (inconsistent with) the causal pathway
going from calling to the outcomes through workaholism and work hours. Although knowledge of the significance of the relationship between calling and the outcomes is important, the overall relationship accounting for workaholism and work hours provides additional insight of a source where negative outcomes of calling arise.

The present study considered how workaholism and work hours may mediate the relationship between calling and mental health symptoms and work-family conflict. Prior research has examined the relationship between number of hours worked and its impact on strain. The current study developed on the literature by examining extra work hours that are not required by the organization as an interesting outcome of possessing a calling.

Individuals with a calling view their work as important and meaningful, these individuals may feel more compelled than their coworkers to dedicate more time to work goals, thus potentially leading to poor mental health. As individuals dedicate more time to work, less time is focused on non-work domains, thus causing strain in the work-home interface. Through increased dedication of time, energy, and emotions towards work, employees can sacrifice their work-life balance. Increased time and energy spent at work, takes away time at home, increasing exhaustion and can increase work-family conflict (Bodenmann et al., 2010). These relationships are depicted in Figure 2. Therefore, the following hypotheses are proposed:

As with model 1, I expect occupational calling at Time 1 to be associated with lower levels of mental health symptoms at Time 2 (See hypothesis 6a-c).
Hypothesis 1

Hypothesis 1(a-c): Occupational calling; (a) Transcendent summons, (b) Purposeful work, and (c) Prosocial orientation, assessed at Time 1 will be associated with lower levels of work-family conflict at Time 2.

Hypothesis 2

Hypothesis 2(a-c): Occupational calling; (a) Transcendent summons, (b) Purposeful work, and (c) Prosocial orientation, assessed at Time 1 will be associated with higher levels of workaholism at Time 1.

Hypothesis 3

Hypothesis 3(a-c): Occupational calling; (a) Transcendent summons, (b) Purposeful work, and (c) Prosocial orientation, assessed at Time 1 will be associated with higher work hours and extra work hours at Time 1.

Hypothesis 4

Hypothesis 4(a-b): High levels of workaholism assessed at Time 1 will be associated with higher levels of (a) mental health symptoms and (b) work-family conflict at Time 2.

Hypothesis 5

Hypothesis 5(a-b): Higher work hours and extra work hours assessed at Time 1 will be associated with higher levels of (a) mental health symptoms and (b) work-family conflict at Time 2.

Hypothesis 6

Hypothesis 6(a-c): Inconsistent mediation will be found in the relationship between occupational calling; (a) Transcendent summons, (b) Purposeful work, and (c) Prosocial orientation, assessed at Time 1 and increased levels of mental health symptoms at Time 2 through high levels of workaholism and increased work hours.

Hypothesis 7

Hypothesis 7(a-c): Inconsistent mediation will be found in the relationship between occupational calling; (a) Transcendent summons, (b) Purposeful work, and (c)
Prosocial orientation, assessed at Time 1 and increased levels of work-family conflict at Time 2 through high levels of workaholism and increased work hours.
CHAPTER FIVE
METHODS

Participants

Participants were working adults within the United States who were recruited as part of a larger study. A total of 518 individuals participated in the Time 1 survey. After completion of the initial survey, the participants were asked to participate in a follow up survey 3 months later. Of those who participated in the Time 1 survey, 301 individuals responded to the follow-up survey at Time 2 (58.11% response rate).

On average, participants were 37.36 years of age ($SD = 9.78$), and worked 41.86 hours ($SD = 6.07$) per week. The mean tenure for which participants worked at their current job was 6.01 years ($SD = 5.70$). Approximately, 57.8% of the participants were female (42.2% male). The ethnic composition of participants was 79.1% Caucasian, 7.3% African American, 7.3% Asian, 4.7% Hispanic, and 1.7% Native American.

In terms of educational attainment, of the 301 respondents who completed both assessments, 8.6% completed high school, 14.3% some college, 11.3% Associates Degree, 44.9% Bachelor’s Degree, 2.7% some Graduate School, 15.6% Master’s Degree, and 2.7% Doctoral Degree. Participants represented a wide range of job industries, 13.6% worked in educational services, 12% worked in professional, scientific, and technical services, 10% worked in finance and insurance, 9.6% worked in health care and social assistance, 8.6% worked in retail trade, 8.3% worked in the administrative and support services, 5.6% worked in manufacturing, 5.3% worked in arts, entertainment, and recreation, 5% worked in the accommodation and food services, 4% worked in
government, 3.3% worked in transportation and warehousing, 3% worked in construction, 2.3% worked in agriculture, forestry, fishing, and hunting, 2% worked in real estate and rental leasing, 1% were self-employed, .7% worked in mining, quarrying, and oil and gas extraction, .7% worked in other services (except public administration), and .3% worked in wholesale trade. The annual personal income of participants was as follows (in thousands of U.S. dollars): less than $25 (17.9%), $25 - $49 (46.2%), $50 - $74 (23.6%), $75 - $99 (8.6%), $100 - $149 (2.3%), or more than $150 (1.3%).

In order to test for response bias of differences between participants who responded to both time points in comparison to participants who only responded at Time 1, independent samples t-tests and chi-square tests were computed. There were no significant differences between the groups in terms of gender, $\chi^2(1) = 1.88, n.s.$, educational level, $\chi^2(6) = 10.74, n.s.$, or years of employment at their current job, $t(515) = 0.33, n.s.$ However, there were significant differences in ethnicity between the two groups, $\chi^2(5) = 12.29, p < .01$, as well as differences in marital status, $\chi^2(3) = 12.19, p < .01$. The frequencies of white participants whom responded to both surveys increased from Time 1 (75.3%) to Time 2 (79.1%), while African American and Native American participants decreased from Time 1 (11.0%, .8%, respectively) to Time 2 (7.3%, 0%, respectively). More participants were married at Time 2 (52.8%) than Time 1 (47.7%) and less participants reported having a domestic partner at Time 1 (9.5%) than Time 2 (4.3%). Participants who responded to both surveys were also older ($M = 37.20, SD = 9.90$) than those who only completed the survey at Time 1 ($M = 33.50, SD = 9.78$), $t(516) = 4.22, p < .01$. 
Additional analyses were conducted on the key measures utilized in the present study. There were no significant differences between the groups in terms of occupational calling: transcendent summons, $t(516) = -.48, n.s.$, purposeful work, $t(516) = -.62, n.s.$, and prosocial orientation, $t(516) = -.39, n.s.$, challenge stressors, $t(516) = -1.75, n.s.$, or hours worked, $t(516) = 0.63, n.s$. However, there were significant differences between the groups in terms of responses to the hindrance stressor scale, $t(516) = -3.09, p < .01$; those completing the Time 2 assessment scored lower ($M = 2.54$) than those not completing the assessment ($M = 2.75$), working excessively, $t(516) = -2.31, p < .05$; those completing the Time 2 assessment scored lower ($M = 2.56$) than those not completing the assessment ($M = 2.68$), and working compulsively, $t(516) = -2.37, p < .05$; those completing the Time 2 assessment scored lower ($M = 2.67$) than those not completing the assessment ($M = 2.79$). However, these differences were minimal.

Engagement and work family conflict were not assessed at Time 1 so differences were not able to be examined.

**Procedure**

Participants were recruited through an online data collection service, Amazon’s Mechanical Turk (MTurk), where adults can complete tasks for compensation. MTurk is an established survey software providing valid and reliable measurement methods (Buhrmester, Kwang, & Gosling, 2011; Pittman & Sheehan, 2016). In order to participate in the survey, participants had to be a United States Citizen, 18 years old, and work at least 30 hours per week (at a job other than MTurk). Participants received compensation for completing the survey and passing all necessary attention checks. Six attention checks
were dispersed throughout the survey in order to enhance the quality of the data. 589 participants responded to the Time 1 survey, however, 71 participants were deleted from the analyses as they failed at least one of the six attention checks. The remaining 518 participants were invited to participate in another study three months following the Time 1 assessment. Four reminder emails were sent out to encourage increased participation. The same measures, with a few additional scales were used; the same procedure and requirements were also used at Time 2. Of the 518 participants who were emailed, 301 participants responded and no participants failed the Time 2 attention checks.

**Measures**

Perception of occupational calling, challenge/hindrance stressors, work hours and workaholism were assessed at Time 1, while engagement, mental health symptoms and work-family conflict were assessed at Time 2. All assessment measures are included in Appendix A-G.

*Occupational Calling*. Calling was assessed using the subscales relating to the presence of calling from the Calling and Vocation Questionnaire (Dik, Eldridge, Steger, & Duffy, 2012). The measure consisted of 12 items asking participants to report how much the statements describes their occupation, ultimately determining three orientations; presence-transcendent summons, present-purposeful work, and present-prosocial orientation. The measure utilized a 4-point response scale ranging from (1) not at all true of me to (4) absolutely true of me. A sample item is “My career is an important part of my life’s meaning.” Internal consistency reliability coefficients were high for the original subscales; transcendent summons, $\alpha = .85$, purposeful work $\alpha = .88$, and prosocial
orientation $\alpha = .88$. Test-retest coefficients for the subscales were as follows; transcendent summons, $r = .67$, purposeful work $r = .63$, and prosocial orientation $r = .66$. In the present study, the internal consistency reliability was .86, .93, and .91 for transcendent summons, purposeful work, prosocial orientation subscales respectively.

**Challenge/Hindrance Stressors.** Participants reported the frequency of experiencing demands in their daily work using the challenge/hindrance scale by Zhang et al. (2014). The measure utilized a 5-point rating scale ranging from (1) never to (5) always. The measure consisted of 13 items, such as “having to perform complex tasks” defining a challenge stressor and “conflicting instructions and expectations from your boss” as an example of a hindrance stressor. The internal consistency reliability for the original challenge stressor scale was $\alpha = .82$, and $\alpha = .88$ for hindrance stressors. In the present study, the internal consistency reliability was .85 for challenge stressors and .86 for the hindrance stressors subscales.

**Workaholism.** Participants responded to the Dutch Workaholism Scale indicating the degree to which they had workaholic tendencies (Schaufeli, Shimazu, & Taris, 2009). Two factors were assessed within this measure; working excessively and working compulsively, using 5 items each. A sample item is “I find myself continuing to work after my coworkers have called it quits.” Participants utilized a 6-item response scale ranging from (1) totally disagree to (6) totally agree. The internal consistency reliability for the scale was assessed using two international samples. Working compulsively had a Cronbach’s alpha of $\alpha = .78$ in a Dutch sample and $\alpha = .68$ in a Japanese sample. Working excessively had a Cronbach’s alpha of $\alpha = .78$ in the Dutch sample and $\alpha = .73$ in the
Japanese sample. In the present study, the internal consistency reliability for working excessively was .72 and .73 for working compulsively.

**Work Hours.** Participants reported the number of hours they worked throughout the week with one open-ended response item. The item was created for the purposes of this study. The item was, “How many hours do you actually work each week?”

**Additional Work Hours.** To assess the extra work hours that employees work in addition to their required work hours, a measure was created for the purposes of this study. Two open-ended response items were used to assess the additional amount of work hours. One items asked how many work hours were required each week (i.e. “How many hours are you required to work each week?”) and an item assessing the number of hours that the employee actually worked each week (i.e. “How many hours do you actually work each week?”). Additional hours worked was measured by subtracting the actual hours worked from the required hours worked to produce a measure of extra hours spent at work.

**Engagement.** Engagement was assessed using the Utrecht Work Engagement Scale (Schaufeli, 2006). Vigor, dedication, absorption subscales were included in the 9-item scale. An example of an item is “I am enthusiastic about my job.” Participants responded to items with a 6-point response scale ranging from (1) almost never (a few times a year or less) to (6) always (everyday). Cronbach’s alpha for the total 9-item scale was .80 across 10 countries that were assessed in the original study. Reliability for the scale was assessed in two countries over 1 year. Reliabilities ranged from \( r = .64 \) to .73. In
the present study, the internal consistency reliability for vigor, dedication, and absorption was .91, .91, and .87 respectively.

Work Family Conflict. In order to assess participant’s work-family conflict, the Work Family Conflict Scale was used (Netemeyer, Boles, & McMurrian, 1996). Participants indicated how well they agree with the 5-items utilizing a 7-point response scale ranging from (1) strongly disagree to (7) strongly agree. A sample item is “My job produces strain that makes it difficult to fulfill family duties.” The internal consistency reliability for the work-family conflict scale ranged from $\alpha = .82$ to $\alpha = .90$ in the original study. In the present study, the internal consistency reliability for the scale was .96.

Mental Health Symptoms. Participants reported their mental health symptoms with the Generalized Anxiety Disorder Scale (GAD-7; Spitzer, Kroenke, Williams, & Löwe, 2006) and the Patient Health Questionnaire (Spitzer, Kroenke, & Williams, 1999). The two scales were highly correlated ($r = .85, p < .05$) and thus assessed as a single measure constructed by a mean score of responses to both scales. Participants reported how often they had been bothered by 16 items. A 4-point response scale ranging from (1) not at all to (4) nearly every day was used. The internal consistency of the GAD-7 was $\alpha = .92$ with test-retest reliability of $r = .83$. In the present study, the internal consistency reliability for the scale was .96.

Data Analysis

All statistical analyses were conducted in SPSS. The longitudinal analyses utilized Time 1 predictors, moderators, and mediators as well as Time 2 outcomes. In order to assess the relationship between constructs, correlations between stressors and
engagement and mental health symptoms (H1-4), as well as between calling and the outcomes (H5-6), were analyzed. Then, a multiple regression analysis tested for moderation effects of the calling dimensions on challenge and hindrance stressors with engagement (H7&9) and with the relationship between challenge and hindrance stressors on mental health symptoms (H8&10). Age and tenure were used as control variables. The negative outcomes associated with having a calling may become more salient as individuals increase in age, and the longer an individual is in a career and thus influence the hypothesized relationships. If the specific interaction between stressors and calling were found to be significant, tests of simple slopes between stressors and outcomes were conducted at low, medium, and high levels of calling in order to interpret the relationships. If multiple interactions were significant, an additional regression was conducted with all significant interactions predicting the outcomes to test whether one interaction term explained unique variance above the others in predicting the outcomes.

To test the mediational hypotheses, a bootstrap estimation approach with 5,000 samples was calculated using the PROCESS macro as described by Hayes (2012). PROCESS is an observed variable path analysis modeling tool for testing mediation estimating direct and indirect effects in single and multiple mediator models (Hayes, 2012). Examination of the direct effects of each calling dimension at Time 1 on mental health symptoms (H6) and work-family conflict (H11) at Time 2 were examined. In following, the direct effects of calling on workaholism and additional work hours (H12-13) and workaholism and work hours on mental health symptoms (H14) and work-family conflict (H15) were tested. Finally, the indirect effects of workaholism and work hours
on the relationship between calling, mental health symptoms (H16) and work-family conflict (H17) were tested. To determine whether the relationship between calling and mental health symptoms and work-family conflict was significantly mediated by workaholism and additional work hours, the confidence intervals were analyzed. In order to suggest such relationship exists, the confidence should indicate significance when zero is not included in the interval.
CHAPTER SIX

RESULTS

Descriptive and Correlational Statistics

Table 1 presents the means, standard deviations, bivariate correlations and Cronbach Alphas for the measures assessed. Participants, on average, reported moderate levels of transcendent summons, purposeful work and a prosocial orientation at Time 1. In addition, participants reported experiencing fairly high challenge stressors and a moderate amount of hindrance stressors at Time 1. Participants also reported a moderate degree of working excessively and working compulsively at Time 1. The average rating of engagement and work-family conflict was slightly above the midpoint of the scale, whereas the average score on mental health symptoms at Time 2 was below the midpoint, indicating the sample overall had few mental health symptoms.

Challenge stressors at Time 1 were positively related to engagement at Time 2, providing support for Hypothesis 1. However, challenge stressors at Time 1 were not associated with higher levels of mental health symptoms at Time 2, thereby failing to support Hypothesis 2. Hindrance stressors at Time 1 were associated with lower levels of engagement and higher levels of mental health symptoms at Time 2, providing support for Hypotheses 3 and 4.

Transcendent summons, purposeful work, and prosocial orientation at Time 1 were associated with higher levels of engagement at Time 2, supporting Hypothesis 5(a-c). However, Hypothesis 6(a-c) was not supported, as perceptions of occupational calling at Time 1 were not significantly related to mental health symptoms at Time 2.
Perceptions of occupational calling at Time 1 were not associated with work-family conflict at Time 2, failing to support Hypothesis 11. Increased perceptions of occupational calling at Time 1 were associated with higher levels of workaholism at Time 1, providing support for Hypothesis 12(a-c). In support of Hypothesis 13a, Transcendent summons accessed Time 1 was associated with higher work hours at Time 1, but purposeful work and prosocial orientation were not associated with higher work hours. None of the three calling dimensions were associated with working extra hours.

Support was found for the relationship between workaholism and mental health symptoms and work-family conflict. High levels of working excessively assessed at Time 1 were associated with higher levels of mental health symptoms and work-family conflict at Time 2, and working compulsively assessed at Time 1 was associated with higher levels of mental health symptoms and work-family conflict at Time 2, providing support for Hypothesis 14(a-b).

Hypothesis 15 was partially supported, such that higher work hours and extra work hours assessed at Time 1 were associated with higher levels of work-family conflict but not mental health symptoms at Time 2.

**Multiple Regression Analyses of Interactions Between Challenge Stressors and Calling**

In order to test for interaction effects of the calling dimensions and challenge and hindrance stressors as predictors of engagement and mental health symptoms, I conducted moderated multiple regressions after controlling for the main effects and the control variables of age and tenure (see Tables 2 and 3 for moderation results).
As seen in Table 2, when mean-centered challenge stressors and transcendent summons were entered in the model, after controlling for age and tenure, both challenge stressors and transcendent summons significantly predicted engagement. After controlling for the two main effects, there was not a significant interaction between challenge stressors and transcendent summons predicting engagement at Time 2, thus Hypothesis 7a was not supported. The interaction was also not significant when controlling for engagement at Time 1.

In order to examine Hypothesis 7b, mean-centered challenge stressors and purposeful work were entered in the model controlling for age and tenure. Both challenge stressors and purposeful work significantly predicted engagement. After controlling for the two main effects, there was not a significant interaction between challenge stressors and purposeful work predicting engagement at Time 2, thus Hypothesis 7b was not supported. The interaction was not significant when controlling engagement at Time 1.

In the final model of Hypothesis 7, when mean-centered challenge stressors and prosocial orientation were entered in the model, after controlling for age and tenure, the two main effects of challenge stressors and prosocial orientation uniquely predicted engagement. After controlling for the two main effects, there was a marginally significant interaction between challenge stressors and prosocial orientation predicting engagement at Time 2 \((p = .06)\). The \(R^2\) for the interaction was .010 \((f^2 = .010)\). The interaction was not significant when controlling engagement at Time 1.

Tests of simple slopes were conducted to interpret the marginal interaction between challenge stressors and prosocial orientation as a predictor of engagement, using
the guidelines developed by Cohen et al. (2013). The simple slopes were estimated at low (-1SD from the mean), medium (the mean), and high (+1 SD from the mean) values of prosocial orientation. At low levels of prosocial orientation there was a significant positive relationship between challenge stressors and engagement, \( t (301) = 2.96, p < .01 \) as well as at medium levels, \( t (301) = 2.26, p < .05 \), whereas at high levels of prosocial orientation there was a non-significant relationship between challenge stressors and engagement, \( t (301) = .42, p = .676 \). Figure 3 demonstrates the relationship between low and medium levels of prosocial orientation and engagement as challenge stressors increased.

As seen in Table 3, Hypothesis 8 was examined by entering mean-centered challenge stressors and transcendent summons after controlling for age and tenure, however neither challenge stressors nor transcendent summons significantly predicted mental health symptoms. Similarly, there was no interaction effect found, thus Hypothesis 8a was not supported. The interaction was not significant when controlling for mental health symptoms at Time 1.

When mean-centered challenge stressors and purposeful work were entered in the model, challenge stressors and purposeful work marginally predicted mental health symptoms, after controlling for age and tenure \( (p = .05, .06, \text{ respectively}) \). However, after controlling for the two main effects, there was not a significant interaction, thus Hypothesis 8b was not supported. The interaction was not significant when controlling mental health symptoms at Time 1.
When mean-centered challenge stressors and prosocial orientation were entered in the model, after controlling for age and tenure, challenge stressors were found to be marginally significant in predicting mental health symptoms ($p = .06$), however, prosocial orientation did not. Additionally, after controlling for the two main effects, there was not a significant interaction between challenge stressors and prosocial orientation predicting mental health symptoms at Time 2, thus Hypothesis 8c was not supported. The interaction was not significant when controlling engagement at Time 1.

**Multiple Regression Analyses of Interactions Between Hindrance Stressors and Calling**

Next, I tested the interaction effect of Time 1 mean-centered hindrance stressors and transcendent summons as a predictor of Time 2 engagement. After controlling for age and tenure, hindrance stressors and transcendent summons uniquely predicted engagement. However, after controlling for the two main effects, there was no interaction effect found, thus Hypothesis 9a was not supported. The interaction was not significant when controlling for engagement at Time 1.

Hypothesis 9b was examined through significant main effects for mean-centered hindrance stressors and purposeful work as predictors of engagement, after controlling for age and tenure. However, after controlling for the two main effects, there was no interaction effect found, thus Hypothesis 9b was not supported. The interaction was not significant when controlling for engagement at Time 1.

In the final model of Hypothesis 9, after controlling for age and tenure, mean-centered hindrance stressors and prosocial orientation both significantly predicted
engagement. However, after controlling for the two main effects, there was not a significant interaction, thus Hypothesis 9c was not supported. The interaction was not significant when controlling engagement at Time 1.

Hypothesis 10a tested the moderated effect of mean-centered hindrance stressors and transcendent summons at Time 1 on mental health symptoms at Time 2. After controlling for age and tenure, transcendent summons did not significantly predict mental health symptoms, however hindrance stressors did. There was a marginally significant interaction effect found, thus Hypothesis 10a was marginally supported (p = .06). The $R^2$ for the interaction was .011 ($f^2 = .011$). When mental health symptoms at T1 was added to the model, the interaction was no longer significant.

In order to interpret the interaction between hindrance stressors and transcendent summons as a predictor of mental health symptoms, tests of simple slopes were estimated at low (-1SD from the mean), medium (the mean), and high (+1 SD from the mean) values of transcendent summons. At low levels of transcendent summons there was a marginally significant positive relationship between hindrance stressors and mental health symptoms, $t (301) = 1.86, p = .064$. However, the relationship between hindrance stressors and mental health symptoms was significant at moderate, $t (301) = 4.25, p < .01$, and, high, $t (301) = 4.47, p < .01$, levels of transcendent summons. As seen in Figure 4, the relationship between hindrance stressors and mental health symptoms was magnified when participants reported higher levels of transcendent summons, consistent with the proposed hypotheses.
Next, after controlling for age and tenure, mean-centered hindrance stressors and purposeful work were examined in a model predicting mental health symptoms. Purposeful work was not a significant predictor of mental health symptoms, but hindrance stressors were. After controlling for the two main effects, there was a significant interaction between hindrance stressors and purposeful work predicting mental health symptoms at Time 2, thus Hypothesis 10b was supported. The $R^2$ for the interaction was .030 ($f^2 = .031$). However, when controlling for mental health symptoms at Time 1, the interaction was not significant.

In order to interpret the interaction between hindrance stressors and purposeful work as a predictor of mental health symptoms, tests of simple slopes were estimated at low (-1SD from the mean), medium (the mean), and high (+1 SD from the mean) values of purposeful work. At low levels of purposeful work, there was not a significant relationship between hindrance stressors and mental health symptoms, $t (301) = 1.66, p = .098$. However, at medium and high levels of purposeful work there was a significant positive relationship between hindrance stressors and mental health symptoms, $t (301) = 4.21, p < .01$ and $t (301) = 4.48, p < .01$, respectively. As seen in Figure 5, the relationship between hindrance stressors and mental health symptoms was magnified when participants reported higher levels of purposeful work, consistent with the proposed hypotheses.

Hypothesis 10c was also supported. After controlling for age and tenure, a significant main effect for mean-centered hindrance stressors was found in predicting mental health symptoms, but the main effect for prosocial orientation was not significant.
After controlling for the two main effects, there was a significant interaction between hindrance stressors and prosocial orientation predicting mental health symptoms at Time 2, thus Hypothesis 10c was supported. The $R^2$ for the interaction was .017 ($f^2 = .017$). The interaction remained marginally significant when controlling for mental health symptoms at Time 1, $B = .061$, $S.E. = .031$, $t = 1.95$, $p = .052$.

In order to interpret the interaction between hindrance stressors and prosocial orientation as a predictor of mental health symptoms, tests of simple slopes were estimated at low (-1SD from the mean), medium (the mean), and high (+1 SD from the mean) values of prosocial orientation. At low levels of prosocial orientation, there was not a significant relationship between hindrance stressors and mental health symptoms, $t (301) = .99$, $p = .325$. However, at medium and high levels of prosocial orientation, there was a significant positive relationship between hindrance stressors and mental health symptoms, $t (301) = 4.13$, $p < .01$ and $t (301) = 5.25$, $p < .01$, respectively. As seen in Figure 6, the relationship between hindrance stressors and mental health symptoms was magnified when participants reported higher levels of prosocial orientation, consistent with the proposed hypotheses.

In order to investigate whether the interactions between the calling dimensions and hindrance stressors accounted for unique variance in mental health symptoms, a final multiple regression was conducted with age and tenure, the main effects of the orientations and the three interactions (see Table 4). In the final model, only prosocial orientation remained a significant predictor of mental health symptoms, $B = .15$, $S.E. = .074$, $p < .05$. 
Mediational Hypotheses Between Calling and Mental Health Symptoms via Workaholism and Work Hours

To examine hypotheses 16(a-c) and 17(a-c), the mediation models were conducted using a bootstrap estimation approach with 5,000 samples using the PROCESS macro as described by Hayes (2012). A separate PROCESS model was conducted for each dimension of calling, as well as each workaholism subscale to determine if the effects of calling on mental health symptoms and work-family conflict are mediated by workaholism and work hours. Whether or not the relationship between calling orientations and mental health symptoms was significantly mediated by workaholism was determined by examining the provided confidence intervals, which indicated significance when zero was not included in the interval. Bootstrap intervals revealed that workaholism did mediate the relationship between the calling dimensions and mental health symptoms and work-family conflict. However, the lack of an initial significant relationship between the calling dimensions and the outcomes did not support the inconsistent mediation indicated in Hypotheses 16(a-c) and 17(a-c). No paths were significant in the role of additional hours worked and work hours mediating the relationship between any of the calling dimensions and mental health symptoms.

Despite a nonsignificant direct relationship between the calling orientations at Time 1 and mental health symptoms and work-family conflict at Time 2, scholars have argued that the direct path is not a requirement for testing mediational analyses. Zhao, Lynch, and Chen (2010) argued that the direct path reflects the sum of the hypothesized indirect path (a*b) and the direct path (c’). If the direct path has an opposing sign in
relation to the indirect path, the product may reflect a nonsignificant effect of X on Y when no mediator is present in the analyses. Thus, the only requirement for mediation is that the indirect effect should be significant.

In the first model examining Hypothesis 16a, where the workaholism scales were entered separately, the results indicated that transcendent summons was a significant predictor of working excessively, and that working excessively was a significant predictor of mental health symptoms. Additionally, transcendent summons was a significant predictor of working compulsively, and working compulsively was a significant predictor of mental health symptoms. This provided initial support for a potential mediated relationship. In order to test for mediation, the control variables and both mediators were entered into a single model (see Figure 7). Approximately 8.51% of the variance in mental health symptoms was accounted for by the predictors ($R^2 = .085, f^2 = .093$). Bootstrap estimations indicated that the relationship between transcendent summons and mental health symptoms was mediated by working excessively, as indicated by the confidence interval not including zero (95% CI [.008, .059]). Working compulsively was no longer a significant mediator (95% CI [-.030, .023]). Transcendent summons was not a significant predictor of mental health symptoms after accounting for the mediators, indicating evidence for full mediation. Given this mediation occurred in the absence of the direct relation between transcendent summons and mental health symptoms, a comparison of the direct and indirect path is not appropriate to access inconsistent mediation as proposed by Hypothesis 16a.
Considering the calling dimension of purposeful work, an initial model examined the workaholism scales separately and indicated that purposeful work was a significant predictor of working excessively, and that working excessively was a significant predictor of mental health symptoms. Additionally, purposeful work was a significant predictor of working compulsively, and working compulsively was a significant predictor of mental health symptoms. This provided initial support for a potential mediated relationship. In order to test for mediation, the control variables and both mediators were entered into a single model (see Figure 8). Approximately 10.02% of the variance in mental health symptoms was accounted for by the predictors ($R^2 = .100, f^2 = .111$). Bootstrap estimations indicated that the relationship between purposeful work and mental health symptoms was partially mediated by working excessively, as indicated by the confidence interval not including zero (95% CI [.014, .068]). Working compulsively was no longer a significant mediator (95% CI [-.023, .025]). Purposeful work became a significant predictor of mental health symptoms after controlling for the mediators, consistent with suppression. Given this mediation occurred in the absence of the direct relation between transcendent summons and mental health symptoms, a comparison of the direct and indirect path is not appropriate to access inconsistent mediation as proposed in Hypotheses 16b.

When investigating the relationship between the calling dimension of prosocial orientation and mental health symptoms through workaholism, the workaholism scales were first examined separately. The results indicated that prosocial orientation was a significant predictor of working excessively, and that working excessively was a
significant predictor of mental health symptoms. Additionally, prosocial orientation was a significant predictor of working compulsively, and working compulsively was a significant predictor of mental health symptoms. This provided initial support for a potential mediated relationship. In order to test for mediation, the control variables and both mediators were entered into a single model (see Figure 9). Approximately 9.33% of the variance in mental health symptoms was accounted for by the predictors ($R^2 = .093$, $f^2 = .103$). Bootstrap estimations indicated that the relationship between prosocial orientation and mental health symptoms was partially mediated by working excessively, as indicated by the confidence interval not including zero (95% CI [.013,.069]). Working compulsively was no longer a significant mediator (95% CI [-.025, .025]). Prosocial orientation became a significant predictor of mental health symptoms after controlling for the mediators, consistent with suppression. Given this mediation occurred in the absence of the direct relation between prosocial orientation and mental health symptoms, a comparison of the direct and indirect path is not appropriate to access inconsistent mediation as proposed in Hypotheses 17c.

**Mediational Hypotheses Between Calling and Work-Family Conflict via Workaholism**

A second set of analyses was conducted to determine whether the relationship between calling and work-family conflict was significantly mediated by workaholism and additional work hours. Similar to the prior set of analyses, the mediators were first examined separately. The results indicated that transcendent summons was a significant predictor of working excessively, and that working excessively was a significant
predictor of work-family conflict. Additionally, transcendent summons was a significant predictor of working compulsively, and working compulsively was a significant predictor of work-family conflict. This provided initial support for a potential mediated relationship. In order to test for mediation, the control variables and both mediators were entered into a single model (see Figure 10). Approximately 14.18% of the variance in work-family conflict was accounted for by the predictors \( R^2 = .142, f^2 = .166 \). Bootstrap estimations indicated that the relationship between transcendent summons and work-family conflict was mediated by working excessively, as indicated by the confidence interval not including zero (95% CI [.023,.209]). Working compulsively was no longer a significant mediator (95% CI [-.093, .055]). Transcendent summons was not a significant predictor of work-family conflict after controlling for the mediators, consistent with full mediation. Given this mediation occurred in the absence of the direct relation between transcendent summons and work-family conflict, a comparison of the direct and indirect path is not appropriate to access inconsistent mediation as proposed in Hypotheses 17a.

In considering the calling dimension of purposeful work and work-family conflict, the mediators were first examined separately. The results indicated that purposeful work was a significant predictor of working excessively and working excessively was a significant predictor of work-family conflict. Additionally, purposeful work was a significant predictor of working compulsively, and working compulsively was a significant predictor of work-family conflict. This provided initial support for a potential mediated relationship. In order to test for mediation, the control variables and both mediators were entered into a single model (See Figure 11). Approximately 14.21%
of the variance in mental health symptoms was accounted for by the predictors ($R^2 = .142, f^2 = .166$). Bootstrap estimations indicated that the relationship between purposeful work and work-family conflict was mediated by working excessively, as indicated by the confidence interval not including zero (95% CI [.045, .233]). Working compulsively was no longer a significant mediator (95% CI [-.083, .053]). Purposeful work was not a significant predictor of work-family conflict after controlling for the mediators, consistent with full mediation. Given this mediation occurred in the absence of the direct relation between purposeful work and work-family conflict, a comparison of the direct and indirect path is not appropriate to access inconsistent mediation as proposed in Hypotheses 17b.

Considering the calling dimension of prosocial orientation, when the mediators were entered into the model separately, the results indicated that prosocial orientation was a significant predictor of working excessively, and working excessively was a significant predictor of work-family conflict. Additionally, prosocial orientation was a significant predictor of working compulsively, and working compulsively was a significant predictor of work-family conflict. This provided initial support for a potential mediated relationship. In order to test for mediation, the control variables and both mediators were entered into a single model (See Figure 12). Approximately 14.38% of the variance in work-family conflict was accounted for by the predictors ($R^2 = .144, f^2 = .168$). Bootstrap estimations indicated that the relationship between prosocial orientation and work-family conflict was mediated by working excessively, as indicated by the confidence interval not including zero (95% CI [.047, .250]). Working compulsively was
no longer a significant mediator (95% CI [-0.088, 0.054]). Prosocial orientation was not a significant predictor of work-family conflict after controlling for the mediators, consistent with full mediation. Given this mediation occurred in the absence of the direct relation between prosocial orientation and work-family conflict, a comparison of the direct and indirect path is not appropriate to access inconsistent mediation as proposed in Hypotheses 17c.

**Mediational Hypotheses Between Calling and Work-Family Conflict via Work Hours**

In examining the role of work hours mediating the relationship between the calling dimensions and work-family conflict, none of the calling dimensions were significantly related to actual or additional hours worked. However, hours worked, $B = .05$, $S.E. = .013$, $p < .01$, and additional hours worked, $B = .04$, $S.E. = .013$, $p < .01$, were significantly related to work-family conflict.

Given that salaried employees worked significantly more hours than hourly employees, additional analyses were conducted to examine the differences between the two groups. The data were split and the relationships were tested for hourly and salary employees separately. All mediational findings were consistent with the significant results reported above.
CHAPTER SEVEN

DISCUSSION

Summary of Findings and Connection to Prior Research

Research has shown the numerous benefits that can arise from having an occupational calling, such as increased job engagement (Hirschi, 2011), organizational commitment (Cardador, Dane, & Pratt, 2011), and job satisfaction (Xie et al., 2016). However, the present study contributes to the growing research on the negative outcomes associated with having a calling. Individuals with a calling have been shown to devote longer hours to work and make more personal sacrifices to live out their calling (Bunderson & Thompson, 2009; Clinton, Conway & Sturges, 2017; Serow, 1994). The present longitudinal study investigated whether individuals with a calling may experience either positive or negative consequences based on the type of work demand they are faced with or the number of hours worked. To my knowledge, this is the first study to provide empirical support for the influence that different types of stressors have on individuals with a calling.

The first set of hypotheses examined how the relationship between type of stressor (challenge or hindrance), engagement and mental health symptoms can be influenced by having an occupational calling. Initial analyses supported previous research that revealed both challenge and hindrance stressors were associated with engagement, but in opposing directions (LePine et al., 2005). Specifically, challenge stressors were positively related to engagement while hindrance stressors were negatively associated with engagement. Demands that promote personal growth appear to engage employees,
while obstacles that impede performance hinder engagement. Results indicated that there was a positive relationship between hindrance stressors and mental health symptoms, but the relationship between challenge stressors and symptoms was not significant. This finding is consistent with previous studies that have found inconsistent relationships between challenge stressors and wellbeing outcomes (Podsakoff et al., 2007; Webster et al., 2010).

Illustrating the possible negative outcomes associated with possessing an occupational calling, results indicated that the relationships between hindrance stressors and mental health symptoms were magnified when participants reported higher levels of the three types of occupational calling, whereas calling did not influence the outcomes of challenge stressors. Individuals with high levels of calling tend to devote more time and energy to work, and thus may be at increased risk for mental health symptoms. The interaction between hindrance stressors and calling as predictors of mental health symptoms supports the hypothesized effects and adds to prior research indicating the concurrent positive and negative influences that calling can have on the same outcome (Clinton, Conway, & Sturges, 2017). Although the hypothesized interaction was not supported for challenge stressors, it may be that people with a calling view experiencing challenge stressors as doing what they love, whereas hindrance stressors prevent the employee from doing what they love, and therefore the impact of these types of stressors is more harmful on their mental health.

These results support the narratives from Bunderson and Thompson’s (2009) study of zoo keepers, where employees spoke of the increased responsibility to take care
and ensure the health and happiness of the animals. One of the tenants of challenge stressors is having increased responsibility. When employees continuously experience challenging demands, it can result in poor mental health. However, because individuals with a calling already have an increased sense of responsibility to their work (despite work demands), continuously experiencing these demands could be the reason they are pursuing their calling. Specifically, experiencing challenge stressors demonstrates their important role (“if I didn’t do it, nobody would”; Bunderson & Thompson, 2009, p.41), thus increasing the degree of their calling in contrast to increasing mental health, providing rationale for the non-significant results.

On the other hand, hindrance stressors pose a barrier for optimal employee performance and require a solution to overcome that is out of one’s personal control. The present study also supports Bunderson and Thompson’s (2009) findings that individuals with a calling felt frustration resulting from the organizational policies of animal transport, purchasing and personnel decisions that were out of the worker’s control. Individuals higher on occupational calling appear to react more to barriers that hinder their purpose. For example, one zoo keeper stated, “They should care as much about these animals as I do, and maybe they don’t” when referring to how money was spent. Additionally, the present findings support the work of Keller, Spurk, Baumeler, and Hirschi (2016), who found that a competitive work environment would affect individuals with a calling because the environment would be perceived as a threat to their ability to live out their calling. The results of the present study indicate that individuals with a
calling are more sensitive to workplace obstacles that obstruct their ability to live out their calling.

In the analysis of the three calling dimensions and the interaction terms with hindrance stressors in predicting mental health symptoms, prosocial orientation uniquely moderated the relationship above the other two dimensions. It is possible that individuals who work to serve others and feel a responsibility for those they affect are more influenced by hindrance stressors than individuals who feel spiritually called or finding meaning in the task at hand. Individuals high on prosocial orientation may feel increased responsibility towards overcoming stressors as they feel accountable for others. Prosocial orientation was also the only calling dimension that had an interaction effect with challenge stressors on engagement. Given this interaction was only marginally significant, I am hesitant to draw firm conclusions from these findings. Additionally, there were no interaction effects found between hindrance stressors and calling on engagement.

The second set of hypotheses examined how workaholism mediated the relationship between calling and mental health symptoms and work-family conflict. The findings of the present study build upon the results found by Keller et al. (2016) who found a small positive correlation between the Brief Calling Scale (Dik et al., 2012) and the Dutch Work Addiction Scale (Schaufeli, Taris, & Bakker, 2008). The present study utilized the full Calling and Vocational Questionnaire (Dik et al., 2012) and how all three dimensions of calling were related to both dimensions of workaholism and both working excessively and working compulsively were linked to increased mental health symptoms.
and work-family conflict. Interestingly, the hypotheses were partially supported in that
the three dimensions of occupational calling were related to mental health symptoms and
work-family conflict through only one dimension of workaholism, working excessively.
According to the definition of workaholism, working excessively hard refers to the
behavioral dimension whereas being obsessed with work refers to the cognitive
dimension of working compulsively (Schaufeli, Shimazu, & Taris, 2009, p. 322).

The findings from the present study highlight that individuals with a calling are at
higher risk for mental health symptoms and work-family conflict because of their
tendency to be physically consumed with work (i.e. working late, exerting energy) over
and beyond the psychological absorption with work. The findings provide empirical
support for inferences made by prior studies. Bunderson and Thompson (2009) found that
calling was associated with increased “willingness to make whatever personal sacrifices
are required to perform their work” (p.44); however, these researchers attributed this to
moral duty rather than workaholism. Moral duty refers to feelings of obligation, a
cognitive approach, whereas workaholism is the act of actually physically being
consumed with work. Similarly, Clinton and colleagues (2017) proposed that calling is
related to increased energy to pursue work, which increases vigor at the start of the work
day. However, by working longer and harder, next vigor was actually diminished. The
present study supports these findings and elaborates even further that not only next day
vigor can be weakened but overall mental health symptoms can be increased in the long
term for individuals with a calling.
Contrary to previous studies (Bunderson & Thompson, 2009; Keller et al., 2016), calling was not associated with increased hours worked or additional hours worked. It may be that these differences were not able to be shown as half of the sample was hourly workers. Hourly workers are restricted by management to a limited number of hours available each week, thus they are not legally able to work more hours than they are assigned. This is different from salaried workers who tend to have more flexibility in the hours they work each day and thus are able to work additional hours than required.

**Implications of Findings**

The present study contributes to the literature on the dark side of calling in several ways. As noted by Dobrow (2013), there is a lack of quantitative studies investigating calling with longitudinal predictions and without a reliance on student samples. The present study obtained data from 301 adults currently working in a wide range of industries at two different time periods separated by 3 months. The present research has extended the literature on calling by examining potential problems that can occur for adults in a variety of work roles over time.

This study also adds to previous research by focusing on the type of stressor that is experienced, rather than the participant’s evaluation of the extent to which the stressor is experienced. Past research has relied on participant evaluations of the degree a stressor is experienced, whereas the current study focused on the type of stressor categorized as either a challenge or hindrance. Classification of the type of stressor has been proven to be more predictive of outcomes by past researchers (Cavanaugh et al., 2000; Selye, 1982).
Additionally, the combination of examining both positive and negative outcomes resulting from challenge-hindrance stressors provided a comprehensive model explaining the impact calling has on stressors experienced at work. It is important to investigate both avenues of outcomes as typically studies have addressed organizational and performance domains with less attention to personal health. As past researches have demonstrated, detrimental effects can arise from experiencing hindrance stressors (Rodell & Judge, 2009; Webster et al. 2010), however, the current study is among the first to demonstrate the magnified effect that calling has on the relationship between hindrance stressors and mental health symptoms. Past research has indicated that hindrance stressors have been associated with negative outcomes for the employee, such as increased emotional exhaustion (Boswell, Olson-Buchanan, & LePine, 2004), psychological and physical strain (Webster et al., 2010), and anger (Rodell & Judge, 2009) as well as concerns for the organization such as decreased job satisfaction, organizational commitment, and loyalty (Cavanaugh et al., 2000; Podsakoff et al., 2007). The findings from the present study show how these relationships may also be magnified for those employees reporting a calling.

The current study also supports prior research in the inconsistent predictive qualities of challenge stressors (Podsakoff et al., 2007; Webster et al., 2010). While hindrance stressors typically have consistent findings predicting outcomes such as increased strain and decreased engagement, significant results from challenge stressors vary. The present research provides additional evidence that challenge stressors have weaker relationships with outcomes such as engagement and mental health symptoms.
and that the current measure may have poor predictive qualities or may be missing a key domain of the construct. Future research should assess ways to improve the psychometric properties of the scale and ensure the generalizability for all industries.

Highly dedicated employees who are motivated by a calling can be found in all occupations. Given the passion and drive to work in one’s career path, these employees can be an organization’s best resource. Considering work is a socially rich environment where employees draw on cues from others, organizations are in a unique position to help dedicated members of their occupation cultivate and enact meaningful work in a healthy manner (Pratt & Pradies, 2013). The current research demonstrates the importance of organizational interventions designed to help employees with a calling better respond to stressors in a healthy way. Research has shown that helping fatigued workers after harm has been done is less effective and sustainable than improving the personal and management skills of employees prior to the experience of mental health symptoms (Noblet & LaMontagne, 2006). Training employees on emotion-focused coping and recognizing the possible negative consequences with working excessively, as well as allowing employees to voice their concerns during organization decisions, may be ways to mitigate the negative outcomes associated with having a calling.

**Limitations**

There are several limitations in the present study that highlight potential areas for future research. First, all measures in the present study were assessed via self-report. Although self-report measures provide the ability to capture information as perceived by employees, researchers have argued biases may occur regarding social desirability and
accuracy of the variables measured (Del Boca & Nol, 2000). Importantly, employees were assured of their anonymity when responding to the measures, therefore minimizing concerns with social desirability.

Secondly, the sample size of the presented study may have not been large enough to detect all of the interactions present. As noted by Aiken and West (1991) relatively small sample sizes tend to not have enough power to detect the moderator effects even if they exist. Typically, it is difficult to detect moderation as the interaction has to emerge after controlling for the main effects and therefore not much variance remains to be explained by the interaction term. For example, to obtain a small effect size such as .01, 1,000 individuals would be required. For this reason, detecting a significant interaction is more likely to occur with large samples. This is further complicated when examining stressors. Sonnentag and Frese (2003) argued that methodological reasons make it difficult to detect moderator effects, particularly in nonexperimental stress studies. The authors noted that moderators in stress research may be plagued by a large Type II error (i.e., not finding significant relationships in research when they exist in reality). Because individual strain measures are fairly stable over time, a large proportion of the variance of the dependent variable is already explained. Thus, there is little variance left to be explained by the interaction effect as seen in the present study, where the interaction effect was not significant after controlling for Time 1 outcomes.

**Future Research**

An important contribution of the present study was the presence of a magnified effect of hindrance stressors on mental health symptoms with individuals with a calling.
Further research should seek to better understand the additional consequences that may occur as a result of having a high level of calling. Individuals with a calling report having an emotional attachment to their work, and thus when experiencing high demands, may experience increased emotional fatigue more than individuals low on calling. Similarly, calling has been associated with increased organizational citizenship behaviors (OCB; Elangovan, Pinder, & McLean, 2010), but research has shown that when employees engage in ‘too much’ OCBs, they feel worn out, tired, or on edge referred to as citizenship fatigue (Bolino, Hsiung, Harvey, & LePine, 2015). It may be that individuals with a calling also experience a magnified effect in citizenship fatigue as well. These proposed areas for future research contribute to Duffy et al.’s (2015) theory that individuals who are able to live their calling can experience harmful outcomes that either minimize the degree to which living out a calling is fulfilling or add additional burdens in order to live their calling. This is an important direction for future research as these individuals can serve as the ideal employee, but over time may lead to poor organizational outcomes if personal wellbeing is not addressed.

An interesting unexpected finding from the results was that working excessively seems to be related over and above working compulsively in the present model. The distinction between a cognitive (working compulsively) or physical (working excessively) absorption with work was present in the mediational hypotheses. Future research should address whether calling is inherently being cognitively absorbed and thus, individuals high on calling may not associate constant thoughts about work as unnecessary or unwarranted whereas they do notice that they are exerting increased effort
and physical sacrifices. Demonstration of this was shown in the Bunderson and Thompson (2009) study where zoo keepers reported acknowledging the physically demanding, dangerous and uncomfortable work they do.

Additionally, job resources were not examined within the current study. It may be that many individuals are exposed to numerous assets that may mitigate the effects of stressors. Future research should address whether individuals with a calling perceive or utilize their resources to mitigate later fatigue differently than individuals low on calling. Resources such as having the opportunity to voice staff opinions in organizational decisions, training on coping strategies, or social resources from interactions with others may mitigate the detrimental effects of living out a calling in an unhealthy fashion.

Within the current study, exploratory analyses were conducted on the potential differing effects of hourly versus salary employees. Future research should evaluate whether the dark side of calling may affect one group more than another. It may be that salaried employees have the ability to work longer hours as they are not restricted by overtime like hourly employees. Salaried employees may be at risk for personal sacrifices of their mental and physical health going unnoticed. In contrast, employees who are required to work a set number of hours each week may feel bounded by hourly restraints and organizational politics more than salaried employees. Research investigating whether one group is more at risk for some consequences than others should be addressed.

Future research should also seek to evaluate the effectiveness of organizational interventions with individuals with a calling. Interventions could explore the most effective strategies and mechanisms to harness a greater capacity for employees with a
calling becoming active agents in stress prevention and management of their calling thereby sharing the responsibility with the organization to safeguard their health and well-being (Tuckey, Searle, Boyd, Winefield, & Winefield, 2015).

**Conclusion**

Many individuals experience psychological benefits by living out their calling. Past research has focused on the benefits resulting from a calling, while few studies have examined the possible costs that may also simultaneously occur. The present study contributes to the literature in demonstrating the relationship between hindrance stressors and mental health symptoms was strengthened when participants reported higher levels of occupational calling. Additionally, the current study demonstrated that calling is related to mental health symptoms and work-family conflict through working excessively. The present study adds to the growing literature on the double-edge sword of calling. Continued research and application of the present findings should seek to enhance the positive outcomes associated with a calling and minimize the problematic outcomes that may also occur.
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https://doi.org/10.4236/ojl.2013.24015


APPENDICES
APPENDIX A

MEASURE OF OCCUPATIONAL CALLING

Please indicate the degree to which you believe the following statements describe you, using the following scale. Please respond with your career as a whole in mind. For example, if you are currently working part time in a job that you don't consider part of your career, focus on your career as a whole and not your current job. Try not to respond merely as you "should" respond; rather, try to be as accurate and as objective as possible in evaluating yourself. If any of the questions simply do not deem relevant to you, "1" may be the most appropriate answer.

1= Not at all true of me
2= Somewhat true of me
3= Mostly true of me
4= Absolutely true of me

1. I believe that I have been called to my current line of work
2. I do not believe that a force beyond myself has helped guide me to my career. (R)
3. I was drawn by something beyond myself to pursue my current line of work.
4. I am pursuing my current line of work because I believe I have been called to do so.
5. My work helps me live out my life’s purpose.
6. I see my career as a path to purpose in life.
7. Please select "Not at All True of Me" for this item.
8. My career is an important part of my life’s meaning.
9. I try to live out my life purpose when I am at work.
10. The most important aspect of my career is its role in helping to meet the needs of others.
11. Making a difference for others is the primary motivation in my career.
12. My work contributes to the common good.
13. I am always trying to evaluate how beneficial my work is to others.

Note. Items 1-4 present the Transcendent Summons dimension, items 5-9 represent the Purposeful Work dimension, and items 10-13 represent the Prosocial Orientation dimension from the Presence subscale from the Calling and Vocation Questionnaire by Dik, Eldridge, Steger, and Duffy (2012).
APPENDIX B

MEASURE OF CHALLENGE/HINDRANCE STRESSORS

Rate the frequency of the following demands in your daily work using the scale below.

1= Never
2= Rarely
3= Sometimes
4= Often
5= Always

1. Having to complete a lot of hard work.
2. Having to work very hard.
3. Time pressure.
4. Having to perform complex tasks.
5. Having to multitask your assigned projects.
6. Having high levels of responsibility.
7. Administrative hassles.
8. Bureaucratic constraints to completing work (red tape).
9. Conflicting instructions and expectations from your boss or bosses.
10. Unclear job tasks.
11. Conflicting requests from your supervisor(s).
12. Disputes with co-workers.

Note. Items 1-6 represent the challenge stressor items, and items 7-13 represent the hindrance stressor items by Zhang, LePine, Buckman, and Wei (2014).
APPENDIX C

MEASURE OF WORKAHOLISM

Rate the extent to which you agree with each of the following statements using the scale provided.

1 = Totally disagree
2 = Disagree
3 = Agree
4 = Totally agree

1. I seem to be in a hurry and racing against the clock.
2. I find myself continuing to work after my coworkers have called it quits.
3. I stay busy and keep many irons on the fire.
4. I spend more time working than on socializing with friends, on hobbies, or on leisure activities.
5. I find myself doing two or three things at one time, such as eating lunch and writing a memo while talking on the telephone.
6. It's important to me to work hard even when I don't enjoy what I'm doing.
7. I feel that there's something inside me that drives me to work hard.
8. I feel obligated to work hard, even when it's not enjoyable.
9. I feel guilty when I take time off work.
10. It is hard for me to relax when I'm not working.

Note. Items 1-5 represent items assessing working excessively and items 6-10 represent items assessing working compulsively from the Dutch Workaholism Scale by Schaufeli, Shimazu, Taris, (2009).
APPENDIX D

MEASURE OF WORK HOURS

1. How many hours are you required to work each week? _____________

2. How many hours do you actually work each week? _____________

Note. Additional hours worked was measured by subtracting item 2 from item 1. Item 1 was used for the measure of work hours.
APPENDIX E

MEASURE OF ENGAGEMENT

The following statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, select the "almost never, a few times a year or less" option. If you have had this feeling, indicate how often you felt it by selecting the statement that best describes how frequently you feel that way.

1= Almost Never, a few times a year or less
2= Rarely, once a month or less
3= Sometimes, a few times a month
4= Often, once a week
5= Very Often, a few times a week
6= Always, everyday

1. At my work, I feel bursting with energy.
2. At my job, I feel strong and vigorous.
3. When I get up in the morning, I feel like going to work.
4. I am enthusiastic about my job.
5. My job inspires me.
6. I am proud of the work that I do.
7. I feel happy when I am working intensely.
8. I am immersed in my work.
9. I get carried away when I am working.

Note. Items 1-3 represent the vigor subscale, items 4-7 represent the dedication subscale, and items 6-9 represent the absorption subscale from the Utrecht Work Engagement Scale by Schaufeli, Bakker, and Salanueva (2006).
APPENDIX F

MEASURE OF WORK-FAMILY CONFLICT

Please indicate how well you agree with each of the following statements.

1= Strongly Disagree
2= Disagree
3= Somewhat Disagree
4= Neither Agree or Disagree
5= Somewhat Agree
6= Agree
7= Strongly Agree

1. The demands of my work interfere with my home and family life.
2. The amount of time my job takes up makes it difficult to fulfill family responsibilities.
3. Things I want to do at home do not get done because of the demands my job puts on me.
4. My job produces strain that makes it difficult to fulfill family duties.
5. Due to work-related duties, I have to make changes to my plans for family activities.

APPENDIX G

MEASURE OF MENTAL HEALTH SYMPTOMS

Over the last 2 weeks, how often have you been bothered by any of the following problems?

1= Not at all
2= Several days
3= More than half of the days
4= Nearly every day

1. Little interest or pleasure in doing things.
2. Feeling down, depressed, or hopeless.
3. Trouble falling or staying asleep, or sleeping too much.
4. Feeling tried or having little energy.
5. Poor appetite or overeating.
6. Feeling bad about yourself - or that you are a failure or have let yourself or your family down.
7. Trouble concentrating on things such as reading the newspaper or watching television.
8. Moving or speaking so slowly that other people have noticed? Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual.
9. Thoughts that you would be better off dead or hurting yourself in some way.
10. Feeling nervous, anxious or on edge.
11. Not being able to stop or control worrying.
12. Trouble relaxing.
13. Worrying too much about different things.
14. Being so restless that it is hard to sit still.
15. Becoming easily annoyed or irritable.
16. Feeling afraid as if something awful might happen.

Note. Items 1-9 were taken from the Patient Health Questionnaire by Spitzer, Williams, and Kroenke (1999). Items 10-16 were taken from the Generalized Anxiety Disorder Scale by Spitzer, Kroenke, Williams, and Löwe (2006).
Table 1

Means, standard deviations, reliabilities and bivariate correlations among study variables.

<table>
<thead>
<tr>
<th>Scale</th>
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<td>1. Transcendent Simplicity</td>
<td>2.12</td>
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<td>3. Provocative Orientation</td>
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<td>4. Challenge Stressors</td>
<td>3.56</td>
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<td>5. Hindrance Stressors</td>
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<td>6. Working Excessively</td>
<td>2.61</td>
<td>0.59</td>
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<td>7. Working Compassively</td>
<td>2.72</td>
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<td>8. Required Work Hours</td>
<td>37.99</td>
<td>7.51</td>
<td>(.76)</td>
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<td>9. Actual Hours Worked</td>
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<td>7.20</td>
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<td>10. Overtime Hours (Actual - 1)</td>
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<td>7.16</td>
<td>(.70)</td>
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<td>11. Engagement</td>
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<td>(.70)</td>
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<td>13. Work-Family Conflict</td>
<td>3.37</td>
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<td>14. Engagement</td>
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<td>16. Work-Family Conflict</td>
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Note: Cronbach’s alphas are presented in parentheses along the diagonal.

* p < .05; ** p < .01.
Table 2

Moderated regression analysis of challenge and hindrance stressors and occupational calling at Time 1 predicting engagement at Time 2.

<table>
<thead>
<tr>
<th>Predictor</th>
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Step 1: Control variables
Age
Tenure

Step 2: Main Effects
Stressor
Purposeful Work

Step 3: Interaction
Stressor
Purposeful Work
Stressors X PW

Step 1: Control variables
Age
Tenure

Step 2: Main Effects
Stressor
Prosociaal Orientation

Step 3: Interaction
Stressor
Prosociaal Orientation
Stressors X PO

Note. TS = Transcendent Summons, PW = Purposeful Work, PO = Prosociaal Orientation.
* p < .05; ** p < .01.
Table 3

Moderated regression analysis of challenge and hindrance stressors and occupational calling at Time 1 predicting mental health symptoms at Time 2.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Challenge Stressors</th>
<th>Hindrance Stressors</th>
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<tbody>
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</table>

Step 1: Control variables

Age                        | -.01| .00  | -1.63  | .11     | -1.01| .00  | -1.63  | .11     |
Tenure                     | -.01| .01  | -.67   | .50     | -.01| .01  | -.67   | .50     |

Step 2: Main Effects

Stressor                   | .09 | .05  | 1.93   | .05     | .19 | .04  | 4.34   | .001**  |
Purposeful Work             | -.07| .04  | -1.88  | .06     | -.03| .04  | -.95   | .34     |

Step 3: Interaction

Stressor                   | .09 | .05  | 1.82   | .07     | .19 | .04  | 4.44   | .001**  |
Purposeful Work             | -.07| .04  | -1.87  | .06     | -.01| .04  | -3.9   | .70     |
Stressors X PW              | -.05| .05  | -.98   | .33     | .09 | .04  | 2.34   | .02**   |

Step 1: Control variables

Age                        | -.01| .00  | -1.63  | .11     | -1.01| .00  | -1.63  | .11     |
Tenure                     | -.01| .01  | -.67   | .50     | -.01| .01  | -.67   | .50     |

Step 2: Main Effects

Stressor                   | .09 | .05  | 1.86   | .06     | .19 | .04  | 4.41   | .001**  |
Prosocial Orientation       | -.06| .04  | -1.48  | .14     | -.02| .04  | -.63   | .53     |

Step 3: Interaction

Stressor                   | .09 | .05  | 1.88   | .06     | .18 | .04  | 4.39   | .001**  |
Prosocial Orientation       | -.06| .04  | -1.45  | .15     | .00 | .04  | -1.1   | .92     |
Stressors X PO              | .06 | .05  | 1.11   | .27     | .14 | .04  | 3.15   | .002**  |

Note. TS = Transcendent Summons, PW = Purposeful Work, PO = Prosocial Orientation.
* p < .05; ** p < .01.
Table 4

*Moderated regression analysis of hindrance stressors and occupational calling at Time 1 predicting mental health symptoms at Time 2.*

<table>
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<th>Predictor</th>
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<th>S.E.</th>
<th>t-value</th>
<th>p-value</th>
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</tbody>
</table>

*Note.* *p* < .05; **p** < .01.
Hypothesized interaction of occupational calling on the relationship between challenge and hindrance stressors on engagement and mental health symptoms (Hypotheses 1-10).
Figure 2

Hypothesized model of the inconsistent mediation between occupational calling and mental health symptoms and work-family conflict through workaholism and additional work hours (Hypotheses 11-17).
Figure 3

The interaction between challenge stressors and prosocial orientation at Time 1 predicting engagement at Time 2 (H7c). The interaction was significant at low and moderate values of prosocial orientation.
Figure 4

*The interaction between hindrance stressors and transcendent summons at Time 1 predicting mental health symptoms at Time 2 (H10a). The interaction was significant at high, medium, and marginally at low values of transcendent summons.*
The interaction between hindrance stressors and purposeful work at Time 1 predicting mental health symptoms at Time 2 (H10b). The interaction was significant at high and medium values of purposeful work.
Figure 6

The interaction between hindrance stressors and prosocial orientation at Time 1 predicting mental health symptoms at Time 2 (H10c). The interaction was significant at high and medium values of prosocial orientation.
Figure 7

The relationship between transcendent summons at Time 1 and mental health symptoms at Time 2 through workaholism (H16a).

Note. Regression coefficients account for control variables; standard errors are presented in parentheses. *p < .05, **p < .01.
Figure 8

The relationship between purposeful work at Time 1 and mental health symptoms at Time 2 through workaholism (H16b).

Note. Regression coefficients account for control variables; standard errors are presented in parentheses. *p < .05, **p < .01.
Figure 9

*The relationship between prosocial orientation at Time 1 and mental health symptoms at Time 2 through workaholism (H16c).*

Note: Regression coefficients account for control variables; standard errors are presented in parentheses.

* $p < .05$, ** $p < .01$. 

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Figure 10

*The relationship between transcendent summons at Time 1 and work-family conflict and Time 2 through workaholism (H17a).*

![Diagram](image)

*Note:* Regression coefficients account for control variables; standard errors are presented in parentheses.

* *p < .05, ** *p < .01.
Figure 11

The relationship between purposeful work at Time 1 and work-family conflict at Time 2 through workaholism (H17b).

Note. Regression coefficients account for control variables; standard errors are presented in parentheses.  
*p < .05, **p < .01.
Figure 12

The relationship between prosocial orientation at Time 1 and work-family conflict at Time 2 through workaholism (H16c).

Note. Regression coefficients account for control variables; standard errors are presented in parentheses. *p < .05, **p < .01.