DISSERTATION

THE DARK SIDE OF CALLING: A PARTIAL TEST OF THE WORK AS CALLING THEORY

(WCT) USING THE VETERINARIAN OCCUPATIONAL WELL-BEING STUDY (VOWS)

Submitted by

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ABSTRACT

THE DARK SIDE OF CALLING: A PARTIAL TEST OF THE WORK AS A CALLING

THEORY (WCT) USING THE VETERINARIAN OCCUPATIONAL WELL-BEING STUDY

(VOWS)

Although research on the concept of calling has blossomed in the last several decades, less is known about how and when having a calling may lead to less desirable outcomes (i.e., the so-called "dark side" of calling). Recently, the Work as Calling Theory (WCT - Duffy, Dik, Douglass, England, & Velez, 2018) proposed certain working conditions and individual characteristics that may lead to these negative outcomes. Many veterinarians experience lower psychological well-being (e.g., depression, thoughts of suicide, moral distress) as a result of occupational stressors and job characteristics. According to WCT, this may paradoxically be attributed to the reported likelihood that a high number of veterinarians find their work deeply meaningful and identify their work as a calling, often from a very early age. Using path analysis techniques with a sample of associate veterinarians ($n = 149$), the current study found support for the hypothesized relationships between living a calling and job satisfaction, which was mediated by the disengagement aspect of burnout. The relationship between living a calling and disengagement was found to be moderated by perfectionistic standards, in that, for individuals with both high perfectionistic standards and high sense of calling, increased disengagement was reported. Furthermore, while interpretation should be made with caution, the results indicated that the exhaustion subscale of burnout was also associated with living a calling and job satisfaction and acted as a mediator. Finally, the hypothesized moderators of living a calling and

several characteristics of the work environment (i.e., coworker and supervisor support) and personality traits (i.e., conscientiousness, need for achievement, and self-esteem) demonstrated some relationships with burnout, and provide tentative, initial starting points to be more fully explored in other studies. This study contributes to the field in providing initial support for some of the proposed relationships within WCT and has several practical implications for veterinarians.

ACKNOWLEDGESMENTS

TABLE OF CONTENTS

INTRODUCTION

...And as I push away the pain,

I go to bed and think, I would do it all again.

As a vet I am starving, for days I am hungry,

But please, go on how I'm "only in it for the money."

It is not my fault your animal is sick,

But it is your fault, when I stay passed my shift.

It's not my fault that you can't pay.

But it is your fault why I'm so tired today.

Please don't blame me for your issues,

I have also had my fair share of abuse.

Just because I'm not as open,

Does not discount that I, too, am broken,

I am affected for days,

In so many ways, and (so you're aware), I am not okay.

But I'll get up tomorrow, and keep it up,

Maybe not for you, but at least for your pup.

– Excerpt from "The Starving Veterinarian" by Dr. Ashley Hill

Work is a major part of life for many people around the globe and has thus been described as a central life domain (e.g., Hall & Chandler, 2005). For instance, the United States (U.S.) Bureau of Labor Statistics reported in their *American Time Use Survey 2019* that people employed full-time worked an average of 8.5 hours per weekday, when they worked, and 5.5 hours on weekend/holiday days they worked (BLS, 2019). Given that work is such a large part of daily life in the U.S., it is not surprising that many desire for the time and effort they put into work to signify something more than just a path to a paycheck (e.g., Wrzesniewski, McCauley, Rozin, & Schwartz, 1997). Sensing meaning and purpose at work may be an integrative aspect of workers' overall well-being (Harpaz & Fu, 2002) and health (Dik, Byrne, & Steger, 2013). However, contemporary workers may often feel a disconnect from what they desire from work and their own reality. Gallup's (an analytics and advisory company based in the U.S.) most recent iteration of the *State of the American Workplace* report summarizes findings from 195,600 U.S. workers. The report notes that only a third of workers are actively engaged at work despite craving meaning and purpose, and half of all workers are actively seeking different employment opportunities. "[The workers] want to be engaged and motivated, doing work that feels meaningful and makes the most of their talents and strengths" (p. 190). Better understanding meaningful work (i.e., the appraisal of work as positive and significant; Rosso, Dekas, & Wrzesniewski, 2010) has ramifications beyond the work domain, since finding one's work to be meaningful can fulfill the fundamental human need (Frankl, 1985) for meaning in life (e.g., Steger & Dik, 2009).

Calling has been consistently linked with a heightened sense of purpose, meaning, and fulfillment at work (e.g., Praskova, Hood, & Creed, 2014) and understanding the calling concept has also been posited to be a highly useful way to understand how workers experience meaning

in their occupations (Dik & Duffy, 2009). Importantly, however, research supports that while the relationship between finding one's work to be meaningful and considering it a calling is strong, the two constructs are distinct (e.g., Duffy & Dik, 2013; Duffy, Allan, et al., 2013; Duffy, Douglass, et al., 2016). Calling is a highly relatable concept for many people, with roughly a third to half of adult participants in the U.S. describing calling as personally relevant. This is true today for both college students (44% found calling relevant; Duffy & Sedlacek, 2010) and working adults (43% endorsed "mostly true" or "totally true" to the statement "I have a calling to a particular kind of work"- White, Marsh, Dik & Besseler (2021); 35.5% endorsed the calling orientation - Wrzesniewski et al., 1997; 50.6% reported having a calling - Duffy et al., 2014).

Brief History of Calling

The earliest understandings of the term "calling" originated in Europe (c. 1300) and referred to a call from God to fulfill a specific role within a Christian context (Colozzi & Colozzi, 2000). The term has since evolved. During the Protestant Reformation of the 16th and 17th centuries, Martin Luther and John Calvin argued that both overtly sacred work roles (e.g., monks) and more secular work roles (e.g., shoemakers) could be considered to be proper Christian occupations. They posited that all work could be equally favorable in God's eyes if conducted for righteous reasons. These ideas also led to the perception that all "honest" work done in the pursuit of giving glory to God and for the betterment of the common good could also be a calling (Hardy, 1990; Dik, Nepute, & McLaren, 2010). Despite existing as a term (in at least some societies) for centuries, research in the social sciences on the calling concept was scarce prior to 2007; but since that "tipping point," its use has quickly proliferated (Duffy & Dik, 2013).

The religious roots of the calling concept can still be observed in some current understandings of the term, such as Floyd's (1998) view that the term "calling" necessarily

implies a "caller," even though many contemporary scholars assert that callings can be both secular and sacred (e.g., Cahalan & Schuurman, 2016). Today, there remains conceptual disagreement among calling scholars. Some take a more secular or "modern" understanding of calling which emphasizes personal and professional achievement and development (e.g., Hall & Chandler, 2005; Weiss, Skelley, Haughey, & Hall, 2004). Others describe "neoclassical" understandings which typically recall the origins of the term and reflect the need for an external call (e.g., Dik & Duffy, 2009) or "push" (Bunderson & Thompson, 2009) toward a specific work role. Still, others offer a blended definition that contains both neo-classical and modern components of the construct (Dik & Shimizu, 2019).

Definitions of Calling

Calling is typically conceptualized as a psychological construct which can be incorporated into existing career theories and is not itself a theory (Duffy & Dik, 2013), although a theory to explain the dynamics of how a sense of calling is linked to outcomes has recently emerged (Duffy et al., 2018). Contemporary calling scholars have defined the concept in a variety of ways. Some take a straightforward approach and emphasize a unidimensional understanding of calling, as "a consuming, meaningful passion" (Dobrow & Tosti-Kharas, 2012, p. 1005) or as "work that a person perceives as his [sic] purpose in life" (Hall & Chandler, 2005, p. 10). Although almost all definitions include this core dimension of deeply meaningful/purposeful work (e.g., Hirschi, 2011), many also include a prosocial orientation (e.g., Elangovan, Pinder, & McLean, 2010; Wrzesniewski et al., 1997), evocative of Luther and Calvin's conceptualization of honest work. One example of this was illustrated when Elangovan et al., (2010) described callings as having an action orientation, a clarity of purpose and personal mission, along with a prosocial orientation (i.e., "a desire to make the world a better place").

Some calling scholars additionally describe a dimension of calling as necessitating a "caller" (e.g., Floyd, 1998) or "external force" and note that this distinction is what differentiates calling from the similar topic of vocation (e.g., Dik & Duffy, 2009). For example, Dik and Duffy (2009) described calling 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" (p. 427); and, Bunderson and Thompson (2009) defined calling as "that place in the occupational division of labor in society that one feels destined to fill by virtue of particular gifts, talents, and/or idiosyncratic life opportunities" (p. 38).

Although scholars may differ on which aspects of calling they accentuate with their conceptual definitions, qualitative studies typically support the multi-dimensional structure of the calling concept and have found similar dimensions to those proposed on conceptual grounds (Bunderson & Thompson, 2009; Coulson, Oades, & Stoyles, 2012; French & Domene, 2010; Hagmaier & Abele, 2012; Hunter, Dik, & Banning, 2010; Zhang, Dik, Wei, & Zhang, 2015). Hunter, Dik and Banning (2010) examined open-ended responses of how 295 college students defined calling, and identified three primary themes of Guiding Force, Personal Fit/Eudemonic Well-being, and Altruism. Measurement comparisons also support that it may be better to take a multi-dimensional approach when specific aspects of a calling (i.e., versus a more general global understanding) are of interest (Duffy, Autin, Allen & Douglass, 2015). Although calling definitions may appear, on the surface, to be somewhat different from each other, a recent study using the taxometric method (e.g., Meehl, 1995) found that dissimilar definitions tap into a singular construct of calling; in other words, apparent differences do not represent distinct differences in types of calling, but rather are differences in emphasis chosen by different

researchers (Shimizu, Dik, & Conner, 2019). An examination of the five most commonly used scales of calling (i.e., the Calling Paragraph, Brief Calling Scale (BCS), Calling and Vocation Questionnaire (CVQ), Calling Scale (CS), and Multidimensional Calling Measure (MCM)), each created with different definitions and conceptual understandings by different researchers, found support for the use of all five measures in predicting work outcomes, and some support that all may load onto an overarching higher-order factor, thus likely tapping into the same construct (Duffy et al., 2015). Taken together, these empirical findings support the notion that calling is a singular construct, best measured using a multi-dimensional approach, and that the conceptual differences noted by some in the field (Dik & Shimizu, 2019) are likely best understood as differences in emphasis placed on particular calling dimensions.

Consistent with the initial conception of calling as a Christian idea, much of the early empirical work on calling was conducted on Western and specifically U.S. samples. However, studies conducted in a variety of other countries and cultures tend to find more similarities to U.S. samples than might be expected. For example, research conducted in China using both qualitative (Zhang, Dik, Wei, & Zhang, 2015) and quantitative (Zhang, Herrmann, Hirschi, Wei, & Zhang, 2015) methods found strikingly similar calling dimensions such as altruism, guiding force, and meaning and purpose. Hagmaier and Abele (2012), in the formation of their calling scale (i.e., the Multidimensional Measure of Calling or MCM), used qualitative and quantitative approaches with both American and German samples and identified a multi-dimensional structure for calling. They labeled their dimensions as Identification & Person-Environment-Fit (IP), Transcendent Guiding Force (TGF), and Sense and Meaning & Value-Driven-Behavior (SMVB). Similarly, although the calling term seems to have originated within Christian contexts, other major faiths such as Islam and Buddhism share similar perspectives on meaningful work

(e.g., Hermansen, 2004; Lama & Cutler, 2005, Cahalan & Schuurman, 2016). Islam, for example, also holds the view that all types of work can be sacred if done in an honorable fashion for God. The Qur'an most commonly uses the word "call' to refer to either people asking God for something or God calling on people to do his work (Hermansen, 2004). Buddhism's concept of the "right livelihood," an integral part of the Buddha's Noble Eightfold Path, is described as ensuring compassionate activity and to make one's living doing work that does not harm others and is ethically positive. The concept of the Right Livelihood shares similarities to calling; in fact, the Dalai Lama of Tibetan Buddhism has gone so far as to state that he believes the calling work orientation is that which likely leads to the greatest internal satisfaction (Lama & Cutler, 2005).

Based on the collection of these empirical findings and cultural contexts, calling will be discussed as defined by Dik and Duffy (2009): a multi-dimensional construct that contains aspects of 1) purposeful/meaningful work, 2) a prosocial orientation, and 3) an external summons.

Benefits of Calling

Although the history of the calling concept is long, scientific research on the topic within fields such as vocation psychology, industrial/organizational psychology, occupational health psychology, and management has only more recently blossomed within the last three decades. Initial research into calling first examined it as a categorical work orientation. Bellah, Madsen, Sullivan, Swidler, and Tipton (1985), in their book, *Habits of the Heart,* included the term calling as one of three, minimally overlapping work orientations, which they designated as a job (i.e., emphasis on financial rewards), a career (i.e., focus on advancement and achievement), or a calling (i.e., commitment to fulfilling, socially important work). Building on this

conceptualization of calling, a study of non-faculty university employees and employees of a university student health service found that roughly an equal number of participants endorsed each of these three work orientations as most applicable to themselves (Wrzesniewski, Mccauley, Rozin, & Schwartz, 1997). Following the work by Bellah et al., (1985), other scholars have now examined calling in its own right and not solely in combination with the other two work orientations. Generally speaking, calling has also been overwhelmingly studied within the domain of work, although it has also been fruitfully applied at times to other prominent life roles such as parenting (e.g., Coulson, Oades, & Stoyles, 2012).

The accumulation of empirical research on calling since Bellah et al.'s (1985) introduction of the topic into research has consistently linked calling to positive criterion variables. In addition to an increased sense of meaning at work, calling has also been consistently tied to other important work outcomes. One of the positive outcomes most consistently linked with living out one's calling has been job satisfaction. This association has held up for adults from a wide variety of different backgrounds and identities (e.g., samples of working adults; Chen, May, Schwoerer, & Augelli, 2016; Duffy et al., 2012; diverse nationalities or sexual orientations; Allan, Tebbe, Duffy, & Autin, 2015; Douglass et al., 2016; Kim, Praskova, & Lee, 2016; Lazar, Davidovitch, & Coren, 2016; Xie, Xia, Xin, & Zhou, 2016). Although it is most commonly posited that living a calling over time would lead to increased job satisfaction (e.g., Duffy et al., 2018), one longitudinal study conversely found that increased satisfaction within one's job over time led to a heightened perception of living out one's calling (Duffy, Allan, Autin, & Douglass, 2014). Therefore, while there has been a consistent linkage between higher levels of job satisfaction and living a calling, the temporal directionality of the relationship still remains to be fully explored. In another longitudinal study of calling, Dalla

Rosa, Vianello, and Anselmi (2019) found support in their sample of Italian college students that increased levels of engagement in student's chosen study domain, clarity of professional identity, and the presence of a supportive social environment temporally preceded (i.e., predicted) the development of a calling over a three-year duration. Taken together, these two longitudinal studies suggest that it is likely that having a positive work/school environment conducive to fostering a calling may lead to an increased sense of calling over time.

Living a calling may also be linked to outcomes important to both workers as well as their work organizations. For example, despite job performance being a broad topic with a plethora of assessment methods, some studies have linked specific types of job performance to living a calling. Having a higher sense of calling has been linked to the number of commissions and policies sold among a sample of salespersons (Park et al., 2016) and a sample of teachers and aides working in childcare settings show that individuals who have higher levels of calling are more committed to their organizations, have less emotional exhaustion and exhibit higher levels of contextual performance (Rawat & Nadavulakere, 2015). Overall, the ways in which a worker thinks about the work they do impacts important outcomes such as job performance, job satisfaction, organizational citizenship behavior, and well-being (e.g., Dik & Duffy, 2009; Pratt & Ashforth, 2003; Wrzesniewski & Dutton, 2001).

Although calling has often been discussed and measured as a stable construct, it is important to note that most scholars advocate for understanding calling as a developmental and continual process for many individuals. Thus, it may be erroneous to assume that once someone feels they have lived out a calling, that it becomes a static aspect of their life. Instead, calling is not something which can be definitively "discovered" by someone; it is rather a theme which

grows and changes over time, and within different life circumstances, for many individuals (Dik & Duffy, 2009; Dobrow, 2013).

It is also important to note that the benefits associated with a calling appear to specifically be linked to living a calling versus simply perceiving a calling (e.g., Duffy, Bott, Allan, Torrey, & Dik, 2012; Duffy et al., 2013). For example, in their study of working adults, Duffy and colleagues (2013) found that living a calling fully mediated the relationship between perceiving a calling and life satisfaction. In another study, living a calling and life meaning, taken together, were found to fully mediate the relationship between perceiving a calling and life satisfaction. Interestingly, calling motivation was found to moderate both living a calling and life meaning; and income moderated the relationship between perceiving a calling and living a calling (Duffy, England, Douglass, Autin, & Allan, 2017). This finding indicates that those who are more motivated to pursue a calling are more likely to do so and to find greater meaning in life. It also suggests that those with higher household income may have more capacity to enact their perceptions of a calling, which leads to a higher likelihood of living out a calling.

In a similar line of research, Berg, Grant, and Johnson (2010), in their qualitative study of calling, identified two types of unanswered callings (i.e., when one perceives a calling, but is unable to live it out): missed callings (i.e., when an individual does not view their current occupation as a calling and has one or more unanswered callings) and additional callings (i.e., when an individual views their current occupation as a calling and also identifies at least one additional unanswered calling). The authors noted that when these callings could be fulfilled, their participants identified pleasant states such as enjoyment and meaning. However, when participants were unable to fulfill a perceived calling, they often reported experiencing regret and stress relating to the challenging pursuit of living out these unanswered callings. Similarly,

Gazica and Spector (2015), in their study of a sample of academics, concluded that based on a variety of life (e.g., life satisfaction), health (i.e., physical health, emotional well-being), and job outcomes (e.g., turnover intentions), that while benefits existed for those living out a calling, it was better to have no calling than to have an unanswered calling. In fact, within their study, having unmet callings were detrimental to both physical and emotional health for their participants. Gazica and Spector (2015) posit that this finding is consistent with Self-Determination Theory's prediction of humans' necessity for satisfying psychological needs (Ryan & Deci, 2000). Conversely however, a more recent study using the Portrait of American Life Study (i.e., a nationally representative sample of 445 full-time workers) found that consistent with other research, answered callings did confer to benefits, but having an unanswered calling was not worse than lacking a calling (Marsh, Alayan, & Dik, 2020). These findings point towards the complex nature of callings and the possibility that they hold potential to evoke both negative and positive outcomes for some individuals.

Work as Calling Theory

The hypothesized, intricate relationships of calling with other relevant variables has been articulated in the calling literature as the Work as Calling Theory (i.e., "a theoretical, empirically testable model of work as a calling," Duffy, Dik, Douglass, England, & Velez, 2018, p. 423), which was recently published to provide calling scholars and applied researchers with a theoretical model meant to guide research by outlining the predictors and outcomes of living a calling. The theory, in part, summarizes existing research, as well as introduces new or more novel directions such as the potential negative outcomes of living a calling. The full model (depicted in Appendix A, replicated with permission of the authors) is quite inclusive and predicts the likely path many individuals take from perceiving a calling to living a calling as well

as positing likely associated occupational outcomes. Much of the model is grounded within previous empirical research; this resemblance is especially true for the first portion of the model, which aims to elucidate the path many individuals take from perceiving a calling to living their calling.

The "predictors" portion of Work as Calling Theory (WCT) depicts the expected relationships between perceiving a calling to living a calling, which is partially mediated by person-environment (PE) fit, work meaning and career commitment. The relationship between perceiving a calling and PE fit is also hypothesized to be moderated by calling motivation, job crafting, and organizational support (such that these variables increase a sense of PE fit). Furthermore, access to opportunity is posited to increase a sense of work meaning, career commitment, as well as living a calling. The second half of WCT depicts how living a calling leads to positive work-related outcomes, such as increased job satisfaction and job performance, but also may lead to negative outcomes (i.e., increased workaholism, burnout, and workplace exploitation) when certain maladaptive personality and workplace environment characteristics are present. Finally, when individuals experience negative outcomes, this additionally is hypothesized to create another effect in that those negative outcomes also lead to a decrease in experiences of the aforementioned positive outcomes. Thus, the outcomes linked to living a calling in the WCT demonstrate possible ways in which living a calling may bring with it a dark side through this theorized moderated, mediation model.

Consistent with the model, an empirical test of the first twenty propositions of the WCT found full (17) and partial (1) support when using structural equation modeling techniques on a large sample of U.S. working adults (2 propositions unsupported; Duffy, Douglass, Gensmer, England & Kim, 2019). Specifically, Duffy et al., (2019) found support for PE fit, career

commitment, and work meaning mediating the relationship between both perceiving a calling and access to opportunity to living out one's calling. Increased levels of calling motivation (i.e., the motivation to live out one's calling), job crafting efforts, and organizational support did moderate the relationship between perceiving a calling and increased PE fit. PE fit, in turn, mediated the relationship between perceiving a calling and increased sense of work meaning and career commitment. However, they did not find support for the theorized relationship between perceiving a calling and career commitment nor the hypothesized relationship in which career commitment mediates the association between perceiving a calling and living a calling. Please refer to Appendix B for the summarized results of Duffy et al.'s (2019) findings.

The Dark Side of Calling

As discussed within the second half of WCT, a rich but currently under-investigated topic, is for whom and under which circumstances living out one's calling may lead to negative or less pleasant outcomes. This issue has been frequently mentioned by calling scholars, but to date there are few empirical studies. One prominent vocational psychology theory which may be useful in understanding the dark side of calling is the Theory of Work Adjustment (TWA; Dawis & Lofquist, 1984). TWA posits that the more closely an individual's abilities correspond with the requirements of the organization for their role, the more likely they will be satisfied with their job as well as be satisfying to their organization. This degree of fit (i.e., "correspondence") in turn predicts how likely they are to stay in their role within the organization. Importantly, TWA postulates that this is an ongoing process such that the level or amount of flexibility of both the individual and organization impacts how much each is willing to adjust before they may end the work relationship. When empirical research findings of calling studies (discussed in more depth shortly) are understood from a TWA framework, these findings are consistent with the TWA

13

inspired prediction that there could be personal tendencies (e.g., overidentification with one's career and propensity to work too many hours), which, when combined with certain workplace environments (e.g., exploitative workplaces, pressure to work long hours) leads to negative outcomes (e.g., burnout) and lower rates of retention.

Another relevant theory is that of Super's Life-Span, Life-Space Theory (Super, 1953, 1957, 1990; Super, Savickas, & Super, 1996), which focuses on the content, process, and relevant outcomes of career decisions. Life-Span, Life-Space Theory postulates understanding careers in three ways: 1) as a developmental career process over a life-span, 2) through the ways in which various individual roles held at different points in time may have importance, and 3) how one builds their self-concept into different roles over time. One common theme in the discourse on calling is that callings may be consuming to the point of being harmful to other areas of life (Levoy, 1997) and lead to over-identification with work or rigidity in career choice. Thus, the prominence of the work role in the development of self-concept for those with a calling (i.e., how deeply those with a calling may identify with their calling), may lead to role-conflict across relevant roles during various stages of development for some individuals. For example, it has been suggested that sacrifice is the "shadow in the calling" and is simply the price one has to pay to live out a calling (Levoy, 2015). Similarly, within their very definition of calling Wrzesniewski et al. (1997) stated that "people with callings find that their work is inseparable from their life" (p. 22). Additionally, in their theoretical paper, Cardador and Caza (2012) propose two specific circumstances which can lead to callings being "unhealthy" for some individuals: the development of unhealthy work-related and personal relationships, and inflexibility in one's work identity.

Dobrow and Tosti-Kharas (2012) found some empirical support for this idea in what they describe as "career tunnel vision." In their two empirical studies, business and music students who rated themselves high in a sense of calling often also lacked career flexibility and were less likely than members of their low-calling cohort to heed their mentors' disheartening career advice to find another career path. Another study, of teachers in rural high schools of South Africa, conducted by Shava and Chinyamurindi (2020), found that a high presence of calling was positively associated with better mental health, but not physical health. However, higher career adaptability negatively moderated the relationship between both physical and mental health for this sample. This indicates that those who rated themselves higher on career adaptability and calling experienced a decrease in both types of health (Shava & Chinyamurindi, 2020). Similarly, a two-study project on how having a calling impacts employability found that it did so as a double-edged sword. Specifically, calling negatively impacted employability because it corresponded with decreased levels of career flexibility, while positively impacting employability via increased proactive professional development (Lysova, Jansen, Khapova, Plomp, & Tims, 2018). Taken together within a Life-Space, Life-Role perspective, these findings suggest that living a calling may lead to negative outcomes via decreased career adaptivity; and consequently, individuals continuing within a job despite poor correspondence.

A recent conceptual article (Anastasiadis & Zeyen, 2021) notes that it is likely that the sacrifices individuals make because of a strong sense of living of calling may also come at an additional cost to close family members. The authors suggest that this may be the case because those who have identified that they are living out their calling at work have limited abilities to exercise choice and manage their work-non-work boundaries, this may especially affect women because of gendered differences in domestic workload (e.g., Hagqvist, Vinberg, Tritter, Wall, &

Landstad, 2019) and greater levels of negative work-life spillover (Cottingham, Chapman, & Erickson, 2020). They also suggest that in work environments in which it is more normative for individuals to have a calling, this may create a mutually reinforcing work culture in which sacrifices of resources, time, or salary are expected (i.e., collective reinforcement). In fact, some organizations or occupations (e.g., clergy) may depend on such sacrifices for their own existence. One such example may be found with theatre actors, who in one qualitative study, discussed substantial material hardships (e.g., "living on the boundary of poverty") as well as existential hardships (e.g., social visibility and recognition); interestingly, despite the common reports of sacrifice and experiences of suffering described by the actors, none at the time of the study reported intentions to leave theatre (Cinque, Nyberg, & Starkey, 2020).

Another potential job characteristic which may increase the possibility of negative outcomes for those with a calling may be when workers feel an obligation to protect and care for those which are more vulnerable (e.g., animals). This may be because care work with vulnerable populations increases the emotional demands of a job, without a corresponding increase in the resources to cope effectively with the resulting strain (i.e., the *health impairment process* from Job Demands-Resources Theory - Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). In some of the earliest empirical research on the topic, Bunderson and Thompson (2009) conducted two studies to investigate how finding one's work to be extremely meaningful, or identifying it as a personal calling, could potentially lead to negative outcomes. They first conducted twenty-three semi-structured interviews with zookeepers. The researchers did not initially set out to examine the calling concept, but after identifying it as the most commonly coded category in their interviews (identified in twenty-one out of twenty-three interviews), they determined that calling was extremely important to understand why these zookeepers chose to work in their profession.

Bunderson and Thompson (2009) found that zookeepers often endorsed a sense of calling they defined as "neoclassical," or as "that place in the occupational division of labor in society that one feels destined to fill by virtue of particular gifts, talents, and/or idiosyncratic life opportunities" (p. 38). This, for Bunderson and Thompson (2009), differed from modern views of calling which they identified as more "self-directed" where one can "thrive and feel fulfilled" (p. 51). The neoclassical orientation toward calling specifically included a sense of destiny, or the notion that this was the work the zookeepers were "meant to do," toward which they felt a strong sense of duty.

In their second study in which they used quantitative methods via a sample of 982 zookeepers from the U.S. and Canada, Bunderson and Thompson (2009) found that identifying one's lived occupation as a neoclassical calling can lead to positive outcomes: including greater transcendent meaning, vocational identity, and experienced significance of work. However, this study also supported the notion that those with a greater sense of neoclassical calling could simultaneously experience negative consequences, such as an increased sense of unbending duty, sacrifice (i.e., of money, time, and physical comfort or well-being), potential exploitation by management, and greater reported levels of vigilance and suspicion between the zookeepers and management. The idea that calling is associated with both negative and positive outcomes was termed by Bunderson and Thompson (2009) as the "double-edged sword" of calling.

Another exemplar study of the potential double-edged sword or dark side of calling was conducted on a sample of workers who care for animals. The animal shelter workers in Schabram and Maitlis' (2016) study may be similar to the zookeepers in Bunderson and Thompson's (2009) studies. Not only did their work primary involve the care of animals, but both jobs were often conducted from a prosocial orientation, viewed as "dirty" work, often

17

involved extensive unpaid overtime, and included jobs with little room for career growth or promotion. Although many individuals with a calling do reap benefits from living their callings, Schabram and Maitlis (2016) suggested that our contemporary view of those living out their callings may be "unrealistically heroic" and romanticized. They specify that actual perceptions of living out callings, especially when faced with challenges, may be experienced very differently between individuals. To investigate how this may be the case, Schabram and Maitlis (2016) conducted narrative interviews with 50 animal shelter workers (i.e., "non-farm animal caretakers" who work at animal welfare organizations) who all identified as perceiving a call to their work. The researchers conducted their study to better understand how those who perceive their work as a calling may choose to navigate challenges that occur while living those callings out. They proposed that when individuals who feel they are living their callings out encounter obstacles, they may feel stronger emotions than individuals who are not living their callings out because of the possibility of not being able to live out such strongly endorsed personal values. All of their participants initially began in similar positions, and all endorsed a common love of animals and desire to make a change in the animals' lives. They also all reported experiencing similar types of challenges within their work. However, Schabram and Maitlis (2016) found that individuals with callings may live out those callings in different ways because of how they perceive workplace challenges.

Schabram and Maitlis (2016) designated three common themes they heard from their interviews to help distinguish how certain shelter workers may experience their work in dissimilar ways, which they labeled as "identity-oriented," "contribution-oriented," and "practice-oriented." Overall, it appeared that the ways in which shelter workers differentially reacted to initial stressors at work were rooted in their conceptualizations of self, which then, in

turn, led to these alternative patterns of sensemaking and experiences of their emotional reactions. Many of the individuals who fell within the identity-oriented path ultimately left shelter work because they perceived the work demands to be too high but continued to care for animals through different means after leaving. Notably, many of these individuals described their initial selves as having a passion and unique gift for animals. They often perceived challenges as personal affronts and reacted with intense negative emotions, ultimately leading to burnout and departure from shelter work. Those who fell within the contribution-oriented path also left shelter work. These individuals initially described themselves as having both a passion for animals and talents they could bring to the shelter, and often experienced negative emotions as a result of unattained goals and feeling unable to contribute enough within the shelter context. After departing from shelter work, they continued to focus on the desire to have a broad, positive impact on society as a whole (i.e., they did not constrain their prosocial efforts after shelter work to caring for animals). The third path described by Schabram and Maitlis (2016) was termed practice-oriented and included individuals who remained within shelter work and who discussed doing so to increase the well-being of the shelter. Those who fell within this path described their initial self as being highly motivated by their passion to help animals, which developed over time to being thoroughly committed to and empowered by working at the shelter. These individuals described wanting to remain in shelter work to innovate, build community, and teach the next generation of shelter workers.

It may be that Schabram and Maitlis' (2016) findings could point towards the organizational research on differences in key outcomes as a result of goal orientations which has established two fundamentally different orientations taken by individuals when working towards attaining goals. The first is a performance goal orientation, in which workers try to demonstrate

19

their competence via task performance (Dweck & Leggett, 1988; Elliot & Thrash, 2001). The other is a learning goal orientation in which workers try to understand something new or increase developmental competency and learning (Button, Mathieu, & Zajac, 1996). Empirical research on these orientations overall supports the benefit of having a learning versus a performance goal orientation; for example, the learning goal orientation is associated with a higher motivation to learn (e.g., Colquitt and Simmering, 1998), better training performance (e.g., Brett & VandeWalle, 1999), and better task performance (Seijts, Latham, Tasa & Latham, 2004). Thus, one of the main differences between those who stayed within shelter work (i.e., practice-oriented individuals) and those who ultimately left shelter work (i.e., identity and contribution oriented individuals) may have been that those who stayed used more of a learning orientation (versus a "performance" orientation used by those who left in which obstacles are perceived as barriers to career goals) when they encountered obstacles, cognitively framing them as opportunities to develop mastery and learn the work. Those with a practice-orientation additionally may have perceived challenges as less of a threat to their personal identities and purpose, which led to lessened emotional reactivity to these events.

Research suggests that tenure working within one's calling may play an important role with regard to possible harmful consequences associated with callings, specifically as it relates to burnout. Cardador and Caza (2012) note that upon initially entering into an occupation one identifies as a calling, workers may first experience personal and professional benefit, but that in time, they may "fall from the call" (Hartnett & Kline, 2005) and those positive benefits may decline and/or lead to burnout. This assertation is consistent with research conducted on two professions with typically high rates of identifying one's work as a calling, teachers (who may leave the profession; Hartnett & Kline, 2005) and nurses (who report high rates of burnout;

Sherman, 2004). Work by Vallerand and colleagues (i.e., Vallerand et al., 2003; Vallerand, Paquet, Philippe, & Charest, 2010) noted that passionate workers also report higher burnout and less goal flexibility. Early work on burnout has also supported the possibility of such patterns in that to "burn out" one must have been "on fire" previously (Pines, Aronson, & Kafry, 1981).

Those with a calling may also experience more negative outcomes when they have difficulty stepping away from work. For example, research conducted on a sample of church ministers found that, although identifying that one's work was a calling led to overall increased vigor, it also limited ministers' ability to detach from one's work at the end of the day and led to poorer sleep quality and decreased levels of reported morning vigor (Clinton, Conway & Sturges, 2017). Pratt and Ashforth (2003) found that those with a high sense of calling often had a decrease in organizational commitment because of emphasis on doing the work versus engaging with one's organization. These findings are consistent with broader research on psychological recovery from work which is based on the effort-recovery (Meijman & Mulder, 1998) and allostatic load (McEwen, 1998) models. Empirical studies on this topic have examined how the amount of time after work affects the recovery process. For instance, spending time on job-related activities after work in the evening leads to a decrease in well-being (Sonnentag, 2001; Sonnentag & Zijlstra, 2006) and happiness (Bakker, Demerouti, Oerlemans, & Sonnentag, 2013) as well as decreased vigor (ten Brummelhuis & Bakker, 2012) and low recovery levels the next day (ten Brummelhuis & Trougakos, 2014). Level of recovery in the morning is particularly important for worker well-being as being recovered in the morning has important implications in predicting work engagement and proactive behaviors at work (Sonnentag, 2003). This relationship appears to be consistent across multiple studies between recovery level and work

engagement (e.g., Sonnentag, Mojza, Demerouti, & Bakker, 2012; ten Brummelhuis & Bakker, 2012).

Wilson and Britt (2020), in their longitudinal research conducted on a large MTurk sample of workers within the U.S., also examined several specific circumstances under which those with a high sense of calling experienced more negative outcomes than their low-calling peers. Within this sample, increased rates of experiencing a calling were associated with aspects of workaholism, including increases in both working compulsively and working excessively, which, in turn, were related to poorer mental health and increased family-work conflict. Furthermore, the relationship between increased calling and poorer mental health was found to be mediated via the working excessively aspect of workaholism. Wilson and Britt (2020) also examined how participants with a calling may differentially react to stressors. They found that when people who were high in calling encountered hindrance stressors (i.e., obstacles which are viewed as something that necessarily impede personal growth and goal attainment), they also reported poorer mental health. Specifically, living a calling acted as a moderator to increase the strength of the relationship between encountering hindrance stressors and poorer mental health. However, there was no relationship between level of calling for those with challenge stressors (i.e., challenges which can be viewed as something to learn from and overcome) and any pattern of mental health symptomology.

Related research has also found converging results to the work conducted by Wilson and Britt (2020). Work described by Brieger, Anderer, Fröhlich, Bäro, and Meynhardt's (2020) illustrates a study with Swiss citizens on corporate social responsibility (CSR), where organizations voluntarily take "actions that appear to further some social good, beyond the interests of the firm and that which is required by law" (McWilliams & Siegel, 2001, p. 117). In

Brieger and colleagues' moderated mediation model, for individuals with a high value for public welfare employed at organizations with high CSR, the corresponding increased sense of meaningful work and organizational commitment in turn led to increased work addiction (i.e., workaholism). These findings again point toward potentially harmful outcomes for individuals with specific characteristics who identify a high sense of meaningful work under certain circumstances. In similar calling-adjacent research, Kim, Campbell, Shepard, and Kay (2019) identified support via seven studies in a meta-analysis for the legitimization of what they have termed "passion exploitation" (i.e., the unfair and demeaning managerial practices imposed upon those who are passionate about their work) and poorer worker treatment. The mechanisms through which this process takes place relate to the assumptions that passionate workers would do the work for free if necessary and the belief that work provides its own reward for those who are passionate about it. One implication to worker well-being of such attitudes may be poorer recovery from work (i.e., not feeling physically and mentally refreshed after non-work time; Binnewies, Sonnentag & Mojza, 2010). In organizations where recovery needs are seen as a sign of weakness, workers may have a more difficult time engaging in leisure activities or detaching from work-related thoughts during non-work time (Sonnentag, 2015). Supervisors' expectations and support (or lack thereof) may play an important role in this process (Bennet, Gabriel, Calderwood, Dahling, & Trougakos, 2016).

Taken together, the empirical findings from Bunderson and Thompson (2009), Schabram and Maitlis (2016), Wilson and Britt (2020), and other related research seems to suggest that the dark side or double-edged sword of calling may be more likely to occur for certain individuals, placed at risk in exploitative work environments, or who encounter specific types of stressors at work. Specifically, individuals who feel they are living a calling in which their sense of

23

self/identity are tightly intertwined with their work may experience more frustration and extreme negative emotions because of how much being able to live out their values in a calling means to them. When these individuals encounter certain types of stressors at work which they perceive may hinder them in living out that calling, any negative effects on their mental health and work-non-work balance may be exacerbated. Over time, it may be that these negative effects culminate in burnout and possibly departure from one's job. These effects may in turn be most pronounced or explained via the inability to detach from work to recover resources and an over-investment in terms of working hours, perhaps, as suggested by Bunderson and Thompson (2009) and Schabram and Maitlis (2016), as a result in part of the expectation of certain jobs to contribute extensive amounts of unpaid overtime. This occurrence may be especially true when the client or community member being served by the worker is perceived as (and may actually be) very vulnerable and at risk of severe consequences if the worker were to take a step back from their duties; for example, when work is conducted with animals, children, elderly, or mentally unhealthy clients.

Contributions of Present Study

The current study contributes to psychological research about veterinarians by examining occupational outcomes and processes for a population (i.e., associate veterinarians) who may be at an increased risk of negative consequences because of dynamics linked to their career orientation. This need is described in more depth later in this manuscript. Although some studies have tested and established empirical support for some aspects of the model (e.g., living a calling and job satisfaction), no known studies to date have empirically tested all of the criterion variables outlined within the outcomes section of the WCT model (i.e., propositions 20-32 – See Appendix 122) as part of a single study. The current study aims to contribute to the present body of calling research by using path analysis techniques on a sample of U.S. associate veterinarians to examine the outcomes section of the WCT. Although the full model is quite comprehensive, it is to be expected that not all hypothesized relationships within the outcomes portion of the WCT will be supported, as evidenced by the more refined, parsimonious model. This objective is a desirable contribution to the theory since "...the best one can hope for is to identify a parsimonious, substantively meaningful model that fits the observed data adequately well." (MacCallum & Austin, 2000, p. 218).

It should be noted that per the study design, data collection will be for a single time point (cross-sectional data) and thus true mediation in which causal sequences are tested are not able to be determined. The present study will examine atemporal mediation, described herein using the path analysis terminology of "indirect effects." Similarly, "moderation" is commonly referred to within path analysis as a "conditional effect."

Hypotheses

The formal hypotheses which follow have been adapted from the original propositions 20-32 of the WCT to be consistent with the current study design, statistical techniques, and properties of the data (please refer to Appendix D for a more succinct summary of the current study's hypotheses).

As discussed previously, job satisfaction has been consistently linked to calling via empirical research (e.g., Duffy et al., 2012); recently, this association between calling and job satisfaction has been demonstrated to be mediated through outcome expectations (Lee, Lee, & Shin, 2020). Both Hypotheses 1 and 2 (i.e., Propositions 20 and 21) were posited in WCT based upon empirical findings in the literature and are consistent with TWA (Dawis & Lofquist, 1984). Regarding Hypothesis 1, individuals who report living a calling at work likely find that this is a benefit within their workplace, leading to higher reports of correspondence (i.e., an individual's needs being met by the workplace while also fulfilling the requirements of the workplace), and therefore feeling more satisfied at work because of perceptions that their workplace is providing them with a highly valued experience. Thus, Hypothesis 1 is as follows:

Hypothesis 1: **Living a calling will be positively associated with job satisfaction.**

Individuals living a calling are likely to be highly motivated to fulfill the needs of an organization and therefore, from a TWA perspective, are likely to have a high rate of satisfactoriness, resulting in high job performance. Thus, the broader TWA perspective predicts similar positive outcomes as WCT. This prediction has some support via the empirical studies aforementioned (e.g., Park et al., 2016; Lee, Chen, & Chang, 2016). Additional support comes from one study of South Korean workers which found a positive link between calling and

supervisor-rated job performance after a 2-year lagged time period (Park, Kim, Lim, & Sohn, 2019). Based upon this theorical underpinning and empirical support, Hypothesis 2 is as follows:

Hypothesis 2: **Living a calling will be positively associated with job performance.**

Although there are multiple theories which have been applied to understanding workaholism, cognitive perspectives may be especially important in explaining the likely association between living a calling and increased workaholism behaviors. For example, cognitions (schemata, assumptions, expectations, attributions, automatic thoughts) are assumed to initiate behaviors (Beck, 1995). Thus, if an individual thinks that engaging in work will lead to positive outcomes, for example if they have Positive Work Efficacy (Bandura, 1986) as a result of viewing their work as a calling, they may be more likely to engage in work behaviors or prioritize work over other life roles. Similarly, if they feel their basic needs (e.g., autonomy, competence, relatedness; Ryan & Deci, 2000) rely solely on the work domain for fulfillment because of perceiving their work as their calling, they may experience an increase in intrinsic motivation toward work to the point of engaging in workaholic behavior. This proposition was found to be partially true for the working excessively aspect of workaholism in a sample of MTurk workers discussed previously (Wilson & Britt, 2020). Thus Hypothesis 3 is as follows:

Hypothesis 3: **Living a calling be positively associated with workaholism.**

Hypothesis 3a: Living a calling will be positively associated with the working compulsively aspect of workaholism.

Hypothesis 3b: Living a calling will be positively associated with the working excessively aspect of workaholism.

Some suggest that in certain circumstances workaholism might be beneficial (Baruch, 2011); however, overall, higher rates of workaholism have been linked to poorer occupational

27

and personal outcomes such as burnout, job stress, job satisfaction, work-life conflict, and diminished physical and mental health (A meta-analysis of 89 studies - Clark, Michel, Zhdanova, Pui, & Baltes, 2016). Thus, it is expected that higher rates of workaholism will be related to similar negative criterion variables in the present study, Hypothesis 4 is as follows:

Hypothesis 4: **Workaholism will be negatively associated with job satisfaction.**

Hypothesis 4a: The working compulsively aspect of workaholism will be negatively associated with job satisfaction.

Hypothesis 4b: The working excessively aspect of workaholism will be negatively associated with job satisfaction.

Workaholism has been linked to higher overall work engagement and a likelihood of being absorbed in one's work, however this has neither resulted in higher vigor nor dedication; rather, workaholism is a distinct construct from work engagement with different relationships with occupational outcomes (Clark et al., 2016). In particular, where work engagement has been shown to predict increased job performance, this has not been the case for those with workaholic tendencies. Thus, workaholism in the present sample is anticipated to relate negatively with job performance, as has been indicated in previous empirical findings, Hypothesis 5 is as follows:

Hypothesis 5: **Workaholism will be negatively associated with job performance.**

Hypothesis 5a: The working compulsively aspect of workaholism will be negatively associated with job performance.

Hypothesis 5b: The working excessively aspect of workaholism will be negatively associated with job performance.

Based upon Hypotheses 3, and 4, workaholism may act as a mediating variable between living a calling and job satisfaction. Individuals with a high sense of living a calling, over time,

may be more likely to develop workaholic tendencies and then experience a resulting decrease in positive occupational outcomes. Thus Hypothesis 6 is as follows:

> ***Hypothesis 6:*** **Workaholism will act as a link (i.e., atemporal mediation) between living a calling and job satisfaction such that when a higher sense of living calling is associated with higher levels of workaholism, which is negatively associated with job satisfaction.**

>> *Hypothesis 6a:* The working compulsively aspect of workaholism will act as a link between living a calling and job satisfaction.

>> *Hypothesis 6b:* The working excessively aspect of workaholism will act as a link between living a calling and job satisfaction.

Living a calling is likely to act as a job resource, which is theorized within the Job Demand-Resource Theory (JD-R) to aid individuals in work circumstances with high demands through an increase in energy replenishment and motivation (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Therefore, living a calling and the associated increase in sense of meaning derived from one's job likely mitigate stressful situations' effects on workers and lead to greater well-being. Research has also supported that calling has been linked to less burnout, specifically the disengagement aspect of burnout (Hagmaier, Volmer, & Spurk, 2013). A large study of physicians, a sample with some overlap with the current one of veterinarians, found that those who identified medicine as a calling were less likely to experience burnout (Jager, Tutty, & Kao, 2017). Thus, the present study specifies that typically it is expected that living a calling will act as a job resource and correspond with lower levels of burnout for many individuals. However, it should be noted that WCT does state that burnout is expected to occur for "certain individuals,"

under which circumstances this is expected is addressed further in the present study in

Hypotheses 17 and 20. Hypothesis 7 is therefore as follows:

>*Hypothesis 7:* **Living a calling will be negatively associated with burnout.**
>
>> *Hypothesis 7a:* Living a calling will be negatively associated with the disengagement aspect of burnout.
>>
>> *Hypothesis 7b:* Living a calling will be negatively associated with the exhaustion aspect of burnout.

JD-R states that when job demands are high for a period of time, without the buffering effects of resources, this leads to a reduction in health and energy which in turn can cause mental health problems such as burnout. As workers invest more time and effort to deal with high job demands and manage resulting occupational stress (called "adjustive reaction"), this in turn can take a cost on their occupational health (e.g., job satisfaction) and job performance due to the depletion of cognitive and emotional resources (Shirom, 2003). Therefore, based upon JD-R, it is hypothesized that higher levels of burnout over time will result in lower levels of job performance and satisfaction. Hypotheses 8 and 9 are as follows:

>*Hypothesis 8:* **Burnout will be negatively associated with job satisfaction.**
>
>> *Hypothesis 8a:* The disengagement aspect of burnout will be negatively associated with job satisfaction.
>>
>> *Hypothesis 8b:* The exhaustion aspect of burnout will be negatively associated with job satisfaction.

>*Hypothesis 9:* **Burnout will be negatively associated with job performance.**
>
>> *Hypothesis 9a:* The disengagement aspect of burnout will be negatively associated with job performance.

Hypothesis 9b: The exhaustion aspect of burnout will be negatively associated

with job performance.

Based on Hypotheses 7, 8, and 9, conceptually if living a calling acts as a resource to reduce burnout, that this in turn should increase positive outcomes (e.g., job satisfaction and performance) even further due to the reduction in stress experiences related to burnout. Thus, Hypothesis 10 is as follows:

Hypothesis 10: Burnout will act as a link (i.e., atemporal mediation) between living a calling and job satisfaction, such that when a higher sense of living calling is associated with lower levels of burnout, this is associated with a higher sense of job satisfaction.

Hypothesis 10a: The disengagement aspect of burnout will act as a link between

living a calling and job satisfaction.

Hypothesis 10b: The exhaustion aspect of burnout will act as a link between

living a calling and job satisfaction.

The literature on organizational-employee relationships has defined organizational exploitation as "employees' perceptions that they have been purposefully taken advantage of in their relationship with the organization, to the benefit of the organization itself" (Livne-Ofer, Coyle-Shapiro, & Pearce, 2019, p. 2). Possible organizational exploitation of those with a high sense of living their calling has been a consistent theme identified through multiple discussions on the possible dark side of calling (Berkelaar & Buzzanell, 2015; Bunderson & Thompson, 2009; Dik & Duffy, 2012; and Duffy, Douglass, et al., 2015). These scholars posit that having a calling is a vulnerability for workers that some organizations or managers may take either implicit or explicit advantage of. These findings are also consistent with the concept of passion-

exploitation discussed previously in which workers are taken advantage of because it is assumed they would do the work for free, if necessary; and, that work should provide enough of a reward on its own (Kim et al., 2019). Thus, Hypothesis 11 is as follows:

Hypothesis 11: **Living a calling will be positively associated with exploitation.**

Perceptions of organizational exploitation have been demonstrated to lead to negative inward (i.e., guilt and shame) and outward emotions (i.e., hurt and anger - Livne-Ofer, Coyle-Shapiro, & Pearce, 2019) which have been linked to additional negative occupational outcomes. Psychological climate perceptions (i.e., "employees' descriptions of their work environment" Parker et al., 2003, p. 390) have been linked to negative outcomes in terms of work attitudes (i.e., job satisfaction, job involvement, and organizational commitment), psychological well-being, employee motivation, and performance. Therefore, if workers perceive that their workplaces regularly exploit them, their psychological climate perceptions will likely be negative and will lead to these negative occupational outcomes. Thus Hypotheses 12 and 13 are as follows:

Hypothesis 12: **Exploitation will be negatively associated with job satisfaction.**

Hypothesis 13: **Exploitation will be negatively associated with job performance.**

In accordance with Hypotheses 11, 12, and 13, when living a calling leads to the increased perception that one's workplace is exploiting a worker, the worker will subsequently likely experience a decrease in job satisfaction and performance. Thus, Hypotheses 14 and 15 are as follows:

Hypothesis 14: **Exploitation will act as a link (e.g., atemporal mediation) between living a calling and job satisfaction, such that when higher levels of living a calling is associated with higher levels of exploitation, this is associated with a lower sense of job satisfaction.**

Hypothesis 15: **Exploitation will act as a link (e.g., atemporal mediation) between living a calling and job performance, such that when higher levels of living a calling is associated with higher levels of exploitation, this is associated with lower ratings of job performance.**

The following hypotheses are more tentative and have less theoretical/empirical backing, as the authors of WCT note "this section of the theoretical model contains the least backing from previous research and as such should be considered speculative and in particular need of empirical investigation" (Duffy et al., 2018, p. 431). The following rationale for Hypotheses 16, 17, and 18 are consistent with Duffy et al.'s (2018) reasoning for their propositions regarding how maladaptive personality characteristics moderate the relationship between living a calling and workaholic tendencies, organization exploitation, and burnout. As such, maladaptive personality characteristics (i.e., higher levels of neuroticism, perfectionism, need for achievement, and lower levels of agreeableness, conscientiousness, and self-esteem) can be understood via the Job Demands-Control Model (Karasek, 1979) as moderators between job demands and the experience of stress (Ilies, Johnson, Judge, & Keeney, 2011). In particular, individuals with these maladaptive personality traits may experience job demands as more distressing and more often focus on the negative aspects of work than other individuals (e.g., how their managers may take advantage of them), thus experiencing higher levels of burnout, perceived exploitation, and workaholism. Therefore, Hypotheses 16, 17, and 18 are as follows:

Hypothesis 16: **Living a calling will interact with maladaptive personality traits to moderate (i.e., "conditionally effect") the relationship between living a calling and workaholism, such that some individuals with higher levels of the maladaptive personality trait(s) and a higher sense of living a calling will actually experience**

more workaholism for both the *i*) working compulsively and *ii*) working excessively aspects of workaholism.

Hypothesis 16a: Neuroticism will moderate the relationship between living a calling and workaholism, such that for individuals with higher levels of neuroticism, the strength of the relationship between living a calling and workaholism will be strengthened.

Hypothesis 16b: Perfectionism will moderate the relationship between living a calling and workaholism, such that for individuals with higher levels of perfectionism, the strength of the relationship between living a calling and workaholism will be strengthened

Hypothesis 16c: Need for achievement will moderate the relationship between living a calling and workaholism, such that for individuals with higher levels of need for achievement, the strength of the relationship between living a calling and workaholism will be strengthened.

Hypothesis 16d: Agreeableness will moderate the relationship between living a calling and workaholism, such that for individuals, lower levels of agreeableness, the strength of the relationship between living a calling and workaholism will be strengthened.

Hypothesis 16e: Conscientiousness will moderate the relationship between living a calling and workaholism, such that for individuals with lower levels of conscientiousness, the strength of the relationship between living a calling and workaholism will to be strengthened

Hypothesis 16f: Self-esteem will moderate the relationship between living a

calling and workaholism, such that for individuals with lower levels of self-

esteem, the strength of the relationship between living a calling and workaholism

will be strengthened.

Burnout has been conceptualized as the manifestation of stressors stimulated by both

organizational and individual characteristics (e.g., Farber, 1991). The transactional model

(Shirom, 1993) explains this process further in that triggering environmental characteristics may

interact with personal characteristics of certain individuals, such as maladaptive personality

traits, to result in higher levels of burnout. Thus, individuals with higher levels of maladaptive

personality traits may experience more symptoms of burnout instead of less.

Hypothesis 17: Living a calling will interact with maladaptive personality traits to

moderate the relationship between living a calling and burnout, such that some

individuals with higher levels of the maladaptive personality trait(s) and a higher

sense of living a calling will actually experience more burnout for both the *i*)

disengagement and *ii*) exhaustion aspects of burnout.

Hypothesis 17a: Neuroticism will moderate the relationship between living a

calling and burnout, such that for individuals with higher levels of neuroticism,

the direction of the relationship between living a calling and burnout will change

to be a positive association.

Hypothesis 17b: Perfectionism will moderate the relationship between living a

calling and burnout, such that for individuals with higher levels of perfectionism,

the direction of the relationship between living a calling and burnout will change

to be a positive association.

Hypothesis 17c: Need for achievement will moderate the relationship between living a calling and burnout, such that for individuals with higher levels of need for achievement, the direction of the relationship between living a calling and burnout will change to be a positive association.

Hypothesis 17d: Agreeableness will moderate the relationship between living a calling and burnout, such that for individuals with lower levels of agreeableness, the direction of the relationship between living a calling and burnout will change to be a positive association.

Hypothesis 17e: Conscientiousness will moderate the relationship between living a calling and burnout, such that for individuals with lower levels of conscientiousness, the direction of the relationship between living a calling and burnout will change to be a positive association.

Hypothesis 17f: Self-esteem will moderate the relationship between living a calling and burnout, such that for individuals with lower levels of self-esteem, the direction of the relationship between living a calling and burnout will change to be a positive association.

Hypothesis 18: **Living a calling will interact with maladaptive personality traits to moderate the relationship between living a calling and exploitation, such that some individuals with higher levels of maladaptive personality trait(s) and a higher sense of living a calling will experience more exploitation at work.**

Hypothesis 18a: Neuroticism will moderate the relationship between living a calling and exploitation, such that for individuals with higher levels of

36

neuroticism, the strength of the relationship between living a calling and exploitation will be strengthened.

Hypothesis 18b: Perfectionism will moderate the relationship between living a calling and exploitation, such that for individuals with higher levels of perfectionism, the strength of the relationship between living a calling and exploitation will be strengthened.

Hypothesis 18c: Need for achievement will moderate the relationship between living a calling and exploitation, such that for individuals with higher levels of need for achievement, the strength of the relationship between living a calling and exploitation will be strengthened.

Hypothesis 18d: Agreeableness will moderate the relationship between living a calling and exploitation, such that for individuals with lower levels of agreeableness, the strength of the relationship between living a calling and exploitation will be strengthened.

Hypothesis 18e: Conscientiousness will moderate the relationship between living a calling and exploitation, such that for individuals with lower levels of conscientiousness, the strength of the relationship between living a calling and exploitation will be strengthened.

Hypothesis 18f: Self-esteem will moderate the relationship between living a calling and exploitation, such that for individuals with lower levels of self-esteem, the strength of the relationship between living a calling and exploitation will be strengthened.

Another broad concept posited in the WCT to moderate the relationship between living a calling and exploitation, burnout, and workaholism is that of psychological climate in the workplace. Again, consistent with WCT, psychological climate can be conceptualized as the aggregate of the common factors identified by James and James (1989). An individual typically evaluates their workplace on these four factors in their evaluation of psychological climate: levels of role stress and harmony; the amount of challenge and autonomy at work; facilitation and support displayed by leadership; and the amount of cooperation and friendliness. In the present study, a poor psychological climate has been parsed into 1) role conflict, 2) decreased task control, 3) decreased decision control, 4) decreased physical environment control, 5) decreased resources control, 6) decreased coworker support, and 7) decreased supervisor support. Herein, James and James' (1989) first factor of role stress and harmony corresponds with role conflict; their second factor of challenge and autonomy at work corresponds with task, decision, physical environment, and resources control; their third factor of support displayed by leadership corresponds with supervisor support; and their fourth factor of cooperation and friendliness corresponds with coworker support.

Again, the following Hypotheses are more tentative, however, one empirical example of German workers found higher rates of workaholism for individuals in more competitive work environments (i.e., less cooperation between coworkers), an effect that was greater for those who perceived their work as a calling (Keller, Spurk, Baumeler, & Hirschi, 2016). One meta-analysis showed that aspects of the work environment can contribute to workaholism (Clark, Michel, Zhdanova, Pui, & Baltes, 2014) and another meta-analysis of psychological climate and related outcomes used 121 studies and found that psychological climate was associated with workers' attitudes, motivation, and performance (Parker et al., 2003). Thus Hypothesis 19 is as follows:

***Hypothesis 19*: Living a calling will interact with unhealthy work environment characteristic(s) to moderate the relationship between living a calling and workaholism, such that some individuals with higher levels of the unhealthy work environment characteristics and higher levels of living a calling will actually experience more workaholism for both the *i*) working compulsively and *ii*) working excessively aspects of workaholism.**

Hypothesis 19a: More role conflict will moderate the relationship between living a calling and workaholism, such that for individuals with higher levels of role conflict, the strength of the relationship between living a calling and workaholism will be strengthened.

Hypothesis 19b: Less task control will moderate the relationship between living a calling and workaholism, such that for individuals with lower levels of task control, the strength of the relationship between living a calling and workaholism will be strengthened.

Hypothesis 19c: Lower levels of decision control will moderate the relationship between living a calling and workaholism, such that for individuals with lower levels of decision control, the strength of the relationship between living a calling and workaholism will be strengthened.

Hypothesis 19d: Less physical environment control will moderate the relationship between living a calling and workaholism, such that for individuals with lower levels of physical environment control, the strength of the relationship between living a calling and workaholism will be strengthened.

Hypothesis 19e: Less resources control will moderate the relationship between living a calling and workaholism, such that for individuals with lower levels of resources control, the strength of the relationship between living a calling and workaholism will be strengthened.

Hypothesis 19f: Less coworker support will moderate the relationship between living a calling and workaholism, such that for individuals with lower levels of coworker support, the strength of the relationship between living a calling and workaholism will be strengthened.

Hypothesis 19g: Less supervisor support will moderate the relationship between living a calling and workaholism, such that for individuals with lower levels of supervisor support, the strength of the relationship between living a calling and workaholism will be strengthened.

Individuals are also likely to experience increased burnout in work environments with a poor psychological climate. For example, in one study of hospital workers, interpersonal aggression led to increased rates of burnout via a reduction in perceptions of psychological climate (Bedi, Courcy, Paquet, & Harvey, 2013). Another study found that health care workers who perceived that their workplaces promoted authenticity at work, reported lower levels of burnout due to higher levels of emotional regulation when having to cope with their patients' emotions (Grandey, Foo, Groth, & Goodwin, 2012). These findings, along with the Conservation of Resources Theory (Hobfoll, 1988, 1989, 1998), suggest that individuals who perceive an unhealthy psychological climate at work have fewer resources, thus leading to increased stress experiences such as burnout. Hypothesis 20 is as follows:

Hypothesis 20: **Living a calling will interact with unhealthy work environment characteristic(s) to moderate the relationship between living a calling and burnout, such that some individuals with higher levels of the unhealthy work environment characteristics and a higher sense of living a calling will experience more burnout for both the i) disengagement and ii) exhaustion aspects of burnout.**

Hypothesis 20a: More role conflict will moderate the relationship between living a calling and burnout, such that for individuals with higher levels of role conflict, the direction of the relationship between living a calling and burnout will change to be a positive association.

Hypothesis 20b: Less task control will moderate the relationship between living a calling and burnout, such that for individuals with lower levels of task control, the direction of the relationship between living a calling and burnout will change to be a positive association.

Hypothesis 20c: Less decision control will moderate the relationship between living a calling and burnout, such that for individuals with lower levels of decision control, the direction of the relationship between living a calling and burnout will change to be a positive association.

Hypothesis 20d: Lower levels of physical environment control will moderate the relationship between living a calling and burnout, such that for individuals with lower levels of physical environment control, the direction of the relationship between living a calling and burnout will change to be a positive association.

Hypothesis 20e: Lower levels of resources control will moderate the relationship between living a calling and burnout, such that for individuals with lower levels

of resources control, the direction of the relationship between living a calling and burnout will change to be a positive association.

Hypothesis 20f: Less coworker support will moderate the relationship between living a calling and burnout, such that for individuals with lower levels of coworker support, the direction of the relationship between living a calling and burnout will change to be a positive association.

Hypothesis 20g: Less supervisor support will moderate the relationship between living a calling and burnout, such that for individuals with lower levels of supervisor support, the direction of the relationship between living a calling and burnout will change to be a positive association.

Finally, although empirical studies on poor psychological climate and workplace exploitation appear to be lacking, it may be likely that living a calling in an unhealthy work environment leads even further to higher ratings of perceived exploitation. Those work environments which are already characterized as unhealthy may be conducive to further unhealthy practices such as unjust procedures or behaviors by supervisors. Conceptually, it is also likely that perceptions of unsupportive supervisors may also correlate positively with perceptions of supervisors engaging in exploitative practices. Thus, Hypothesis 21 is as follows:

Hypothesis 21: **Living a calling will interact with unhealthy work environment characteristic(s) to moderate the relationship between living a calling and exploitation, such that some individuals with higher levels of the unhealthy work environment characteristics and a higher sense of living a calling will experience more exploitation in their workplace.**

Hypothesis 21a: More role conflict will moderate the relationship between living a calling and exploitation, such that for individuals with higher levels of role conflict, the strength of the relationship between living a calling and exploitation will be strengthened.

Hypothesis 21b: Less task control will moderate the relationship between living a calling and exploitation, such that for individuals with lower levels of task control, the strength of the relationship between living a calling and exploitation will be strengthened.

Hypothesis 21c: Less decision control will moderate the relationship between living a calling and exploitation, such that for individuals with lower levels of decision control, the strength of the relationship between living a calling and exploitation will be strengthened.

Hypothesis 21d: Less physical environment control will moderate the relationship between living a calling and exploitation, such that for individuals with lower levels of physical environment control, the strength of the relationship between living a calling and exploitation will be strengthened.

Hypothesis 21e: Lower levels of resources control will moderate the relationship between living a calling and exploitation, such that for individuals with lower levels of resources control, the strength of the relationship between living a calling and exploitation will be strengthened.

Hypothesis 21f: Less coworker support will moderate the relationship between living a calling and exploitation such that for individuals with lower levels of

coworker support, the strength of the relationship between living a calling and exploitation will be strengthened.

Hypothesis 21g: Less supervisor support will moderate the relationship between living a calling and exploitation, such that for individuals with lower levels of supervisor support, the strength of the relationship between living a calling and exploitation will be strengthened.

Veterinarians, a Vulnerable Worker Population

Veterinarians represent one worker population which may often report high levels of meaningful work, while also reporting high levels of workplace stressors, and exists at an increased risk for certain mental health issues. According to the Bureau of Labor Statistics, in 2018 there were 84,5000 veterinarians in the U.S. who were making a median annual wage of $93,830 (BLS, 2019). The Occupational Information Network (i.e., "O*NET"- Peterson et al., 2001), a database of occupational information developed by the U.S. Department of Labor/Employment and Training Administration, noted that veterinarians have a "bright outlook" in terms of employment needs and a projected growth that is "much faster" than the national average relative to other occupations. According to the American Veterinary Medicine Association, the largest national, professional organization within the U.S., the majority of working veterinarians work in private practice (i.e., clinical practice N = 73,373 (65%) compared to N = 16,897 (15%) in public and corporate positions, N = 28,375 position type unknown (25%), and N = 2,007 not listed (2%)) with those in clinical practice often having an exclusive or predominant focus on companion animal medicine (75.3% as of 2018; AVMA, 2018) The O*NET further notes from its work context data that, although the explicit primary description of a veterinarian's job may be to provide care, research, and medical aid to animals, many of the

daily tasks that are important to veterinarians have to do with interpersonal interactions (e.g., face-to-face discussions, dealing with external customers, working on a team). This extension points to the duplicity within the veterinary field of having to care for both the patient (i.e., animal) and client (i.e., human owner of the animal) and the complexities involved in working in clinical practice.

Veterinarians appear to often make their career choices at a very early age. For example, in one study of French veterinary students, career choice was reported to have been decided by an average of 8.7 years old with three fourths of the sample stating they had decided to become a veterinarian before the age of 12 (Sans, Mounier, Bénet, & Lijour, 2011). The most commonly cited factor for making this decision for two thirds of the Sans et al. (2011) sample was "vocation" with the most commonly evoked words associated with "veterinarian" being "animal," "care," and "passion." Similarly, the American Veterinarian Medical Association's slogan reads "Our Passion. Our profession. Empowering veterinarians to thrive in the profession we all love" (https://www.avma.org/). These themes of finding passion, purpose, and meaning can be found throughout the literature on the veterinary profession. For example, one model of veterinary well-being found that having higher reported rates of finding one's work to be self-actualizing, perceiving that one's work helps animals, and feeling a sense of belonging, corresponded to a higher sense of meaningful work. Meaningful work was also positively related to feeling a more general eudaimonic sense of well-being (Wallance, 2019). This is consistent with a review which found that the main areas of satisfaction among veterinarians appeared to be most related to personal growth, relationships, and meaningful purpose (Cake, Bell, Bickley, & Bartram, 2015).

Occupational Stressors for Veterinarians

Some of the most common workplace stressors reported by veterinarians in clinical practice (versus research or academia) were financial insecurity (20.3%), client issues (17.9%), coworker or interpersonal issues (12.7%), and work-life balance (11.7%; Vande Griek et al., 2018). Similarly, a large study of veterinarians cited high levels of student debt (91%), heightened stress (90%), suicide rates (81%), and an ability to retire comfortably (80%) as critically or moderately important stressors (from U.S. Veterinarians MAH Wellbeing Study 2017 - Volk, Schimmack, Strand, Lord, & Siren, 2018). Strikingly, less than half of veterinarians would recommend working in the profession to a family member or friend (41% would recommend - Volk et al., 2018) which is less than human physicians (51% would recommend) and the general public (70%) would do for their respective profession(s). Key reasons reported by veterinarians for their reluctance to recommend a career as a veterinarian included high student debt, the comparatively lower rate of compensation, and the perceived personal toll the job takes on the individual.

These findings were generally supported in a follow-up survey (i.e., the U.S. Veterinarians MAH Wellbeing Study 2019) conducted in 2019 which found similar rates for the top stressors for U.S. veterinarians - stress level (92%), high student debt (91%), ability to retire/leave the profession (81%), and people's declining willingness to pay for vet services (71%; Volk, Schimmack, Strand, Vasconcelos, & Siren, 2020). However, notably, results from the 2019 survey indicated an increase in the percentage of the veterinarian population who were concerned about veterinarian suicide deaths from 80% in 2017, to 89% in 2019, with 7.5% of veterinarians reporting that they themselves had considered suicide in the past year. Additional areas explored in the follow-up survey indicated that 70% of veterinarians reported

cyberbullying and/or vicious reviews as a top professional stressor (although only 1 in 5 reported personally experiencing it in the past year).

It appears likely that these types of occupational stressors lead to negative outcomes for some veterinarians. While many veterinarians within the field thrive and flourish within their occupation, it has also been well-documented that some also experience heightened levels of distress as a result of their career. There is some variation within the literature regarding the exact percentage of veterinarians experiencing significant distress; one study found 6.8% of male and 10.9% of female respondents were characterized as having serious psychological distress (Nett et al., 2015), which is approximately twice of that of the U.S. population (3.5% of male and 4.4% of female U.S. adults - Reeves et al., 2011). Specifically, a very high percentage of veterinarians report experiencing ethical conflict within their jobs which leads to moral distress (70%; Moses, Malowney, & Boyd, 2018), with ethical dilemmas a reportedly common experience (e.g., 57% faced 1-2 ethical dilemmas per week and 34% faced 3-5 ethical dilemmas per week for UK veterinary surgeons; Batchelor & McKeegan, 2012).

Compassion Fatigue and Burnout

One possible negative outcome resulting from these types of stressors may be higher rates of compassion fatigue for veterinarians (Volk et al., 2018), with one study finding that as many as one third of their veterinarian sample scored in the high or extremely high-risk category for compassion fatigue (Figley & Roop, 2006). Compassion fatigue is a phenomenon most often studied in healthcare professionals and refers to a set of both physical and emotional responses that lead to a decrease in compassionate feelings towards others as a result of a worker's occupation (Sinclair, Raffin-Bouchal, Venturato, Mijovic-Kondejewski, & Smith-MacDonald, 2017). Importantly, it can be conceptualized as a progression which occurs over time:

47

"Compassion fatigue is the final result of a progressive and cumulative process that is caused by prolonged, continuous, and intense contact with patients, the use of self, and exposure to stress" (Coetzee & Klopper, 2010, p. 237).

Similarly, over half of veterinarians in a U.S. sample reported experiencing some signs of burnout (i.e., 67% of females, 53% of males – Elkins & Kearney, 1991). When compared to the similar occupation of physicians (who report higher rates of burnout than the general public), veterinarians reported 40% more burnout, although this was not a function of hours worked and was instead associated with lack of work-life balance, lower enjoyment of work, not finding work invigorating, and having personal conflict with colleagues at work (Volk et al., 2020). Concerningly for the profession, many veterinarians also personally struggle with depression (e.g., since graduating from veterinary school, 24.5% (male) and 36.7% (female) respondents reported experiencing depressive episodes; Nett et al., 2015), suicidal ideation (e.g., 24.9% have had suicidal thoughts; Volk et al., 2018), and suicide attempts (1.1% (male) and 1.4% (female) suicide attempts; Nett et al., 2015). Bartram and Baldwin (2010), in their review of the literature, state that veterinary surgeons have a proportional mortality ratio (i.e., increased risk) of dying via suicide four times greater than the general public. The authors suggest that several explanations for this finding could include access to means of suicide, attitudes toward death and euthanasia, suicide "contagion," cognitive and personality factors, work-related stressors, perceived stigma against mental illness, and psychiatric factors. Veterinarians are most likely to choose to complete suicide through deliberate self-poisoning methods (i.e., male veterinarians 76% of suicides, female veterinarians 86% of suicides; Kelly & Bunting, 1998). In another study of U.S. veterinarians which examined data from the years 1979-2015, male veterinarians were 2.1 times and female veterinarians were 3.5 times as likely as the general U.S. population to die by suicide

with 79% of those who died by suicide holding clinical positions at the time of their deaths (Tomasi et al., 2019). Gender differences for preferred method emerged in the Tomasi et al. (2019) study such that male veterinarians are most likely to die by firearms (51% of male suicides) versus female veterinarians were most likely to die via pharmaceutical poisonings (64% of female suicides). These mental health issues within the veterinarian community are especially concerning because of the lower perceived helpfulness of mental health treatments and decreased levels of help-seeking behaviors being reported by veterinarians (Nett et al., 2015).

Job Level and Career Stage

Negative outcomes such as compassion fatigue and burnout may be especially exacerbated for associate (also termed "assistant") veterinarians who do not own a clinical practice themselves. Associate veterinarians often have less control over their job characteristics (e.g., lower decision-making) and schedules. According to both the Job Demand-Control (JD-C) model (Karasek, 1979) and the Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2007), autonomy may act as a resource for those coping with high job demands, in turn leading to lower levels of work stress for individuals with higher autonomy. Furthermore, associate veterinarians often are younger, less experienced, more likely to be female (i.e., in 2019 over 80% of student enrolled in colleges of veterinary medicine were female; AAVMC, 2020), and to have graduated from veterinary school with high levels of student debt (i.e., in 2018 only 20% graduate without student debt, for those with student debt upon completion the median for students in the U.S. was $150,000+; AAVMC, 2020). Younger veterinarians report significantly more psychological distress than older ones and it appears from cross-sectional data that perhaps one of the biggest drivers of this relationship is increased amounts of student debt (Volk et al.,

49

2018). Women veterinarians in general also report a decreased level of flourishing (e.g., 51.3%) relative to their male counterparts (e.g., 67.1%; Volk et al., 2018).

Indeed, research that explicitly compares associate and principal veterinarians also highlights the relative increased risk for associate veterinarians. One study conducted among Australian veterinarians found that associate veterinarians were higher in the extreme categories for experiencing stress, anxiety, depression, and personal, work, and client burnout (Hatch, Winefield, Christie, & Lievaart, 2011) compared to principal veterinarians. They found significant effects of being female and within 10 years from graduating school impacting depression, stress, and burnout. Another large study found that as many as two-thirds of their participants, including 79% of associate veterinarians in practice, reported experiencing feelings of depression, compassion fatigue or burnout, or anxiety or panic attacks within the past year (Volk et al., 2018). Another large study of Canadian veterinarians found higher levels of negative mental health states and lower resilience in their study compared to the general public; those who identified as female reported worse outcomes than males in the sample. Negative associations with resilience reported existence of mental illness, being married, in small animal practice, or being in an associate role (Perret, 2020). Additionally, general practitioners, practitioners with less experience, and associate veterinarians reported experiencing more ethical dilemmas at work, with females reporting these types of encounters as particularly stressful (Kipperman, Morris, & Rollin, 2018).

It would appear that while veterinarians tend to decide upon their career paths from an early age and often attribute considerable meaning to their work, many veterinarians (especially younger, female, and associate veterinarians) may be at increased risk for decreased psychological health and well-being.

METHOD

Participants

Participants were adults (i.e., 18+ years old) in the U.S. who were asked to self-identify as associate veterinarians to have access to the survey. Participants were recruited via an email/web announcement sent out to veterinarians through professional associations (e.g., the Fear Free veterinarian group), via social media groups that may be frequented by associate veterinarians, and personal contacts. After eliminating survey data that was less than 50% complete, a total of $n = 149$ was included for analyses. The sample largely identified as female (94%), White/Caucasian (87.2%, Asian/Pacific Islander – 4.7%, Hispanic or Latin American – 3.5%, and other – 0.7%), and middle-aged ($m = 39.62$, $SD = 10.74$). They also reported currently working (97.3%), with most being employed full-time (81.9%; part-time - 6.7%, self-employed – 8.1%) and being relatively earlier in their careers as veterinarians ($m = 12.0$ years), but with a fair amount of variability ($SD = 10.64$ years). The majority also reported working in urban settings (68.5%, mixed – 19.5%, rural – 12.1%) and focusing on small animal (74.3%), companion animal (12.4%), and other (shelter – 4.8%, veterinarian specialist - 2.9%, industry - 1.9%, livestock – 1.9%, lab animal – 1.0%, mixed animal practice – 1.0%) types of medicine. Stated current household annual income level was fairly high ($m = \$134,958.06$), although there was a high degree of variability in the sample ($SD = \$73,362.42$; income ranged from \$0 to \$500,000).

The number of hours worked/work schedule had been noted by the VOWS advisory committee as a likely stressor for many veterinarians and was therefore assessed in more depth. The current sample noted that in the past week they had been scheduled to work 60.39 hours (SD

= 23.01), had actually worked 69.84 hours (SD = 25.0), and this was "more than" (60.1%) or "as much" (35.8%) as they would have liked to work. When asked about how much control they had over their schedules, respondents replied that they had very little (24.2%), some (43.0%), a fair amount (20.1%), and a lot (12.8%) of control. Finally, when asked if they believed they had a calling, the majority reported that they did (i.e., 66.4%, "no" – 33.6%).

Procedure

Data were collected via an online survey which was disseminated to potential participants who self-identified as being currently employed under the title of "Associate Veterinarian" (or equivalent job level). All data were collected in a cross-sectional manner using one online survey. No compensation was provided to participants; they were provided with a written consent form prior to taking the survey and a short debriefing form (also written) following completion of the survey. Most questions on the survey could be answered on a provided Likert-style response scale or by selecting amongst multiple choice options. Questions broadly centered on topics of demographic information, work-related well-being, work outcomes, personality traits, and workplace climate; specific measures are provided in more detail below. The online survey was hosted via the Qualtrics survey platform, which participants accessed via an anonymous link. No identifying information was collected from participants and the link to the survey was deactivated upon reaching data collection completion. Institutional Review Board approval was completed at Colorado State University (protocol #20-9784H) prior to data collection and is for the broader Veterinarian Occupational Well-being Study (VOWS), which included the following measures as well as additional scales and questions to be used for other research studies.

Measures

      Living a calling. Living a calling was measured by the six-item Living a Calling Scale

(LCS) first used by Duffy, Bott, Allan, Torrey, and Dik (2012) and piloted with a sample of

college students. Samples items included: ''I am consistently living out my calling'' and ''I am

living out my calling right now in my job.'' Participants were provided with a 7-point response

scale ranging from "Strongly disagree" to "Strongly agree." Participants who did not find the

calling concept relevant to themselves were also provided with a response option of "Not

applicable." Item scores are summed together to provide one overall score of living a calling.

Initial internal consistency for scores on the unidimensional scale was acceptable within the

Duffy et al. (2012) undergraduate sample $\alpha = .85$ and the total LCS scale score correlated in the

predicted manner with presence of a calling ($r = .32$), life meaning ($r = .31$), and academic

satisfaction ($r = .29$). Subsequent studies using samples of working adults have further supported

evidence of strong internal consistency and that LCS scores relate to work outcomes such as job

satisfaction ($r = .52$), career commitment ($r = .68$), and work meaning ($r = .62$) in the positive

predicted manner (i.e., $\alpha = .95$ – Duffy et al., 2012). In their longitudinal study of working adults,

Duffy et al. (2014) found LCS scores to demonstrate good 3-month ($r = .71$, $p < .001$) and 6-

month ($r = .55$, $p < .001$) test–retest reliability. Internal consistency in the present study was

excellent ($\alpha = .98$).

      Job satisfaction. Job satisfaction was assessed using the four-item Job Satisfaction scale

originally in Caplan, Cobb, French, Harrison, and Pinneau (1975) and accessed via the National

Institute of Occupational Safety and Health's (NIOSH) Generic Job Stress Questionnaire

(accessed via https://www.cdc.gov/niosh/topics/workorg/detail088.html on 2/8/2020). Questions

are meant to be non-specific and to not allude to certain aspects of work. Response options vary

by question and are on a 3-point scale for the first 3 questions (i.e., *"Knowing what you know now, if you had to decide all over again whether to take the type of job you now have, what would you decide?"; "If you were free right now to go into any type of job you wanted, what would your choice be?"; "If a friend of yours told you he/she was interested in working in a job like yours, what would you tell him/her?"*) and on a 4-point scale for the fourth question (i.e., *"All in all, how satisfied would you say you are with your job?"*). Scale score was calculated by reverse scoring all items and computing the mean across items (higher scores indicate more job satisfaction). In Caplan et al.'s (1975) original sample of nurses, internal reliability was acceptable ($\alpha = .83$) and similar to reliability in the current study ($\alpha = .84$).

Job performance. Job performance in the present study was measured by using the three-item Individual Task Proficiency subscale from Griffin, Neal, and Parker's (2007) Model of Work Role Performance. Griffin et al., (2007) define Individual Task Proficiency as "the degree to which an employee meets the known expectations and requirements of his or her role as an individual" (p. 331) and note that most prior research on job performance has centered on this sub-category. The three items for this subscale are "Carried out the core parts of your job well," "Completed your core tasks well using the standard procedures," and "Ensured your tasks were completed properly." Participants are informed to rate how often they had carried out the behavior over the past month on a five-point Likert scale ranging from "Very little" to a "Great deal," item scores were summed together to create a total score. Giffin et al. (2007) tested their scale with three samples and found acceptable internal consistency in all three samples for Individual Task Proficiency (i.e., supervisor sample $\alpha = .87$, working adult sample in environmental management organization $\alpha = .83$, working adult sample in health care sector $\alpha = .88$). Individual Task Proficiency was found to be significantly correlated with Role Clarity as

hypothesized by Griffin et al., (2007) for both working adult samples (i.e., environmental management organization $r = .30$, health sector organization $r = .25$). Internal consistency in the present study was also acceptable ($\alpha = .88$).

Workaholism. Workaholism was measured using the Dutch Work Addiction Scale (DUWAS), created as a brief measure of workaholism by Del Líbano, Llorens, Salanova and Schaufeli (2010), which measure the two subscales of Working Excessively (WkE, five items) and Working Compulsively (WkC, five items). This brief form was adapted by Del Líbano et al., (2010) from the longer 17-item DUWAS created by Schaufeli, Taris, and Bakker (2006) and validity evidence was established using two large samples of Dutch and Spanish working adults ($\alpha s = .75-.81$). Participants respond on a 4-point Likert scale from "(almost) never" to "Almost (always)" and sample items include "I seem to be in a hurry and racing against the clock" (WkE) and "I often feel that there's something inside me that drives me to work hard" (WrC). Líbano et al., (2010) also found support for validity in their samples, scores on both of the subscales within their Dutch and Spanish working adult samples were negatively and significantly correlated with perceived health (WrE $r = -.25$ and WrC $r = -.29$) and happiness (WrE $r = -.26$ and WrC $r = -.30$). In the current study, the first item of the scale loaded poorly (i.e., 0.21) onto its factor of working excessively, and was thus trimmed and not used in path analysis. Subscale scores were calculated by summing items on each subscale. Internal consistency (calculated after trimming for working excessively) in the current study was acceptable for both subscales (WkE $\alpha = .83$, WkC $\alpha = .83$).

Burnout. Burnout was measured using the English version of the Oldenburg Burnout Inventory (OLBI; Demerouti, Bakker, Vardakou & Kantas, 2003), which is traditionally comprised of the two subscales of Disengagement (eight items) and Exhaustion (eight items).

Items are designed to be scored on a 4-point Likert scale from "Strongly agree" to "Strongly disagree" such that higher scores indicate more burnout (with eight reverse-scored items). Sample items include "I always find new and interesting aspects in my work" (Disengagement) and "After working, I have enough energy for my leisure activities" (Exhaustion). The OLBI improves upon other commonly used measures of burnout such as the Maslach Burnout Inventory-General Survey (MBI-GS; Schaufeli, Leiter, Maslach, & Jackson, 1996) by including aspects of affective, physical and cognitive exhaustion and has been supported as an alternative scale to the MBI-GS and Utrecht Work Engagement Scale (UWES - that assesses only work engagement) as a method to measure both burnout and engagement simultaneously within one scale (Demerouti, Mostert, and Bakker, 2010). Halbesleben & Demerouti (2005) found good internal consistency across two U.S. samples of generalized working adults and of fire department employees for the English translation of the OLBI (αs = .74-.87). They additionally supported that scores on the OLBI subscales have moderate test-retest reliability across four months (autocorrelation for the Exhaustion subscale = .51, autocorrelation for the Disengagement subscale = .34). The 13th item of the scale loaded poorly onto its theorized factor of Disengagement (0.18) and was therefore trimmed, scale scores for each dimension were calculated by summing items for that subscale. Both the Disengagement (α = .85) and Exhaustion (α = .88) dimensions demonstrated good reliability in the present study.

Exploitation. Exploitation in the present study was assessed using the fourteen-item Perceived Exploitative Relationships scale (PERs) developed by Livne-Ofer, Coyle-Shapiro, and Pearce (2019) which includes items such as "As long as I work in my organization, it will keep taking advantage of me" and "I am a modern-day slave." Livne-Ofer et al. (2019) define exploitation as "employees' perceptions that they have been purposefully taken advantage of in

their relationship with the organization, to the benefit of the organization itself" (p. 9). Initial validation of the PERs was conducted by Livne-Ofer et al. (2019) on five separate samples, three samples for scale development purposes as well as on two additional samples (i.e., construction workers and medical residents) for validation purposes. The PERs was distinct from similar constructs such as perceived organizational support, psychological contract breach, distributive justice, abusive supervision and perceived supervisor support (Livne-Ofer et al., 2019). Overall, findings support that PERs scores correlate with other relevant workplace constructs in expected directions such as positively correlating with revenge ($r = .35$), turnover intentions ($r = .52$), and burnout ($r = .52$) and negatively relating to organizational commitment ($r = -.62$) for Livne-Ofer et al.'s (2019) sample of medical residents. The scale score was calculated by summing items, internal consistency in the current study was excellent ($\alpha = .94$).

Workplace environment. The workplace environment aspects for the present study were assessed using select scales from the National Institute of Occupational Safety and Health's (NIOSH) Generic Job Stress Questionnaire (accessed via https://www.cdc.gov/niosh/topics/workorg/detail088.html on 2/8/2020). This questionnaire was compiled from existing scales based upon content analyses conducted by external subject matter experts and in-house expertise from NIOSH. NIOSH's written rational for compiling this questionnaire was to fulfill the need for a valid and reliable core set of scales which can "be applied across occupational situations." All workplace environment scale scores were calculated by summing items. Within the present study, *Role Conflict* (originally from Rizzo, House, & Lirtzman, 1970) was assessed using eight-items measured on a seven-point Likert style scale from "Very inaccurate" to "Very accurate," internal consistency in the present study was excellent ($\alpha = .90$). An example item is "I receive an assignment without adequate resources and

materials to execute it." Role Conflict in the present study corresponds to the "levels of role stress and harmony" described within the WCT paper (Duffy et al., 2018) as a reference to one of the five primary domains of work environment perceptions identified by James and James (1989). *Job Control* (Greenberger, 1981; Ganster, 1984) was assessed using four subscales of Task Control (seven items, original α = .85, current α = .87), Decision Control (four items, original α =.74, current α = .88), Physical Environment Control (two items, original α = .79, current α = .84), and Resource Control (two items, original α = .82, current α = .89) on a five-point Likert style scale from "Very little" to "Very much." Example items (in order to the above listed subscales) include "How much influence do you have over the variety of tasks you perform?" (Task Control), "How much influence do you have over the decisions concerning which individuals in your work unit do which tasks?" (Decision Control), "How much influence do you have over the arrangement and decoration of your work area?" (Physical Environment Control), and "How much influence do you have over the availability of materials you need to do your work?" (Resource Control). *Social Support* (Caplan et al., 1975) in the present study was examined as Social Support from Coworkers (four items, original α = .84) and Social Support from Supervisor (four items, original α = .88). These were each measured on a four-point scale from "Very much" to "Not at all" as well as including a fifth option of "Don't have any such person." Participants are instructed to rate each question (e.g., "How much can each of these people be relied on when things get tough at work?") for their "Immediate supervisor (boss)" and "Other people at work." Notably, original internal consistency for both types of social support (coworker support α = .65, supervisor support was α = .78) was less than desirable and appeared to mostly be due to the first and second questions asking respondents to rate "how much does this person go out of their way to make things easier for you." Additionally, standardized factor

loadings for the first (0.16) and second items (0.07) were poor, and these items were trimmed

and internal reliability recalculated, which increased reliability (coworker support α = .83,

supervisor support was α = .92) to acceptable levels.

Agreeableness, Conscientiousness, and Neuroticism. Neuroticism (i.e., Negative

Emotionality), Agreeableness, and Conscientiousness was assessed by The Big Five Inventory–2

Extra-Short Form (BFI-2-XS) developed by Soto and John (2017a; 2017b). Each of the Big Five

personality traits was originally measured using three items intended to be scored on a five-point

Likert style scale from "Disagree strongly" to "Agree strongly." All scale scores were calculated

by summing items. The BFI-2-XS is an abbreviated version of the longer, 60-item Big Five

Inventory-2 (BFI-2). Soto and John (2017b) conducted two validation studies using samples of

online participants and university students and found that the BFI-2-XS retained about 80% of

the BFI-2 domain scales' reliability, self-peer agreement, and external validity and could be used

when survey space/participants' time was limited. Participants are prompted with the stem of "I

am someone who…" followed by items including "Is compassionate, has a soft heart."

(Agreeableness, original αs = .55 and .49), "Is reliable, can always be counted on."

(Conscientiousness, original αs = .61 and .55) and "Worries a lot" (Neuroticism/Negative

Emotionality, original αs = .73 and .69). The 12th item of the scale was expected to load onto

Agreeableness but did so poorly in the current study (0.18) and was therefore trimmed. Internal

reliability for both Agreeableness (r_{SB} = .42) and Conscientiousness (α = .51) in the current study

were well under the recommended levels, Negative Emotionality demonstrated a more

acceptable level of reliability (α = .79).

Perfectionism. The degree to which participants exhibit perfectionistic tendencies was

measured using the Short Form of the Revised Almost Perfect Scale (SAPS; Rice, Richardson, &

Tueller, 2014) which is comprised of two subscales of Standards (i.e., defined as high performance expectations, measured using four items) and Discrepancy (i.e., defined as self-critical performance evaluations, measured using four items). The SAPS is a shorter and more refined version of the Almost Perfect Scale–Revised (APS–R; Slaney, Mobley, Trippi, Ashby, & Johnson, 1996; Slaney, Rice, Mobley, Trippi, & Ashby, 2001). Participants respond on a seven-point Likert style scale from "Strongly disagree" to "Strongly agree" and the subscale scores were calculated by summing items. Sample items include "I have high expectations for myself." (Standards) and "Doing my best never seems to be enough." (Discrepancy). The SAPS was validated using two undergraduate student samples and showed acceptable internal consistency (Standards original αs = .87 and .85, Discrepancy original αs = .84 and .87). Validity was supported via relationships in the expected directions with other constructs such as conscientiousness (Standards r = .33, Discrepancy r = -.20), neuroticism (Standards r = .05, Discrepancy r = .32), emotion regulation (Standards with Reappraisal r = .22, Standards with Suppression r = -.03, Discrepancy with Reappraisal r = -.24, Discrepancy with Suppression = .26), and depression (Standards r = -.05, Discrepancy r = .50). Internal consistency for both subscales fell within the good range in the current study (Standards α = .87, Discrepancy α = .92).

Need for Achievement. Need for Achievement in the present study was assessed using DeCharms, Morrison, Reitman, and McClelland's (1955) scale which is a revised version of Murray's (1938) original explicit nAch questionnaire. DeCharms et al.'s (1955) scale is comprised of nine items (e.g., "I set difficult goals for myself which I attempt to reach.") which are measured on a seven-point Likert style scale from "Strongly disagree" to "Strongly agree." Additional studies (e.g., Thrash, Elliot, & Schultheiss, 2007, α = .77) have supported the

DeCharms et al.'s (1955) scale's convergent validity with other commonly used measures of nAch such as Edwards Personal Preference Schedule developed by Edwards (1959, r = .48) and the Achievement Motivations Scale by Nygård and Gjesme (1973, r = .37). Because the first (0.08) and second (0.20) items of the scale loaded poorly, they were trimmed. Reliability in the present study after trimming those two items was acceptable (α = .80) and this variable was entered into the path analyses as a summed score made up by adding the remaining items together.

Self-Esteem. Self-esteem was assessed using the Rosenberg (1965) Self-Esteem scale (RSE) comprised of ten items scored on a four-point Likert style scale from "Strongly disagree" to "Strongly agree" with half of the items reverse scored. Sample items include "On the whole, I am satisfied with myself." and "At times I think I am no good at all" (reverse scored). The scale score was calculated by summing the items together. Test-retest reliability over a period of 2 weeks found correlations of .85 and .88, indicating excellent stability (Rosenberg, 1979). In the present study, the scale demonstrated good internal consistency (α = .92).

RESULTS

Data Cleaning

Any data from participants missing at least 50% or more of the relevant questions were deleted from the data set. Data was further examined visually to determine if there were other possible signs of potentially issues, such as unmeaningful responding patterns (e.g., always responding with the same response option). All variables were entered into a Missing Completely at Random test (MCAR; Little, 1988) which was conducted using SPSS to determine if missing data demonstrated any consistent patterns of non-response styles to specific questions. Results from the Little's MCAR test on the data were non-significant ($\chi^2 = 315.893$, $df = 283$, $p = .09$) indicating missing data was random (i.e., responses were not systemically missing specific pieces of data). All variables were also checked using SPSS prior to analyses to determine if any violated linear regression assumptions (i.e., linearity, normally distributed, no outliers, multivariate normality, little to no multicollinearity, independence of observations, homoscedasticity – See Appendix E for more details). Job Performance did not meet the assumption of normality of residuals as well as being very negatively skewed ($m = 13.70$, $SD = 1.76$, Max = 15, Min = 3, Skew = -2.16, Kurtosis = 8.58 – See Table 1 for all more details).

Table 1. Means and Descriptive Statistics of Variables

Variable Name	Mean	SD	Possible Range	Min	Max	Skewness	Kurtosis
Living a Calling	30.54	15.01	6 – 48	6	48	-.59	-1.13
Job Satisfaction	2.37	.60	1.0 – 3.25	1	3.25	-.10	-.86
Job Performance	13.70	1.76	3 – 15	3	15	-2.16	8.58
Workaholism – Working Excessively	25.18	5.47	12 – 36	12	36	-.33	-.60
Workaholism – Working Compulsively	20.24	4.64	9 – 28	9	28	-.50	-.53
Burnout - Disengagement	17.07	3.99	7 – 26	7	26	-0.07	-.17
Burnout - Exhaustion	22.30	4.58	9 – 32	9	32	-.50	.17
Exploitation	39.05	18.47	14 – 92	14	92	.52	-.48
Role Conflict	30.10	11.91	8 – 56	8	56	-.16	-.72
Task Control	20.69	5.76	7 – 35	7	35	.54	.18
Decision Control	10.64	4.09	4 – 20	4	20	.47	-.40
Physical Environment Control	4.93	2.57	2 – 10	2	10	.61	-.72
Resource Control	5.55	2.24	2 – 10	2	10	.20	-.68
Supervisor Support	9.89	3.50	3 – 15	3	15	-.37	-.68
CoWorker Support	11.97	2.24	7 – 15	7	15	-.38	-.83
Agreeableness	7.51	1.68	3 – 10	3	10	-.30	-.37
Conscientiousness	11.18	2.50	4 – 15	4	15	-.39	-.60
Negative Emotionality	9.86	3.16	3 – 15	3	15	-.30	-.76
Perfectionism - Standards	25.53	3.22	9 – 28	9	28	-2.12	6.13
Perfectionism - Discrepancy	17.84	6.69	4 – 28	4	28	-.21	-.97
Need for Achievement	26.40	7.98	7 – 49	7	49	-.14	-.13
Self-Esteem	29.03	6.14	13 – 40	13	40	-.19	-.57

Both log and square root transformations were applied (see Appendix F for histograms) to explore if it was possible to correct this assumption violation, but normality of residuals was not achieved. While these findings are not unexpected due to the conceptual issues with measuring job performance in general and especially via self-report (e.g., typically individuals rate their own performance higher than their supervisors do - Harris & Schaubroeck, 1988).

Psychometric Analyses

Prior to conducting statistical analyses to test hypotheses, all measures were assessed using confirmatory factor analysis to determine how well the observed data fit the theorized factor structure of each scale. Model fit for all original scales are summarized in Table 2.

Table 2. Original CFA Model Fit for Scales

Variable Name	χ^2	CFI	TLI	SRMR
Live Calling	25.13 ($df = 9, p < .01$)	0.99	0.98	0.01
Job Satisfaction	2.48 ($df = 2, p = 0.29$)	1.00	0.99	0.02
Job Performance	0.00 ($df = 0, p < .001$)	1.00	1.00	0.00
Workaholism	388.45 ($df = 118, p < .01$)	0.76	0.72	0.08
Burnout	216.32 ($df = 103, p < .01$)	0.90	0.88	0.06
Exploitation	579.24 ($df = 77, p < .01$)	0.71	0.65	0.09
Role Conflict	97.88 ($df = 20, p < .01$)	0.88	0.84	0.05
Perceived Control	322.38 ($df = 99, p < .01$)	0.86	0.83	0.15
Social Support	296.04 ($df = 57, p < .01$)	0.68	0.63	0.15
Big Five	149.81 ($df = 80, p < .01$)	0.84	0.79	0.07
Perfectionism	53.29 ($df = 19, p < .01$)	0.96	0.94	0.07
Need for Achievement	99.03 ($df = 27, p < .01$)	0.79	0.72	0.08
Self-Esteem	110.43 ($df = 35, p < .01$)	0.92	0.89	0.05

Less desirable fit was initially observed for the following scales/subscales; workaholism, exploitation, social support, and need for achievement. The excellent model fit for job performance is likely due to the very low (i.e., 3) number of indicators used to calculate this factor. Variables with items which had standardized factor loadings below .30 were trimmed and model fit indices and alphas were recalculated (for all item loadings, please reference Appendix

149

G). This led to the elimination of 1 item from the working excessively subscale, 1 item from the

disengagement subscale, 2 items from the social support scale (i.e., 1 item from supervisor

support and 1 item from coworker support), 2 items from the Big Five scale (i.e., 1 item from

agreeableness and 1 item from open-mindedness), and 2 items from the need for achievement

subscale. The details regarding trimmed items is provided in the Measures section as applicable.

Overall, model fit did not reach good fit for these scales/subscales even after item trimming.

While these variables were not so poor as to be completely excluded from following analyses,

the poorer model fit for these factors indicate a need for increased caution in interpretation of

results. Specifically, when the assumed measurement model does not fit the actual data well,

typically this leads to small effects not being able to be detected by statistical analyses.

Table 3. CFA Model Fit for Scales with Trimmed Items

Variable Name	χ^2	CFI	TLI	SRMR
Workaholism	394.12 (*df* = 119, *p* < .01)	0.75	0.72	0.09
Burnout	198.14 (*df* = 89, *p* < .01)	0.90	0.88	0.06
Social Support	271.88 (*df* = 38, *p* < .01)	0.68	0.63	0.17
Big Five	*No model indices calculated as model did not converge*			
Need for Achievement	59.53 (*df* = 14, *p* < .01)	0.85	0.78	0.08

Path Analysis Approach

      The first step in examining path analysis results is to interpret model fit based on multiple

indices to determine if proposed models achieve reasonably good fit to the actual data. Chi-

Square values represent how different the proposed model is from the actual data such that

significant values indicate a significant difference between the model and the data. Thus, non-

significant Chi-Square values (or at least smaller Chi-Square values) are desirable in that they

indicate that the model is not significantly different from the actual data and thus that the data is

a good fit to the proposed model. Since Chi-Square tests are sensitive to sample size, additional

model fit indices were also examined according to Hu and Bentler's (1999) model fit index suggestions to assess how well the model fits the data. These suggestions are as follows for a preferably acceptable fitting model: comparative fit index (CFI) greater than .95, Tucker–Lewis Index (TLI) greater than .95, and standardized root mean squared residual (SRMR) less than .08. The other most commonly reported model fit index (Kline, 2010), the root mean square error of approximation (RMSEA) was not reported in the current study due to both theoretical reasons and supporting Monte Carlo simulation studies which note considerable issues with RMSEA incorrectly rejecting properly fitting models in studies with models with lower degrees of freedom (e.g. Kenny, Kaniskan, & McCoach, 2015; Taasoobshirazi, & Wang, 2016; Shi, DiStefano, Maydeu-Olivares, & Lee, 2020). In those circumstances, CFI, TLI, and SRMR have been found to be more reliable indicators of actual model fit.

Based on how limited prior research has been on both the study population and regarding the proposed linkages from the WCT, a more exploratory analytical approach was taken, specifically that of "New Statistics" (Cumming, 2013, 2014; Eich, 2014). New Statistics shifts away from solely focusing on null hypothesis significance testing (NHST), which emphasizes specific alpha levels to determine if a relationship is statistically significant or not, to instead interpret the magnitude of observed effects. Specifically, the New Statistics approach avoids some of the potential pitfalls of NHST testing such as the sole reliance on p-values which are largely impacted by sample size, and instead highlights the importance of examining effect sizes, confidence intervals, and the synthesis of all information to inform interpretation. Effect sizes are further advantageous in that they, by nature, cannot fall liable to Type I or Type II errors (one downside to relying on p-values for dichotomous significance testing) and are more easily used with in meta-analytic approaches if future research dictated such a need.

66

Congruent with the New Statistics method (Cumming, 2013, 2014; Eich, 2014),

standardized regression coefficients (commonly signified as β) were estimated for each possible

path with effects of .1+ indicating small effect sizes, .3+ indicating middle effect sizes, and .5+

indicating large effect sizes. Standardized regression coefficients can be interpreted as the

expected change in the endogenous variable (i.e., the dependent variable) with a one unit

increase in the exogenous or predictor variable. When interpreting confidence intervals for

regression coefficients, if the range between the minimum and maximum estimated coefficient

does not contain zero, it can be concluded with 95% confidence that there is an effect or

relationship between the two variables. In this study, variable relationships which demonstrated a

medium or large effect are highlighted as possibly fruitful moderators to explore in future

studies, but those which did contain zero within their 95% confidence range are described as

being "less confident." Another useful metric to interpret is R-Squared (i.e., R^2), which can be

understood as the percentage of the variance in the dependent variable explained by the model

(higher values indicate more variance accounted for by the model).

A series of path analyses using Ordinary Least Squares regression were conducted in

MPlus version 8.4 (Muthén & Muthén, 1998-2017) to determine if the hypotheses outlined

previously were supported by the data. Steps 1-3 were run using the Maximum likelihood with

robust standard errors (MLR); the robust nature of MLR is to more accurately estimate standard

errors which was helpful when the non-normal job performance variable was included in the

analyses. The latter models run to examine indirect and conditional effects were run using the

Maximum Likelihood Estimation method and were bootstrapped 10,000 iterations to find

parameter estimates (bootstrapping is not available for MLR). Bootstrapping, a method of taking

numerous subsamples within the data set, is especially helpful with smaller sample sizes and can

help stabilize parameter estimates and/or when wanting to examine conditional effects (as is the case with this study).

The WCT predicts a moderated mediation model for the dark side of calling. Please refer below to Figure 1 for a visual depiction of these hypotheses.
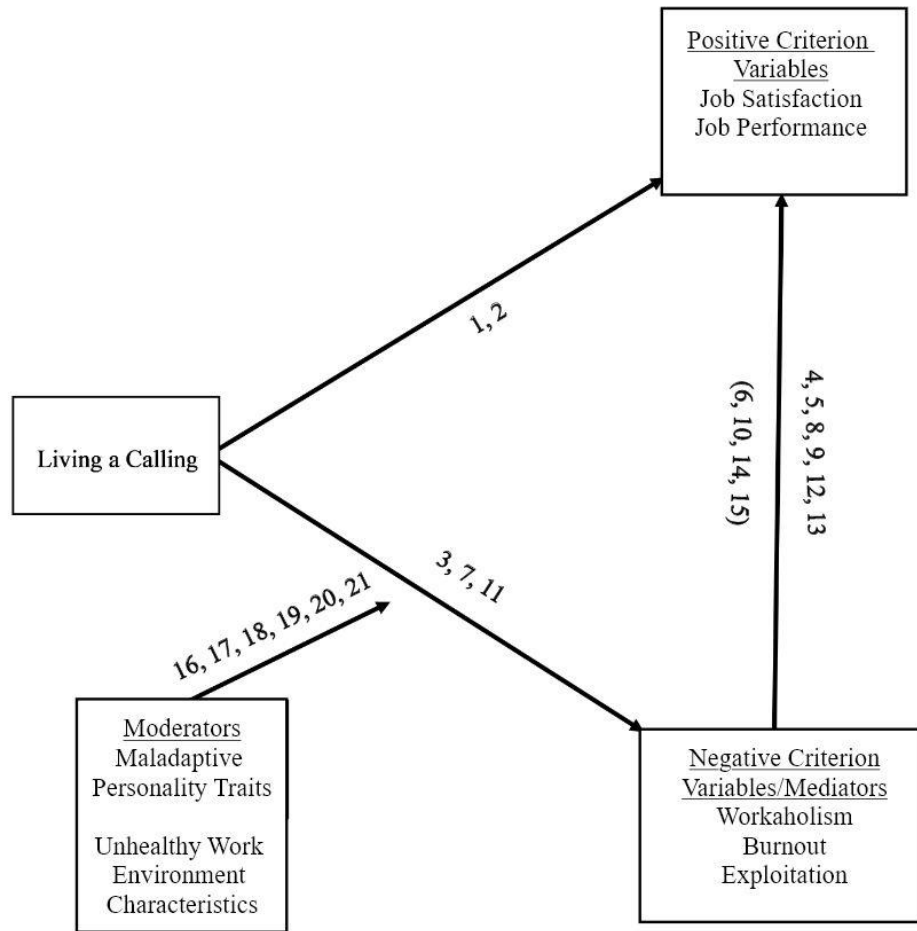
Figure 1. Conceptual Model of Proposed Hypotheses

The proposed hypotheses (simplified) are that a) living a calling will function as an exogenous variable will directly associate with job performance and job satisfaction, b) living a calling will directly associate with organizational exploitation, burnout, and workaholism, c) organizational exploitation, burnout, and workaholism will directly associate with job satisfaction and job performance, d) unhealthy workplace environment characteristics and

maladaptive personality traits will conditionally effect workplace exploitation, burnout, and workaholism and that e) organizational exploitation, burnout, and workaholism will act as possible mediators between living a calling and job performance and satisfaction under some, moderated circumstances. Please see below for the conceptual model of all proposed hypotheses. All variables were designed to be scored on a continuous scale and thus all possible moderators were entered as interaction terms.

Due to the large number of hypotheses in the present study, simple models were first run to initially examine the proposed direct effect associations (i.e., Steps 1-3 detailed below). From there, only variables which demonstrated medium to large associations were retained to build "from the ground up" models which were used to explore the conceptually relevant hypothesized indirect (Step 4) and conditional effects (Steps 5 and 6). A final model with good model fit is outlined in more detail in Step 7 to parse out the relationships which could be most confidently examined in the current study. All decision-making was based on the criterion outlined in the prior Analyses section (pp. 64-67).

Step 1 – Direct effects of living a calling, job satisfaction, and job performance. Using the MLR estimation method, the first model run examined the association between living a calling, job satisfaction, and job performance.
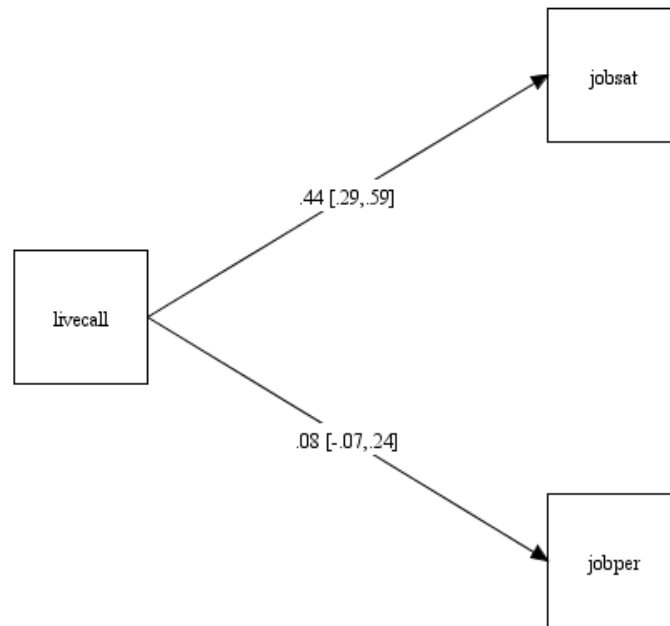
Figure 2. Step 1 - Standardized Direct Effects of Living a Calling, Job Satisfaction, and Job Performance with their 95% Confidence Intervals

Living a calling demonstrated a positive, medium effect with job satisfaction, such that those who reported higher levels of living a calling also reported higher levels of job satisfaction. The 95% confidence interval of the effect between living a calling and job satisfaction did not contain the value of zero, indicating that it can be confidently interpreted that the effect was present in the current study. Living a calling essentially had no relationship with job performance, indicating that Hypothesis 2 was not supported in the current study.

Step 2 – Direct Effects of Living a Calling with Proposed Negative Criterion/Mediator Variables. Once again applying the MLR estimation method, the relationships between living a calling, workaholism, burnout, and exploitation were examined.

70
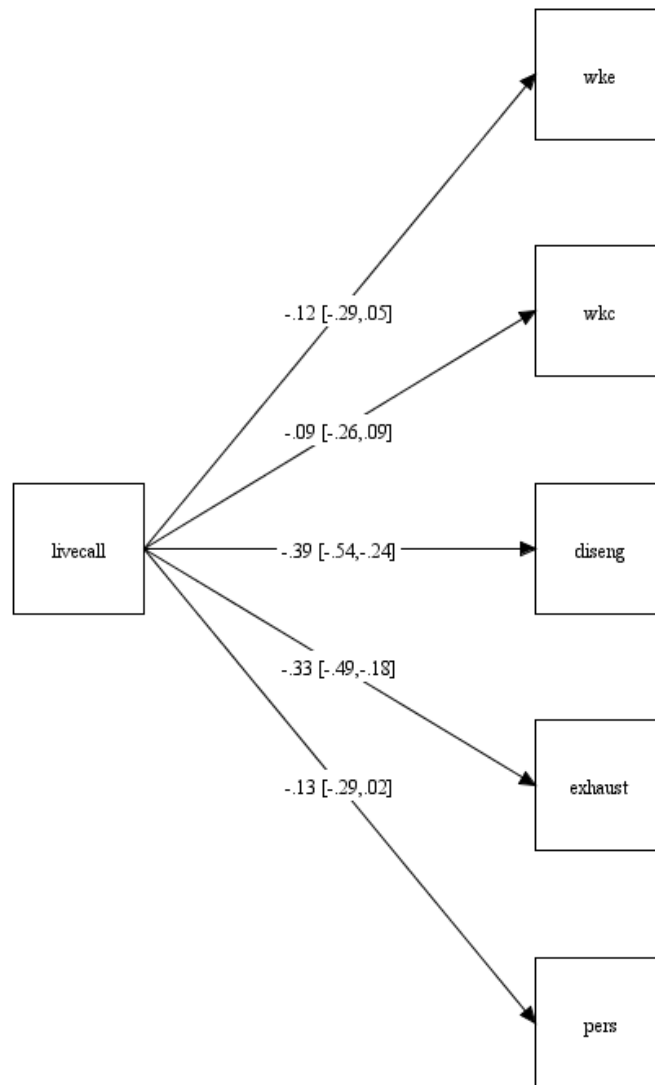
Figure 3. Step 2 - Standardized Direct Effects of Living a Calling with Negative Criterion/Mediator Variables with their 95% Confidence Intervals

Living a calling had a trivial effect with working compulsively, a small, negative effect with working excessively and perceived exploitation, and a medium, negative effect with disengagement and exhaustion. Furthermore, as the 95% confidence intervals of the effect sizes between living a calling and disengagement and exhaustion did not include the value of zero, those effects can be confidently stated to have been present in the current study. Living a calling

therefore either had no or a negative relationship to the negative criterion variables such that those who reported higher levels of living a calling typically also reported lower levels of these negative states.

Step 3 – Direct Effects of Negative Criterion/Mediator Variables on Positive Criterion Variables. Thirdly, the associations between the proposed negative criterion/mediator variables were examined on the proposed positive criterion variables.
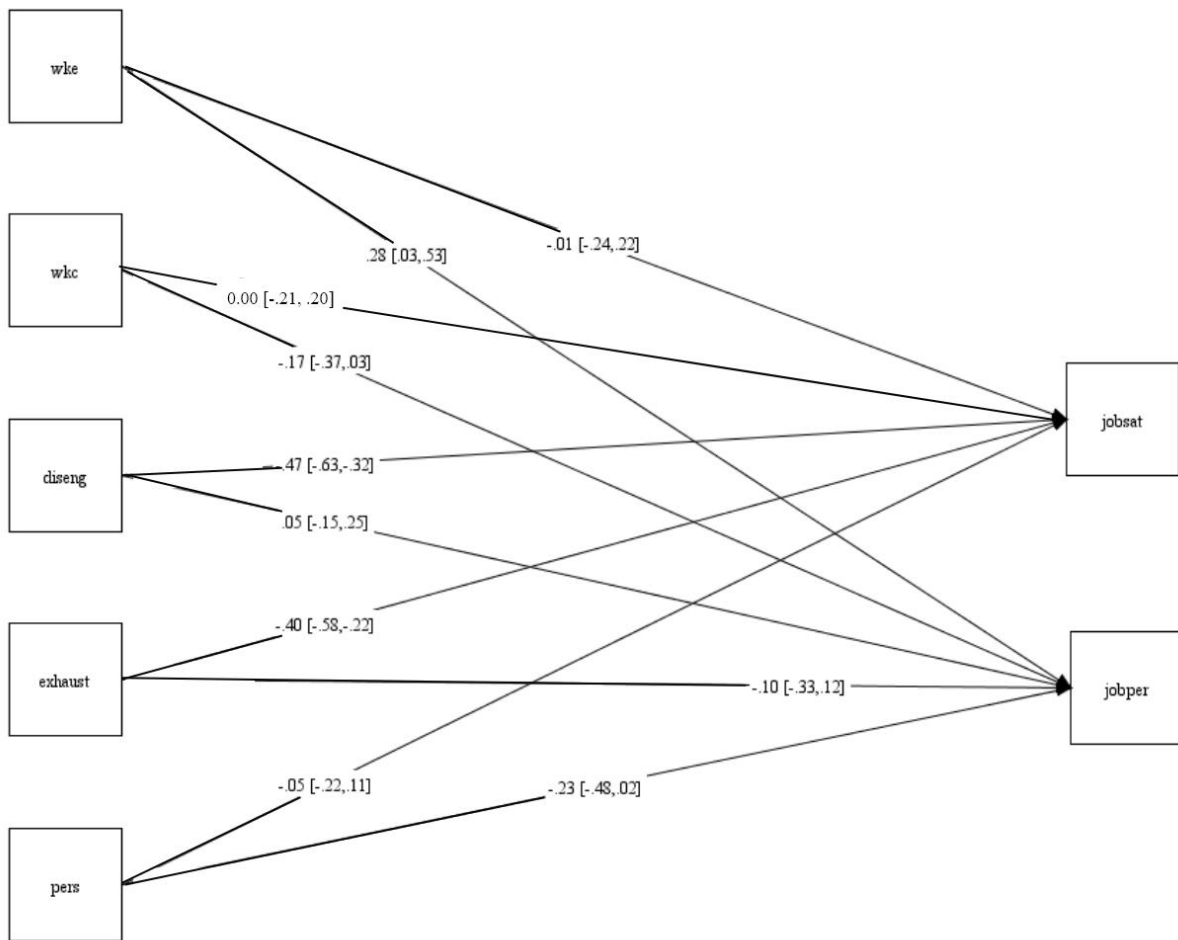
Figure 4. Standardized Direct Effects of Negative Criterion/Mediator Variables with 95% Confidence Intervals

No associations were found between workaholism, exploitation, and job satisfaction.

Medium, negative associations were supported between disengagement and exhaustion with job

satisfaction, such that those who reported more burnout, were also more likely to report decreased job satisfaction. This relationship can be confidently interpreted as the 95% confidence interval did not contain zero for either association. Job performance did have a small, positive association with working excessively, such that those who reported working excessively also reported higher levels of job performance. The 95% confidence interval did not contain the value of zero, indicating that this relationship can be more confidently asserted as existing in this data set. In contrast, job performance demonstrated either no or small, negative associations with working compulsively, burnout, and exploitation so that typically the negative states were associated with lower levels of job performance.

Step 4 – Indirect Effects Examined for Burnout. After examining the direct effects present in the current study, the variables (i.e., disengagement and exhaustion) for which indirect effects were most empirically supported from results of Steps 1-3 were subsequently examined. The primary challenge in making appropriate determinations regarding the strength of an indirect effect is that the product of two regression slopes is not normally distributed. The violation of the normality assumption results in a loss of statistical power for many traditional approaches to testing mediation (e.g., the Sobel Test). In order, to circumvent this issue the best practices approach is to assess asymmetrical confidence intervals (ACIs) that best represent the true distribution of the product of coefficients. ACIs that do not contain zero are considered to be significant. The indirect effects within the current study were examined using bias-corrected bootstrapped estimates (Efron & Tibshirani, 1993; Manly, 1997) based on 10,000 bootstrapped samples, which provides a powerful test of mediation (Fritz & MacKinnon, 2007) and are asymmetrical. Significance was determined by 95% bias-corrected bootstrapped confidence intervals that did not contain zero. When entered into a model with living a calling and job

satisfaction, both disengagement (β =0.16 [0.09, 0.25]) and exhaustion (β =0.12 [0.06, 0.21])

acted as mediators with small, positive indirect effects.

       Step 5 – Direct Effects Testing Results in a Base Model: Used to Explore Possible

Moderator Relationships. Isolating the variables that could most confidently be interpreted as

having a relationship via the direct effects testing in Steps 1-3 led to a model in which living a

calling had a small, positive relationship with job satisfaction, such that higher levels of living a

calling were associated with higher levels of job satisfaction. Medium, negative associations

were between living a calling to each burnout variable, indicating that as reported levels of living

a calling increased, the level of burnout reported typically decreased. Burnout in turn had a

medium, negative relationship with job satisfaction which indicated higher levels of burnout

were associated with lower levels of job satisfaction.
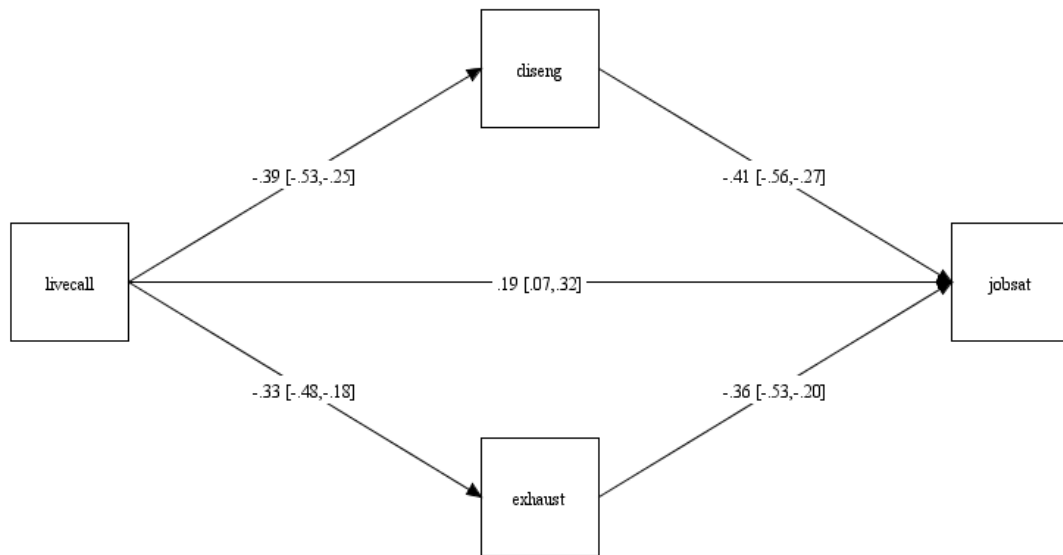
Figure 5. Step 5 - Model Used to Explore Moderators. While this model poorly fit the data ($\chi^2 =$ 89.71 *(1), p* < .001, CFI = 0.64, TLI = 0.00, SRMR = 0.21), it was used to initially explore the proposed moderators.

Step 6 – Testing Proposed Moderators. Fourteen possible moderators were proposed in this study and could be grouped broadly into characteristics of an unhealthy workplace environment (7 proposed moderators) or as maladaptive personality characteristics (7 proposed moderators). Each was entered into a model separately, resulting in 14 models analyzed for the Step 6. All analyses for this step were run using the Maximum Likelihood Estimation methods and all analyses were bootstrapped 10,000 iterations. See below for the conceptual diagram of how all moderator models were run.
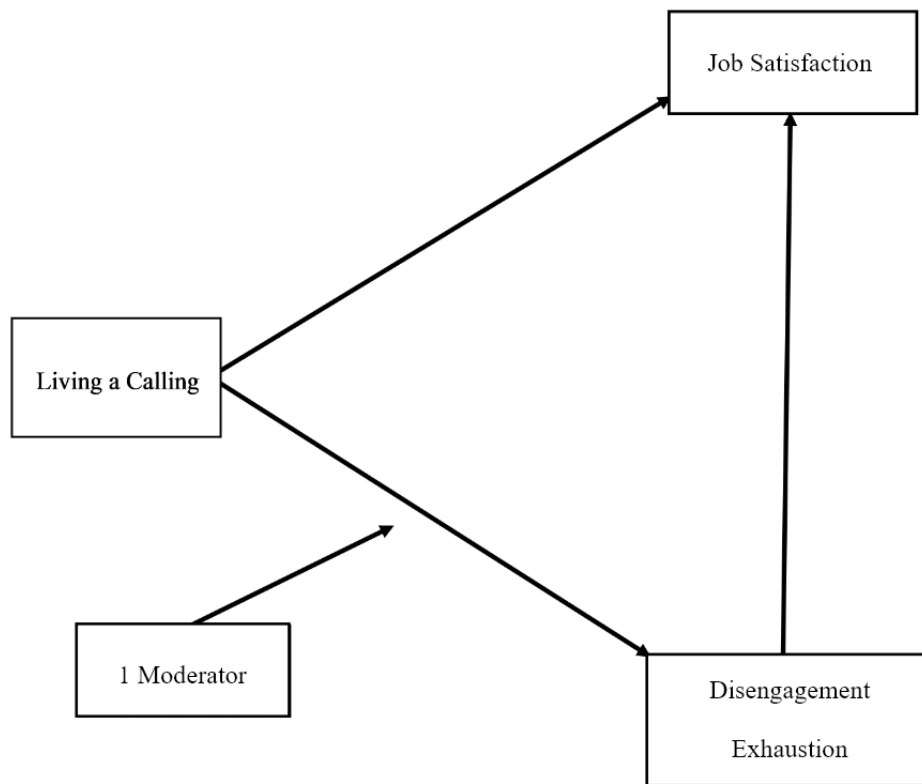
Figure 6. Conceptual Diagram of Step 6 Analyses in which 1 Moderator was Entered at a Time

All 14 moderator models did not fit the data well, and all but one contained the value of zero within their 95% confidence interval.

Table 4. Proposed Moderators (i.e., Conditional Effects) using Trimmed Scales

	β	*SE* of β	95% CI
Role Conflict			
Disengagement	-0.09	0.20	-0.50, 0.28
Exhaustion	-0.18	0.24	-0.68, 0.27
$\chi^2 = 66.87(3)$, $p < .001$, CFI = 0.79, TLI = 0.17, SRMR = 0.11			
Task Control			
Disengagement	0.08	0.38	-0.68, 0.80
Exhaustion	-0.04	0.35	-0.68, 0.70
$\chi^2 = 60.11$ (3), $p < .001$, CFI = 0.80, TLI = 0.20, SRMR = 0.11			
Decision Control			
Disengagement	-0.27	0.36	-1.03, 0.40
Exhaustion	0.04	0.35	-0.62, 0.75
$\chi^2 = 75.94$ (3), $p < .001$, CFI = 0.75, TLI = 0.01, SRMR = 0.14			
Physical Environment Control			
Disengagement	-0.03	0.27	-0.59, 0.44
Exhaustion	0.02	0.30	-0.59, 0.59
$\chi^2 = 77.72$ (3), $p < .001$, CFI =0.71, TLI = 0.00, SRMR = 0.15			
Resource Control			
Disengagement	-0.06	0.34	-0.76, 0.59
Exhaustion	-0.21	0.37	-0.90, 0.54
$\chi^2 = 73.88$ (3), $p < .001$, CFI = 0.73, TLI = 0.00, SRMR = 0.14			
Supervisor Support			
Disengagement	0.64	0.40	-0.15, 1.39
Exhaustion	0.15	0.38	-0.59, 0.88
$\chi^2 = 88.77$ (3), $p < .001$, CFI = 0.67, TLI = 0.00, SRMR = 0.16			
Coworker Support			
Disengagement	0.68	0.40	-0.13, 1.45
Exhaustion	0.24	0.46	-0.65, 1.16
$\chi^2 = 73.72$ (3), $p < .001$, CFI = 0.44, TLI = 0.00, SRMR = 0.13			
Agreeableness			
Disengagement	0.26	0.37	-0.52, 0.96
Exhaustion	0.27	0.41	-0.54, 1.07
$\chi^2 = 91.50$ (3), $p < .001$, CFI = 0.65, TLI = 0.00, SRMR = 0.17			
Conscientiousness			
Disengagement	-0.08	0.37	-0.79, 0.64
Exhaustion	-0.37	0.36	-1.02, 0.39
$\chi^2 = 82.25$ (3), $p < .001$, CFI = 0.70, TLI = 0.00, SRMR = 0.15			

	β	*SE* of β	95% CI
Negative Emotionality			
Disengagement	-0.14	0.27	-0.67, 0.39
Exhaustion	0.08	0.26	-0.42, 0.63
χ^2 = 66.21 (3), p < .001, CFI = 0.80, TLI = 0.19, SRMR = 0.11			
Perfectionistic Standards			
Disengagement	-1.13	0.50	-2.08, -0.12
Exhaustion	-0.72	0.64	-1.71, 0.79
χ^2 = 82.97(3), p < .001, CFI = 0.70, TLI = 0.00, SRMR = 0.15			
Perfectionistic Discrepancy			
Disengagement	-0.15	0.22	-0.58, 0.28
Exhaustion	0.10	0.22	-0.34, 0.53
χ^2 = 73.66 (3), p < .001, CFI = 0.77, TLI = 0.06, SRMR = 0.12			
Need for Achievement			
Disengagement	-0.45	0.39	-1.21, 0.34
Exhaustion	-0.26	0.40	-0.99, 0.56
χ^2 = 86.88 (3), p < .001, CFI = 0.68, TLI = 0.00, SRMR = 0.16			
Self-Esteem			
Disengagement	0.52	0.41	-0.27, 1.30
Exhaustion	0.11	0.38	-0.62, 0.85
χ^2 = 73.86 (3), p < .001, CFI = 0.76, TLI = 0.06, SRMR = 0.12			

Note. Only one moderator (i.e., conditional effect) at a time to avoid multicollinearity among moderator variables when simultaneously testing multiple moderators (Fritz & Arthur, 2017).

Within the moderators grouped under unhealthy work environment characteristics, most (i.e., role conflict, task control, decision control, physical environment control, resource control) demonstrated either no or small effects with burnout. Supervisor support and coworker support, however, demonstrated large effects with the disengagement aspect of burnout. See Figures 7 and 8 for the statistical diagrams for those two models.
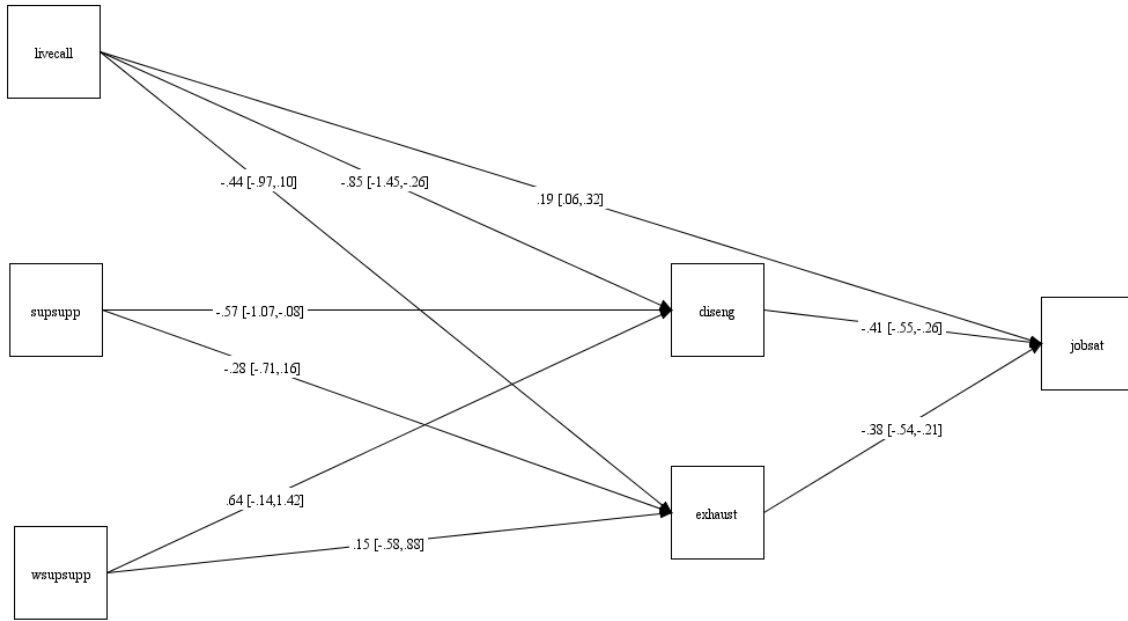
Figure 7. Supervisor Support Statistical Figure for Step 6 with Effect Sizes and 95% Confidence Intervals

Within the moderators grouped under maladaptive personality traits agreeableness, negatively emotionality, and perfectionistic discrepancy demonstrated no relationship or only small relationships with the burnout variables of interest. The conscientiousness moderator had a medium effect with the exhaustion subscale of burnout while the need for achievement and self-esteem moderators demonstrated a medium and large effect (respectively) with the disengagement aspect of burnout. The perfectionistic standards moderator had large effects with both aspects of burnout, with its relationship with the disengagement aspect of burnout confidence interval not including the value of zero.
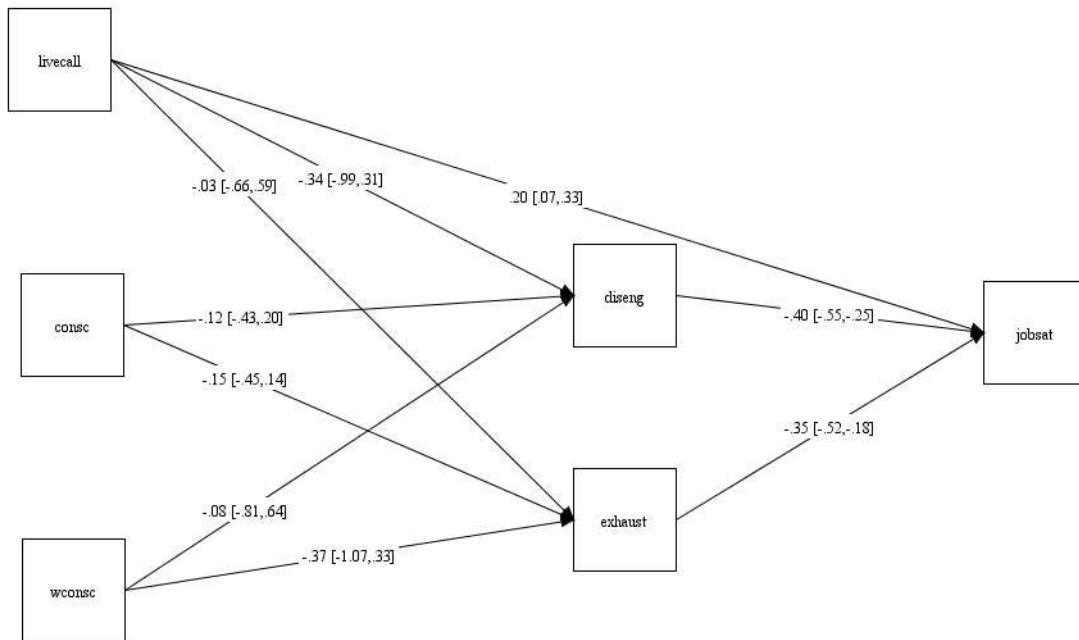
Figure 9. Conscientiousness Statistical Figure for Step 6 with Effect Sizes and 95% Confidence Intervals
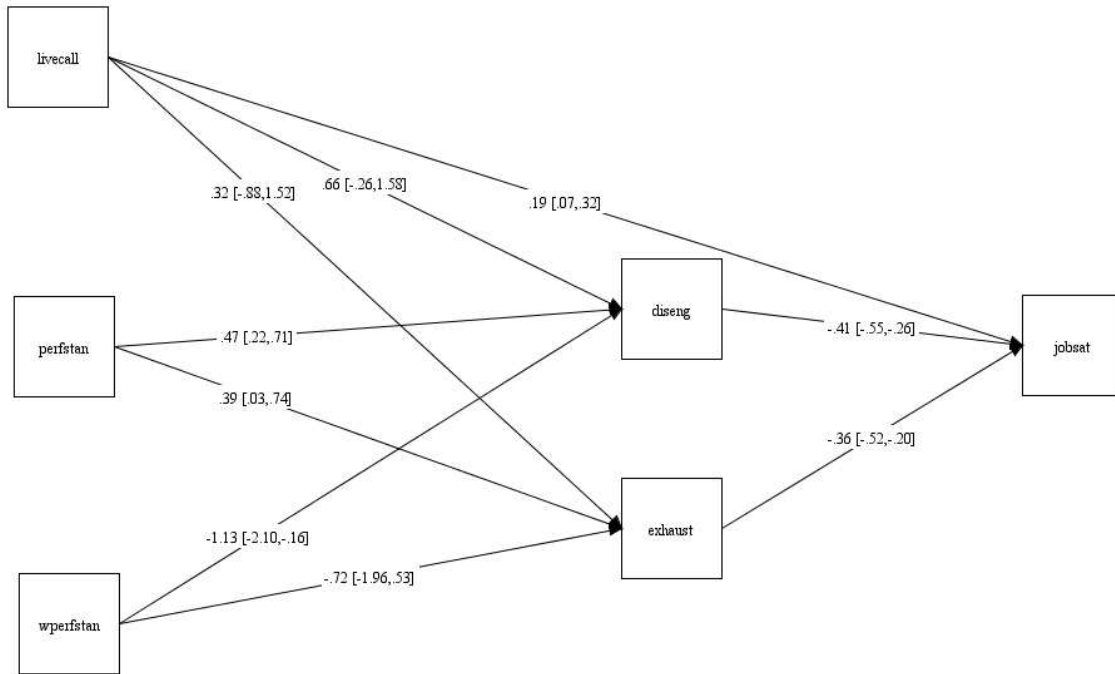
Figure 10. Perfectionistic Standards Statistical Figure for Step 5 with Effect Sizes and 95% Confidence Intervals
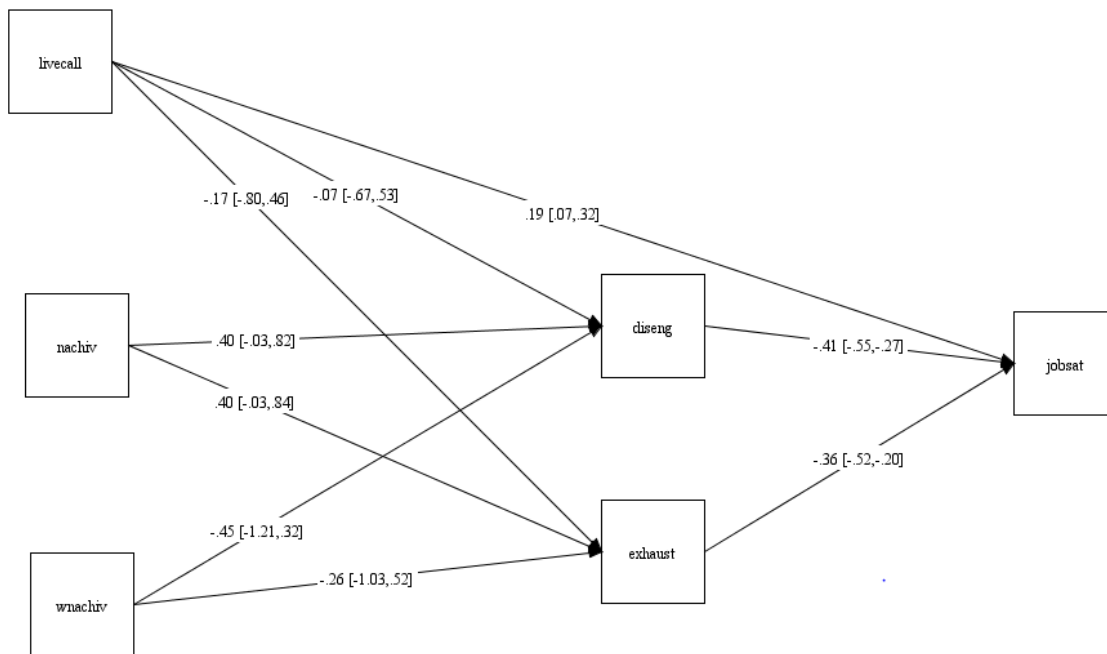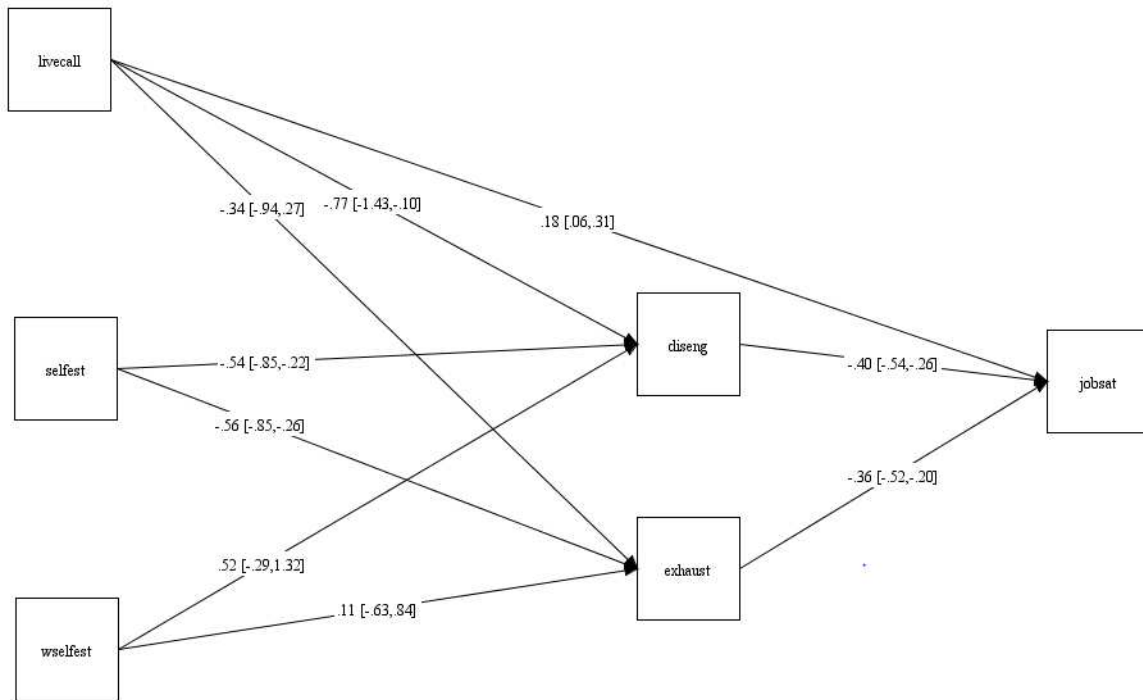
Figure 12. Self-Esteem Statistical Figure for Step 5 with Effect Sizes and 95% Confidence Intervals

Please see below for a collapsed view of all moderator interaction terms' relationships with the two burnout subscales. Because it was the moderator with the largest effect size and which could be most confidently interpreted, perfectionistic standards was rerun in another final model with only the disengagement aspect of burnout.
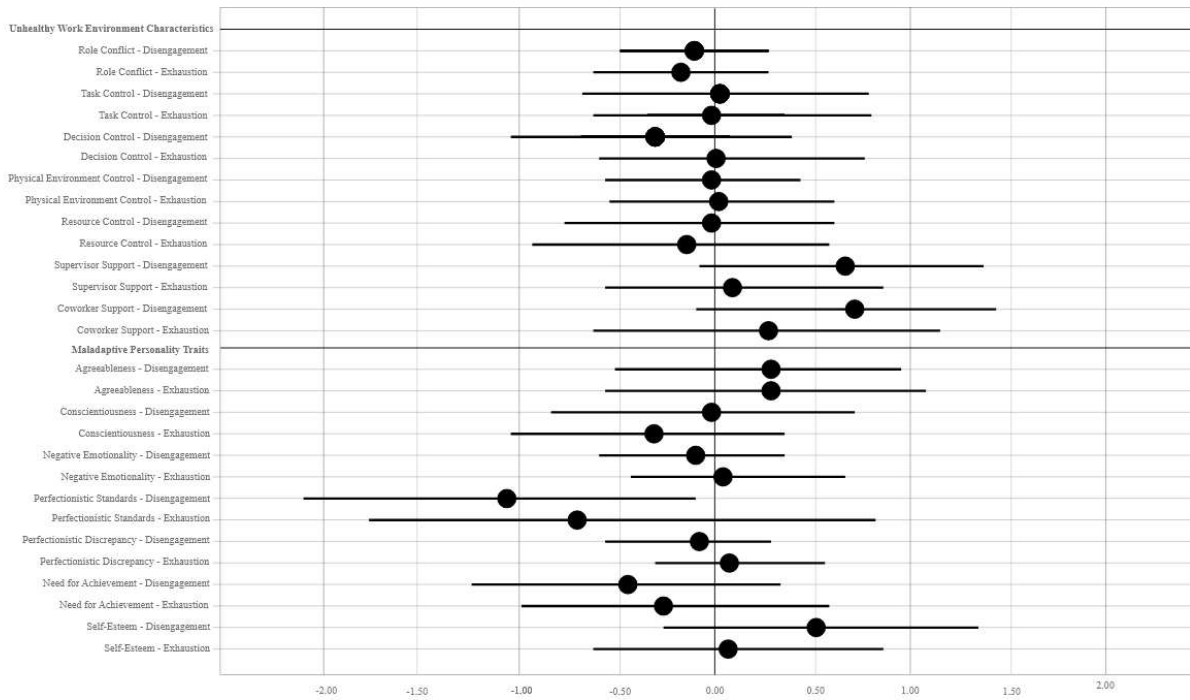
Figure 13. Effect Sizes and 95% Confidence Intervals for Proposed Moderators. The vertical line at zero represents no association while the dot represents the point estimate (i.e., effect size value) and the bar represents 95% confidence intervals.

Step 7 – Probing the Perfectionistic Standards Moderator Term. As it was the proposed moderator which could be most confidently interpreted and because the moderator models all had model fit indices which poorly fit the data, perfectionistic standards was entered into a model with only living a calling, disengagement, and job satisfaction. Model fit increased to reach good levels of fit with the data ($\chi^2 = 4.28$ (2), $p < .12$, CFI = 0.98, TLI = 0.94, SRMR = 0.04). The model explained roughly a quarter of the variance in disengagement ($R^2 = 0.24$) for disengagement and half of the variance ($R^2 = 0.51$) for job satisfaction.
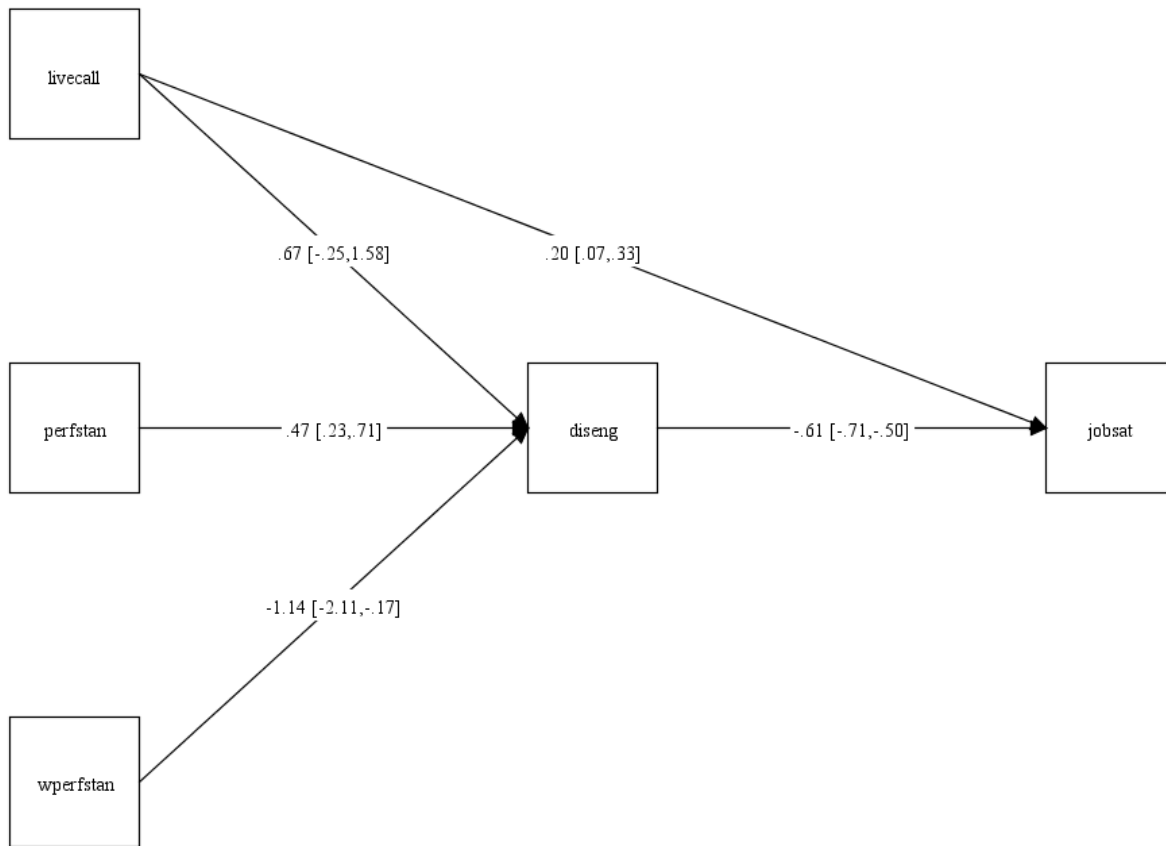
Figure 14. Statistical Diagram of Final Model

Probing the interaction using a simple slopes graph at the mean, 1 standard deviation above, and one standard deviation for living a calling created a "fan" shaped graph (see below for Figure 9) with a much wider difference between the graphed lines on the right-hand side of the graph (i.e., at higher levels of living a calling). This indicates that for those who reported higher levels of perfectionistic standards and higher levels of living a calling, disengagement was more likely to also be reported at high levels.
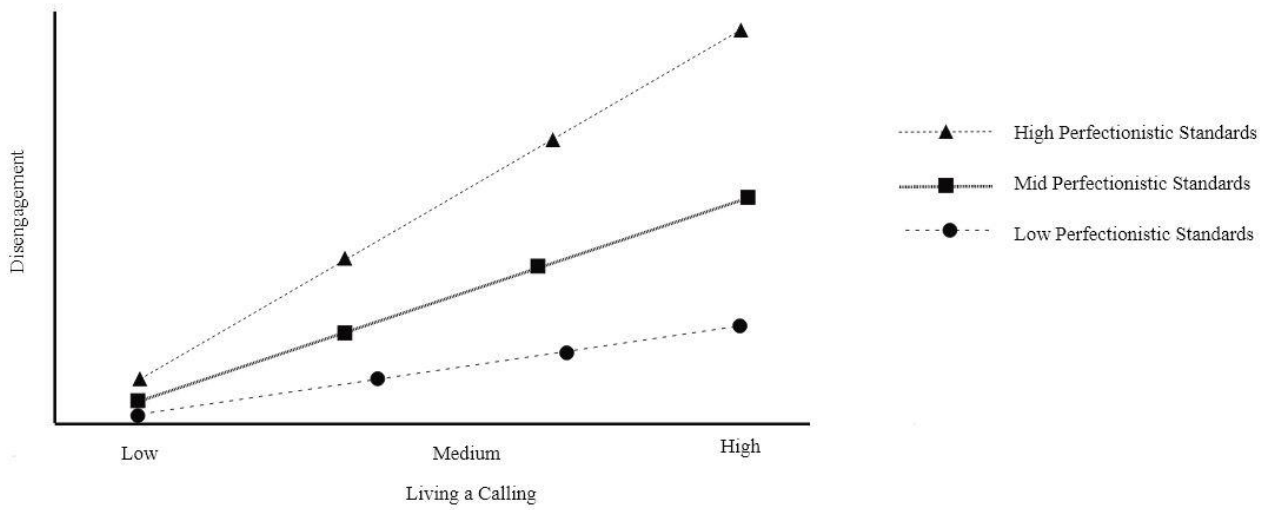
Figure 15. Plot of conditional effect of moderator (i.e., Perfectionistic Standards) on outcome at average, +1 SD, -1 SD values

A summarized table of which hypotheses where supported can be found below.

Table 5. Simplified View of Current Study Hypotheses and Their Summarized Support

Hypotheses	Supported?
1. Living a calling (+) → job satisfaction (+)	Yes
2. Living a calling (+) → job performance (+)	No
3. Living a calling (+) → workaholism (+)	No
4. Workaholism (+) → job satisfaction (-)	No
5. Workaholism (+) → job performance (-)	No
6. Living a calling (+) → workaholism (+) → job satisfaction (-)	Not Run
7. Living a calling (+) → burnout (-)	Yes
8. Burnout (-) → job satisfaction (+)	Yes
9. Burnout (-) → job performance (+)	No
10. Living a calling (+) → burnout (-) → job satisfaction (+)	Yes
11. Living a calling (+) → exploitation (+)	No
12. Exploitation (+) → job satisfaction (-)	No
13. Exploitation (+) → job performance (-)	No
14. Living a calling (+) → exploitation (+) → job satisfaction (-)	Not Run
15. Living a calling (+) → exploitation (+) → job performance (-)	Not Run
16. Living a calling (+) X maladaptive personality trait (+) → workaholism (+)	Not Run
17. Living a calling (+) X maladaptive personality trait (+) → burnout (+)	For Some
18. Living a calling (+) X maladaptive personality trait (+) → exploitation (+)	Not Run
19. Living a calling (+) X unhealthy work environment (+) → workaholism (+)	Not Run
20. Living a calling (+) X unhealthy work environment (+) → burnout (+)	For Some
21. Living a calling (+) X unhealthy work environment (+) → exploitation (+)	Not Run

Note: Hypotheses 16-21 contain more detail with regard to personality traits (total of 7 personality traits will be tested) and unhealthy work environment characteristics (total of 7 unhealthy work environment characteristics). Support was assessed "yes" for associations which had a medium or large effect size. Some hypotheses were not directly tested due to not having the support for the necessary conditions to build out a supported model from which to test.

DISCUSSION

The purpose of this study was twofold: 1) to gain a deeper understanding of an at-risk worker population for whom calling is often very important (i.e., associate veterinarians); and 2) to empirically test the hypothesized relationships in the dark side of calling aspects of the Work as Calling Theory (WCT – Duffy et al., 2018). Results revealed the most confident support for Hypotheses 1, 7a, 8a, 10, and 17b; that is, living a calling was positively associated with job satisfaction and negatively associated with disengagement (i.e., the dimension of burnout which is defined as distancing oneself from one's work in general, work object and work content, particularly focused on how individuals identify with work and seek to continue in the same occupation; Demerouti et al., 2003). Disengagement in turn was negatively associated with job satisfaction. When perfectionism (specifically perfectionistic standards, i.e., high performance expectations; Rice et al., 2014) was added to the model, the relationship between living a calling and burnout changed as those high in both living a calling and extremely high in perfectionistic standards reported higher levels of disengagement. In the moderated model, disengagement did not atemporally mediate the relationship between living a calling and job satisfaction when the perfectionistic standards was included but did partially mediate the relationship between living a calling and job satisfaction when the moderator was not included in the model. These findings are consistent with the literature in that living a calling in most situations is associated with positive outcomes, such as increased job satisfaction and decreased burnout. However, for some people in some circumstances, such as for those high in both living a calling and perfectionistic standards, this study's results do support that calling can reveal its theorized dark side. The final

model was able to explain roughly half of the variance for job satisfaction and a quarter of the variance in disengagement.

In addition to the main findings noted above, several additional relationships are discussed in less detail below. The exhaustion subscale of burnout (i.e., a consequence of intense physical, aaffective,and cognitive strain; Demerouti et al., 2003) was also associated with living a calling and job satisfaction as well as being supported to act as a mediator (i.e., indirect effect) between these two variables of interest. Five additional proposed moderators also showed promise via medium to large effect sizes but offer more limited interpretation ability in this study than perfectionistic standards.

Perfectionistic Standards

Interestingly, the dark side of calling only occurred in very specific circumstances for this study's sample of associate veterinarians. If subsequent studies accrue similar empirical patterns to this one, the calling field may be able to eventually provide more refined recommendations on who may be at the highest risk of experiencing the dark side of calling. Such recommendations could inform the development of strategies to ensure the dark side of calling vulnerabilities are managed, so that the typical benefits associated with calling are experienced instead. Another approach with support from this study, is that there may be large potential for future exploration and possible interventions to target perfectionistic standards. Generally, perfectionism has been empirically found to be a vulnerability associated with burnout, job dissatisfaction, and depression (e.g., Fairlie & Flett, 2003). In the current study, the standardized coefficient of the perfectionistic standards/living a calling interaction term was roughly twice as large as the perfectionistic standards or living a calling coefficients entered separately into the model; hence the interaction accounted for more variance on disengagement than either of the other variables

by themselves. Additionally, due to the observation that when the interaction moderator term was added to the model the path from living a calling to disengagement was no longer statistically significant, living a calling only appears to have a dark side for those with extremely high perfectionistic standards. While not explored as thoroughly within this study due to being more tentative for interpretation, the perfectionistic standards moderator term also demonstrated a large conditional effect with the exhaustion subscale of burnout.

Although not directly tested within this study, it may be that substantial relief from higher levels of burnout could occur for those at the highest levels of perfectionism if they were to even slightly lower their perfectionistic standards. This recommendation would be consistent with other calls for veterinarians and veterinary students to consider ways to find a healthy balance with perfectionism because of its links to other negative outcomes such as higher levels of stress and lower mental health (Holden, 2020). It could be construed from these findings that those with the very highest standards are interpreting workplace issues as hinderance versus challenge stressors, as in Wilson and Britt's (2020) work, and/or experiencing an increased emotional reaction to stressors because of how such obstacles are interpreted via their own self narrative, as in Schabram and Maitlis' (2016) work. This is consistent with other studies in which perceived stress moderated the relationship between adaptive perfectionism and burnout (e.g., in a sample of hospitality employees; Hammond, Gnilka, & Ravichandran, 2019). Research conducted with Australian veterinarians also supports that trait perfectionism is an individual difference that enhances vulnerability to greater distress in response to morally challenging events at work (Crane, Phillips, & Karin, 2015). Taken collectively, one suggestion is that those individuals experiencing the dark side of calling may benefit from techniques to cognitively restructure (e.g.,

Beck, 1995) how they think about workplace stressors or through other strategies to craft (Wrzesniewski & Dutton, 2001) how they perceive their work.

Different types of perfectionism (e.g., self-oriented, other-oriented, and socially prescribed) have been found to exhibit somewhat different relationships with burnout and engagement (e.g., Childs & Stoeber, 2010). In the present study, perfectionism was conceptualized as a multidimensional construct, and two of its key dimensions entailed striving for high performance standards and focusing on the discrepancy between one's standards and actual performance. It could be that this discrepancy was not supported as a moderator because of the high range of job performance noted by participants (i.e., since performance was so high, there would not be a large discrepancy and therefore a very limited amount of variance to enter into the model). Additional studies may continue to elucidate the nuanced differences identified in this study. It should also be noted that, while the other variables not discussed here were not supported in the current study, this does not necessarily "disprove" those theoretical relationships. Future research is encouraged to continue to explore the WCT in more depth within this and other worker populations.

Less Confident Moderator Effects

While the perfectionistic standards moderator was the only proposed moderator which demonstrated both a medium+ effect and did not contain the value of zero in its 95% confidence interval, several others did have a medium to large effect in the current study. While these cannot be as confidently interpreted as they contained zero in their confidence intervals and were run in models with poor model fit indices, they do point towards possibly fruitful variables to consider including for future research on the dark side of a calling and/or with veterinarians.

For instance, while some of the work environment characteristics (i.e., aspects of job control and role conflict) did not demonstrate conditional effects, the supervisor and coworker support moderator variables did have large effects with the disengagement aspect of burnout. While these results should be interpreted with some caution, this may indicate that within this sample that social support was an element of the work environment which may be the most important to delve into further with future studies. Within the pre-existing body of research between social support and burnout can indicate convoluted relationships between the two variables (e.g., Halbesleben, 2006), one longitudinal study did find that coworkers were less likely to reach out to their colleagues suffering more strain (Marcelissen, Winnubst, Buunk, & de Wolff, 1988). However, gender may impact how social support and burnout are related, for instance, work support was more helpful for women while men found life support to be more helpful (Etzion, 1984); a somewhat more recent study found that women found both types of support more helpful than their male counterparts (Perrewe′ & Carlson, 2002).

Because a variety of personality characteristics (i.e., self-esteem, self-efficacy, locus of control, emotional stability, extraversion, conscientiousness, agreeableness, positive affectivity, optimism, proactive personality, and hardiness) have been shown to be related to burnout (e.g., a meta-analysis; Alarcon, Eschleman, & Bowling, 2009), it is not surprising that some did show support for tentative conditional effects in the present study. While counter to some other studies, agreeableness, negative emotionality, and perfectionistic discrepancy did not receive support as moderators in this study. Conscientiousness in the present study had a medium effect with exhaustion, typically in other studies in the literature, higher levels of conscientiousness are associated with lower levels of burnout (e.g., Alarcon et al., 2009; Azeem, 2013). However, there is some indication that conscientiousness' relationship with burnout may be gender specific

90

(Armon, Shirom, & Melamed, 2012). The need for achievement moderator variable in the present study had a medium relationship with disengagement. Originally included in the propositions of the WCT because of its demonstrated relationship with workaholism (Ng, Sorensen, & Feldman, 2007), the results of the current study make even tentative discussion based on existing research difficult. However, conceptually the need for achievement moderator may function similarly to perfectionistic standards, in that, when paired with higher levels of living a calling, it may correspond to more disengagement.

Finally, self-esteem as a moderator in the present study had a large association with disengagement. While self-esteem has been typically posited as an antecedent of burnout (McMullen & Krantz, 1988), one study investigating the role of self-esteem in large samples of police officers and hospital workers found that it was both as a cause and consequence of burnout. Thus, low self-esteem may be an indicator on both who is more vulnerable in developing burnout and also be an important aspect in the "rehabilitation" of workers who have been become burned out (Rosse, Boss, Johnson & Crown, 1991). These tentative moderators should be included in additional studies and examined in more detail before conclusions can be made, but the results of this study may help highlight how to narrow down future empirical work on the dark side of calling. Additionally, it is the first empirical study I am aware of which included these work characteristics and personality traits to begin to investigate their relationships with living a calling.

Veterinarian Career Development and Vocational Identity

This study naturally contributes directly to the body of research on the WCT as well as adding to the growing body of research on the dark side of calling. While not parsed out in this study, it is notable that now several key studies investigating the dark side of calling have found

support for its existence among individuals who work with animals (i.e., Bunderson & Thompson, 2009; Schabram, & Maitlis, 2017). This may have implications for career counseling/development theories and practice, such as having career counselors conceptualize how clients who work with animals have made their "personal career theory" (PCT; Holland, 1997) in such a way that has left them vulnerable to the dark side of calling. PCT refers to "the collection of beliefs, ideas, assumptions, and knowledge that guides individuals as they choose occupations or fields of study, explains why they persist in them, and is used by people as they go about making careers decisions" (Reardon & Lenz, 1999, p.103). Veterinarians as noted previously are unique in their PCTs in how early they express a desire to join their career (Sans, Mounier, Bénet, & Lijour, 2011), which may point to differences in the development of their occupational identity in late adolescence (Erikson, 1968) and how they make those career choices (e.g., Holland, 1997). Recent longitudinal research conducted with Italian college students found support that calling develops as a result of positive experiences (i.e., engaged learning, clarity of professional identity, and social support; Dalla Rosa, Vianello, & Anselmi, 2019) over time. One suggestion is that it may be useful for school counselors working with children interested in pursuing a career as a veterinarian to urge their clients to explore both vocational and non-work identities, thus helping build out healthy career development along with a well-rounded, holistic identity formation (Blustein, Devenis, & Kidney, 1989). This recommendation is also consistent with others which suggest that investing in areas of life other than solely in work can act as a proactive way of preventing workaholism and burnout for those who view work as their calling (Dik & Duffy, 2012).

It may also be important for mentors and models who are key influences on children's and adolescents' development of purpose (e.g., school teachers; Bundick & Tirri, 2014) to take a

longer-term development view and understand that, while other-orientated motivations for purpose may initially bring the most positive outcomes during adolescence (Yeager & Bundick, 2009), being too focused on service professions may lead to detrimental longer-term consequences such as identity fusion, high rates of perfectionism, and burnout. This interpretation may also hold true for physicians who focus on particularly "noble" but arguably emotionally intense specialties; for example, doctors who primarily specialize in end-of-life care report both higher levels of burnout as well as a deeper sense of calling (Jager, Tutty, & Kao, 2017). However, qualitative work on first responders found that both self- and other-orientated callings are viewed by others as having ethical value (i.e., self-orientation callings are not perceived as ego-driven; Michaelson & Tosti-Kharas, 2019). Thus, I may also echo the sentiment expressed by Schabram and Maitlis (2016) that veterinarians need not feel the pressure to be "unrealistically heroic" in pursuing solely other-orientated callings.

It is additionally notable that in the current study sample, the large majority of participants identified as women. While the higher proportion of women is consistent with reported trends of who chooses to enter into veterinary medicine and for those at the career stage of being an associate veterinarian in the U.S., it has also been documented that female veterinarians on average experience more mental concerns and vocational stressors than men at their same career stage (e.g., Volk et al., 2018). Added to this finding is the consistent trend that women across paid occupations typically experience more work-life spillover than men (Cottingham, Chapman, & Erickson, 2020) and that the burden of life expectations (e.g., childcare and housework distribution) is unequally distributed (e.g., Hagqvist, Vinberg, Tritter, Wall, & Landstad, 2019), which taken together could lead to the hypothesis that at times women veterinarians may be exposed to additional stressors. While unable to be parsed out in the current

study due to the limited amount of variability, there is a possibility that gender identity may therefore be an additional vocational vulnerability for some associate veterinarians; future studies may use group invariance testing to explore if the role of gender differentially impacts experiences of perfectionism, burnout, and the dark side of calling for veterinarians.

Burnout

This study further adds to the literature examining the Job Demands Resources Theory of burnout (JD-R; Demerouti et al., 2001) which has found that exhaustion is caused by high job demands, and disengagement by lack of job resources, and that these two components of burnout are correlated but not causally related (although potentially people experience exhaustion faster when job demands are particularly intense). Demands are typically positively associated with burnout while resources are negatively related. Furthermore, resources are consistently positively related to engagement, yet the demands and engagement relationship appears to be dependent on if the demand is appraised by the individual as a hinderance or a challenge (Crawford, LePine, & Rich, 2010). Job resources are both instrumental in achieving work goals while also playing an intrinsic motivational role, because they satisfy basic human needs for autonomy, relatedness, and competence (Deci & Ryan, 2000; Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008).

I would like to add that extending the JD-R to consider how personality characteristics such as perfectionism can be incorporated based on the findings of this study may yield insightful and practical implications for further studies. This aligns with similar work and focus on *personal demands,* i.e., "the requirements that individuals set for their own performance and behavior that force them to invest effort in their work and are therefore associated with physical and psychological costs" (Barbier, Hansez, Chmiel, & Demerouti, 2013, p. 751). There have been calls for incorporating perfectionism (Lorente Prieto,Salanova Soria, Martínez Martínez, &

94

Schaufeli, 2008) along with more commonly understood traits or behavioral patterns such as workaholism (Bakker & Demerouti, 2017) into the JD-R framework. While newer to the framework, Bakker and Demerouti (2017) note the nuanced nature of personal demands in that they may be involved in either the health-impairment process or the motivational process. One contribution of the current study is that it appears to generally support perfectionistic standards as a possible personal demand which impairs the health of those who rate themselves high on it, thus providing some insights into how perfectionism can be understood within JD-R.

Limitations

While a valuable contribution to the field, this study has several important limitations to note. The first is the possible risk of failing to identify real relationships in research when they do actually exist due to methodological limitations. In this study, some of the scales had only modest fitting models based on CFAs, and thus the measurement limitations may have attenuated the path coefficients in the path analyses. This is especially the case for hypothesized moderation effects as the interaction term must control for the main effects first and thus not much variance remains after (Aiken, West, & Reno, 1991). Such interactions have further been argued to be particularly difficult to detect in non-experimental stress studies (Sonnentag & Frese, 2003). Therefore, it is important to note that while the relationships that were supported in the current study can be interpreted with confidence, the lack of support for other hypothesized relationships may be due to methodological constraints rather than because those associations truly do not exist. Additional research with large samples and in different worker populations would be needed before such conclusions could be made. An additional limitation is that by design, the cross-sectional sampling technique deployed for this study limits the scope of analyses and interpretations to be made as there is no way to test temporal mediation nor make any causal

95

inferences. An additional complication is the inability of cross-sectional data to parse out certain effects for veterinarians such as whether poorer mental health is an occupational outcome (Perret, 2020). As noted by Hirschi, Keller, and Spurk (2019), there remains a need for subsequent research to use within-individual and time-lagged designs to more carefully examine in-person fluctuations in calling for people over time.

Unfortunately, one key variable of interest (i.e., job performance) in this study was problematic for multiple reasons. Job performance ratings have often been noted as poor measures of actual job performance because of their weak relationship with the actual construct (Murphy, 2008) with no clear explanation as to why. Furthermore, it is widely acknowledged that self-ratings of job performance often give a biased view of reality (Van Woerkom & de Reuver 2009) and (naturally) tend to be more favorable than other evaluations (DeNisi & Murphy, 2017). Despite these conceptual concerns, many authors have measured performance through self-reported measures (e.g., Tyagi, 1985; Coleman & Borman, 1999) and others note advantages to this approach such as the relative ease of gathering data in this manner, allowing measurement of the concept in high complexity jobs, and the ability for employees to observe their own behaviors (Koopmans, Bernaards, Hildebrandt, & van Buuren, 2013). Additional arguments to explain the differences between self and other reports have noted that "the lack of agreement across sources may reflect true differences resulting from differences in perspectives or opportunities to observe performance" (Woehr, 2008, p. 163). An additional possible explanation for the heavy negatively skewed ratings of job performance for the current study is that this is an accurate representation of this sample's actual level of performance (i.e., associate veterinarians as a group demonstrate a high level of task proficiency at work which is why they scored so highly on this scale). Because of the murkiness of self-rated job performance both conceptually

and methodologically, along with the lack of clear interpretation for the current study, it is unfortunately a limitation to the study that this variable was not able to be examined in more detail.

By nature of the sample selected for the current study, caution should also be made to avoid over-extending this study's findings to other worker populations as the population of interest here is well-documented to be different from the general worker population (e.g., higher levels of negative mental states and lower resilience; Perret, 2020; much higher levels of burnout; Volk et al., 2020; more likely to die from suicide; Tomasi et al., 2019). As such, more empirical studies are needed to more fully to examine the proposed dark side of calling from the WCT.

Taken together, methodological constraints, measurement obstacles, and specificity of the population of interest should be considered when interpreting this study's findings.

Future Research

The collection of research on calling has matured considerably over the last decades, however, certain areas remain as potentially fruitful topics for future research. One such area is the effect living a calling may have on those closest to the individual with the calling (e.g., the families of those called; Anastasiadis & Zeyen, 2019). Studies of this nature would help highlight the holistic impact of calling beyond that of the individual level to study the called one's impact on their microsystem or beyond (Bronfenbrenner, 1992). Almost all research currently on the calling concept has focused on measuring an individual's perceptions of their own self and work; those studies that do seek to widen the scope of their research questions seem to point towards possibly mixed outcomes.

For example, Wilson and Britt (2021) found that living a calling was related to higher levels of self-reported work-family conflict and poorer mental health and that this relationship was partially mediated by the working excessively dimension of workaholism. However, in contrast, a study among Chinese university counselors found that the greater the extent their participants were living out their calling, the more likely they were to be classified as experiencing work-family enrichment (in contrast to the study's other latent profiles of slightly conflictual and work-to-family conflict; Zhang, Dik, & Dong, 2021). Another study using 284 leader-follower pairs from the South Korean Air Force found that a leader's calling was positively associated with followers' team commitment, voice behaviors (both partially mediated by perceptions of transformational leadership), and job performance (Park, Lee, Lim, & Sohn, 2018). Based on these limited studies thus far, the field may find though subsequent research examining how being called influences outcomes of those around the called person that calling may also be "double-edged" with mixed outcomes for others as well as the individual.

Another area to consider in the exploration of the dark side of calling is chronological age. Understanding calling through a career development versus solely career choice perspective is consistent with theories such as Super's Life-Span, Life-Space approach (Super, 1980; 1990). While no research to my knowledge has followed called individuals over their entire career spans, some initial research has begun to highlight how chronological age and/or career stage may impact individuals' experiences of calling. Older workers (aged 50-60) in a German sample found that living a calling caused both positive and negative outcomes (Hirschi, Keller, & Spurk, 2019). Specifically, the study found that higher levels of calling were positively related to positive affect at work which was related to increased work-nonwork enrichment. However, the same study pointed towards mixed outcomes in that higher levels of calling were also related to

increased workaholism which led to more work-nonwork conflict. Additional studies have begun to examine calling in older adults such as Duffy, Torrey, England, and Tebbe's (2016) study of retired adults. Their work helped elucidate the most common calling activities (i.e., helping others) and barriers to living a calling (i.e., lack of resources) within this understudied population. Another study examined how retirees in Sweden process "de-calling" (i.e., retirement from a job they perceive as a calling) through "conserving the calling, learning to become a self-oriented subject, and redefining the calling" (Bengtsson & Flisbäck, 2017, p. 37). Continued empirical studies are needed with populations such as older working adults, retired individuals, or those engaging in encore careers to more fully understand how more mature career development stages and chronological aging impact calling experiences. However, caution should be taken as it is difficult to disentangle the Healthy Worker Effect (e.g., workers with better mental health being able to stay in the professional longer, giving the appearance that older workers are healthier; Li & Sung, 1999) from other variables such as age and career stage. Thus, additional research is needed to parse out how living a calling affects the families of those called and if certain factors such as culture, age of the individual, or the called individual's occupation may differentiate such relationships.

Another related area to explore is how social interactions for those called may potentially change the manifestation of outcomes. Such interactions impacting a calling's influence would be theoretically consistent with Bronfenbrenner's (1992) Ecological Systems Theory in which individuals not only impact their microsystems but are also in turn altered by those around them (i.e., bi-directional effects). One recent paper has also proposed a conceptual typology to for future research to explore how an individual's perceptions of belonging, distinctiveness, and sense of calling (i.e., both search and presence dimensions) may impact the calling experiences

within a work group (Buis, Ferguson, & Briscoe, 2019). Such work is consistent with the limited empirical studies within the general literature and with the tentative findings in this current study related to social support from coworkers and supervisors.

For example, in a study of health care professionals (i.e., nurses and doctors) in Lithuania (Goštautaitė et al., 2020), participants who were called and who reported experiencing social appreciation as a resource had negative associations to burnout. This relationship was moderated by career stage, such that their results indicate that as these professionals mature in their careers, social worth was even more vital in reducing burnout. Another study which examined nurses in China during the Covid-19 outbreak found that perceived supervisor support enhanced the indirect relationship between living a calling and nursing performance via enhanced clinical and relational care (Zhou et al., 2021). These findings would be consistent with the present study's demonstrated conditional effect sizes for coworker and supervisor support. Future research may explore if similar outcomes related to social interactions changing the experience of calling is also the case for animal doctors (i.e., veterinarians) in the U.S. If so, Goštautaitė et al.'s (2020) suggestion that "Organizations and administrators can focus on bolstering social worth in their employees by giving them the opportunities to receive positive feedback and feel socially valued" (p. 663) seems important to heed. Depending on what future research finds, this could be another area rich with potential for those who work with veterinarians to provide insight into future intervention work. Promising research does indicate that the social support of friends and family were associated with better resilience in a sample of Canadian veterinarians (Perret, 2020).

Finally, as the world of work has rapidly changed in recent times (e.g., increases in flexible work arrangements; Shifrin & Michel, 2021; multi-domain confinement due to Covid-19

mandates; Hennekam, Ladge, & Powell, 2021), it may be productive for additional research to examine how previously atypical and uncommon career moves such as a career "pivot" to pursue a calling (Weisman, 2021) relates to occupational outcomes of interest. In their qualitative work conducted longitudinally of those who have made such a career pivot, Weisman (2021) identified the self-narrative evolution (i.e., with early, middle, and late stages) with 78 participants. Again, the importance of others is apparent how these self-narratives are maintained after a career pivot if they are affirmed by those around the individual. As Weisman (2021) summarized: "Subsequently, in the late stage of a career pivot—when people are working in their new occupations—if their new occupational identity is validated and work is experienced as a calling, the self-narrative becomes enduring, and the career pivot is complete" (p. 121). Subsequent research is needed to further explore if some of the recent trends in the workplace which have resulted in positive outcomes such as increased physical health, absenteeism, somatic symptoms, and physical activity (Shifrin & Michel, 2021) and positive identity changes due to decreased external pressures (Hennekam, Ladge, & Powell, 2021) can be applied to the typically documented benefits of living out ones calling. Potentially these positive outcomes could come through a career pivot that may not have been deemed feasible prior to these recent changes.

Practical Implications

Overall, one of the key takeaways from the current study is that calling is a complex concept and a one-size-fits-all approach to understanding the topic, either by fully encouraging or by fully dissuading the pursuit of a calling, likely misses important nuances. However, one practical implication of the current study is that the established benefits of living out one's calling as an associate veterinarian is typically still associated with positive outcomes for most individuals. I would therefore suggest that intervention efforts to enhance the well-being of

101

veterinarians at the industry, organization, and individual levels should target the maladaptive cognitive distortions (e.g., excessive strivings to be perfect) which can contribute to perfectionism (e.g., Ellis, 2002). By encouraging and supporting relatively small changes to the mindsets of those vulnerable to perfectionism, it may be possible to alter outcomes. For example, key differences in outcomes may be tied to if one approaches life as a positive perfectionist (i.e., sets more realistic goals and can still feel satisfaction if they are not met) versus a negative perfectionist (i.e., sets unattainable goals and are driven by the fear of failing; (Terry-Short, et al., 1995; Nyland, 2004). Considering these differences in mindset are relatively minor, one implication is that instead of using screening techniques to eliminate certain candidates all together from veterinary training programs, programs shift to identifying problematic perfectionistic tendencies during the training process with a focus on teaching healthy goal-setting behaviors for individuals more vulnerable to negative outcomes. Another suggestion is that veterinarian training institutions may consider adopting grading systems that focus on identifying who is able to achieve above threshold performance; versus alternative, more competitive ways of assessing performance such as ranked systems which may encourage an over-focus on achieving perfection or unnecessary competition between students.

Although not exclusive by any means to this study's findings, another practical implication highlighted by this study is the importance of focusing on how to best prevent and rehabilitate individuals at risk for experiencing burnout. Interventions may aim to address common causes of burnout by preventing or reducing known occupational stressors (e.g., negative work-home interactions, issues with coworkers, workload, responsibilities, financial issues, emotional demands, issues with clients, and feeling of being in danger; Andela, 2020) to directly impact the antecedents of burnout in veterinarians. While systematically addressing

102

some of these stressors is difficult, organizations (e.g., veterinary practices) are encouraged to adapt best-practice strategies related to decreasing workplace violence (WPV), recommendations of which are often congruent with those for other types of healthcare providers – which in theory could lead to fewer emotional demands, issues with clients, and decreased overall feelings of being in danger for veterinarians as well. One example is to apply the Hadden Matrix (Hadden, 1972; 1974) as a framework with particular attention to identifying amendable aspects of the physical and social environments that could lead to decreases in opportunity for violence to occur (for an example of how this was done in nursing, please refer to McPhaul & Lipscomb, 2004) as well as using additional applicable theories such as how to alter job design (i.e., changes to work processes and organizational practices; Huang, Feuerstein, & Sauter, 2002).

Several recommendations for organizations which employ veterinarians is to establish and maintain organizational policies which follow best practices in creating healthy boundaries between work and non-work (e.g., aimed at achieving work-nonwork boundary management fit; Bogaerts, De Cooman, & De Gieter, 2018), hold to requiring a reasonable number of hours per week, and focus on fostering a positive, supportive work culture (e.g., through an increase in family supportive supervisor behaviors; Hammer, Kossek, Yragui, Bodner & Hanson, 2009). Additionally, treatment strategies for burnout which have been explored in other medical fields such as nursing provide some support that resilience can be trained via coping skills (Mealer et al., 2014; Pipe et al., 2009) and that practices such as meditation may be helpful in combating burnout (Oman, Hedberg, & Thoresen, 2006). These and other interventions are encouraged with associate veterinarians as practical suggestions for future work.

Summary and Conclusions

This study provides an initial exploration into some of the relationships proposed within the WCT. Within the current sample of associate veterinarians, living a calling did have a dark side for those at the highest levels of perfectionistic standards. For these individuals who were high in both living a calling and perfectionistic standards, they rated themselves higher on the disengagement dimension of burnout and lower on job satisfaction. While this sample overall rated themselves high on perfectionistic standards, this conditional effect was most notable in those at the extremes of perfectionism, indicating that there may be an opportunity to help these individuals by either encouraging them to have more flexibility in how they approach their work or to lower their perfectionistic expectations for themselves at work. Due to methodological difficulties, the scope of the current study was unfortunately limited in being able to provide more direct insights into some of the other relationships proposed in the WCT. It was also somewhat constrained in being able to provide concrete take-a-ways for those who work with associate veterinarians and seek to help those who are suffering. However, I hope that this study provides some initial clarity on the mechanisms and conditions in which the dark side of calling can exist as well as pinpointing other concepts of interest to inform subsequent research and intervention work with this vulnerable worker population.

Finally, I believe that this study has implications for the field of workplace, vocational, organizational, and other related subfields of psychology in that it incorporates theoretical perspectives from multiple subfields. I intended this study to serve as a practical example of such "de-siloed" works that have been called for during multiple decades (e.g., Savkickas, 2001) with apparent need still in more recent years (e.g., Savickas, 2021; Spurk, 2021; Foud Fouad &

Kozlowski, 2019) and which may be especially important to newer areas of study such as occupational health psychology (e.g., Quick, 1999).

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Appendix A - Full WCT Model (Duffy et al., 2019)
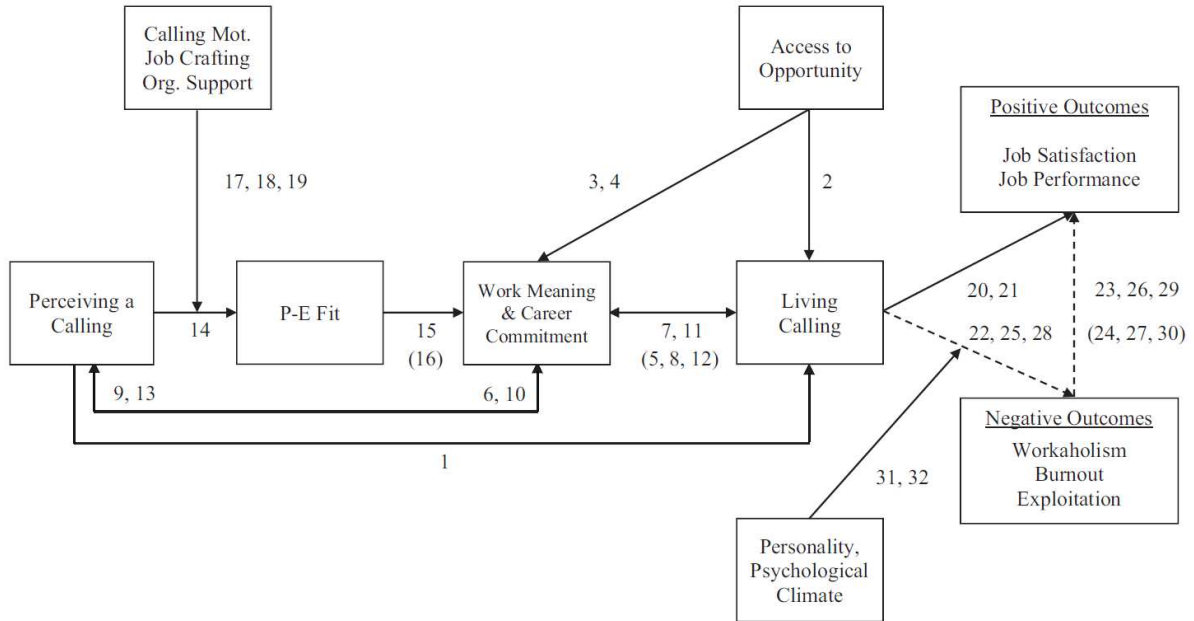
Figure 16. Replicated with permission from the authors. Dashed lines indicate negative relationships for some individuals, propositions within parentheses are hypothesized mediation relationships.

Appendix B – Results of Duffy et al.'s (2019) Study on WCT

Table 6. Hypotheses tested in Duffy et al., (2019)

Hypothesized path	Support?
1. Perceiving calling → Living calling	Supported
2. Work volition → Living calling	Supported
3. Work meaning → Living calling	Supported
4. Career commitment → Living calling	Supported
5. Work volition → Work meaning	Supported
6. Work volition → Career commitment	Supported
7. Work volition → Work meaning → Living calling	Supported
8. Work volition → Career commitment → Living calling	Supported
9. Perceiving calling → Work meaning	Supported
10. Perceiving calling → Career commitment	Unsupported
11. Perceiving calling → Work meaning → Living calling	Supported
12. Perceiving calling → Career commitment → Living calling	Unsupported
13. Perceiving calling → Fit	Supported
14. Fit → Work meaning	Supported
15. Fit → Career commitment	Supported
16. Perceiving calling → Fit → Work meaning	Supported
17. Perceiving calling → Fit → Career commitment	Supported
18. Perceiving calling × Calling motivation → Fit	Supported
19. Perceiving calling × Job crafting → Fit	Partially supported
20. Perceiving calling × Organizational support → Fit	Supported

Appendix C - Propositions from WCT Tested in Current Study
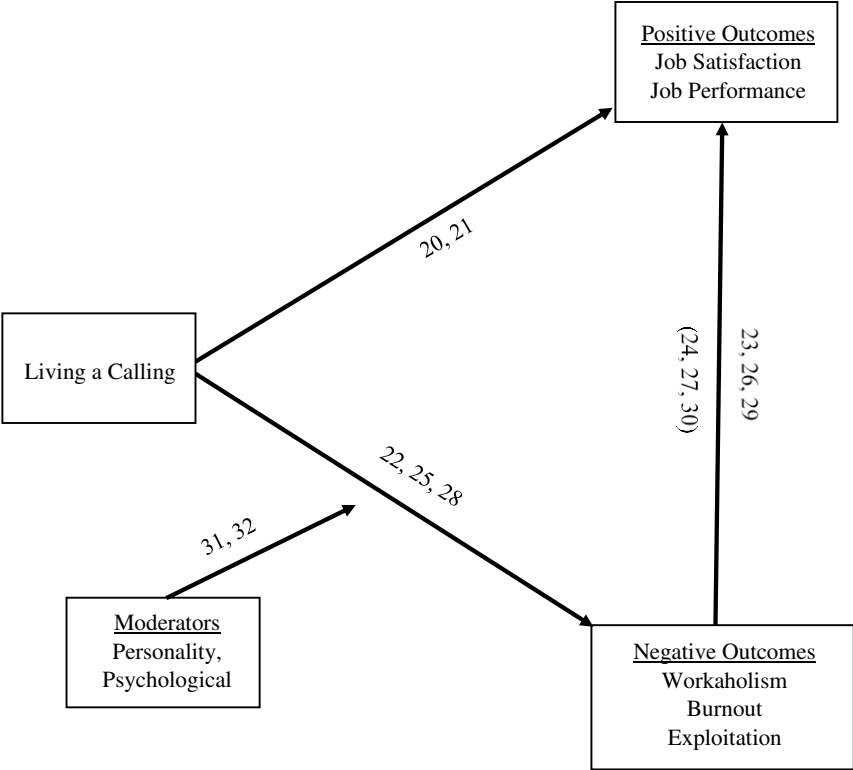
Figure 17. Propositions 20-32 from WCT (Duffy et al., 2018). Propositions within parentheses are hypothesized mediation relationships.

Table 7. Original propositions and corresponding hypotheses

Propositions from WCT	Hypotheses for current study
20 - Living a calling predicts satisfaction with one's job.	1 – Living a calling will be positively associated with job satisfaction (+ relationship)
21 - Those who are living their calling will evidence greater job performance	2 – Living a calling will be positively associated with job performance (+ relationship)
22 - For some individuals, living a calling may be related to increased workaholism in their career	3 – Living a calling will be positively associated with workaholism (+ relationship)
23 - Workaholism will directly predict decreased job satisfaction and performance	4 - Workaholism will be negatively associated with job satisfaction (- relationship)
	5 - Workaholism will be negatively associated with job performance (- relationship)
24 - Workaholism is proposed to mediate the relation between living a calling and job satisfaction. Specifically, living a calling over time may lead to deceased job satisfaction because of the development of workaholic tendencies.	6 – Workaholism will mediate (aka a*b = c*c') between living a calling and job satisfaction
25 - Living a calling may positively predict burnout.	7 – Living a calling will be negatively associated with burnout (- relationship)
26 - Burnout will directly predict decreased job satisfaction and performance	8 - Burnout will be negatively associated with job satisfaction (- relationship)
	9 - Burnout will be negatively associated with job performance (- relationship)
27 - Burnout is proposed to mediate the relation between living a calling and job satisfaction. Specifically, living a calling over time may lead to deceased job satisfaction.	10 - Burnout will mediate (aka a*b = c*c') between living a calling and job satisfaction
28 - Living a calling is associated with organizational exploitation.	11 - Living a calling will be positively associated with exploitation (+ relationship)
29 - Exploitation will directly predict decreased job satisfaction and performance.	12 - Exploitation will be negatively associated with job satisfaction (- relationship)

Propositions from WCT	Hypotheses for current study
	13 - Exploitation will be negatively associated with job performance (- relationship)
30 - Exploitation is also proposed to mediate the relation between living a calling and job satisfaction, such that certain individuals living a calling over time may experience decreased job satisfaction and lower performance, if living a calling makes them a target of greater exploitation in the workplace	14 - Exploitation will mediate (aka a*b = c*c') between living a calling and job satisfaction 15 - Exploitation will mediate (aka a*b = c*c') between living a calling and job performance
31 - Individuals living out their calling with maladaptive traits—manifested by variables such as higher levels of neuroticism, perfectionism, need for achievement, and lower levels of agreeableness, conscientiousness, and self-esteem—will evidence higher levels of workaholism, burnout, and experiences of exploitation in their work environment	16 - Living a calling X personality trait will moderate/strengthen the relationship such that increased living a calling for individuals with specific personality traits will lead to more workaholism (+ relationship) 17 - Living a calling X personality trait will moderate/change the relationship such that increased living a calling for individuals with specific personality traits will lead to burnout (+ relationship) 18 - Living a calling X personality trait will moderate/strengthen the relationship such that increased living a calling for individuals with specific personality traits will lead to more exploitation (+ relationship)
32 - Psychological climate moderates the link between living a calling and negative workplace outcomes. Specifically, individuals living a calling in work environments perceived to be unhealthy may be more likely to experience burnout, workaholism, and exploitation	19 - Living a calling X unhealthy work environment will moderate/strengthen the relationship such that increased living a calling for individuals with specific unhealthy work environment aspects will relate to more workaholism (+ relationship) 20 - Living a calling X unhealthy work environment will moderate/change the relationship such that increased living a calling for individuals with specific unhealthy work environment aspects will relate to more burnout (+ relationship) 21 - Living a calling X unhealthy work environment will moderate/strengthen the relationship such that higher living a

Propositions from WCT	Hypotheses for current study
	calling for individuals with specific unhealthy work environment aspects will relate to more exploitation (+ relationship)

Note: Propositions from WCT paper are quoted directly from Duffy et al. (2019).

Appendix E – Checking Assumptions

Table 8. Checking Assumptions and Simple Linear Regressions

Simple Regression	Assumptions Met?	R	R^2	f^2	B	*p*
Live Call → Job Sat	Yes	.44.	.19	.23	.02	<.001
Live Call → Job Perf	No[1]	.08	.01	.01	.01	.31
Live Call → WkE	Yes	.15	.02	.02	-.06	.07
LiveCall→ WkC	Yes	.09	.01	.01	-.03	.30
Live Call → DisEng	Yes	.43	.19	.23	-.12	<.001
Live Call → Exhaus	Yes	.33	.11	.12	.-10	<.001
Live Call → PERS	Yes	.13	.02	.02	-.16	.11
WkE → Job Sat	Yes	.43	.18	.22	-.05	<.001
WkC → Job Sat	Yes	.36	.13	.15	-.05	<.001
Diseng → Job Sat	Yes	.72	.52	1.08	-.10	<.001
Exhaus → Job Sat	Yes	.67	.44	.79	-.09	<.001
PERS → Job Sat	Yes	.45	.21	.27	-0.2	<.001

Note: [1]Normality of residuals not met from visual observation of P-P plot

Appendix F – Attempted Transformations of Job Performance
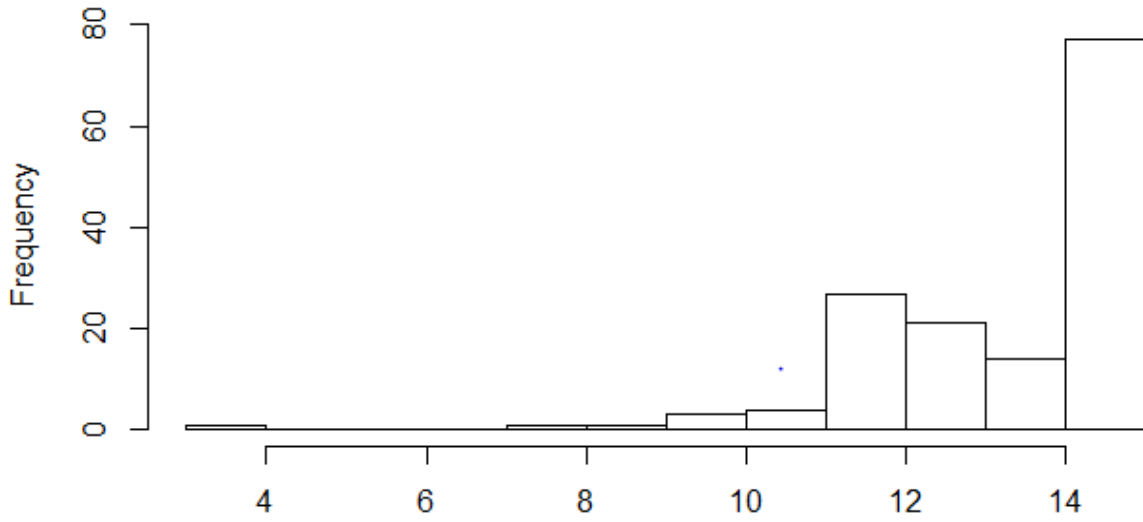
Figure 18. Histogram of Job Performance distribution
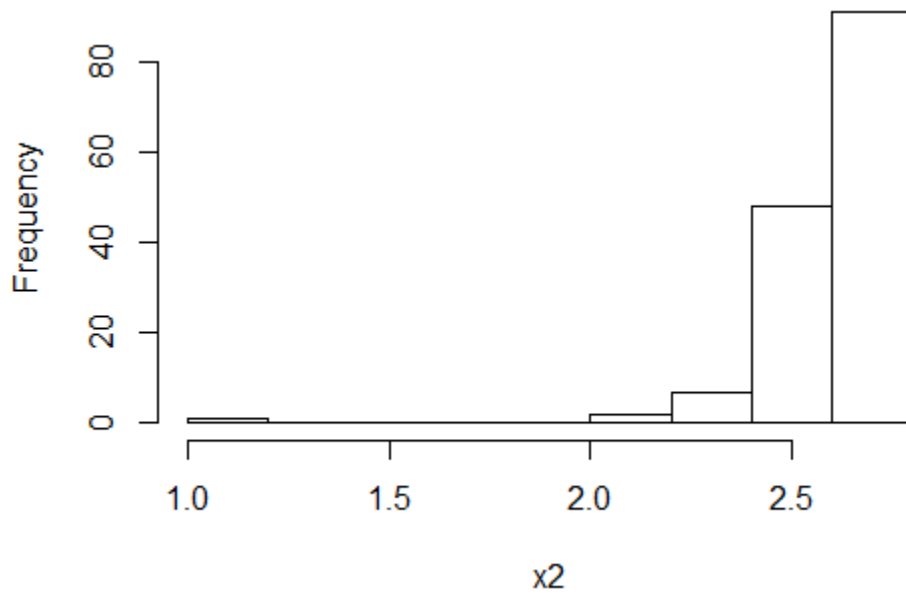
Figure 19. Histogram of the Log of Job Performance
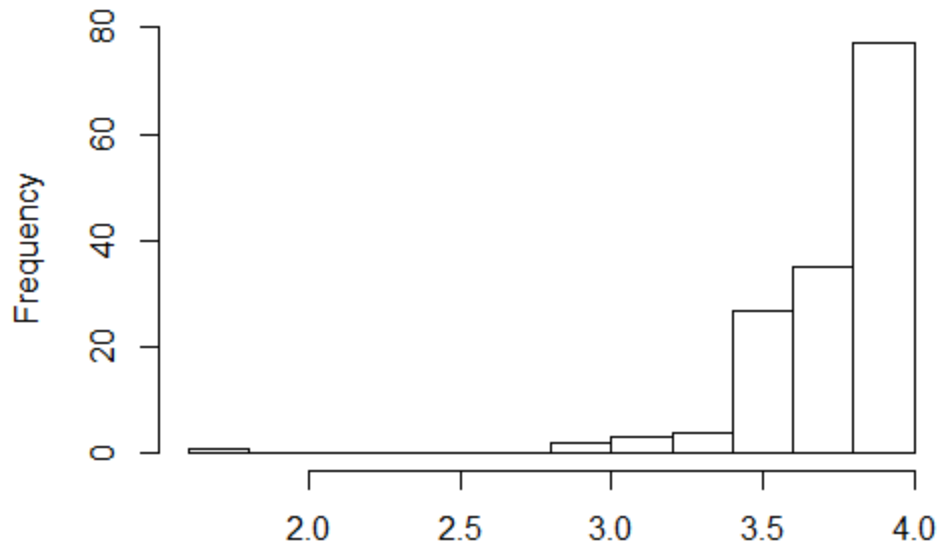
Figure 20. Histogram of the Square Root of Job Performance

Table 9. Summary CFA Model Fit for Scales

Variable Name	χ^2	CFI	TLI	SRMR
Living a Calling	25.13 (*df* = 9, *p* < .01)	0.99	0.98	0.01
Job Satisfaction	2.48 (*df* = 2, *p* = 0.29)	1.00	0.99	0.02
Job Performance	0.00 (*df* = 0, *p* <.001)	1.00	1.00	0.00
Workaholism	388.45 (*df* = 118, *p* < .01)	0.76	0.72	0.08
Burnout	216.32 (*df* = 103, *p* < .01)	0.90	0.88	0.06
Exploitation	579.24 (*df* = 77, *p* < .01)	0.71	0.65	0.09
Role Conflict	97.88 (*df* = 20, *p* < .01)	0.88	0 .84	0.05
Perceived Control	322.38 (*df* = 99, *p* < .01)	0.86	0.83	0.15
Social Support	296.04 (*df* = 57, *p* < .01)	0.68	0.63	0.15
Big Five	149.81 (*df* = 80, *p* < .01)	0.84	0.79	0.07
Perfectionism	53.29 (*df* = 19, *p* < .01)	0.96	0.94	0.07
Need for Achievement	99.03 (*df* = 27, *p* < .01)	0.79	0.72	0.08
Self-Esteem	110.43 (*df* = 35, *p* < .01)	0.92	0.89	0.05

Table 10. Living a Calling Confirmatory Factor Analysis Details

Item	Standardized Factor Loading	Mean	*SD*	Skew	Kurtosis	P-Value
LC 1	0.91	5.24	6.50	-0.68	-1.05	< .001
LC 2	0.96	5.24	7.08	-0.59	-1.26	< .001
LC 3	0.96	4.80	6.56	-0.33	-1.39	< .001
LC 4	0.95	5.17	6.64	-0.62	-1.19	< .001
LC 5	0.99	5.00	6.90	-0.44	-1.37	< .001
LC 6	0.92	5.11	7.10	-0.47	-1.36	< .001

Note: Model fit indices for Living a Calling, χ^2 = 25.13, *df* = 9, *p* < .01, CFI = 0.99, TLI = 0.98, SRMR = 0.01

Table 11. Job Satisfaction Confirmatory Factor Analysis Details

Item	Standardized Factor Loading	Mean	*SD*	Skew	Kurtosis	P-Value
JobSat 1	0.86	1.77	0.48	0.35	-0.89	< .001
JobSat 2	0.64	1.78	0.54	0.38	-1.08	< .001
JobSat 3	0.70	1.97	0.46	0.04	-0.84	< .001
JobSat 4	0.82	2.01	0.65	0.68	0.22	< .001

Note: Model fit indices for Job Satisfaction, $\chi^2 = 2.48$, $df = 2$, $p = 0.29$, CFI = 1.00, TLI = 0.99, SRMR = 0.02

Table 12. Job Performance Confirmatory Factor Analysis Details

Item	Standardized Factor Loading	Mean	*SD*	Skew	Kurtosis	P-Value
JobPer 1	0.88	4.54	0.48	-1.91	5.13	< .001
JobPEr 2	0.88	4.57	0.37	-1.82	6.51	< .001
JobPEr 3	0.78	4.60	0.43	-2.23	7.24	< .001

Note: Model fit for Job Performance, $\chi^2 = 0.00$, $df = 0$, $p < .001$, CFI = 1.00, TLI = 1.00, SRMR = 0.00

Table 13. Workaholism Confirmatory Factor Analysis Details

Item	Standardized Factor Loading	Mean	*SD*	Skew	Kurtosis	P-Value
Working Excessively						
Work 1	0.21*	2.85	0.82	-0.13	-1.05	0.01
Work 3	0.54	2.98	0.85	-0.52	-0.65	< .001
Work 4	0.55	2.74	1.01	-0.21	-1.08	< .001
Work 6	0.42	3.08	0.56	-0.52	0.01	< .001
Work 8	0.67	2.42	0.86	0.18	-0.82	< .001
Work 10	0.72	2.42	0.81	0.09	-0.76	< .001
Work 12	0.59	3.11	0.89	-0.66	-0.73	< .001
Work 13	0.67	2.60	1.21	-0.13	-1.30	< .001
Work 15	0.61	3.39	0.64	-1.29	1.14	< .001
Work 17	0.62	2.34	1.19	0.19	-1.27	< .001
Working Compulsively						
Work 2	0.59	2.62	0.84	-0.11	-0.81	< .001
Work 5	0.62	2.91	0.89	-0.53	-0.61	< .001
Work 7	0.66	3.14	0.69	-0.62	-0.39	< .001
Work 9	0.77	2.92	0.96	-0.48	-0.84	< .001
Work 11	0.63	2.92	0.88	-0.38	-0.88	< .001
Work 14	0.78	2.97	0.83	-0.64	-0.36	< .001
Work 16	0.58	2.69	1.27	-0.14	-1.40	< .001

Note: Model fit indices for Workaholism, $\chi^2 = 388.45$, $df = 118$, $p < .01$, CFI = 0.76, TLI = 0.72, SRMR = 0.08. Items marked with a "*" were trimmed for analyses based on low loadings.

Table 14. Oldenburg Burnout Inventory Confirmatory Factor Analysis Details

Item	Standardized Factor Loading	Mean	*SD*	Skew	Kurtosis	P-Value
Disengagement						
OBI 1	0.68	2.89	0.46	-0.52	0.68	< .001
OBI 3	0.83	2.24	0.85	0.19	-0.89	< .001
OBI 6	0.52	2.78	0.60	-0.46	0.00	< .001
OBI 7	0.74	2.85	0.46	-0.59	0.79	< .001
OBI 9	0.67	1.99	0.71	0.42	-0.61	< .001
OBI 11	0.54	2.85	0.69	-0.07	-0.90	< .001
OBI 13	0.18*	2.49	0.89	-0.90	-0.71	0.03
OBI 15	0.75	2.36	0.57	0.17	-0.27	< .001
Exhaustion						
OBI 2	0.69	1.69	0.53	0.88	0.50	< .001
OBI 4	0.72	2.07	0.77	0.28	-0.86	< .001
OBI 5	0.61	2.71	0.49	-0.13	-0.17	< .001
OBI 8	0.79	1.94	0.73	0.57	-0.44	< .001
OBI 10	0.65	2.05	0.69	0.55	-0.16	< .001
OBI 12	0.85	1.93	0.58	0.12	0.01	< .001
OBI 14	0.59	2.89	0.36	-0.71	1.68	< .001
OBI 16	0.70	2.40	0.62	-0.16	-0.54	< .001

Note: Model fit indices Burnout, $\chi^2 = 216.32$, $df = 103$, $p < .01$, CFI = 0.90, TLI = 0.88, SRMR = 0.06. Items marked with a "*" were trimmed for analyses based on low loadings.

Table 15. Perceived Exploitation Confirmatory Factor Analysis Details

Item	Standardized Factor Loading	Mean	*SD*	Skew	Kurtosis	P-Value
PERS 1	0.78	4.17	4.13	-0.22	-1.27	< .001
PERS 2	0.76	4.08	4.14	-0.12	-1.32	< .001
PERS 3	0.77	4.30	4.20	-0.34	-1.15	< .001
PERS 4	0.81	3.28	3.74	0.46	-0.99	< .001
PERS 5	0.68	2.45	2.73	0.99	0.03	< .001
PERS 6	0.69	2.09	2.26	1.25	0.24	< .001
PERS 7	0.82	2.14	2.05	1.13	0.14	< .001
PERS 8	0.74	2.24	2.77	1.18	0.26	< .001
PERS 9	0.80	2.20	2.39	1.22	0.57	< .001
PERS 10	0.75	1.97	2.01	1.50	1.37	< .001
PERS 11	0.53	2.85	4.33	0.85	-0.71	< .001
PERS 12	0.58	2.11	2.50	1.52	1.41	< .001
PERS 13	0.69	2.52	3.05	0.90	-0.34	< .001
PERS 14	0.82	2.91	3.99	0.69	-0.88	< .001

Item	Standardized Factor Loading	Mean	*SD*	Skew	Kurtosis	P-Value

Table 16. Role Conflict Confirmatory Factor Analysis Details

Item	Standardized Factor Loading	Mean	*SD*	Skew	Kurtosis	P-Value
RC 1	0.75	4.35	2.99	-0.49	-0.68	< .001
RC 2	0.73	3.79	3.66	0.01	-1.34	< .001
RC 3	0.66	2.91	2.89	-0.91	-0.39	< .001
RC 4	0.73	4.48	4.52	-0.39	-1.26	< .001
RC 5	0.81	3.68	4.04	0.12	-1.34	< .001
RC 6	0.79	3.95	4.10	-0.05	-1.37	< .001
RC 7	0.81	3.60	3.88	0.17	-1.24	< .001
RC 8	0.56	3.34	3.85	0.32	-1.22	< .001

Table 17. Perceived Control Factor Analysis Details

Item	Standardized Factor Loading	Mean	*SD*	Skew	Kurtosis	P-Value
Task Control						
PC 1	0.74	3.28	1.26	-0.11	-0.68	< .001
PC 3	0.74	3.26	1.18	0.00	-0.66	< .001
PC 4	0.80	2.68	1.30	0.38	-0.59	< .001
PC 5	0.70	2.66	1.29	0.41	-0.46	< .001
PC 6	0.52	4.06	0.68	-0.62	0.20	< .001
PC 15	0.48	1.98	1.44	1.10	0.24	< .001
PC 16	0.89	2.75	1.19	0.26	-0.47	< .001
Decision Control						
PC 8	0.82	2.47	1.40	0.44	-0.62	< .001
PC 10	0.77	2.76	1.16	0.23	-0.37	< .001
PC 11	0.86	2.74	1.44	0.22	-0.87	< .001
PC 13	0.79	2.67	1.65	0.39	-0.95	< .001
Physical Environment Control						
PC 7	0.79	2.65	2.02	0.36	-1.19	< .001

Item	Standardized Factor Loading	Mean	SD	Skew	Kurtosis	P-Value
PC 14	0.91	2.29	1.79	0.77	-0.60	< .001
Resource Control						
PC 2	0.88	2.78	1.43	0.18	-0.73	< .001
PC 12	0.92	2.78	1.34	0.18	-0.76	< .001

Note: Model fit indices for Perceived Control $\chi^2 = 322.38$, $df = 99$, $p < .01$, CLI = 0.86, TLI = 0.83, SRMR = 0.15

Table 18. Social Support Confirmatory Factor Analysis Details

Item	Standardized Factor Loading	Mean	SD	Skew	Kurtosis	P-Value
Supervisor Support						
SS 1	0.16*	3.21	2.46	0.62	-0.67	0.06
SS 4	0.92	3.44	1.63	-0.46	-0.86	< .001
SS 7	0.90	3.33	`1.64	-0.25	-0.99	< .001
SS 10	0.85	3.16	1.49	-0.07	-0.88	< .001
Coworker Support						
SS 2	0.07*	3.01	1.05	1.14	1.47	0.42
SS 5	0.78	4.21	0.64	-0.63	-0.47	< .001
SS 8	0.82	4.00	0.79	-0.46	-0.71	< .001
SS 11	0.78	3.77	0.79	-0.12	-0.86	< .001

Note: Model fit indices for Social Support, $\chi^2 = 296.04$, $df = 57$, $p < .01$, CFI = 0.68, TLI = 0.63, SRMR = 0.15. Items marked with a "*" were trimmed for analyses based on low loadings.

Table 19. BFI-2-XS Confirmatory Factor Analysis Details

Item	Standardized Factor Loading	Mean	SD	Skew	Kurtosis	P-Value
Extraversion						
BFI 1	0.35	3.50	2.04	-0.61	-1.06	< .001
BFI 6	0.33	3.43	1.57	-0.54	-0.86	0.00
BFI 11	0.98	3.24	1.36	-0.28	-0.95	< .001
Agreeableness						
BFI 2	0.52	4.46	0.58	-1.61	2.57	< .001

Item	Standardized Factor Loading	Mean	SD	Skew	Kurtosis	P-Value
BFI 7	0.83	2.95	1.70	-0.16	-1.34	< .001
BFI 12	0.18*	3.53	1.43	-0.48	-0.84	0.09
Conscientiousness						
BFI 3	0.68	2.67	2.07	0.32	-1.36	< .001
BFI 8	0.86	2.69	1.69	0.24	-1.30	< .001
BFI 13	0.69	4.56	0.35	-1.20	1.37	< .001
Negative Emotionality						
BFI 4	0.46	4.13	1.24	-1.22	0.45	< .001
BFI 9	0.60	3.20	1.97	-0.20	-1.31	< .001
BFI 14	0.77	3.46	1.52	-0.45	-0.96	< .001
Open-Mindedness						
BFI 5	0.25	3.97	1.37	-1.13	0.33	0.02
BFI 10	0.21*	2.41	0.55	-0.83	-0.28	0.06
BFI 15	0.59	3.68	1.06	-0.59	-0.41	< .001

Note: Model fit indices Big Five, χ^2 = 149.81, df = 80, p < .01, CFI = 0.84, TLI = 0.79, SRMR = 0.07. Items marked with a "*" were trimmed for analyses based on low loadings.

Table 20. SAPS Factor Analysis Details

Item	Standardized Factor Loading	Mean	SD	Skew	Kurtosis	P-Value
Standards						
SAPS 1	0.76	6.69	0.44	-3.21	15.55	< .001
SAPS 3	0.83	6.34	1.07	-2.24	5.94	< .001
SAPS 5	0.87	6.15	1.34	-1.92	4.34	< .001
SAPS 7	0.75	6.35	0.74	-1.88	5.36	< .001
Discrepancy						
SAPS 2	0.73	5.19	3.24	-0.93	-0.16	< .001
SAPS 4	0.80	4.46	3.18	-0.24	-1.19	< .001
SAPS 6	0.94	4.22	3.61	-0.02	-1.35	< .001
SAPS 8	0.95	3.97	3.87	0.11	-1.38	< .001

Note: Model fit indices for Perfectionism χ^2 = 53.29, df = 19, p < .01, CFI = 0.96, TLI = 0.94, SRMR = 0.07

Table 21. Need for Achievement Confirmatory Factor Analysis Details

Item	Standardized Factor Loading	Mean	*SD*	Skew	Kurtosis	P-Value
NAchiv 1	0.08*	4.07	3.38	-0.09	-1.22	0.37
NAchiv 2	0.20*	5.79	1.53	-1.38	2.12	0.02
NAchiv 3	0.58	4.26	3.40	-0.26	-1.11	< .001
NAchiv 4	0.42	4.95	2.66	-0.73	-0.36	< .001
NAchiv 5	0.49	4.28	3.36	-0.13	-1.21	< .001
NAchiv 6	0.55	3.87	2.88	0.10	-1.04	< .001
NAchiv 7	0.64	3.20	2.51	0.25	-0.76	< .001
NAchiv 8	0.80	2.51	1.71	0.85	0.71	< .001
NAchiv 9	0.77	3.33	3.12	0.15	-1.24	< .001

Note: Model fit indices for Need for Achievement $\chi^2 = 99.03$, *df* = 27, *p* < .01, CLI = 0.79, TLI = 0.72, SRMR = 0.08. Items marked with a "*" were trimmed for analyses based on low loadings.

Table 22. Rosenberg Self-Esteem Scale Confirmatory Factor Analysis Details

Item	Standardized Factor Loading	Mean	*SD*	Skew	Kurtosis	P-Value
RSES 1	0.79	2.83	0.60	-0.47	0.03	< .001
RSES 2	0.81	2.51	0.96	0.14	-1.00	< .001
RSES 3	0.61	3.25	0.31	-0.45	2.17	< .001
RSES 4	0.54	3.15	0.32	-0.20	0.99	< .001
RSES 5	0.75	3.26	0.58	-0.74	-0.06	< .001
RSES 6	0.82	2.53	0.93	0.16	-0.99	< .001
RSES 7	0.73	3.17	0.41	-0.47	0.66	< .001
RSES 8	0.73	2.40	0.90	-0.86	-0.88	< .001
RSES 9	0.75	3.24	0.69	-0.88	0.09	< .001
RSES 10	0.85	2.75	0.68	-0.30	-0.41	< .001

Note: Model fit indices for Self-Esteem, $\chi^2 = 110.43$, *df* = 35, *p* < .01, CFI = 0.92, TLI = 0.89, SRMR = 0.05

Table 23. Variable Correlations

	1	2	3	4	5	6	7	8	9	10	11
1. Living a Calling	-										
2. Job Satisfaction	0.46	-									
3. Job Performance	0.08	0.12	-								
4. Working Excessively	-0.22	-0.43	-0.02	-							
5. Working Compulsively	-0.12	-0.34	-0.04	0.80	-						
6. Disengagement	-0.48	-0.73	-0.10	0.47	0.34	-					
7. Exhaustion	-0.38	-0.67	-0.13	0.55	0.47	0.71	-				
8. Perceived Exploitation	-0.16	-0.44	-0.18	0.42	0.24	0.56	0.45	-			
9. Role Conflict	-0.22	-0.43	-0.15	0.27	0.15	0.57	0.41	0.61	-		
10. Task Control	0.32	0.38	0.09	-0.32	-0.22	-0.53	-0.54	-0.42	-0.47	-	
11. Decision Control	0.32	0.29	0.17	-0.14	-0.11	-0.43	-0.39	-0.34	-0.49	0.75	-
12. Physical Environment Control	0.23	0.29	0.10	-0.14	-0.17	-0.36	-0.35	-0.32	-0.37	0.60	0.67
13. Resource Control	0.32	0.35	0.10	-0.16	-0.14	-0.45	-0.37	-0.46	-0.51	0.69	0.73
14. Supervisor Support	0.01	0.14	0.15	-0.19	-0.12	-0.09	-0.13	-0.29	-0.11	-0.05	-0.14
15. Coworker Support	0.16	0.37	0.17	-0.31	-0.14	-0.45	-0.37	-0.40	-0.47	0.46	0.43
16. Agreeableness	0.12	0.15	0.01	-0.14	-0.04	-0.23	-0.21	-0.17	-0.35	0.07	0.10
17. Conscientiousness	0.03	0.12	0.25	-0.18	-0.13	-0.11	-0.27	-0.10	-0.19	0.17	0.14
18. Negative Emotionality	-0.15	-0.36	-0.10	0.43	0.36	0.39	0.63	0.22	0.29	-0.33	-0.31
19. Perfectionistic Standards	0.02	-0.22	0.03	0.40	0.49	0.11	0.19	0.14	0.12	-0.04	-0.07
20. Perfectionistic Discrepancy	-0.21	-0.30	-0.24	0.47	0.47	0.40	0.56	0.24	0.31	-0.48	-0.44
21. Need for Achievements	0.23	0.13	0.00	0.38	0.37	-0.07	0.07	0.17	0.05	-0.11	-0.09
22. Self-Esteem	0.19	0.32	0.14	-0.41	-0.34	-0.39	-0.55	-0.29	-0.31	0.43	0.43

Table 23. (continued)

	12	13	14	15	16	17	18	19	20	21	22
1. Living a Calling											
2. Job Satisfaction											
3. Job Performance											
4. Working Excessively											
5. Working Compulsively											
6. Disengagement											
7. Exhaustion											
8. Perceived Exploitation											
9. Role Conflict											
10. Task Control											
11. Decision Control											
12. Physical Environment Control	-										
13. Resource Control	0.70	-									
14. Supervisor Support	-0.12	-0.01	-								
15. Coworker Support	0.35	0.43	0.17	-							
16. Agreeableness	0.07	0.07	0.23	0.11	-						
17. Conscientiousness	0.13	0.07	0.08	0.26	0.08	-					
18. Negative Emotionality	-0.23	-0.30	-0.16	-0.34	-0.30	-0.38	-				
19. Perfectionistic Standards	0.06	-0.05	-0.18	-0.08	-0.18	0.11	0.30	-			
20. Perfectionistic Discrepancy	-0.30	-0.36	-0.05	-0.25	-0.19	-0.33	0.61	0.32	-		
21. Need for Achievements	-0.06	-0.03	-0.01	-0.11	0.05	0.04	0.23	0.42	0.37	-	
22. Self-Esteem	0.33	0.37	0.08	0.38	0.23	0.43	-0.75	-0.20	-0.69	-.23	-

Note: All reported correlations are Pearson's *r* and were calculate as two-tailed correlations.

Appendix I – Example MPlus Code for Moderated Mediation Model

```
TITLE: Testing Moderator PerfStan;
DATA: FILE IS DissertationData3.csv;

VARIABLE:

NAMES ARE ID LiveCall JobSat JobPer WkE WkC Diseng Exhaust PERS
RoleConf TaskCont DecCont PECont ResCont SupSupp
CWSupp Agree Consc NegEmot PerfStan PerfDisc NAchiv SelfEst;

!Predictor variable - X LiveCall
!Mediator Variables - M Diseng Exhaust
!Moderator Varialbe - W PerfStan
!Outcome variables - Y JobSat

MISSING = .;

USEVARIABLES ARE

LiveCall Diseng Exhaust JobSat PerfStan WPerfStan;

!X M W Y;

DEFINE:

WPerfStan = LiveCall*PerfStan;

ANALYSIS:

TYPE = GENERAL;
ESTIMATOR = ML;
BOOTSTRAP = 10000;

MODEL:

![y]    (b0);
!Y ON M (b1);
 [JobSat]  (b0);
 JobSat ON Diseng (b1);
 JobSat ON Exhaust (b2);

 !Y ON X (cdash);
 JobSat ON LiveCall (cdash);
```

!Predictor variable - X LiveCall
!Mediator Variables - M Diseng Exhaust
!Moderator variable - W PerfStan
!Outcome variable - Y JobSat

 ![M] (a0);
 !M ON X (a1);
 !M ON W (a2);
 !M ON XW (a3);

[Diseng] (a0);
Diseng ON LiveCall (a1);
Diseng ON PerfStan (a2);
Diseng ON WPerfStan (a3);

[Exhaust] (a4);
Exhaust ON LiveCall (a5);
Exhaust ON PerfStan (a6);
Exhaust ON WPerfStan (a7);

 MODEL CONSTRAINT:
    NEW(LOW_W MED_W HIGH_W
    IND_LOWW IND_MEDW IND_HIW
    TOT_LOWW TOT_MEDW TOT_HIW);

LOW_W = 22.31;
MED_W = 25.53;
HIGH_W = 28.75;

IND_LOWW = a1*b1 +a3*b1*LOW_W;
IND_MEDW = a1*b1 + a3*MED_W;
IND_HIW = a1*b1 + a3*b1*HIGH_W;

TOT_LOWW = IND_LOWW + cdash;
TOT_MEDW = IND_MEDW + cdash;
TOT_HIW = IND_HIW + cdash;

PLOT(LOMOD MEDMOD, HIMOD);

LOOP(XVAL, 6, 48, 0.1);

LOMOD = IND_LOWW*XVAL;
MEDMOD = IND_MEDW*XVAL;

HIMOD = IND_HIW*XVAL;

PLOT: TYPE = plot2;

Output: STAND CINT(bcbootstrap);

Table 24. Standardized Effects of Step 1

Variables	β	SE of β	95% CI of β
Living a Calling (IV)			
Job Satisfaction (DV)	0.44	0.08	0.29, 0.59
Job Performance (DV)	0.08	0.08	-0.07, 0.24

Note: R^2 *Job Satisfaction = 0.19, R^2 Job Performance = 0.01, χ^2 = 1.27 (1), p = 0.26,* CFI = 0.99, TLI = 0.97, SRMR = 0.03

Table 25. Standardized Effects of Step 2

Variables	β	SE of β	95% CI of β
Living a Calling (IV)			
Working Excessively (DV)	-0.12	0.09	-0.29, 0.05
Working Compulsively (DV)	-0.09	0.09	-0.26, 0.09
Disengagement (DV)	-0.39	0.08	-0.59, -0.24
Exhaustion (DV)	-0.33	0.08	-0.49, -0.18
Perceived Exploitation (DV)	-0.13	0.08	-0.29, 0.02

Note: R^2 *WkE = 0.01, R^2 WkC = 0.01, R^2 Disengage= 0.15, R^2 Exhaust = 0.11, R^2 PERS = 0.02, χ^2 = 391.73 (10), p < .001,* CFI = 0.04, TLI = 0.00, SRMR = 0.32

Table 26. Standardized Effect Sizes of Step 3

Variables	β	SE of β	95% CI of β
Job Satisfaction (DV)			
Working Excessively (IV)	0.01	0.12	-0.25, 0.22
Working Compulsively (IV)	-0.00	0.11	-0.21, 0.20
Disengagement (IV)	-0.47	0.08	-0.63, -0.32
Exhaustion (IV)	-0.40	0.09	-0.58, -0.22
Perceived Exploitation (IV)	-0.05	0.08	-0.22, 0.11
Job Performance (DV)			
Working Excessively (IV)	0.28	0.13	0.03, 0.53
Working Compulsively (IV)	-0.17	0.10	-0.37, 0.02
Disengagement (IV)	0.05	0.10	-0.15, 0.25
Exhaustion (IV)	-0.11	0.12	-0.33, 0.12

Variables	β	SE of β	95% CI of β
Perceived Exploitation (IV)	-0.23	0.13	-0.48, 0.02

Note: R^2 *Job Satisfaction* = *0.39, R^2 Job Performance =0.18, χ^2 = 365.39(11), p < .001,* CFI = 0.00, TLI = 0.00, SRMR = 0.35

Table 27. Step 4 - Base Model Standardized Regression Coefficients

Variables	β	*SE* of β	95% CI A
Living a Calling (IV)			
Disengagement	-0.39	0.07	-0.52, -0.24
Exhaustion	-0.33	0.08	-0.47, -0.17
Job Satisfaction	0.19	0.07	0.06, 0.32
Job Satisfaction (DV)			
Disengagement	-0.41	0.07	-0.55, -0.26
Exhaustion	-0.36	0.08	-0.53, -0.20

Note: R^2 *Disengagement = 0.15, R^2 Exhaustion = 0.11, R^2 Job Satisfaction = 0.49, χ^2 =* 89.71 *(1), p < .001*, CFI = 0.64, TLI = 0.00, SRMR = 0.21