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Trait Anxiety in the Workplace: A Job Demands-Resources Perspective

Tessly Ann Dieguez

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by

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Abstract

Title: Trait Anxiety in the Workplace: A Job Demands-Resources Perspective

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There is a widely held assumption that anxiety is always bad for job performance, when, in reality, the research findings on anxiety and performance are complex, varied, and inconsistent. Anxiety is extremely common and recently on the rise in the general population, and it can be related to important workplace outcomes such as job performance and well-being. Using the theoretical backdrops of the job demands-resources model (Bakker & Demerouti, 2007, 2018) and the theory of workplace anxiety (Cheng & McCarthy, 2018), this study proposed a model examining the mechanisms through which trait anxiety could lead to lower and higher typical job performance and lower employee well-being. Findings were mixed. The indirect effect of trait anxiety on typical job performance through emotional exhaustion was not significant. Trait anxiety was negatively related to employee well-being through emotional exhaustion. While Behavioral drive, a recently-developed motivational construct that measures effort, was positively related to typical job performance, opposite of what was hypothesized, trait anxiety was negatively indirectly related to typical job performance through behavioral drive, However, the effect disappeared when using other-rated rather than self-rated typical performance data. Additionally, behavioral drive buffered the negative

relationship between trait anxiety and self-rated typical job performance. This study

contributes to the growing conversation about anxiety in the workplace and

answers the call for a more humanistic approach to I/O psychology.

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Acknowledgement

Dedication

This dissertation is dedicated to my parents,
Dr. Edward Dieguez and Dr. Teresiana Goyenechea.
Thank you for all the inspiration, support, and love.
I couldn't have done this without you. I love you.

"I've spent my life inheriting dreams from you." – Lin-Manuel Miranda

Chapter 1 Introduction

Anxiety has recently become a hot topic in popular media. In early March 2020, a Google News search for "anxiety" brought up 132,000,000 results, up from 6,050,000 results for the same search in December 2017. In late April 2020, during the height of the COVID-19 global pandemic, the same Google News search brought up 157,000,000 results. In May of 2021, the same search brought up 140,000,000 results. According to the National Institute of Mental Health (NIMH) (2017) approximately 18.1% of US adults have an anxiety disorder. Thus, anxiety disorders are something that can affect a relatively large group of employees, and as such, the topic of anxiety in the workplace has become salient in the organizational sciences. In late 2019, the Harvard Business Review released a podcast, *The Anxious Achiever,* that specifically highlights anxiety and mental health in the workplace (Aarons-Mele, 2019).

Recent popular media articles frequently refer to "high-functioning anxiety" (Morgan, 2017; Patel, 2017; Smith, 2018; Quinn, 2017; Wheeler, 2017; Wright, 2017). High-functioning anxiety is often described in these articles as characterized by perfectionistic tendencies, ambition, extreme achievement, hyper vigilance, constant busyness, effective performance, taking initiative, hard work, and intense focus that does not get in the way of success or the ability to live a relatively normal life (Patel, 2017; Morgan, 2017; Quinn, 2017; Wheeler, 2017). However, underneath these positive attributes, individuals with high-functioning anxiety suffer from the same issues anyone with anxiety problems does—exhaustion, poor

sleep habits, racing thoughts, panic attacks, compulsions, and intense self-criticism (Patel, 2017; Quinn, 2017; Wheeler, 2017).

According to an article in a college student publication, "High-functioning anxiety looks like calm perfectionism and crystal-clear achievement on the surface, while immediately below is full of white-capped fear, crashing self-confidence, and constant nervousness rippling further out with each grasp for validation" (Morgan, 2017, p. 1). There are a number of examples of highly successful individuals or groups of individuals with anxiety that could potentially provide support for the idea of "high-functioning anxiety". Michael Phelps, the most decorated Olympian in history, was recently featured in a documentary discussing his struggles with anxiety (Kennedy, 2017). Barton (2011) found a high prevalence of anxiety disorders among graduate students, and there is a growing conversation in popular media around mental health and anxiety issues in academics (Flaherty, 2017; McElroy, 2013; Wilcox, 2014)--populations typically considered highly successful and intelligent. High-functioning anxiety is not a clinical term, and there are some who argue that the term's popularity stems from the stigma around mental illness (Patel, 2017). It appears to be more socially acceptable to admit to having high-functioning anxiety than to having Generalized Anxiety Disorder (GAD) or another "official" disorder.

Despite the explosion of interest on anxiety and anxiety in the workplace in popular media, there is not a large body of research on the topic, particularly within the field of I/O psychology. There has been some, but not much, research on

relationships between anxiety and work within the clinical psychology literature

(e.g., Erickson et al., 2009; Greenberg et al., 1999). Most clinical literature that has

examined relationships between anxiety and work has specifically looked at those

who have a clinical anxiety diagnosis (e.g., Erickson et al., 2009; Greenberg et al.,

1999). It's important to note that not everyone who struggles with anxiety has

sought treatment or has a clinical diagnosis (Forsyth et al. 2004; Odlaug et al.,

2009). Mulderig et al. (2013) argued that clinical psychologists miss research

opportunities by not asking work-related questions. The same can be said for I/O

psychologists who do not ask mental health-related questions.

According to three content analyses of I/O psychology research articles and

dissertations, the most popular research topics within I/O include

methodology/psychometric issues, predictors of performance, work motivation and

attitudes, performance measurement, work outcomes, leadership and leader

influences, human factors-applied experimental psychology, societal issues, teams,

theoretical frameworks, personality factors, supervisor-employee relations, and

personnel selection (Brutus et al., 2010; Cascio & Aguinas, 2008; Piotrowski,

2014). The two content analyses (Brutus et al., 2010; Cascio & Aguinas, 2008) that

examined published research found no articles in top tier I/O journals on employee

mental health or, more broadly, employee well-being. I/O psychology research has

spent less time on questions of personal welfare (Zickar, 2010), and is sometimes

focused on the organization at the expense of the individual (Lefkowitz, 2008,

2012, 2013; Weiss & Rupp, 2011). According to Weiss and Rupp (2011), "the

prevailing paradigm within I/O treats workers as objects and in doing so limits the ability to develop a deep and continued understanding of the important ways in which humans relate to work" (p. 83).

There are two notable exceptions to this. First, occupational health psychology journals inherently include more research related to employee well-being. A content analysis of articles published in *The Journal of Occupational Health Psychology* found high research interest in employee well-being and moderate research interest in employee mental health (Piotrowski, 2012). This is in contrast to a content analysis of articles published in *The Journal of Applied Psychology*, which did not identify employee well-being or occupational health as an included topic (Schmitt, 2017). The second notable exception comes from European I/O Psychology research, which is often focused on the individual employee and concerned with employee well-being (Truxillo & Fraccaroli, 2011).

Researchers have attempted to explain I/O psychology's research focus by examining the field's values. Lefkowitz (2008, 2012, 2013) has been a prominent voice, arguing that I/O psychology has largely ignored the traditional humanistic values that define the psychology field as a whole and guide American Psychological Association (APA) ethical guidelines in favor of corporate and economic interests. Society for Industrial and Organizational Psychology (SIOP) members surveyed about what the ideal values of the field should be ranked increasing effectiveness and efficiency, enhancing productivity, and promoting quality of products and services at the top, and humanizing the workplace near the

bottom (Church & Burke, 1992). Stagner (1982) argued that "…graduate training programs in our field have come to emphasize the quantitative side of instruction, perhaps to the exclusion of human psychology" (p. 895).

Relationships between different psychological fields may also contribute to this. Some have argued that individual psychological fields have become overly fragmented (Bandura, 2001; Latham, 2003). Bandura (2001) specifically mentioned "intradisciplinary squabbles and power struggles" (p. 42). This is sometimes seen in the relationships between I/O and clinical psychology. According to Lefkowitz (2013), in the 1980s, some I/O psychologists felt threatened by clinical psychologists, professionals who held licensures, entering the corporate world. Efforts to distinguish I/O psychology from clinical psychology can be seen in I/O's sometimes strictly quantitative focus (Stagner, 1982) and the fact that clinical psychology literature is often not cited by I/O psychologists (Latham, 2003). It may be that anxiety and other mental health issues have been seen as clinical psychology's domain, and thus, historically avoided in most American I/O Psychology research.

Many have called for a more humanistic and person-centered approach to I/O psychology research (Gasser et al., 2004; Lefkowitz, 2008, 2012, 2013; Weiss & Rupp, 2011). This approach includes the goal of "improving the human condition at work" (Gasser et al., 2004, p. 28), creating safe, healthy, challenging, and fulfilling work environments (Lefkowitz, 2013), and a focus on and appreciation of individual employees (Weiss & Rupp, 2011). Importantly, this

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perspective is not necessarily at odds with I/O psychology's traditional paradigms that focus on organizational effectiveness, but is a broadening of it (Lefkowitz, 2013; Weiss & Rupp, 2011). Weiss and Rupp (2011) specifically identified employee anxiety and well-being as one of the topics a person centric I/O psychology could focus on.

Liu et al. (2011) argued that the interdisciplinary field of occupational health psychology (OHP) answers the call for more humanistic and person-centric research in I/O psychology. Notably, a recommendation from the National Institute of Occupational Safety and Health (NIOSH) to increase training and knowledge of work-related psychological disorders was a foundational component of the OHP field (Sauter & Hurrell, 2017). However, it is important to distinguish between work-related psychological disorders or employee anxiety related specifically to work and more general anxiety or general anxiety disorders. Recent I/O psychology research has examined employee anxiety but specifically in the context of anxiety caused by or specifically related to work (e.g., Cheng & McCarthy, 2018; Jones et al., 2016; Mannor et al., 2016; Muschalla et al., 2013). This study focuses on general trait anxiety rather than on anxiety that is specifically related to work.

Interest in more general employee mental health and well-being within I/O psychology appears to have increased in response to the COVID-19 pandemic. In mid-May of 2020, SIOP's homepage (siop.org) prominently displayed links to resources for managing the pandemic, including a subsection on worker well-being. One article linked in this subsection included advice on how management can

support employee well-being through providing emotional support, setting the example of setting clear boundaries and utilizing sick leave, providing practical accommodations, and expressing empathy (Hammer & Alley, 2020). Another advocated for the use of coping strategies and self-care through sleep, exercise, and social support (Curphy & Nilson, 2020).

The conversations around high-functioning anxiety and general employee anxiety in the workplace bring up some important questions. First, what separates employees with anxiety who typically perform well on the job from those with anxiety who do not? The links between anxiety and negative performance outcomes are well documented (e.g., Plaisier et al., 2010; Reio & Callahan, 2004); however, other studies have found positive relationships between trait anxiety and job performance (Perkins & Corr, 2005) as well as relationships between trait anxiety and other variables positively related to performance, such as intelligence (Karpinski et al., 2017; Penney et al., 2015). Second, what can both individual employees and employers do in order to manage anxiety in the workplace, ensure employee well-being, and maintain good overall job performance?

Chapter 2 Literature Review

Defining Anxiety

Anxiety can be viewed as a universal emotion experienced throughout human history, and a topic that has consistently captured psychologists' attention (Beck, 1976; Spielberger, 1985). Broadly, anxiety can be defined as "feelings of tension, apprehension, and dread, and cognitions of impending danger" (Spielberger, 1985, p. 173). However, Beck (1976) and Spielberger (1972, 1985) asserted that the concept of anxiety suffers from some conceptual issues, and that researchers often use it to refer to different things. This problem persists in the anxiety research today.

Some researchers equate anxiety with stress. For example, Chapa and Triana (2015) equated stress and anxiety by using Parker and DeCotiis' (1983) Job Stress Scale to measure anxiety. Similarly, a 2011 meta-analysis (Ford et al., 2011) categorized studies that measured psychological strain, anxiety, lack of comfort, tension, and perceived stress under the broad umbrella of anxiety. Spielberger (1972) argued against equating stress and anxiety. Specifically, he proposed that "stress be used exclusively to denote environmental conditions or circumstances that are characterized by some degree of objective physical or psychological danger" (p. 488), while anxiety should "be used to refer to the emotional reaction or pattern of response [in an individual who perceives threat]" (p. 488).

Anxiety has also been differentiated from fear (Beck, 1976; Forsyth et al., 2004; McLean & Anderson, 2009). Fear is associated with more intense

physiological symptoms than anxiety, and it tends to be proportional to the

magnitude of the danger presented by a stimulus, whereas the stimulus for anxiety

is not always known (Forsyth et al., 2004; Spielberger, 1972).

Spielberger (1972) asserted the utility of examining anxiety as an emotional

process involving cognitive, affective, and behavioral responses that occur as a

reaction to stress or threat. The hallmark of this model is the temporal sequence of

events: some form of stress leads to perception of danger, which in turn leads to an

anxiety-state reaction (Spielberger, 1972). Spielberger (1972) argued that

individual anxiety states can vary due to the amount of stress someone is

experiencing at any given moment, and that those who are more prone to perceive

threat or danger in response to stress experience more frequent anxiety states.

The temporal sequence of this model continues with the idea that an

anxiety-state reaction leads to cognitive reappraisal, which Spielberger (1972)

conceptualized as reexamining "the stressful circumstances that initiated the

anxiety process" (p. 484). This reexamination can result in the positive outcome of

using coping behaviors, or the negative outcomes of avoidance behaviors or

psychological defenses, such as denial or projection (Spielberger, 1972).

Importantly, Spielberger's conceptualization of cognitive reappraisal differs

slightly from others' (e.g., Gross, 1998; Carver et al., 1989; Carver, 1997). In

Spielberger's (1972) conceptualization, cognitive reappraisal has more to do with

reassessing a situation. This reassessment could result in cognitively reframing a

situation, in line with Gross' (1998) definition of cognitive reappraisal, or it could

result in negative outcomes (Spielberger, 1972). Others (e.g., Carver et al., 1989; Carver, 1997) have conceptualized reappraisal (or positive reframing) itself as a coping strategy, rather than a precursor to the use of coping strategies, as Spielberger (1972) did.

Anxiety has been conceptualized as consisting of both a cognitive and a physiological component (Martens et al., 1990; Mueller, 1992). The cognitive component of anxiety has been referred to as worry or cognitive anxiety, and generally has to do with preoccupying and distracting thoughts about threat and fear of failure and its consequences (Cox et al., 2003; Hardy & Hutchinson, 2007; Hardy & Parfitt, 1991; McLean & Anderson, 2009). The physiological component of anxiety has been conceptualized as both physical symptoms of anxiety (Hardy & Hutchinson, 2007; Mueller, 1992) and individual awareness of those physical symptoms, sometimes referred to as somatic anxiety (Cox et al., 2003; Hardy & Hutchinson, 2007; Martens et al., 1990). Physical symptoms of anxiety include increased heart rate, skin conductance, pupillary dilation, and rapid breathing (Hardy & Hutchinson, 2007; Mueller, 1992).

One of the most common and useful conceptualizations of anxiety is the differentiation between state and trait anxiety (Cattell & Scheier, 1958; Spielberger, 1966a, 1972, 1985). Spielberger (1972) defined state anxiety as an "unpleasant emotional state or condition which is characterized by subjective feelings of tension, apprehension, and worry, and by activation or arousal of the autonomic nervous system" (p. 482). State anxiety is a transitory emotional reaction

experienced at a particular moment in time triggered by appraisal of a particular situation or stimulus as dangerous or threatening (Byron & Khazanchi, 2011; Calapoğlu et al., 2011; Spielberger, 1972). State anxiety varies in intensity and fluctuates over time (Spielberger, 1985).

In contrast to state anxiety, Spielberger (1972) defined trait anxiety as "relatively stable individual differences in anxiety proneness as a personality trait" (p. 482). Trait anxiety is more general than state anxiety, and represents a tendency to experience negative emotional states, specifically, those having to do with tension, fear, and worry (Byron & Khazanchi, 2011; Muschalla et al., 2013). Because the focus of this dissertation is trait anxiety at work, antecedents and outcomes of trait anxiety are reviewed in more detail below.

Trait Anxiety Antecedents

There are both biological and social antecedents of trait anxiety. Differences in trait anxiety between individuals can be due to genetic factors (Calapoğlu et al., 2011). Modi et al. (2019) found that the size of an individual's gray matter in the left thalamus and hypothalamus was associated with trait anxiety. Specifically, "a smaller gray matter volume in the hypothalamus and an increase in the gray matter volume of left thalamus is related to a disposition to high anxiety personality trait" (Modi et al., 2019).

Trait anxiety can also be a consequence of exposure to stress during early childhood experiences (Spielberger, 1966a; Trousselard et al., 2014). Childhood family conflict, family insecurity, negative feelings provoked by childhood sexual

abuse, and a lack of supportive parental emotional socialization have been found to predict trait anxiety (Cabecinha-Alati et al., 2019; Cantón-Cortés et al., 2019). Women tend to score higher than men on trait anxiety measures (McLean & Anderson, 2009; Muschalla et al., 2010). This is influenced by factors such as gender role socialization, sociocultural influences, and heightened sensitivity to social cues (McLean & Anderson, 2009).

Trait Anxiety Outcomes

Individuals who are high in trait anxiety are more likely to perceive situations as threatening or dangerous (Byron & Khazanchi, 2011; Spielberger, 1985). People who are high in trait anxiety tend to perceive more danger in situations related to relationships with people, self-esteem, and personal worth, but they don't differ from people low in trait anxiety on their reactions to physical dangers (Spielberger, 1985). Trait anxiety has been linked to lower job satisfaction (Fox & Spector, 1999), negative perceptions of the work environment (Moreno et al., 2006; Turnipseed, 1992), sleep impairment, (Trousselard et al., 2014), stress (Trousselard et al., 2014), negative well-being outcomes (Trousselard et al., 2014), burnout (Turnipseed, 1998), reduced job involvement (Turnipseed, 1992), reduced peer cohesion (Turnipseed, 1992), and counterproductive work behaviors (CWBs) (Fox & Spector, 1999). Individuals high in trait anxiety are also more likely to develop anxiety and depressive disorders (Elwood et al.,2012; Modi et al., 2019).

Highly trait anxious individuals are more susceptible to experiencing state anxiety (Byron & Khazanchi, 2011; Muschalla et al., 2013; Spielberger, 1972).

Whether or not someone high in trait anxiety experiences state anxiety at any given moment depends on their appraisal of the situation (Spielberger, 1966a). Cognitive appraisals of threat and danger play a role in eliciting state anxiety (Spielberger, 1972). Highly trait anxious individuals are more likely to cognitively appraise situations as threatening, regardless of the presence or absence of objective threat, and are therefore more likely to experience state anxiety in a given situation (Spielberger, 1972).

However, highly trait anxious individuals do not *always* appraise situations as threatening (Humphreys & Revelle, 1984; Spielberger, 1972). Spielberger (1972) argued that "the cognitions involved in appraisals and reappraisals of stress situations as threatening" (p. 491) should be taken into account in models of anxiety. It follows that appraisal and reappraisal of cognitions play a role in when individuals with trait anxiety experience high state anxiety.

Trait Anxiety and Similar Constructs

Trait anxiety can be related to the neuroticism/emotional stability dimension of the 5-factor model of personality. Judge and Ilies (2002) defined neuroticism as "…the tendency to show poor emotional adjustment in the form of stress, anxiety, and depression" (p. 798). Neuroticism is associated with worry, a tendency to think negatively, poor emotional adjustment, embarrassment, insecurity, distress, emotional reactivity, depression, and anger (Barrick & Mount, 1991; Judge & Ilies, 2002; Merz & Roesch, 2011; Smillie et al., 2006). Neurotic individuals are more likely to interpret situations pessimistically and are more sensitive than non-

neurotic individuals to emotion-inducing stimuli (Matthews & Gilliland, 1999; Smillie et al., 2006).

While trait anxiety and neuroticism can be and are often measured by different scales (Scheier et al., 1994), some researchers have equated the two. For example, in their meta-analysis of personality and performance, Judge and Ilies (2002) included studies that measured trait anxiety and equated it with neuroticism. Muris (2002) conceptualized anxiety/neuroticism as one construct. Scheier et al. (1994) found that neuroticism and trait anxiety were correlated at .74. Despite this, there are components of neuroticism that are not included in the definition of trait anxiety, such as depression and anger. Anxiety is a component of neuroticism (Uppal, 2007), whereas neuroticism is a broader construct.

Trait anxiety can also be distinguished from trait negative affect in a similar manner. In some cases, trait anxiety has been used interchangeably with negative affect (Fox et al., 2001); however, trait negative affect (like neuroticism) is also defined more broadly than trait anxiety. According to Watson and Clark (1984), trait negative affect is not limited to emotions such as anxiety and worry, but also includes other negative emotions, such as "anger, scorn, revulsion, guilt, self-dissatisfaction, a sense of rejection, and, to some extent, sadness" (p. 465). Watson et al. (1988) defined trait negative affectivity as "a broad and pervasive predisposition to experience negative emotions" (p. 347). Negative trait affectivity has been associated with negative organizational outcomes, such as reduced task performance and increased counterproductive work behaviors (CWBs) (Kaplan et

al., 2009). Barsade and Gibson (2007) emphasized that the effects of negative

affect are often more complex and nuanced than the effects of positive affect and,

at times, "negative affective responses [can] lead to positive organizational

outcomes" (p. 52). Trait anxiety is a more precise construct than trait negative

affect in that it does not inherently include other negative emotions, such as anger

or revulsion; however, given that anxiety is included in definitions of trait negative

affect, it follows that the effects of trait anxiety may also be complex and nuanced.

Situation-specific Anxiety

In addition to state and trait anxiety, which are broad conceptualizations of

anxiety differentiated by whether the anxiety is a stable disposition or a momentary

mood, some researchers have examined anxiety as it relates to specific situations,

stimuli, or environmental factors (Calapoğlu et al., 2011; Muschalla et al., 2013).

Examples include test anxiety, anxiety in regard to social situations, sports-related

anxiety, statistics anxiety, and workplace/job anxiety (Calapoğlu et al., 2011;

Cheng & McCarthy, 2018; Muschalla et al., 2013; Sandoz et al., 2017).

Anxiety Disorders

Anxiety disorders are the most common mental health disorders (Bandelow

& Michaelis, 2015; Odlaug et al., 2009; Turnipseed, 1992). The NIMH (2017)

estimates that approximately 31% of American adults experience an anxiety

disorder at some point in their lives, and approximately 18.1% of American adults

may experience an anxiety disorder any given year. Other estimates suggest that

anywhere from 15-19 million American adults experience an anxiety disorder each

year (Forsyth et al., 2004; Greenberg et al., 1999). An estimated 13.6% of the

European population has a lifetime history of an anxiety disorder (Plaisier et al.,

2010). Globally, 3.6% of the population are estimated to have anxiety disorders

(WHO, 2017). While anxiety disorders are present globally, culture can affect how

anxiety is manifested (Chapa & Triana, 2015; Good & Kleinman, 1985).

Additionally, some have theorized that differences found in anxiety disorder

prevalence across countries could be due to methodology (Bandelow & Michaelis,

2015).

As with trait anxiety, social, genetic, environmental, psychological, and

biological factors all contribute to the development of anxiety disorders (Calapoğlu

et al., 2011; Hettema et al., 2005; Matthews & Gilliland, 1999). Specific risk

factors for the development of anxiety disorders include high perceptions of stress

and high trait anxiety in childhood (Mundy et al., 2015), having a parent with an

anxiety disorder (Lawrence et al., 2019), childhood sexual abuse (Maniglio, 2013),

trauma (Laugharne et al., 2010), and shy temperament (NIMH, 2018).

According to Bandelow and Michaelis (2015), "anxiety disorders start in

childhood, adolescence, or early adulthood until they reach a peak in middle age,

then tend to decrease again with older age" (p. 331).

Women are twice as likely as men to develop an anxiety disorder

(Bandelow & Michaelis, 2015). Specifically, women are more likely to experience

GAD, agoraphobia, panic disorder, PTSD, and specific phobias (McLean &

Anderson, 2009). There are fewer gender differences for OCD and social anxiety

disorder (McLean & Anderson, 2009). Higher rates of anxiety disorders are found in specific populations as well. For example, a recent study found that graduate students were six times more likely to experience depression and anxiety than the general population (Evans et al., 2018). Specifically, "forty-one percent of graduate students scored as having moderate to severe anxiety on [a generalized anxiety] scale as compared to six percent of the general population" (Evans et al., 2018, p. 282).

Medication and therapy have been shown to be useful in the treatment of anxiety disorders (Bandelow & Michaelis, 2015). Despite this, a large number of individuals with an anxiety disorder do not seek out treatment because of the stigma around mental health issues, chronic nature of their symptoms, physical nature of their symptoms, financial barriers, practical organizational barriers to treatment-seeking, and beliefs about the utility of counseling (Adler et al., 2015; Bandelow & Michaelis, 2015; Odlaug et al., 2009; Turnipseed, 1992). Some anxiety sufferers who do seek treatment do so from their primary care doctor, and are often misdiagnosed (Forsyth et al., 2004).

"High-functioning" Anxiety and Generalized Anxiety Disorder

Recently, the idea of "high-functioning anxiety" has been gaining traction in pop psychology and other popular media. Pop psychology can be broadly defined as psychology that is disseminated primarily through popular media, such as magazine articles or television shows (Rasmussen & Ewoldson, 2013). Criticisms of pop psychology include that it is unacademic, watered-down, and, at

worst, not based in a data-driven approach (De Vos, 2015; Griffiths, 1994). On the other hand, pop psychology can be a positive thing in that it is often free of jargon and makes psychology more accessible to a non-academic audience (Griffiths, 1994).

According to internet blog posts and articles, individuals with "high-functioning anxiety" are extremely successful in different domains of life and project an image of being well, but are suffering from anxiety beneath that successful exterior (Cuncic, 2017; Lindberg, 2017; Patel, 2017; Rose, 2017; Wright, 2017). Individuals with "high-functioning anxiety" are described as perfectionists, responsible, productive, overachievers, Type A, driven, constantly busy, detail-oriented, and successful (Morgan, 2017; Patel, 2017; Rose, 2017; Quinn, 2017; Smith, 2018; Wheeler, 2017; Wright, 2017). However, beneath the surface, these individuals are plagued by self-criticism, self-doubt, stress, an obsessive need for control, fear of failure, and an extreme need for validation (Cuncic, 2017; Lindberg, 2017; Morgan, 2017; Quinn, 2017; Smith, 2018; Wheeler, 2017; Wright, 2017).

"High-functioning anxiety" is not a clinical term or medical diagnosis (Cuncic, 2017; Wright, 2017) and the concept has only recently begun to be discussed in research literature (e.g., Mellifont, 2019). In a thematic analysis of news texts on "high-functioning anxiety", Mellifont (2019) determined that some common themes around the concept include good work performance in terms of quality, quantity, and creativity; challenges in terms of overreaching, perfectionism,

overthinking, and communication; and the importance of support such as medication, behavioral support (e.g., exercise and cognitive behavioral therapy), and workplace accommodations.

The described negative symptoms of "high-functioning anxiety" align closely with those of GAD (Lindberg, 2017; Wright, 2017). GAD is characterized by chronic, excessive, and uncontrollable worry across a variety of domains, such as work, school, or relationships (American Psychiatric Association, 2013; Forsyth et al., 2004; Hirsch et al., 2013;). Symptoms of GAD include restlessness, becoming easily fatigued, having trouble concentrating, irritability, muscle tension, and sleep disturbance (American Psychiatric Association, 2013). In order for an official diagnosis of GAD to be made, at least three of the above six symptoms need to be present along with worry "for more days than not for the past 6 months" (American Psychiatric Association, 2013). Additionally, these symptoms need to "cause clinically significant distress or impairment in social, occupational, or other important areas of functioning", and should not be able to be explained by another condition, such as panic disorder or PTSD (American Psychiatric Association, 2013). Approximately 5.7% of American adults experience GAD at some point in their lives (NIMH, 2017). GAD is highly comorbid with specific phobias, panic disorder, social anxiety, depression, and alcohol abuse (Odlaug et al., 2009).

Distinguishing between Pathological and Non-pathological Anxiety. Many studies that have examined anxiety split their samples into dichotomous groups — those with clinical anxiety, and those without it. These two groups of

individuals have been described as clinical populations with diagnosed mood or anxiety disorders versus "healthy" (Hendriks et al., 2015; Picó-Pérez et al., 2017), "normal" (Matthews & Gilliland, 1999), or "nonclinical" populations (McLean & Anderson, 2009). This categorization oversimplifies the realities of anxiety; the actual distinctions between individuals with anxiety are often not that clear-cut. Three recent studies have explored this issue (Bandelow & Michaelis, 2015; Hirsch et al., 2013; Marcus et al., 2014). Some early seminal research on anxiety also alluded to the problem of dichotomizing individuals with anxiety. Early researchers, including Freud, used the term "anxiety neurosis" to indicate pathological anxiety (Beck, 1976; Spielberger, 1966a, 1972). Beck (1976) asserted that, to some extent, categorizing reactions to situations as normal or abnormal is subjective.

The DSM and International Classification of Diseases (ICD-10) cutoff scores for a diagnosis of an anxiety disorder can make it difficult to distinguish between what is pathological and what is not (Bandelow & Michaelis, 2015). There is some debate as to whether GAD specifically is its own distinct condition or simply the manifestation of an extreme end of the continuum of trait anxiety or neuroticism (Marcus et al., 2014). Marcus et al. (2014) found evidence for GAD being representative of the far end of a continuum, rather than a dichotomous construct. Based on their findings, they concluded that the diagnostic threshold for GAD is arbitrary and asserted that "dichotomizing individuals into GAD and non-

GAD groups will typically result in decreased statistical power" (Marcus et al., p. 366).

Similarly, dichotomizing individuals into clinical and nonclinical populations influences the estimated prevalence of anxiety disorders. Not everyone who meets the criteria for anxiety disorders actually seeks treatment and thus has a diagnosis of a disorder (Hirsch et al., 2013; Karpinski et al., 2017). There are a variety of reasons for this. Individuals may seek treatment because of severity of symptoms or less tolerance for worry (Hirsch et al., 2013). Individuals may not seek treatment because of the stigma often associated with mental health disorders. Systemically, in order for healthcare providers to be paid by insurance companies, they are required to provide a diagnosis code that matches up with an ICD-10 code (T.J. Goyenechea, personal communication, April 8, 2019). Given this, some individuals may be categorized as being in the clinical population just by having sought treatment. Dividing individuals into binary categories of either having an anxiety disorder or not having one may not accurately represent the nature of individual differences in anxiety.

Additionally, individuals with anxiety disorders are often misdiagnosed at first (Bandelow & Michaelis, 2015). Some have argued that, due to this, the prevalence of anxiety disorders in the population may actually be underrepresented (Bandelow & Michaelis, 2015). Prevalence rates of anxiety disorders also vary by the instruments used to diagnose them, culture, and the interviewer/assessor (Bandelow & Michaelis, 2015). One WHO study found that "only approximately

half of the cases of anxiety disorders have been recognized" (Bandelow &

Michaelis, 2015, p. 332).

Symptoms of anxiety and the impairment resulting from anxiety disorders

can also vary (NIMH, 2017). Sarason (1985) noted that individuals who do not

have an anxiety disorder can occasionally experience incapacitating anxiety.

According to Forsyth et al. (2004), "…the extent of impairment and distress may

wax and wane depending on the circumstances" (p.103).

Some studies have explored or accounted for the problem with this

dichotomous characterization. Karpinski et al. (2017) asked their study participants

not only if they had been diagnosed with an anxiety disorder, but also if they

suspected they should be with the goal of "providing a more complete

representation of prevalence" (p. 4). Hirsch et al. (2013) compared a group of

individuals being treated for GAD, a group of individuals who met the diagnostic

criteria for GAD but had not been diagnosed with it, and a group of individuals

who had similar levels of worry but did not necessarily meet the criteria for GAD.

They found that the individuals with GAD had more negative beliefs about worry,

less cognitive confidence, more need for control, and higher levels of trait anxiety

(Hirsch et al, 2013). The individuals who met the criteria for but weren't being

treated for GAD also had higher trait anxiety than the worriers who did not meet

GAD criteria (Hirsch et al., 2013). According to the authors, "the main factors

assessed here that differentiated those with GAD…from high worriers without

GAD were elevated trait anxiety and reduced ability to prevent particularly

distressing thoughts" (Hirsch et al., 2013, p. 394). A 2007 meta-analysis found no

difference in threat-related bias between clinically anxious and nonclinical self-

reported high anxiety populations (Bar-Haim et al.). The authors concluded "these

findings suggest that an official clinical cutoff is of little significance with regard to

biased attentional processes in anxious individuals" (Bar-Haim et al., 2007, p. 16).

Mental Health Issues and Anxiety in the Workplace

Mental health in the workplace has been described as a "public health issue"

(Murcia et al., 2013, p. 319). Anxiety in the workplace can manifest as irritability,

disorganization, fear and avoidance of social interactions, nervous habits, a need for

reassurance, and difficulties with concentration (Grover, 2019; Stein & Hollander,

2003). Since anxiety disorders are prevalent in the general population, it follows

that they are also prevalent in the workplace (Turnipseed, 1992). It has been

estimated that 16% of the US workforce suffers from an anxiety disorder (Forsyth

et al., 2004). Again, this number only represents those who have an official

diagnosis of an anxiety disorder and does not account for the large number of

individuals who struggle with anxiety but do not seek treatment (Forsyth et al.,

2004). It has been estimated that only 37% of employees with anxiety disorders

actually receive treatment (Grover, 2019). A 2019 survey of more than 1800

American employees found that behavioral health insurance claims relating to

anxiety have increased 10% from 2015 to 2018 (Grover, 2019).

These numbers are likely to increase in the wake of the COVID-19

pandemic. A recent *Time* magazine article predicted that an anxiety pandemic

would follow the COVID-19 pandemic, and reported that a number of mental health professionals were anecdotally reporting increased anxiety in their patients (Kluger, 2020). A number of recent surveys have found increased stress and anxiety levels in American workers in response to the pandemic (APA, 2020a; Gavidia, 2020; Mayer, 2020). A survey conducted by Ginger, a mental health provider, found that seven in 10 employees cited the COVID-19 pandemic as the most stressful time in their career, even when compared to other major events including September 11 and the Great Recession (Mayer, 2020). A survey conducted by Express Scripts found that prescriptions for anti-anxiety medications have increased by approximately 37% during the pandemic (Gavidia, 2020). Finally, the APA's annual Stress in America survey found that American stress levels were significantly higher in the 2020 survey, which was conducted during the height of the pandemic, than in the 2019 survey (APA, 2020a).

Anxiety in Specific Professions

Some studies have examined the prevalence of anxiety in specific professions. Sanderson and Andrews (2006) found higher rates of anxiety disorders for clerical workers than for professionals, managers, and craftspeople. A number of studies and anecdotal articles have discussed high rates of anxiety in academia, both among faculty and graduate students (Evans et al., 2018; Barton, 2011; Levecque et al., 2017; Flaherty, 2017; Wilcox, 2014). Campbell (2018) pointed out that there are many anecdotal articles about mental health issues in academia, but that the majority of them take the form of anonymous blog posts due to fear of

disclosure. Peter Railton, a prominent and decorated philosophy professor who disclosed his depression in a 2017 article, compared the culture of mental health in academia to the military "don't ask, don't tell" policy (Flaherty, 2017). Other articles have echoed this idea that many academics and doctoral students are quiet about struggles with anxiety because of stigma (Anonymous, 2014; England, 2016; Wilcox, 2014).

Employee Disclosure

Employees often neither disclose mental health issues at work nor use employee assistance programs (EAPs) due to stigma, lack of understanding, and dismissiveness from managers and colleagues (Aarons-Mele, 2018; Haslam et al., 2005). Additionally, some individuals fear that disclosing mental health issues will lead to repercussions in the form of negative appraisals about their performance, ability, reputation, and trustworthiness; diminished promotion and professional development opportunities; and rejection (Britt, 2000; Britt et al., 2008; Paton, 2017; Shann et al., 2018). Britt et al. (2008) found that perceiving a stigma around mental health disorders can positively influence the relationship between experiencing stress and stressors at work and psychological symptoms. However, research has shown that the majority of employees with anxiety issues are able to work, especially when undergoing treatment to reduce symptoms (Sanderson et al., 2008; Stein & Hollander, 2003).

Workplace/Job Anxiety

A number of researchers (e.g., Cheng & McCarthy, 2018; McCarthy et al., 2016; Muschalla et al., 2010, 2013) have specifically examined anxiety within the workplace. This type of anxiety has been referred to as work-related anxiety (Linden & Muschalla, 2007), workplace-related anxiety (Linden & Muschalla, 2007), work anxiety (Muschalla, 2017; Muschalla et al., 2020), job anxiety (Jones et al., 2016; Mannor et al., 2016; Muschalla & Linden, 2008; Muschalla et al., 2010, 2013), job-related anxiety (Zalewska, 2011), and workplace anxiety (Calderwood et al., 2018; Cheng & McCarthy, 2018; McCarthy et al., 2016). Definitions of this type of anxiety share one important characteristic: this anxiety is domain-specific, and that specific domain is one's job or workplace (Calderwood et al., 2018; Mannor et al., 2016; McCarthy et al., 2016; Cheng & McCarthy, 2018; Linden & Muschalla, 2007; Muschalla et al., 2010, 2013; Zalewska, 2011). That is, workplace or job anxiety is anxiety that is specifically related to one's job or workplace and work-related events, situations, performance, and tasks, and differs from other general conceptualizations of anxiety that affect all domains of life (Linden & Muschalla, 2007; Muschalla et al., 2013).

Workplace/Job Anxiety: State or Trait? Conceptualizations of workplace/job anxiety differ on one critical characteristic: whether it is conceptualized as state or trait-like, or whether that distinction is made at all. According to Bushman et al. (2005), anxiety researchers have often failed to distinguish between state and trait anxiety, which often leads to conceptual and

empirical ambiguity. Research efforts by Muschalla and associates (Muschalla et al., 2010, 2013) have viewed job anxiety as a type of state anxiety "…related to and occurring in the workplace or when thinking of the workplace" (Muschalla et al., 2010, p. 366). They have argued that job anxiety is a type of state anxiety because it is generated by a stimulus—the workplace (Muschalla et al., 2013).

In contrast, research efforts by McCarthy and associates (Cheng & McCarthy, 2018; McCarthy et al., 2016), as well as by Zalewska (2011) have viewed workplace/job anxiety as an umbrella construct that can be separated into a state-like and a trait-like dimension. The state-like dimension of workplace/job anxiety has been referred to as situational workplace anxiety, defined as "transient feelings of anxiety in specific workplace situations" (Cheng & McCarthy, 2018, p. 539) and as situational job-related anxiety, or "the intensity of recently experienced tension at the workplace [and] emotional reactions to current situations at the workplace" (Zalewska, 2011, p. 978). The trait-like dimension of workplace/job anxiety has been referred to as dispositional workplace anxiety, defined as "individual differences in feelings of nervousness, uneasiness, and tension about job performance" (Cheng & McCarthy, 2018, p. 539) and as persistent job-related anxiety, or "proneness to experience anxiety at the workplace [and] the acquired inclination to perceive the job as a source of potential threats and to react with anxiety" (Zalewska, 2011, p. 978).

In examining these two perspectives on workplace/job anxiety, it is useful to revisit the original distinctions between state and trait anxiety. According to

Spielberger et al. (1983), "emotional state[s] exist at a given moment in time and at a particular level of intensity" (p. 4). State anxiety is a transitory emotional reaction experienced at a particular moment in time (Byron & Khazanchi, 2011; Calapoğlu et al., 2011; Mueller, 1992; Spielberger, 1972). In contrast, traits are "relatively stable individual differences among people in the tendency or disposition to respond in specifiable ways to particular circumstances of situations" (Bushman et al., 2005, p. 78). Trait anxiety is a relatively stable personality trait having to do with individual proneness to anxiety (Spielberger, 1972).

Muschalla et al. (2013) argued that job anxiety is a type of state anxiety because it is generated by the workplace situation as a stimulus. However, this does not account for the transitory emotional reaction component of state anxiety. Situation-specific anxiety is not synonymous with state anxiety (Calapoğlu et al., 2011). Additionally, other situation or domain-specific types of anxiety, such as social and test anxiety, have not been conceptualized as types of state anxiety (Calapoğlu et al., 2011). For example, Spielberger and Vagg (1995) conceptualized test anxiety as a "situation-specific anxiety trait" (p. 8), as opposed to a type of state anxiety.

Findings on Job/Workplace Anxiety. There have been some broad findings on job/workplace anxiety, regardless of whether it is conceptualized as a state or a trait-like construct. Individuals with anxiety disorders or who are higher in trait anxiety may be more likely to experience job or workplace anxiety (Linden & Muschalla, 2007; Mannor et al., 2016; Muschalla et al., 2010). At the same time,

employees who do not have other anxiety issues or who have low trait anxiety can still experience job or workplace anxiety (Linden & Muschalla, 2007; Muschalla et al., 2013; Muschalla, 2017).

Using the Workplace Anxiety Scale, McCarthy et al. (2016) found that emotional exhaustion mediated the negative link between workplace anxiety and job performance, and that coworker exchange buffered the relationship between workplace anxiety and emotional exhaustion. Using the same scale, Calderwood et al. (2018) found that affective rumination mediated the negative relationship between work anxiety and coworker-rated helping behaviors.

Workplace/Job Anxiety and Trait Anxiety Distinctions. Despite a lack of agreement on whether workplace/job anxiety is a state or a trait, there is evidence that it is distinct from the trait anxiety construct examined in this study. Research has been done comparing Muschalla and Linden's (2008) Job Anxiety Scale to the trait anxiety subscale of Spielberger et al.'s (1983) State-Trait Anxiety Inventory (STAI-T) (Muschalla et al., 2010, 2013), but not to the same measure's state anxiety subscale (STAI-S). Muschalla et al. (2010) found that the Job Anxiety Scale mean score was correlated with the STAI-T at 0.69, and that different dimensions of the Job Anxiety Scale correlated differently with the STAI-T. Specifically, the dimensions of interactional anxiety, cognitions of insufficiency, and global job anxiety were more highly correlated with the STAI-T than other dimensions of the Job Anxiety Scale (Muschalla et al., 2010). They also found that job anxiety and trait anxiety differentially predicted employee sick leave: job

anxiety was significantly negatively correlated with duration of employee sick leave, while trait anxiety was not (Muschalla et al., 2010). Another study found individuals who scored high on the STAI-T but not the Job Anxiety scale, indicating that "people who are not anxious in general can be anxious in the specific workplace setting" (Muschalla et al., 2013, p. 420). Based on these studies, it has been concluded that job anxiety is a specific type of anxiety (Muschalla et al., 2010, 2013) separate from trait anxiety.

McCarthy et al. (2016) and Cheng and McCarthy (2018) asserted that workplace anxiety differs from both trait anxiety and state anxiety. According to McCarthy et al. (2016),

> "workplace anxiety is conceptually and empirically related to other types of anxiety and affective constructs, but it is not redundant with these constructs. It is distinct from state-based anxiety because in contrast to a transient situation-specific trait, it reflects general feelings of work-related anxiety that manifest over time. It differs from general trait anxiety because workplace anxiety reflects an evaluative-based anxiety that is workplace specific" (p. 280).

The current study is focused on trait anxiety rather than on job/workplace anxiety because it seeks to explore how an individual's broad tendency to be anxious, regardless of whether not that anxiety is specifically related to their job or the workplace, affects their performance, well-being, and motivation.

Effects of Anxiety in the Workplace

Generally, anxiety can affect the workplace in a number of ways. Anxiety disorders in the workplace have been estimated to cost 42.3 billion each year, 10% due to absenteeism and productivity, the rest to medical costs (Forsyth et al., 2004). Clinical anxiety in the workplace has been linked to short and long-term absenteeism and presenteeism (Bouwmans et al., 2014; Forsyth et al., 2004) and diminished productivity (Forsyth et al., 2004). Physical symptoms of anxiety in the workplace have been linked to burnout and diminished productivity (Murphy et al., 2006). State-like job or workplace anxiety has been linked to absenteeism (Jones et al., 2015; Muschalla et al., 2013), avoidance behaviors (Muschalla et al., 2013), negative views of the workplace (Muschalla, 2017) Trait-like job or workplace anxiety has been linked to reduced job performance (McCarthy et al., 2016) and diminished risk-taking behavior (Mannor et al., 2016). State anxiety in the workplace has been linked to burnout (Turnipseed, 1998). One study found that when state anxiety was induced in employees, they were more likely to participate in unethical acts, such as cheating, through increased threat perception (Kouchaki & Desai, 2015). Trait anxiety in the workplace has been linked to burnout (Turnipseed, 1998).

There are some causal chain questions related to anxiety in the workplace. Levecque et al. (2017) described this issue in a study about the prevalence of mental health issues in Ph.D. students as compared to the general population. Are the higher rates of mental health issues among Ph.D. students because anxious

people are more likely to enter doctoral programs, anxious people are more likely

to view their environment as negative, or is it something about the environment that

causes the anxiety? (Levecque et al., 2017). There is research and theory that

supports each of these theories. Turnipseed (1992) found that trait anxiety can

affect perceptions of the work environment. Specifically, he found that nurses

higher in trait anxiety perceived higher levels of work pressure (Turnipseed, 1992).

Spector et al. (1995) found that "individuals high in trait anxiety were more likely

to be found in jobs characterized by lower levels of autonomy, skill variety, task

identity, feedback, task significance, and complexity than individuals with low

levels of anxiety" (p. 63) and theorized that those higher in trait anxiety "would be

hesitant to seek out a challenging job…" (p. 60).

Sanderson et al. (2008) found support for the role of environmental factors

in predicting mental health in the workplace. Using the International Classification

of Functioning, Disability, and Health (ICF) framework, they found that mental

health symptoms were more likely to be an outcome than a predictor of functioning

(Sanderson et al., 2008). Specifically, they found that "[the] work environment

predicted worse mental health but did not find support for a reverse association"

(Sanderson et al., 2008, pp. 1295-6).

Mitigating Anxiety in the Workplace

Mitigating anxiety in the workplace can take the form of specific

accommodations, training programs, and cultural change. Specific accommodations

include employee assistance programs (EAPs), flexible hours, work modification,

and onsite counseling (Aarons-Mele, 2018; Kuhl, 2019; Haslam et al., 2005). Aarons-Mele (2018) gave an example of a successful employee with panic disorder who received accommodation in the form of receiving written feedback prior to meetings. Barton (2011) found that exercising three times a week protected against anxiety in graduate students and suggested that this finding can be utilized in health promotion programs. Training programs to mitigate anxiety in the workplace can focus on communication, coping skills, relaxation, workload management, mental health education, identification of stressors, work-life balance, availability of mental health resources, managing strain, and perfectionism (Grover, 2019; Haslam et al., 2005; Melchior et al., 2007; Murphy et al., 2006; Muschalla et al., 2013; Stein & Hollander, 2003; Wilcox, 2014).

One of the most significant cultural changes workplaces can promote in order to mitigate anxiety is reducing the stigma around mental health issues. This can be achieved through open conversation about and acknowledgement of mental health issues, exhibiting compassion toward those with mental health issues, and education about mental health issues (Aarons-Mele, 2018; Kuhl, 2019; Grover, 2019; Muschalla et al., 2013). Some employees do not disclose mental health issues in the workplace precisely because of the stigma or fear of judgement from colleagues (Evans et al., 2018). Britt et al. (2008) found that overload at work can predict depression when perceived stigma and barriers to care are high. Aarons-Mele (2018) described training sessions in which senior leaders in an organization acknowledged their mental health issues as a way of demonstrating that they are

not always a detriment to success. Additionally, some have argued that acknowledging anxiety in the workplace helps employees manage it and perform well (Aarons-Mele, 2018). Other workplace characteristics that can mitigate the effects of anxiety include social support, positive team climate, and managerial support (Haslam et al., 2005; Muschalla et al., 2013).

Anxiety and Performance

There is a dominant idea that all types of anxiety are consistently bad for performance across different contexts (Brady et al., 2018; Cheng & McCarthy, 2018; Mueller, 1992). Despite the persistence of this idea, the literature is quite clear that the relationship between anxiety and performance is not so straightforward. Over the last three decades, various researchers have pointed out that findings on the relationship between anxiety and performance have been complex, varied, and inconsistent (Cheng & McCarthy, 2018; Eysenck & Calvo, 1992; Mellifont, et al., 2016a; Mueller, 1992; Seipp, 1991; Strack et al., 2017). One potential reason for these inconsistent findings is that researchers sometimes do not explicitly define the conceptualization of anxiety being examined (Bushman et al., 2005; Seipp, 1991; Spielberger, 1966a) Many broadly refer to "anxiety" but do not differentiate between state or trait anxiety (Bushman et al., 2005) or make broad claims about anxiety and performance based on results found for specific types of anxiety and performance (Seipp, 1991).

Broadly, anxiety has been shown to hinder performance, help performance, or have no effect on performance (Humphreys & Revelle, 1984; Maloney et al.,

2014; Mellifont et al., 2016a, 2016b; Seipp, 1991). Humphreys and Revelle (1984) and Mellifont et al. (2016a, 2016b) did not differentiate between trait and state anxiety in their assessments of these inconsistent results, however, their research focused on anxiety as a personality dimension (i.e., a trait) and anxiety disorders, respectively. Maloney et al. (2014) specifically noted inconsistent findings between state anxiety and performance. Given these inconsistencies, a number of researchers have called for examining moderating mechanisms and other underlying processes of the anxiety-performance relationship (Mueller, 1992; Owens et al., 2014; Strack et al., 2017). Research on anxiety and performance has taken place across different contexts and using different conceptualizations of both anxiety and performance.

Anxiety and Academic Performance

There is a relatively large body of research on the relationship between anxiety and academic performance. In a meta-analysis, Seipp (1991) found an effect size of -.21 between anxiety and academic performance. The effects of both trait and state anxiety on academic performance were essentially the same (Seipp, 1991). This is consistent with another meta-analysis (Hembree, 1988) that found that test anxiety negatively impacts performance in average students.

Spielberger (1966b) carried out a number of experiments on anxiety and academic performance. At the time, he referred to anxiety as "a complex hypothetical construct for which the most meaningful and unambiguous empirical referent was a particular state or condition of the human organism" (p. 363). This

implies that he examined state anxiety. However, there is some lack of clarity about the type of anxiety the scale used in his studies on anxiety and academic performance, the Manifest Anxiety Scale (MAS) (Taylor, 1953). The MAS was created with clinicians and has been classified as a measure of trait anxiety (Herts & Beilock, 2017). The scale contains items such as "I worry quite a bit over possible misfortunes" and "I frequently find myself worrying about something" (Taylor, 1953). These statements imply measurement of trait anxiety because they do not refer to transitory emotional states. Given this, it would appear that Spielberger's (1966b) studies on anxiety and academic performance provided information about the relationship between trait anxiety and academic performance. Using the MAS, Spielberger (1966b) found that anxiety can interfere with test performance, especially with more complex test questions. However, Spielberger (1966b) actually found both academic performance enhancements and deficits for highly anxious students. Specifically, he found that high anxiety (as measured by the MAS) impaired mid-range ability student performance, did not significantly affect low ability student performance, and actually helped high ability student performance (Spielberger, 1966b).

Other studies have also found positive relationships between trait anxiety and academic performance. Calapoğlu et al. (2011) found that students with the highest levels of trait anxiety had the highest academic performance, and those with the lowest levels of trait anxiety had the lowest academic performance. Using a sample of Oxford University students, Mellanby and Zimdars (2011) found that

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women who were high in trait anxiety performed better in terms of test performance and final degree completion than those who were low in trait anxiety. The same results did not hold for men (Mellanby & Zimdars, 2011).

Anxiety and Other Types of Performance

The anxiety-performance relationship has also been examined in other specific types of performance domains. Salthouse (2012) found that individuals higher in trait anxiety performed more poorly on some cognitive ability and working memory tests, but the effects were small. Byron and Khazanchi (2011) found that anxiety negatively affects creative performance, and that trait anxiety is worse for creative performance than state anxiety. A 1990 meta-analysis (Kleine) found a small negative relationship between anxiety, including both state and trait measures, and sports performance. When the effect of anxiety on sport performance was broken down by different anxiety measures, state anxiety was found to have a slightly larger negative effect than trait anxiety (Kleine, 1990). In contrast to that Kleine's (1990) findings, Hardy and Hutchinson (2007) found that an increase in performance anxiety in rock climbers led to more effort, which actually enhanced performance. Another study found a curvilinear relationship between somatic intensity of state anxiety and performance on a golf-putting task (Chamberlain & Hale, 2007). Notably, there have been some findings in which highly trait anxious individuals perform just as well as others but are less efficient and may need more time to achieve the same level of performance on cognitive tasks (Owens et al., 2014).

Anxiety and Job Performance

There are also contradicting findings in the research on the relationship between anxiety and job performance. The research on anxiety and job performance is plagued by the same issues as general research on anxiety and performance, such as not specifying the type of anxiety being examined, generalizing about different types of anxiety, and making broad conclusions based on narrow measures. In a meta-analysis, Ford et al. (2011) found that the overall relationship between anxiety and work performance was -.18. However, they did not differentiate between different types or measures of anxiety in the studies included in their meta-analysis (Ford et al., 2011). In their study, anxiety included studies that measures psychological strain, unspecified anxiety, lack of comfort, tension, and perceived stress (Ford et al., 2011). At the same time, they asserted that their study examined anxiety as "a chronic affective state" (Ford et al., 2011, p. 189). Notably, they found that "With the exception of task performance, there was considerable variability in the anxiety-performance effect sizes" (Ford et al., 2011, p. 195). This variability may be due to the different types of anxiety and related constructs included in the meta-analysis. Finally, they asserted that general psychological well-being is a stronger predictor of work performance than are specific facets of well-being, such as anxiety, depression, and psychological disorders.

Clinical Anxiety and Job Performance. There is a large body of research on the effects of clinical anxiety disorders on job performance. As noted earlier,

research has shown that the dichotomous distinction between clinical and nonclinical anxiety is not always useful or accurate (Bandelow & Michaelis, 2015; Bar-Haim et al., 2007; Marcus et al., 2014). However, the literature on the relationship between clinical anxiety and job performance outcomes illuminates some of the potential performance impacts of anxiety in the workplace. The majority of research in this context discusses the deleterious effects of clinical anxiety on job performance. A number of studies have shown a negative effect of clinical anxiety disorders on workplace performance (e.g., Erickson et al., 2009; Greenberg et al., 1999; Hendriks et al., 2015; Plaisier et al., 2010, 2012). Anxiety disorders in employees can affect absenteeism, presenteeism, job productivity, organization, work disability, planning, time management, and work functioning (Bouwmans et al., 2014; Kuhl, 2019; Hendriks et al., 2015; Plaisier et al., 2010, 2012; Waghorn & Chant, 2006). In a sample of employees with clinical anxiety disorders, Bouwmans et al. (2014) found that 12.5% reported short-term absenteeism, 29.2% reported long-term absenteeism, and 27% reported presenteeism. In another study, 32.9% of a sample of employees with clinical anxiety disorders reported work interference (Esposito et al., 2007).

Other symptoms associated with clinical anxiety disorders and some medications used to treat them that can also negatively impact employee performance include poor sleep, headaches, dizziness, lethargy, difficulty concentrating, lack of motivation, confusion, and indecision (Kuhl, 2019; Haslam et al., 2005). One Australian study found that receiving treatment for mental health

disorders was actually associated with decreased work performance (Waghorn & Chant, 2011). Employees with more severe anxiety and those who have a depressive disorder comorbid with a clinical anxiety disorder are more likely to have impaired work performance (Erickson et al., 2009; Plaisier et al., 2012).

However, the relationship between clinical anxiety disorders and employee performance may not be as dire as some studies suggest. Jones et al. (2016) were unable to link psychological health to employee productivity. Esposito et al. (2007) actually found lower levels of presenteeism (defined as when an employee "although impaired by physical or psychological health problems, comes to work regardless"; Gosselin et al., 2013, p. 75) in individuals with clinical anxiety disorders than individuals in the general population they studied and argued that mental health issues can have a more detrimental effect on social situations than on occupational ones. According to the WHO (2002), the organization that developed and maintains the International Classification of Functioning, Disability, and Health (ICF), "…the presence of a disease or a disorder is [not] an accurate predictor of receipt of disability benefits, work performance, [or] return to work potential…" (p. 4). Finally, anxiety and other mental health disorders are common among academics and graduate students (Evans et al., 2018; Wilcox, 2014), populations that are generally viewed as high performing.

Nonclinical Anxiety and Job Performance. Many studies have also examined the effects of nonclinical anxiety on employee performance. A number of these studies have specifically examined state anxiety. Kouchaki and Desai (2015)

found that employees with induced state anxiety were more likely to engage in cheating and unethical behavior. Some studies have shown that police officers experiencing state anxiety perform worse on job tasks (Nieuwenhuys & Oudejans, 2010; Renden et al., 2014; Renden et al., 2017).

Other studies have specifically examined trait anxiety. Reio and Callahan (2004) found that trait anxiety alone was not significantly related to job performance but was significantly negatively related to trait curiosity. Since trait curiosity was positively related to job performance, they argued that "high trait anxiety might be more likely to be associated with lower trait curiosity, which would negatively influence…perceived job performance" (Reio & Callahan, 2004, p. 17). Similarly, Renden et al. (2017) found that trait anxiety did not affect job performance directly, but it did predict state anxiety, which negatively affected job performance. In a study of insurance salespeople, Mughal et al. (1996) found that employees high in trait anxiety exerted more effort, which led to better sales performance. In another study, some employees reported better job performance when their anxiety was high (Mellifont et al., 2016a). Another study conducted by Eysenck and Derakshan for the British Economic Social and Research Council (ESRC) found no differences in task performance between anxious individuals and non-anxious individuals (ESRC, 2009). Notably, in this study, anxiety did affect the amount of time individuals took to perform a task, with anxious individuals taking longer (ESRC, 2009).

Some research has examined the effect of anxiety in interview performance. Anxiety during job interviews can negatively affect job interview performance and result in poor selection decisions (McCarthy & Goffin, 2004). A 2018 meta-analysis (Powell et al.) found a negative relationship between job interview anxiety and job interview performance. Specifically, state anxiety had more of a detrimental effect on job interview performance than trait anxiety (Powell et al., 2018).

Other studies have examined the relationship between job or workplace anxiety and performance. Muschalla et al. (2010) found that workplace anxiety might be more detrimental in the workplace than general trait anxiety. Specifically, they found that workplace anxiety was specifically related to sick leave duration, but trait anxiety was not (Muschalla et al., 2010).

Moderation in Anxiety-Performance Relationships

The research reviewed above suggests a great deal of inconsistency in the anxiety-performance relationship, including negative, positive, and neutral/non-significant relationships. While part of this variability may be due to the use of different conceptualizations of anxiety and performance, research also suggests that the relationship between anxiety and performance may be moderated by a number of different factors. For example, working memory capacity has been found to buffer the negative relationship between trait anxiety and performance (Johnson & Gronlund, 2009; Owens et al., 2014). Strack et al. (2017) found that interpreting state anxiety as facilitative moderated the relationship between state anxiety and

stress appraisal and was positively associated with academic performance. McCarthy et al. (2016) found that emotional exhaustion mediated the relationship between workplace anxiety and job performance, coworker exchange buffered the negative effect of workplace anxiety on emotional exhaustion, and that leader-member exchange (LMX) buffered the negative effect of emotional exhaustion on job performance.

Treatment for mental disorders have been associated with eventual improved employee productivity (Hilton et al., 2009). Additionally, Plaisier et al. (2012) found that the relationships between clinically depressed and anxious employees and poor performance were weaker for employees who reported high job support, high job control, fewer working hours, were self-employed, and worked in highly skilled jobs. Sandoz et al., (2017) found that willingness to engage in statistics anxiety-provoking situations and the importance placed on statistics anxiety provoking situations moderated the relationship between statistics anxiety and statistics quiz performance such that quiz scores were improved when willingness and importance were high.

Results of some studies suggest that intelligence may also be a moderator of the anxiety-performance relationship. For example, when controlling for cognitive ability, Salthouse (2012) found that there were no differences in performance based on individual trait anxiety level. Perkins and Corr (2005) found that, for individuals high in cognitive ability, worrying was associated with better work performance. Spielberger (1966b) found that high anxiety actually had a

facilitative effect on course grades for high-aptitude students. Owens et al. (2014) found that trait anxiety was related to impaired cognitive test performance when working memory capacity was low but was actually associated with higher cognitive test performance when working memory capacity was high.

There is also evidence that the anxiety-performance relationship can depend on other factors, such as task difficulty and gender. Mueller (1992) found that highly anxious individuals outperformed low anxiety individuals on easy tasks, but not on difficult ones. Mellanby and Zimdars (2011) found that women who were high in trait anxiety performed better in terms of test performance and final college degree completion than those who were low in trait anxiety; however, the same findings did not hold for men.

Despite these findings, there are some inconsistencies in the research. Seipp (1991) tested gender, culture, and anxiety stability (state versus trait) as moderators in the relationship between anxiety and academic performance but found no moderation effects. Waghorn and Chant (2006) found that receiving treatment for mental health issues was actually associated with reductions in performance. However, Hilton et al. (2009) asserted that initial mental health treatment can negatively affect employee performance but returns to a baseline performance level "once mental health symptoms have been remitted" (p. 1002).

Other Related Variables

It is useful to review studies that have examined variables related to anxiety (e.g., neuroticism) and their relationship to performance, as well as studies that

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have examined links between anxiety and other variables that are related to performance. In their seminal meta-analysis, Barrick and Mount (1991) found very small relationships between emotional stability (i.e., the opposite of neuroticism) and job performance. Additionally, for professional jobs, which included engineers, architects, attorneys, accountants, teachers, doctors, and ministers, neuroticism was actually positively associated with job performance. Judge and Ilies (2002) found that neuroticism was negatively related to performance motivation and suggested that neuroticism would thus negatively affect performance. In a meta-analysis, Hurtz and Donovan (2000) found a small but positive relationship between emotional stability and performance.

A number of studies have found a positive relationship between anxiety and cognitive ability, which is widely known as the most valid predictor of job performance (Hunter & Hunter, 1984; Schmidt & Hunter, 1998). Using a sample of Mensa members, Karpinski et al. (2017) found that having a high IQ was linked to a greater risk for anxiety disorders. Specifically, these individuals were 8.94 times more likely than the general population to experience GAD symptoms, 5.74 times more likely than the general population to be diagnosed with GAD, 10.9 times more likely than the general population to experience OCD symptoms, and 3.3 times more likely than the general population to be diagnosed with OCD (Karpinski et al. 2017). Interestingly, these highly intelligent individuals were less likely to be diagnosed with social anxiety than the general population (Karpinski et al., 2017). Other studies have found positive associations between cognitive ability

and worrying (Perkins & Corr, 2005) and between verbal intelligence, worry, and rumination (Penney et al., 2015).

Finally, support for the presence of variables that moderate the relationship between anxiety and performance can also be found in this research examining related variables. Debusscher et al. (2014) found that the relationship between neuroticism and task performance was moderated by the complexity of the task such that low neuroticism was beneficial in demanding tasks, and moderate neuroticism was beneficial in less demanding tasks. Jex (1998) suggested that the variety of results found in the stress-performance relationship may indicate moderation. Specifically, studies have shown that self-esteem and organizational commitment can buffer the stressor-performance relationship (Jex, 1998).

Explaining the Anxiety and Performance Relationship

Many researchers have attempted to explain the complicated relationship between anxiety and performance. Some theoretical attempts to explain the relationship between anxiety and performance suffer from the same issues empirical research on the topic does, namely, using "anxiety" as a broad term without differentiating between different types (i.e., trait and state anxiety, anxiety and stress). Some attempts to explain the anxiety and performance relationship have broadly examined the roles of motivation, cognition, resources, and environmental characteristics. Additionally, several specific theories have been used to explain the relationship between anxiety and performance, including the Yerkes-Dodson law (Yerkes & Dodson, 1908; Mueller, 1992), cognitive

interference theory (Sarason, 1984), processing efficiency theory (Eysenck & Calvo, 1992), attentional control theory (Eysenck et al., 2007), and the theory of workplace anxiety (Cheng & McCarthy, 2018).

Anxiety and Motivation

Some researchers have attempted to explain the relationship between anxiety and performance using motivation as an explanatory mechanism. Most of this research focused specifically on trait anxiety (e.g., Humphreys & Revelle, 1984; Mughal et al., 1996; Perkins & Corr, 2005; Strack et al., 2017), although some included state anxiety (e.g., Bar-Haim et al., 2007) or clinical anxiety disorders (e.g., Plaisier et al., 2010). The hyper vigilance, self-discipline, behavioral regulation, planning, increased attentional focus associated with individuals high in trait anxiety can motivate them to perform well (Cheng & McCarthy, 2018; Perkins & Corr, 2005; Strack et al., 2017). On the other hand, some of these same characteristics can be distracting and lead to performance deficits (Cheng & McCarthy, 2018). Humphreys and Revelle (1984) argued that that trait anxiety negatively impacts performance because of its negative effect on motivation.

Individuals high in trait anxiety are also highly attuned to threat (Bar-Haim et al., 2007; Mughal et al., 1996; Perkins & Corr, 2005). A 2007 meta-analysis found that both trait and state anxiety led to increased threat perception (Bar-Haim et al.). Performance can be facilitated or impaired by a threat of negative consequences. Individuals who fear negative consequences can sometimes be more

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motivated to perform better (Owens et al., 2014) For example, an employee who deeply fears receiving a negative performance evaluation may be motivated to work incredibly hard to avoid one. In contrast, anxious individuals may also react to threat by avoiding the threat-causing situation, as is common in individuals with clinical anxiety disorders (Plaisier et al., 2010). For example, an anxious individual may take longer to complete a project because the threat its negative evaluation poses leads him or her to avoid working on it altogether.

Anxiety and Cognition

Research that has used cognitive factors to explain the relationship between anxiety and performance has looked at clinical anxiety disorders (e.g., Beck, 1976) and both trait and state anxiety (e.g., Lasota & Kearney, 2017). Beck (1976) specifically examined anxiety disorders, although, notably, he pointed out that it can be difficult to differentiate between "normal" and pathological anxiety. Beck (1976) asserted that cognitive patterns are key to both understanding and managing anxiety. His conceptualization of "normal" anxiety appears to be more in line with trait than state anxiety, as it has to do with specific thought patterns people have, rather than a transitory emotional state. Specifically, he argued that anxious individuals are prone to cognitive distortions about situations or stimuli (Beck, 1976). Anxiety's effect on performance may depend on the awareness and management of these cognitions.

Lasota and Kearney (2017) found that maladaptive perfectionism was associated with both trait and state anxiety. They argued that the cognitive

components of maladaptive perfectionism that can hurt performance , such as such as "dichotomous thinking of right vs wrong outcomes, selective attention toward mistakes and poor outcomes, emphasis on perceived negative consequences following failure to meet high standards, and self-blame" (p. 347) are closely related to the cognitive processes of anxiety and can lead to overstraining, inability to act, and procrastination because of an overgeneralization of the consequences of failure (Thompson et al., 2000).

Thompson et al. (2000) specifically examined the relationships between anxiety, imposter syndrome, and performance. They conceptualized imposter syndrome as suffering from a persistent anxiety over being "found out", which appears to be similar to trait anxiety, however, they measured state anxiety in their study (Thompson et al., 2000). They found that, while individuals experiencing state anxiety rated their performance on a task more harshly that individuals not experiencing state anxiety, there weren't actually any performance differences between the two groups (Thompson et al., 2000).

The way in which anxiety affects performance can also depend on individual cognitions about anxiety itself. Strack et al. (2017) found that clarity of feelings, the ability to identify and understand one's emotions (Salovey et al., 1995), moderated the relationship between trait anxiety and anxiety motivation (i.e., "the tendency to use anxiety as a source of motivation" (p. 114), such that the relationship was more positive when clarity of feelings was high. Additionally, they found that anxiety motivation mediated the relationship between trait anxiety and

academic performance (Strack et al., 2017). Brooks (2014) found that individuals who reappraised state anxiety as excitement performed better than those who didn't. Similarly, Strack and Esteves (2015) found that interpreting anxiety states as facilitative was positively associated with academic performance. These studies demonstrate that, in addition to cognitions related to anxiety, the way one understands and thinks about anxiety itself can play a role in how anxiety affects performance.

Anxiety and Resources

Research that has attempted to explain the relationship between anxiety and performance from a resource perspective has examined both state-like and trait-like anxiety. Anxiety states can have physiological effects in the form of muscle tension, increased blood pressure, sweat, and heart rate (Maloney et al., 2014). These physiological responses to anxiety states take up prefrontal cortex resources, which reduces the amount of cognitive resources available for performance (Maloney et al., 2014). Anxiety states can also directly take up cognitive resources in the form of worry, rumination, distraction, and selective attention (Hardy & Parfitt, 1991; Maloney et al., 2014). The use of cognitive resources for these anxiety symptoms also reduces the amount of cognitive resources available to be dedicated to performance (Maloney et al., 2014).

In contrast to this, some research has suggested that anxiety-prone individuals (i.e., those higher in trait anxiety) have actually built-up resources to effectively manage anxiety precisely because of their experience with anxiety as

their personality trait and the subsequent heightened tendency to experience anxiety states. Calapoğlu et al. (2011) argued that encountering anxiety-provoking experiences may improve individual ability to cope with anxiety. Since individuals higher in trait anxiety are more likely to experience state anxiety (Spielberger, 1972), it follows that individuals higher in trait anxiety may have an increased ability to cope with state anxiety. There is some support for the idea that some individuals with anxiety disorders can perform better in times of elevated anxiety because of a sort of desensitization to it (Mellifont et al., 2016a). According to Mellifont et al. (2016a), "It is…possible that some…employees with anxiety disorders can maintain strong performance when experiencing elevated levels of anxiety because they are feeling less 'anxiety shock' than would be expected for employees who are not frequently worried" (p. 81). Given the potential overlap between anxiety disorders and high trait anxiety (Marcus et al., 2014), it appears plausible the same could be true for individuals high in trait anxiety.

Theories of Anxiety and Performance

Yerkes-Dodson Law. Historically, one of the most popular attempts to explain the relationship between anxiety and performance has been the Yerkes-Dodson law (Yerkes & Dodson, 1908, cited in Mueller, 1992). The Yerkes-Dodson law suggests that the relationship between arousal and performance is curvilinear, such that arousal benefits performance up to a certain point, but negatively impacts performance after that optimum point is reached (Mellifont et al., 2016a; Yerkes & Dodson, 1908). The Yerkes-Dodson law has been used to explain the relationship

between anxiety and performance with the idea that that there is an inverted U

relationship between anxiety and performance, with individuals exhibiting the best

performance at moderate levels of anxiety, and the worst performance at both the

complete absence of anxiety and at high levels of anxiety (Hardy & Parfitt, 1991;

Mueller, 1992).

Despite its popularity, there are issues with using the Yerkes-Dodson law

as the deciding explanation for the relationship between anxiety and performance

(Hardy & Parfitt, 1991; Mellifont et al., 2016a). Yerkes and Dodson (1908) did not

specifically examine anxiety, but arousal. In modern discussions of the concept,

many researchers have used arousal, stress, and different types of anxiety

interchangeably (e.g., Mellifont et al., 2016a; Mueller, 1992), despite the

differences in those constructs. Some have argued that the Yerkes-Dodson Law

should not be extrapolated to humans, as it was initially tested using rats (Mellifont

et al., 2016a; Mueller 1992). Most importantly, empirical evidence for the

application of the Yerkes-Dodson law to the relationship between anxiety and

performance has been mixed (Kleine, 1990; Mueller, 1992). Salthouse (2012)

found that trait anxiety had an inverted U relationship with cognitive functioning,

"in which the best performance was at intermediate levels of trait anxiety" (p.

1083). In a review of 22 studies that examined both state-like and trait-like anxiety

in work contexts and job performance, Cheng & McCarthy (2018) found no

evidence for curvilinear relationships between these constructs.

Cognitive Interference Theory. Cognitive interference theory (Sarason, 1984) was developed to explain the relationship between test anxiety and performance. The idea behind cognitive interference theory is that the distracting and intrusive thoughts associated with test and other types of evaluation anxiety take attention away from performing whatever task is at hand and can negatively affect performance (Coy et al., 2011, Sarason, 1984; Sarason et al., 1986). These distracting and intrusive thoughts often take the form of negative self-evaluations and worry about how individuals are perceived by others (Sarason et al., 1986). Most research on cognitive interference theory has focused on a state-like conceptualization of anxiety (Sarason, 1984; Sarason et al., 1996), although some have argued that trait anxiety can cause cognitive interference (Macher et al., 2012). Empirical research has shown that cognitive interference does interfere with performance in individuals high in test anxiety in test-taking situations (Sarason, 1984; Sarason et al., 1996). In these studies, test anxiety was measured as a state-like construct, with items such as "I get a headache during an important test" (Sarason, 1984, p. 932).

Processing Efficiency Theory. Eysenck and Calvo (1992) proposed processing efficiency theory as an explanation for the relationship between anxiety and performance. Specifically, processing efficiency theory examines the effect of state anxiety, as determined by the interaction of trait anxiety and situational stress/threat level, on performance (Eysenck & Calvo, 1992; Wilson, 2008). A key assumption of processing efficiency theory is that "the level of state anxiety rather

than trait anxiety…is generally crucial in determining individual differences in processing and performance" (Eysenck & Calvo, 1992, p. 412). Processing efficiency theory also differentiates between effectiveness and efficiency (Eysenck & Calvo, 1992; Owens et al., 2014). Effectiveness has to do with the quality of performance, and efficiency is effectiveness divided by effort (Eysenck & Calvo, 1992). According to this theory, state anxiety affects efficiency more than it affects effectiveness (Eysenck & Calvo, 1992; Eysenck et al., 2008). People experiencing high levels of anxiety might perform the same as people experiencing low levels of anxiety, but less efficiently because of the use of more processing resources (Eysenck & Calvo, 1992; Strack et al., 2017). While processing efficiency theory is primarily interested in the effect of state anxiety and performance, Eysenck and Calvo (1992) noted that it can be difficult to disentangle the two constructs within their theory.

According to processing efficiency theory, the cognitive component of state anxiety in the form of worry (e.g., concerns about one's level of performance) can have either a positive or a negative effect on performance (Eysenck & Calvo, 1992; Wilson, 2008). Cognitive state anxiety's potential positive effect on performance is viewed through a control theory lens (Carver & Scheier, 1998; Eysenck & Calvo, 1992). Individuals compare the probability of a negative performance outcome to their current level of performance and adjust resources as necessary (Eysenck & Calvo, 1992; Wilson, 2008). Resource adjustment can take place through denial, which frees up cognitive resources by reducing worry, or by "compensat[ing] for

the adverse effects of anxiety on processing resources by using additional

processing resources" (Derakshan & Eysenck, 2009, p. 169), i.e., additional effort

(Eysenck & Calvo, 1992). Either of these reactions are more likely in individuals

high in trait anxiety (Eysenck & Calvo, 1992). Individuals high in trait anxiety tend

to set unrealistically high expectations of performance for themselves, which

increases the chance they will perceive a discrepancy between expectations and

performance and put forth more effort that can facilitate performance (Eysenck &

Calvo, 1992). On the other hand, cognitive state anxiety can negatively affect

performance through its strain on working memory storage and retrieval

resources—resources that have been linked to executive functions such as decision-

making, switching attention between tasks, troubleshooting, selective attention and

inhibition, and coding representations of time and place (Baddeley, 1986; Eysenck

& Calvo, 1992; Derakshan & Eysenck, 2009; Wilson, 2008).

Empirical support for processing efficiency theory has been mixed. Hadwin

et al. (2005) found no differences in performance on experimental working memory

tasks between children high and low in state anxiety. In support of the efficiency

versus effectiveness component of processing efficiency theory, Hadwin et al.

(2005) also found that, in some cases, children higher in state anxiety took more

time and required more effort to complete working memory tasks (Hadwin et al.,

2005). Notably, they also found that trait anxiety directly affected the time it took

to complete some working memory tasks (Hadwin et al., 2005). Eysenck et al.

(2005) found that individuals higher in trait anxiety performed worse on a working

memory experimental task when another additional task "required use of the central executive component of the working memory system" (p. 1224). Additionally, Eysenck et al. (2005) found that research subjects higher in trait anxiety experienced higher levels of state anxiety during experimental working memory tasks. Mughal et al. (1996) and Hardy and Hutchinson (2007) found that the positive relationships between anxiety and performance were mediated by greater effort exertion. Finally, Owens et al. (2008) found that verbal working memory mediated the relationship between trait anxiety performance and specifically concluded that "the indirect effect of trait anxiety on academic performance, through verbal working memory, is likely to amount to about half that of the simple association between trait anxiety and academic performance" (p. 426).

In contrast to support for processing efficiency theory, Walkenhorst and Crowe (2009) found no effect of state or trait anxiety on central executive task performance. In fact, they found that both high trait and high state anxiety groups actually took less time to perform at the same level as low trait and low state anxiety groups on some working memory experimental tasks. Additionally, they found that state worry actually enhanced performance on a visual working memory task in individuals low in trait anxiety, and enhanced processing efficiency in those high in trait anxiety on verbal and spatial working memory tasks (Walkenhorst & Crowe, 2009). Finally, although Eysenck et al. (2005) found that subjects higher in trait anxiety experienced higher levels of state anxiety during experimental working memory tasks, they also found that the effect of trait anxiety on performance during

multiple tasks was not mediated by state anxiety. They argued that this finding could be because high trait anxiety people, being more attuned to threat, may be more distracted by state anxiety, and thus have more resources taken up by that state anxiety (Eysenck et al., 2005). However, they asserted that "future research will need to clarify the respective roles of trait and state anxiety in impairing the efficiency of the central executive" (Eysenck et al., 2005, p. 1226) component of the working memory system.

Attentional Control Theory. Eysenck et al. (2007) expanded on processing efficiency theory by proposing attentional control theory. One of the primary issues with processing efficiency theory that led to the development of attentional control theory was that processing efficiency theory posits that anxiety can affect performance through its effect on the central executive component of working memory but does not specify what functions of the central executive are most or least affected by anxiety (Derakshan & Eysenck, 2009; Eysenck et al., 2007). Additionally, processing efficiency theory does not account for circumstances in which anxious individuals actually perform better than nonanxious ones (Eysenck et al., 2007), such as in Walkenhorst and Crowe's (2009) study.

Like processing efficiency theory, attentional control theory posits that the interaction between trait anxiety and situational stress determines state anxiety, which can affect performance though its effect on the central executive component of the working memory system (Eysenck et al., 2007; Wilson, 2008). However,

attentional control theory expands on processing efficiency theory by identifying

attentional control as the specific component of the central executive component of

the working memory system affected by anxiety (Derakshan & Eysenck, 2009).

Attentional control has to do with how individuals allocate, or control, their

attention (Eysenck et al., 2007; Wilson, 2008). The two attentional control

functions in this theory are inhibition and shifting (Eysenck et al., 2008). When

individuals use the inhibition function, which has been identified as positive

attentional control (Derakshan et al., 2009) they "restrain attention from being

directed to task-irrelevant stimuli and responses" (Derakshan & Eysenck, 2009, p.

171). When individuals use the shifting function, which has been identified as

negative attentional control (Derakshan et al., 2009), they shift their mental state to

"maintain focus on task-relevant stimuli" (Derakshan et al., 2009, p. 1112).

Key assumptions of attentional control theory are that "anxiety impairs the

efficiency of the inhibition and shifting functions" (Derakshan & Eysenck, 2009, p.

171) and the processing inefficiency caused by the disruption of the inhibition and

shifting functions" (Wilson, 2008, p. 195) is what affects performance. Anxiety

may not lead to deficits in performance when individuals use other resources to

compensate for its effect on processing efficiency, such as additional effort

(Eysenck et al., 2007; Wilson, 2008).

There is empirical evidence in support of attentional control theory.

Derakshan et al. (2009) found that state anxiety impaired the attentional control

shifting function. Additional research has shown that distraction impairs

performance more for high-anxiety than low-anxiety individuals (Derakshan &

Eysenck, 2009). In another study, distraction resulted in anxious subjects taking

more effort and time to perform tasks even when their performance was equivalent

to the that of the nonanxious subjects (ESRC, 2009).

Theory of Workplace Anxiety. In 2018, Cheng and McCarthy published

their comprehensive theoretical model of workplace anxiety. It is important to note

that Cheng and McCarthy's (2018) theory is specifically concerned with workplace

anxiety, which they defined as "feelings of nervousness, uneasiness, and tension

about job-related performance" (p. 537). The theory of workplace anxiety posits

that both trait-like and state-like anxiety about job performance, respectively

referred to as dispositional workplace anxiety and situational workplace anxiety,

can have both positive and negative effects on job performance (Cheng &

McCarthy, 2018).

The theory of workplace anxiety proposes relationships at two levels: the

between-person level of the model is concerned with the effect of dispositional

workplace anxiety on typical job performance, and the within-person level of the

model is concerned with the effects of situational workplace anxiety on episodic

job performance (Cheng & McCarthy, 2018); the current literature review therefore

focuses primarily on the between-person level of the theory, given that it is most

relevant to the relationship between trait anxiety and typical job performance.

According to this model, dispositional workplace anxiety can negatively affect

typical job performance through a direct linear effect on emotional exhaustion

(Cheng & McCarthy, 2018). Specifically drawing on conservation of resources theory (Hobfall, 1989), Cheng and McCarthy (2018) wrote "the sustained nature of dispositional [workplace] anxiety will lead to a depletion of resources that is manifested in emotional exhaustion" (p. 545). This emotional exhaustion then impairs typical performance (Cheng & McCarthy, 2018).

The model also posits that dispositional workplace anxiety can positively affect typical job performance through a mechanism called reflective self-regulatory processing. Reflective self-regulatory processing is trait-like and is conceptualized as a higher-order "slower, reflective, and unemotional self-regulatory system that searches carefully for information, deliberates on decisions, and anticipates consequences of actions before acting" (Cheng & McCarthy, 2018, p. 545). According to the theory of workplace anxiety, the tendency of individuals with high dispositional workplace anxiety to use this reflective self-regulatory processing strategy can have facilitative effects on their typical performance. (Cheng & McCarthy, 2018). Specifically, employees who are high in dispositional workplace anxiety are more likely than those low in dispositional workplace anxiety to attend to and strategically plan for accomplishment of task goals, which positively influences performance outcomes (Cheng & McCarthy, 2018). Finally, this section of the model argues for a curvilinear relationship between dispositional workplace anxiety and reflective self-regulatory processing, i.e., that moderate levels of dispositional workplace anxiety lead to the highest levels of self-

regulatory processing, and in turn, higher levels of typical performance (Cheng & McCarthy, 2018).

The theory of workplace anxiety also suggests moderators of the effects of dispositional workplace anxiety. Motivation, ability, and emotional intelligence are all proposed to weaken the positive relationship between dispositional workplace anxiety and emotional exhaustion. Further, the curvilinear relationship between dispositional workplace anxiety and reflective self-regulatory processing is proposed to be stronger when motivation, ability, or emotional intelligence are low (Cheng & McCarthy, 2018).

Given the relative newness of Cheng and McCarthy's (2018) theory of workplace anxiety, the empirical evidence for its support is limited. McCarthy et al. (2016) found that the negative effect of dispositional workplace anxiety on typical job performance was mediated by emotional exhaustion above and beyond cognitive interference. Aside from that, it does not appear that Cheng and McCarthy's (2018) nineteen research propositions have been tested in the empirical literature.

The Need for an Additional Theory of Anxiety and Performance

Although there is an abundance of research on the broad relationship between anxiety and performance, much of this research is plagued by a lack of conceptual clarity and does not offer a clear and parsimonious explanation of the relationship between trait anxiety and typical job performance. Daft (1995) identified a number of common problems in empirical manuscripts, including

insufficient definitions of concepts studied. This is a common problem in the

anxiety and performance literature. Researchers have often used the term "anxiety"

without explicitly defining the conceptualization of anxiety being studied. Trait

anxiety, state anxiety, clinical anxiety, and workplace and job anxiety have

sometimes been used interchangeably under the broad umbrella of "anxiety". Even

when studies have used specific measures of anxiety (e.g., the STAI-T or STAI-S)

article titles, abstracts, model figures, conclusions, and discussion sections often

just broadly refer to "anxiety" (e.g., Byron & Khazanchi, 2011; Maloney et al.,

2014; Murphy et al., 2006; Nieuwenhuys & Oudejans, 2010; Renden et al., 2014;

Strack et al., 2017), and one often has to dig into the methods section to determine

what conceptualization of anxiety was actually being studied.

Harzing (2002) argued that citing papers that use a collection of studies

instead of citing original sources can lead to inaccurate conclusions and loss of the

message of the original studies. In many articles, researchers have not explicitly

differentiated between types of anxiety in literature review sections (e.g., Byron &

Khazanchi, 2011; McCarthy et al., 2016; Mellifont et al., 2016a; Owens et al.,

2014), which leads to a snowball effect of making broad conclusions about anxiety

and performance based on unclear conceptualizations of the anxiety construct.

Daft (1995) argued that another common problem in empirical research is

"the operational base of the research…not reflect[ing] the variables or model under

study" (p. 167). This can also be seen in the anxiety and performance literature. For

example, Kouchaki and Desai (2015) concluded that "anxious individuals" (p. 360)

were more likely to commit unethical acts in the workplace. However, this conclusion was based on inducing state anxiety by having participants listen to the theme music from the film *Psycho* (Kouchaki & Desai, 2015). In other research, anxiety has been used interchangeably with psychological strain, stress, or arousal (e.g., Ford et al., 2011; Mellifont et al., 2016a).

According to Seipp (1991), it is important to differentiate between the different types of anxiety when exploring its relationship with performance. The current study focuses on trait anxiety, defined as "relatively stable individual differences in anxiety proneness as a personality trait" (Spielberger, 1972 p. 482) for two reasons. First, focusing on the relationship between trait anxiety and typical job performance provides some of the first empirical research to date related to the relatively newly popular concept of "high-functioning anxiety". Again, "high-functioning anxiety" is characterized by high levels of typical achievement in anxious individuals (Lindberg, 2017; Morgan, 2017). Most of the articles on "high-functioning anxiety" conceptualize it as a persistent personality characteristic, rather than a momentary emotional state (e.g., Morgan, 2017, Smith, 2018). Trait anxiety and typical job performance are most closely related to this conceptualization. Second, focusing on trait anxiety and typical performance is the most appropriate way to answer the question of why some anxious individuals typically perform well while others do not.

Existing theories of anxiety and performance, while useful, do not fully explain the relationship between *trait* anxiety and *typical* job performance. In

examining these existing theories through a critical lens, it is important to understand the distinction and relationship between performance episodes and typical job performance. Beal et al. (2005) defined performance episodes as "naturally segmented, relatively short episodes thematically organized around work-relevant immediate goals or desired end states" (p. 1055). Typical job performance is how employees normally perform over time (Beus & Whitman, 2012; Sackett et al., 1988). Inherent to the concept of performance episodes is the existence of within-person variability in performance; individuals can perform at different levels at different moments in time (Beal et al., 2005).

Additionally, typical job performance is not just an average of performance episodes (Beal et al., 2003). Beal et al. (2003) argued that, in aggregating performance episodes to typical job performance, individuals can compensate for poor performance on one task with better performance on another. While trait anxiety can positively influence state anxiety and state anxiety can negatively affect performance, the findings from theories that relate state anxiety to impaired performance on specific tasks or performance episodes cannot necessarily be extrapolated to a clear relationship between trait anxiety and typical job performance.

The Yerkes-Dodson law (Yerkes & Dodson, 1908) is focused on arousal and not anxiety, and even if one considers arousal to be anxiety, it is a more state-like conceptualization. Cognitive interference theory (Sarason, 1984) is focused more on state anxiety than trait anxiety, and on performance on specific tasks (i.e.,

episodic performance) than on a conceptualization of overall, typical performance. While processing efficiency theory (Eysenck and Calvo, 1992) has been used to examine trait anxiety (e.g., Hadwin et al., 2005; Walkenhorst & Crowe, 2009), its original conceptualization was also focused on state anxiety, and, like cognitive interference theory, it is also focused on performance of specific tasks.

Attentional control theory (Eysenck et al., 2007) is also focused on performance on specific tasks, or "short-lasting cognitive tasks performed under laboratory conditions" (Eysenck et al., 2007, p. 336). Additionally, the theory is somewhat dense, esoteric, and focused mainly on cognition, rather than on other factors that may affect the anxiety-performance relationship. Finally, the theory of workplace anxiety (Cheng & McCarthy, 2018), is focused specifically on job or workplace anxiety, not on general trait or state anxiety. Job or workplace anxiety is anxiety specifically related to one's job or workplace and work-related events, situations, performance, and tasks (McCarthy et al., 2016; Linden & Muschalla, 2007; Muschalla et al., 2013). An individual can be high in trait anxiety without that trait anxiety being specifically related to the workplace domain; thus, the Theory of Workplace Anxiety does not adequately explain the relationship between trait anxiety and typical job performance. The opposite is also true; an individual can be high in job/workplace anxiety without necessarily being high in trait anxiety (Muschalla et al., 2013). Taken together, these theories provide insight into the relationships between anxiety and performance, but do not tell the full story of trait anxiety and typical job performance

To address the need for theory and empirical research aimed at understanding the effects of *trait* anxiety on *typical* job performance, this dissertation will apply the job demands-resources Model (JDR; Bakker & Demerouti, 2007, 2017; Demerouti et al., 2001). The JD-R model is descriptive, flexible model that has often been used as a broad conceptual framework for examining relationships between variables (Schaufeli & Taris, 2014). The JD-R model can be used to integrate and build upon the cognitive resource perspectives presented in cognitive interference theory, processing efficiency theory, and attentional control theory by specifying what other resources may play a role in anxiety-performance relationships. Additionally, the current work builds on the theory of workplace anxiety's propositions about the relationship between dispositional workplace anxiety and typical job performance by providing a broader perspective that isn't limited to the workplace domain. The JD-R Model is reviewed in detail below.

The Job Demands-Resources Model

The job demands-resources model was first introduced in 2001 as the job demands-resources model of burnout (Demerouti et al.). Bakker and Demerouti expanded upon it in 2007 and 2017. Bakker and Demerouti (2007) argued that Karasek's (1979) demand-control model, which suggested that a combination of high job demands and low job control could positively predict strain, was too simplistic and did not account for the complexity of the work environment. The basic premise of the JD-R model is that job characteristics, in the form of both

resources and demands, can affect employee strain and motivation, which predict organizational outcomes (Bakker & Demerouti, 2007, 2017).

Job demands have been defined as "physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological (cognitive or emotional) effort or skills and are therefore associated with certain physiological and/or psychological costs" (Bakker & Demerouti, 2007, p. 312). Job resources have been defined as "physical, psychological, social, or organizational aspects of the job that are either/or: functional in achieving work goals, reduce job demands and the associated physiological and psychological costs, [and] stimulate personal growth, learning, and development" (Bakker & Demerouti, 2007, p. 312).

The JD-R model is a dual process model that consists of both a health impairment and a motivational process (Bakker & Demerouti, 2007, 2018; Schaufeli, 2017). The health impairment process of JD-R posits that job demands positively predict employee strain, and that this strain negatively predicts organizational outcomes, such as job performance (Bakker & Demerouti, 2007, 2018; Lesener et al., 2019). According to Bakker and Demerouti (2017), strain can broadly include exhaustion, job-related anxiety, health complaints, and other variables. Most JD-R research has conceptualized strain as burnout, exhaustion, or stress (Bakker & Demerouti, 2007; Bakker & Wang, 2020; Grover et al., 2018; Lesener et al., 2019), however, it has also been conceptualized as depression

(Hentrich et al., 2017), absenteeism (van Woerkom et al., 2016), and broad psychological distress (Mazzetti et al., 2016).

The motivational process of JD-R posits that job resources positively predict employee motivation, and that this motivation positively predicts organizational outcomes, such as job performance (Bakker & Demerouti, 2007, 2018; Lesener et al., 2019; Schaufeli, 2017). According to Bakker and Demerouti (2017), motivation can broadly include work engagement, commitment, flourishing, low cynicism and other variables. The vast majority of empirical JD-R research has conceptualized motivation as employee engagement (Lesener et al., 2019).

The JD-R model also posits that job resources can buffer the relationship between job demands and strain, and that job demands can buffer the relationship between job resources and motivation (Bakker & Demerouti, 2007, 2018). Additionally, The JD-R model posits, based on conservation of resources theory (Hobfall, 1989) that job resources are likely to have the greatest effect on motivation when demands are high (Bakker & Demerouti, 2007, 2018). Finally, the JD-R model presumes that employees will experience both strain and motivation when job demands and job resources are both high and will experience neither when job demands and job resources are both low (Bakker & Demerouti, 2007).

Operationalizations of Resources, Demands, and Outcomes in the JD-R Model

Job-Related Demands and Resources. Traditionally, the JD-R model has focused on resources, demands, and outcomes that are specifically related to the job

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or organization (Bakker & Demerouti, 2007; Grover et al., 2018; Schaufeli, 2017). For example, job-related demands have been operationalized in the literature as work overload (Corso-de-Zuñiga et al., 2017; Grover et al., 2018), workload (Wang et al., 2016), administrative rigidity (Corso-de-Zuñiga et al., 2017), emotional demands (Wang et al., 2016; Yin et al., 2018), and work-family conflict (Wang et al., 2016). Schaufeli (2017) developed an instrument known as the Energy Compass to specifically assess the JD-R model. In the Energy Compass, job demands include emotional demands, mental demands, physical demands, work-home conflict, work overload, work underload, pace of change, negative change, bureaucracy, harassment, role conflicts, and interpersonal demands (Schaufeli, 2017).

Job-related resources have been operationalized in the literature as material resources (Corso-de-Zuñiga et al., 2017), job discretion (Grover et al., 2018), trust in colleagues (Yin et al., 2018), social support (Wang et al., 2016), performance feedback (Wang et al., 2016), and opportunities for development (Wang et al., 2016). Schaufeli's (2017) Energy Compass instrument divides job resources into four different categories: social resources, work resources, organizational resources, and development resources. Social job resources include co-worker support, supervisor support, team atmosphere, team effectiveness, role clarity, fulfillment of expectations, and recognition (Schaufeli, 2017). Work resources include job control, person-job fit, task variety, participation in decision-making, use of skills, and availability of tools (Schaufeli, 2017). Organizational job

resources include communication, alignment, trust in leadership, organizational

justice, fair pay, and value congruence (Schaufeli, 2017). Developmental job

resources include performance feedback, possibilities for learning and

development, and career perspective (Schaufeli, 2017).

   Personal Demands and Resources. Recent research using the JD-R model

has included consideration of personal demands and personal resources in addition

to job demands and job resources (e.g., Barbier et al., 2013; Yin et al., 2018).

Personal demands have been defined as "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 et al.,

2013, p. 751) and "individuals' characteristics that require extra effort or skills and

are associated with extra costs" (Yin et al., 2018, p. 3). Specific personal demands

that have been studied include workaholism (Guglielmi et al., 2012), performance

expectations (Barbier et al., 2013), and emotion suppression (Yin et al., 2018). The

ways in which these personal demands have fit into the JD-R model vary. In some

instances, personal demands have been examined as a precursor to job demands.

For example, Guglielmi et al. (2012) found that workaholism (a personal demand)

positively influenced job demands, which in turn positively influenced burnout. In

contrast, Yin et al. (2018) found that job demands positively influenced emotion

suppression (a personal demand), which contributed to well-being. Other studies

(e.g., Barbier et al., 2013) have examined how personal demands contribute to

mediators in the JD-R model, specifically work engagement. Some researchers

(e.g., Lorente Prieto et al., 2008; Schaufeli & Taris, 2014) have called for the examination of personality traits, such as neuroticism/emotional instability, pessimism, and perfectionism, as personal demands in the JD-R model. Finally, researchers have argued that there are likely many different ways to fit personal demands into the JD-R model, both in its health-impairment and motivational processes (Bakker & Demerouti, 2017; Schaufeli & Taris, 2014).

Personal resources have studied more commonly than personal demands (Schaufeli & Taris, 2014). Hobfall et al. (2003) defined personal resources as "aspects of the self that are generally linked to resiliency" (p. 632) and have to do with individual ability to exert influence on and successfully control their environment. According to Xanthopoulou et al. (2009), personal resources "(a) are functional in achieving goals, (b) protect from threats and the associated physiological and psychological costs, and (c) stimulate personal growth and development" (p. 236). Optimism, organizational-based self-esteem, and self-efficacy have been the most commonly studied personal resources (e.g., Barbier et al., 2013; Xanthopoulou et al., 2007, 2009, 2013). Other personal resources that have been empirically studied include hardiness (Corso-de-Zuñiga et al., 2020), psychological capital (Grover et al., 2018; Moloney et al., 2018), proactive coping (Searle & Lee, 2015), and reappraisal (Yin et al., 2018). Schaufeli's (2017) Compass instrument identifies resilience, self-efficacy, optimism, flexibility, setting one's own limits, proactivity, goal-directedness, and self-development as personal resources.

Similarly to personal demands, personal resources can fit into the JD-R model in different ways (Schaufeli & Taris, 2014). Some studies have shown that personal resources can play a similar role as job resources and directly increase motivation in the form of work engagement (Schaufeli & Taris, 2014). For example, research has shown that organizational-based self-esteem, optimism, self-efficacy, and psychological capital can positively predict work engagement (Barbier et al., 2013; Grover et al., 2018; Xanthopoulou et al., 2009). Personal resources can also directly affect employee strain. For example, research has shown that hardiness can reduce burnout (Corso-de-Zuñiga et al., 2020; Wang et al., 2016) and that psychological capital can have a positive effect on psychological well-being (Grover et al., 2018).

Other studies have shown that personal resources can serve as mediators between job resources and motivation or between job resources and strain (Schaufeli & Taris, 2014). For example, research has shown that hardiness, organizational-based self-esteem, optimism, and self-efficacy can mediate the relationship between job resources and engagement (Corso-de-Zuñiga et al., 2020; Xanthopoulou et al., 2007), that organizational-based self-esteem, optimism, and self-efficacy can mediate the relationship between job resources and burnout (Xanthopoulou et al., 2007; Wang et al., 2016).

In contrast, some studies have shown that job demands and job resources can serve as mediators between personal resources and engagement or personal resources and strain. For example, Grover et al. (2018) found that job demands and

job resources mediated the relationships between psychological capital and psychological well-being and psychological capital and engagement, respectively. Similarly, Guglielmi et al. (2012) found that job resources mediated the relationships between self-efficacy and burnout and self-efficacy and engagement.

In some instances, personal resources can influence perceptions of job demands and job resources. For example, Grover et al. (2018) found that psychological capital influenced employee perceptions of job demands and job resources such that those higher in psychological capital perceived their work environments more positively. In other instances, job resources can influence personal resources. For example, Xanthopoulou et al. (2007) found that the job resources of autonomy, social support, supervisor coaching, and professional development predicted the personal resources of organizational-based self-esteem, optimism, and self-efficacy. There is also evidence for reciprocal relationships between job resources, personal resources, and engagement (Xanthopoulou et al., 2009).

Finally, some studies have examined the moderating role of personal resources. Empirical evidence for this moderating role is mixed. In some instances, personal resources have not been found to moderate the relationships between job demands and well-being (e.g., Grover et al., 2018; Xanthopoulou et al., 2007) or job demands and engagement (e.g., Grover et al., 2018). In other instances, personal resources have been found to moderate the relationships between job demands and well-being (e.g., Searle & Lee, 2015) and job demands and

engagement (e.g., Searle & Lee, 2015; Xanthopoulou et al., 2013). Specifically, Searle and Lee (2015) found that proactive coping moderated the relationship between challenge demands and engagement such that the positive relationship was stronger for employees high in proactive coping and that proactive coping moderated the relationship between challenge demands and burnout such that those higher in proactive coping experienced less burnout. Xanthopoulou et al. (2013) found that the relationships between emotional demands and engagement and emotion-rule dissonance and engagement were strongly negative when self-efficacy was low, and that "self-efficacy related positively to engagement particularly when emotional demands and dissonance were high" (p. 74).

Some have suggested that these different findings on the role of personal resources are due to the way both demands and resources have been conceptualized and studied (Searle & Lee, 2015; Xanthopoulou et al., 2007). According to Schaufeli and Taris (2014) personal resources are undoubtedly a part of the JD-R model, but "…findings may vary across different types and different combinations of personal resources, job resources, job demands, and outcomes" (p. 51). Searle and Lee (2015) argued that the buffering effect of resources on demands may depend on the specific types of resources and demands being studied and the match between them. Specifically, they separated job demands into challenge and hindrance stressors, and found that proactive coping moderated the relationships between challenge stressors and engagement/burnout, but it did not moderate relationships between hindrance stressors and engagement/burnout (Searle & Lee,

2015). Similarly, Xanthopoulou et al. (2007) argued in favor of looking at different, more practical personal resources, such as "individuals' ability to organize their time" (p. 136) to examine the potential moderating role of these resources. There have been many recent calls for more research on the role of personal resources in the JD-R model (e.g., Bakker & Demerouti, 2017; Grover et al., 2018; Lesener et al., 2019; Wang et al., 2016).

Outcomes in the JD-R Model. The original JD-R model used the umbrella term "organizational outcomes" for the final outcome variable in the model (Bakker & Demerouti, 2007). In Bakker and Demerouti's (2017) expansion of the JD-R Model, strain and motivation were kept as broad umbrella terms within their illustrated model, but the "organizational outcomes" umbrella term was replaced by job performance. However, the authors continued to refer to broad "organizational outcomes" throughout the article (Bakker & Demerouti, 2017), and cited absenteeism, productivity, organizational citizenship behaviors, and client satisfaction as other organizational outcomes in another article (Bakker & Demerouti, 2018). Schaufeli's (2017) Energy Compass instrument divides organizational outcomes into three categories: commitment, employability, and performance. Commitment includes commitment to the team, commitment to the organization, and turnover intentions (Schaufeli, 2017). Employability includes work ability, sickness absence frequency, and sickness absence duration (Schaufeli, 2017). Performance includes in-role performance, extra-role performance, and overall performance (Schaufeli, 2017).

Chapter 3 Present Investigation

The JD-R model is a useful framework for explaining the potential effects of trait anxiety on typical job performance and employee well-being. First, using JD-R brings in an occupational health psychology perspective that is sorely missing from most existing theories of anxiety and performance. The Yerkes-Dodson law, cognitive interference theory, processing efficiency theory, and attentional control theory do not account for employee well-being variables in their examinations of the relationship between anxiety and performance. JD-R is one of the most widely recognized and applied theories in occupational health psychology (Bakker & Demerouti, 2017). Using the JD-R model to guide research on trait anxiety's relationship with job performance and employee well-being answers the calls for a more humanistic and person-centered I/O psychology (Gasser et al., 2004; Lefkowitz, 2008, 2012, 2013; Weiss & Rupp, 2011) and further integrates occupational health psychology with other areas of I/O psychology. The integration of employee well-being into theory about the anxiety-performance relationship is also supported by McCarthy et al. (2016), who found that the negative effect of workplace anxiety on job performance was mediated by emotional exhaustion.

Multiple researchers (e.g., Barrick et al., 2002; Cheng & McCarthy, 2018) have called for a broad examination of the processes involved in anxiety and performance relationships. Using the JD-R model answers this call because of its broad applicability, flexibility, and descriptiveness (Schaufeli & Taris, 2014). According to Schaufeli and Taris (2014), "The JD-R model is heuristic in nature

and represents a way of thinking about how job (and recently also personal) characteristics may influence employee health, well-being, and motivation" (p. 44). The JD-R model therefore allows for the incorporation of a broader set of variables that are likely involved in the trait anxiety-performance relationship, particularly those related to employee well-being (e.g., strain outcomes; Trousselard et al., 2015; Turnipseed, 1998) and job context (e.g., supervisor support; De Clerq et al., 2019). Pop psychology articles about "high-functioning anxiety" also mention motivational factors, such as drive (Navarette, 2020), that are easily incorporated into the JD-R model.

While some of the inconsistent findings in research on anxiety and performance may be explained by inconsistent conceptualizations of constructs (i.e., failure to distinguish between trait and state anxiety), such inconsistent findings might also point to the existence of moderators (Petty & Briñol, 2008). The moderation pathways described in the JD-R model can help suggest moderators of trait anxiety's effects on performance and employee well-being.

According to Cheng and McCarthy (2018), there is limited research using existing stress models to examine relationships between anxiety and performance. The JD-R model is one of the most widely cited stress models (Bakker & Demerouti, 2017), and using it to examine anxiety and performance relationships helps close this gap in the literature. Additionally, given the recent explosion of interest in anxiety due to the COVID-19 pandemic, this is an important area for research.

Job Performance as an Organizational Outcome under the JD-R Model

The conceptualizations and measurement of performance vary greatly in the literature on anxiety and performance. Jones et al. (2016) argued that some of the conflicting results found between anxiety and performance are due to the different ways performance has been measured. Studies that have examined academic performance have relied on placement exams (Calapoğlu et al., 2011), aptitude and achievement tests (Hembree, 2011), IQ tests (Hembree, 2011; Seipp, 1991), course and exam grades (Seipp, 1991; Spielberger, 1966b), and GPA (Seipp, 1991). Experimental studies of both academic and general performance have measured performance using problem-solving tasks, memory tasks, or response accuracy tasks (Eysenck et al., 2007; Hembree, 2011; Seipp, 1991). According to Campbell et al. (1993), "…the word performance is misused and exploited to the extreme in society at large, and is frequently butchered beyond recognition in psychology" (p. 35).

In the anxiety and job performance literature, job performance has been conceptualized in a myriad of different ways and conflated with other constructs. Some studies have used performance measures developed for specific employee populations (e.g., McCarthy et al., 2016; Renden et al., 2014, 2017). Variables that have been used as proxies for performance include turnover (Jones et al., 2016), likelihood of employees engaging in unethical behaviors (Kouchaki & Desai, 2015), and job satisfaction (Reio & Callahan, 2004). Studies have also measured

job performance using what are arguably more objective measures, including organizational records (Ford et al., 2011) or sales data (Mughal et al., 1996).

The research on anxiety and job performance most commonly uses absenteeism and presenteeism as proxies for performance (e.g., Bouwmans et al., 2014; Hendriks et al., 2015; Plaisier et al. 2010; Sanderson & Andrews, 2006; Waghorn & Chant, 2006). Some studies that have measured presenteeism have relied on self-report questions about how difficult it is to accomplish tasks at work (Hendriks et al., 2015; Ivandic et al., 2017), how well employees felt they performed while experiencing anxiety symptoms (Plaisier et al., 2010; Waghorn & Chant, 2011), and whether or not emotional symptoms interfered with work (Esposito et al., 2007; Waghorn & Chant, 2011).

There are a number of problems with conflating measures of absenteeism and presenteeism with employee performance (Ford et al., 2011; Hilton et al., 2009). First, highly anxious individuals tend to be more self-critical than less anxious people (Mughal et al., 1996), which may affect their perceptions of their own performance while experiencing anxiety symptoms. Second, and, perhaps more importantly, experiencing interference with work performance at one point in time should not be extrapolated to an assessment of overall performance. For example, a highly anxious individual may have a day in which his or her anxiety symptoms interfere with work, but that person may be able to make up for it and perform well overall. This idea was echoed by Jones et al. (2016), who argued that

the estimates of costs of anxiety in the workplace are oversimplified and neglect factors such as "the ability to 'catch up'" (p. 760).

Much of the anxiety and performance literature does not distinguish between employee typical performance, maximum performance, and performance episodes. Sackett et al. (1988) were the first to distinguish between typical and maximum performance. Typical job performance is how employees normally perform over time (Beus & Whitman, 2012; Sackett et al., 1988). Maximum job performance is the level at which employees are capable of performing when they exert maximum effort (Beus & Whitman, 2012; Sackett, 2007). Performance episodes are time-bound units focused on specific work goals (Beal et al., 2005). Using typical and maximum performance as interchangeable criteria can lead to incorrect conclusions (Beus & Whitman, 2012). Similarly, performance episodes alone may not paint the whole picture of employee performance. According to Beal et al. (2005), "multiple performance episodes contribute to the final appraisal of performance" (p. 1064).

Much of the anxiety-performance literature has focused on the relationships between state anxiety and performance episodes and less on the relationship between trait anxiety and typical or overall performance. Research has shown that personality characteristics are more related to typical performance, while cognitive ability is more related to maximal performance (Marcus et al., 2007; Witt & Spitmüller, 2007). Given that trait anxiety, by definition, is closer to a personality

characteristic than to cognitive ability, this study focused on typical job performance as the organizational outcome of interest.

Overall Employee Well-being as a Personal Outcome under the JD-R Model

The original conceptualization of the JD-R model focused on job demands, job resources, and organizational outcomes (Bakker & Demerouti, 2007). It has since been expanded to include considerations of personal demands and personal resources (Bakker & Demerouti, 2017). It follows that it may also be useful to expand the JD-R model to include considerations of personal outcomes in addition to organizational ones. While there is very little JD-R research that concerns itself with personal outcomes, Bakker and Demerouti (2007) proposed examining whether or not the JD-R model can predict objective health outcomes, which are personal rather than organizational. Other personal outcome variables that have been examined in the JD-R literature include general mental health (Simbula, 2010), ill health (Corso-de-Zuñiga et al., 2020), and life satisfaction (Corso-de-Zuñiga et al., 2020).

Employee well-being is an often used, but rarely defined term (Zheng et al., 2015). Page and Vella-Brodrick (2009) examined well-being through a mental health lens, defining mental health as "the presence of well-being rather than the absence of illness" (p. 441). They proposed a three-dimensional model of overall employee well-being comprised of subjective well-being, workplace well-being, and psychological well-being (Page & Vella-Brodrick, 2009). Subjective well-being is "a positive state of mind that involves the whole life experience" (Page &

Vella-Brodrick, 2009, p. 443) that consists of high positive affect, low negative affect, and overall life satisfaction (Diener et al., 1999; Page & Vella-Brodrick, 2009). Workplace well-being is comprised of job satisfaction and work-related affect (Page & Vella-Brodrick, 2009). Psychological well-being is comprised of self-acceptance, purpose in life, environmental mastery, positive relations with others, autonomy, and personal growth (Page & Vella-Brodrick, 2009; Ryff, 1989).

Zheng et al. (2015) developed and validated a measure of overall employee well-being as a three-dimensional construct comprised of life well-being (similar to subjective well-being), workplace well-being, and psychological well-being. They found that overall employee well-being was positively related to affective organizational commitment and job performance and called for future examination of antecedents of employee well-being, including personality traits (Zheng et al., 2015). The current study examined overall employee well-being as an additional, personal outcome resulting from trait anxiety.

Trait Anxiety and the JD-R Health Impairment Process

According to the health impairment process of the JD-R model, job demands positively predict strain, and strain negatively predicts organizational outcomes (Bakker & Demerouti, 2007, 2017). Recent research has expanded the JD-R Model to include a consideration of personal demands in addition to job demands (e.g., Barbier et al., 2013, Guglielmi et al., 2012; Yin et al., 2018) and has called for an examination of personality traits as personal demands within the JD-R Model (Lorente Prieto et al., 2008; Schaufeli & Taris, 2014).

Trait anxiety can be considered a personal demand because of its potential physical and psychological costs and the extra effort that can be associated with it. Potential physical and psychological costs of trait anxiety include burnout (Turnipseed, 1998), stress (Trousselard et al., 2014), sleep impairment (Trousselard et al., 2014), reduced job satisfaction (Fox & Spector, 1999), susceptibility to state anxiety (Byron & Khazanchi, 2011), and an increased likelihood of developing clinical anxiety and depressive disorders (Elwood et al., 2012; Modi et al., 2019). Additionally, according to processing efficiency theory, state anxiety affects effort more than effectiveness (Eysenck & Calvo, 1992). Given that individuals high in trait anxiety are more likely to experience state anxiety (Byron & Khazanchi, 2011), it follows that trait anxiety can also be associated with increased effort.

Personal demands can potentially fit into the JD-R model in a number of different ways (Bakker & Demerouti, 2017; Schaufeli & Taris, 2014). Following the logic behind job demands and strain, it is possible that personal demands also positively predict strain, one of the mediators in the JD-R model. There is some precedent for examining how personal demands affect mediators in the JD-R Model (e.g., engagement; Barbier et al., 2013). Empirical research on how personal demands can affect strain using the JD-R framework is limited, but there is some evidence in support of this idea. Moloney et al. (2018) found that work-life interference, a personal demand, positively predicted burnout. Upadyaya and Salmela-Aro (2020) found that employees who experienced personal demands in the form of relationship demands were more likely to belong to a high burnout

latent profile group. Finally, Salmela-Aro and Upadyaya (2018) found that the

personal demands of caregiving demands and economic problems were associated

with burnout at different career stages.

Using a JD-R framework and conceptualizing trait anxiety as a personal

demand, emotional exhaustion as the strain process mediator, and typical job

performance and overall employee well-being as organizational and personal

outcomes of interest, suggests indirect effects of trait anxiety on typical

performance and overall employee well-being via emotional exhaustion. The model

in Figure 1 summarizes these ideas and the resulting set of hypotheses:

Hypothesis 1: Trait anxiety is positively related to emotional exhaustion.

Hypothesis 2: Emotional exhaustion is negatively related to typical job
performance.

Hypothesis 3: Emotional exhaustion mediates the relationship between trait
anxiety and typical job performance.

Hypothesis 4: Emotional exhaustion is negatively related to employee well-
being.

Hypothesis 5: Emotional exhaustion mediates the relationship between trait
anxiety and employee well-being.
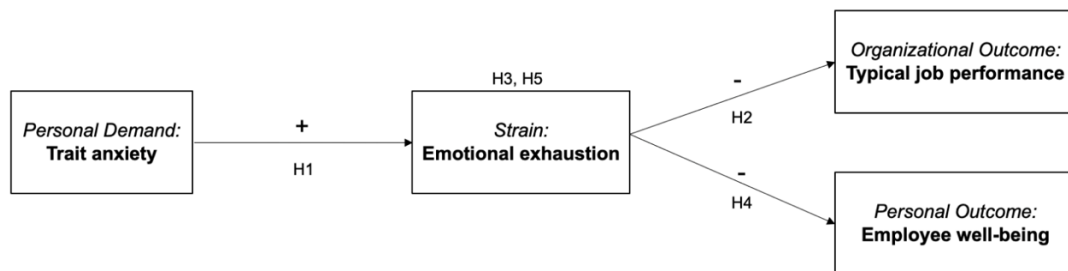
Figure 1: Trait Anxiety and the JD-R Health Impairment Process (H1-H5)

The Moderating Roles of Personal and. Organizational Resources in the JD-R Health Impairment Process

One of the primary components of the JD-R model has to do with how demands and resources can moderate relationships between variables. According to the JD-R model, job resources can buffer the relationship between job demands and strain. There is empirical evidence for the buffering effect of job resources on organizational outcomes and for the buffering effect of job resources on strain outcomes. For example, Van Woerkom et al. (2016) found that organizational support for strengths use buffered the relationship between emotional demands and absenteeism and the relationship between workload and absenteeism. Similarly, Bakker et al. (2005) found that job resources in the form of social support, supervisor relationships, and performance feedback buffered the relationship between work overload and exhaustion. However, resources have not always been shown to buffer the effects of job demands (Schaufeli & Taris, 2014). Researchers have argued that specific job resources might have more of a buffering effect than others (Van Woerkom et al., 2016).

Personal demands and personal resources can likely fit into the JD-R model in much the same way that job resources do (Bakker & Demerouti, 2017; Schaufeli & Taris, 2014). For example, Hentrich et al. (2017) found that core self-evaluations (a personal resource) buffered the relationship between high job demands and depression (a strain outcome). Based on the JD-R proposition that resources can buffer the negative effects of demands on strain (Bakker & Demerouti, 2007, 2018), this study predicted that habitual cognitive reappraisal, psychological

capital, and supervisor support may buffer the negative effect of trait anxiety on emotional exhaustion.

 Resources may also indirectly affect outcomes through this reduced effect on strain. For example, Schaufeli (2015) found that leadership indirectly affected organizational outcomes through reduced burnout. Similarly, Matijaš et al. (2018) found that coworker support positively affected job satisfaction in women through its negative effect on work-family conflict. Based on this, habitual cognitive reappraisal, psychological capital, and supervisor support may positively impact overall employee well-being through reduced emotional exhaustion.

Cognitive Reappraisal. Cognitive reappraisal is an emotion regulation strategy that involves "cognitively transforming [a] situation so as to alter its emotional impact" (Gross, 1998, p. 284). In using cognitive reappraisal, individuals reframe, or change the meaning, of situations in order to change their emotional reactions to them (Ochsner & Gross, 2005). For example, instead of perceiving a bad grade on an exam as a sign of failure, an individual may reappraise the situation as an opportunity to learn better study strategies. Cognitive reappraisal is most often measured in the literature as trait-like, e.g., "the habitual use of reappraisal" (Gross & John, 2003a, p. 348), and was conceptualized in this study as such.

Cognitive reappraisal can be considered a personal resource because it is an aspect of the self that has to do with impacting one's environment (i.e., the cognitive transformation of a situation). In line with Hobfall et al. (2003) and

Xanthopoulou et al.'s (2009) explanations of personal resources, cognitive

reappraisal has been associated with resilience (Tabibnia & Radecki, 2018),

specific goal achievement (Spann et al., 2019), diminished physiological and

psychological costs (Blalock et al., 2016; Hofmann et al., 2009; Nickerson et al.,

2017), and personal growth (Wagner et al., 2007). Additionally, cognitive

reappraisal has been linked to increased experience and expression of positive

emotions and decreased experience and expression of negative emotions (Gross &

John, 2003a). Following the propositions set forth by Broaden and Build Theory

(Fredrickson, 2001), the positive emotions triggered by cognitive reappraisal can

lead to psychological growth.

Cognitive reappraisal is "closely related to skills taught in interventions for

mood and anxiety disorders" (McRae et al., 2012, p. 2). It is a key component of

cognitive behavioral therapy (CBT), which can sometimes be more successful than

drug therapy as a treatment for emotional disorders (Aho et al., 2014). Cognitive

reappraisal has been shown to modify the effects of different types of anxiety on a

variety of outcomes. For example, cognitive reappraisal can reduce physiological

anxiety symptoms (Hofmann et al., 2009) and symptom severity in individuals with

social anxiety disorders (Blalock et al., 2016; Kivity & Huppert, 2016).

There is also empirical support for a link between cognitive reappraisal and

employee well-being. Gross and John (2003a) found positive relationships between

cognitive reappraisal and the following specific facets of well-being: positive

affect, (low) negative affect, life satisfaction, purpose in life, and autonomy (Page

& Vella-Brodrick, 2009; Zheng et al., 2015). In terms of workplace well-being, there is also evidence that cognitive reappraisal can positively affect job satisfaction (Kafetsios et al., 2012). Similarly, reappraising anxiety itself can also reduce its negative effects. Reappraising physiological arousal and test anxiety as facilitative or neutral has been shown to positively affect self-confidence and performance (Brady et al., 2018; Sammy et al., 2017).

Cognitive reappraisal has also been directly linked to different well-being outcomes. Reappraisal has been positively linked to contentment (Yin et al., 2018), positive emotions (Gross & John, 2003a), interpersonal functioning (Gross & John, 2003a), and general well-being (Gross & John, 2003a). It has been negatively linked to negative emotions (Balzarotti et al., 2017; Gross & John, 2003a; Yeung & Wong, 2020), stress (Yeung & Wong, 2020), and symptoms of depression and anxiety (Schäfer et al., 2017).

Generally, coping strategies can moderate the effects of work demands (Searle & Lee, 2015). The tendency to cognitively reappraise can be considered a personal resource that can moderate the effects of the personal demand of trait anxiety on emotional exhaustion. According to Troy and Mauss (2011), "those who use cognitive reappraisal across a wide range of negative emotional contexts are more likely to experience positive outcomes and less likely to experience negative outcomes" (p. 37). Having high trait anxiety could be considered a negative emotional context, and those who use habitually use cognitive reappraisal to reevaluate their anxiety and situations that they face may be less likely to suffer

from negative strain outcomes and, in turn, have higher levels of overall employee

well-being. Hypotheses 6-7 are presented in Figure 2.

>Hypothesis 6: Cognitive reappraisal moderates the positive relationship
>between trait anxiety and emotional exhaustion such that the relationship is
>weaker when cognitive reappraisal is high.
>
>Hypothesis 7: The indirect effect of trait anxiety on employee well-being
>through emotional exhaustion is moderated by cognitive reappraisal.

*Figure 2: Cognitive Reappraisal, Emotional Exhaustion, and Employee Well-being
Moderated Mediation Model (H6-H7)*

Psychological Capital. Luthans et al. (2006) defined psychological capital,

or PsyCap, as "an individual's positive psychological state of development" (p. 3)

comprised of four facets: self-efficacy, optimism, hope, and resilience. While

related, PsyCap and core self-evaluations have been shown to be empirically

distinct constructs (Howard, 2017) Self-efficacy is characterized by confidence and

belief in one's ability to mobilize in order to execute tasks (Bandura, 1997; Luthans

et al., 2006). Hope is characterized by directing energy toward goals, planning to

meet goals, and redirecting this energy if necessary (Luthans et al., 2006; Snyder,

2000). Optimism is characterized by positive attributions about success in the

present and the future (Luthans et al., 2006; Seligman, 1998). Resilience is characterized by "sustaining and bouncing back and even beyond [from problems and adversity] to attain success" (Luthans et al., 2006, p. 3). While these four facets of PsyCap can be examined as theoretically independent from one another, there is evidence for them coming together as a single, higher-order construct that is expected to have larger effects on employee outcomes than each facet alone (Luthans et al., 2006; Mazzetti et al., 2016). PsyCap has been conceptualized as a state-like, malleable construct that can be developed through training interventions (Lupșa et al., 2019; Luthans, Avolio, et al., 2007).

A number of studies have characterized PsyCap as a personal resource (e.g., Grover et al., 2018; Lupșa et al., 2019; Mazzetti et al., 2016; Xanthopoulou et al., 2009), however, few have explicitly stated *why* PsyCap fits the conceptualization of a personal resource. PsyCap can be conceptualized as a personal resource because of its role in goal achievement, protection from threats and associated costs, and contribution to personal growth and development (Xanthopoulou et al., 2009). The higher-order PsyCap construct has been associated with goal achievement in the form of job performance and organizational citizenship behaviors (Avey, Reichard, et al., 2011). In terms of protection from threats and their associated costs, PsyCap has been demonstrated to negatively impact job stress (Avey, Reichard, et al., 2011), cynicism (Avey et al., 2008; Avey, Reichard, et al., 2011), turnover intentions (Avey, Reichard, et al., 2011), deviance (Avey et al., 2008; Avey, Reichard, et al., 2011), violent tendencies in students (Aliyev & Karakus, 2015),

and negative job attitudes (Kong et al., 2018). Additionally, PsyCap has been

shown to buffer the negative effects of surface acting on depersonalization and job

satisfaction, such that the effects are weaker when PsyCap is high (Cheung et al.,

2011). Finally, there is some evidence that PsyCap can stimulate personal growth

and development. For example, PsyCap or individual elements of it have been

shown to mediate relationships between leader behaviors and employee creativity

(Wang et al., 2018) and the relationship between strengths training intervention and

personal growth initiative (Meyers et al., 2015).

PsyCap has been directly linked to reduced strain. Research has found

negative associations between PsyCap and burnout and its components (i.e.,

emotional exhaustion, depersonalization, and reduced personal accomplishment)

(Adil & Kamal, 2018; Li et al., 2019; Maslach et al., 2001). Specifically, a number

of studies have found negative relationships between PsyCap and emotional

exhaustion (e.g., Freire et al., 2020; Li et al., 2019; Moyer et al., 2017).

Research has shown that PsyCap can have a moderating effect between

demands and negative outcomes. PsyCap has been shown to buffer the effect of job

stress on incivility (Roberts et al., 2011), job satisfaction (Ma et al., 2015), and

turnover intentions (Ma et al., 2015); workplace ostracism on affective

commitment and turnover intentions (Zheng et al., 2016); and surface acting and

job satisfaction (Cheung et al., 2011). Specifically with regards to strain outcomes,

research has shown that PsyCap buffers the effect of challenge and hindrance job

stressors on burnout (Min et al., 2015) and surface acting on depersonalization

(Cheung et al., 2011).

Most research on PsyCap and anxiety has been concerned with state anxiety

and symptoms of anxiety. Studies have found negative associations between

PsyCap and symptoms of anxiety (e.g., Liu et al., 2013; Zhou et al., 2018).

However, no research to date has examined how PsyCap may affect outcomes of

trait anxiety. Psychological capital can be considered a personal resource that

buffers the negative effect of trait anxiety on strain outcomes and, in turn,

positively impacts overall employee well-being. Hypotheses 8-9 are presented in

Figure 3.

> Hypothesis 8: Psychological capital moderates the positive relationship between trait anxiety and emotional exhaustion such that the relationship is weaker when psychological capital is high.

> Hypotheses 9: The indirect effect of trait anxiety on employee well-being through emotional exhaustion is moderated by psychological capital.
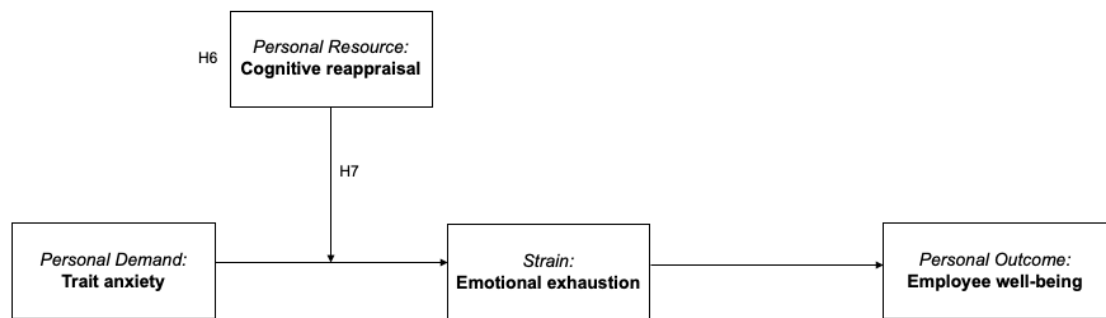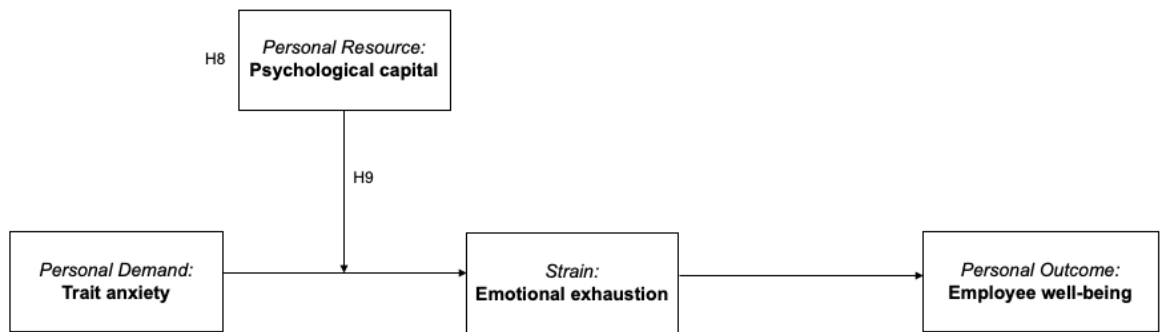

Figure 3: Psychological Capital, Emotional Exhaustion, and Employee Well-being Moderated Mediation Model (H8-H9)

Supervisor Support. Supervisor support has been conceptualized as both a form of perceived organizational support (Simosi, 2012) and a form of broad social support (De Clerq et al., 2019). Perceived supervisor support has been defined as "the degree to which employees perceive that their supervisor cares about them and values their contributions" (Simosi, 2012, p. 303). Broadly, perceived supervisor support includes concepts such as valuing employees, caring about employee well-being and opinions, being available to help, consideration of employee goals and values, and taking pride in employee accomplishments (Kottke & Sharafinski, 1988).

House (1981) identified four types of social support: instrumental, emotional, informational, and appraisal support. Of these, instrumental and emotional support are most commonly examined in the literature. Instrumental support has been defined as "the provision of instrumental resources that help an individual in need directly address a demand" (Jolly et al., 2021, p. 233). Emotional support has been defined as "the provision of psychosocial support such as empathy and caring" (Jolly et al., 2021, p. 233). Supervisor support has been conceptualized as consisting of both instrumental and emotional support (De Clerq et al., 2019).

More specifically, Gonzalez-Morales et al. (2018) organized supportive supervisory behaviors into four categories: benevolence, sincerity, fairness, and experiential processing. Benevolence includes behaviors that provide employees with information, tangible support, and emotional support, such as providing

training opportunities and recognizing employee efforts (Gonzalez-Morales et al., 2018). Sincerity includes behaviors that demonstrate authenticity, such as following through on promises and treating employees with respect (Gonzalez-Morales et al., 2018). Fairness has to do with procedural and informational justice and includes behaviors such as uniform application of policies and opportunities for employees to express their voice (Gonzalez-Morales et al., 2018). Experiential processing involves "…attending to stimuli without immediate judgment or evaluation" (Gonzalez-Morales et al., 2018, p. 154), and includes behaviors such as active listening and gathering relevant information (Gonzales-Morales et al., 2018).

Supervisor support is frequently studied as a job resource in JD-R literature (Bakker & Demerouti, 2007; Bakker, Schaufeli, et al., 2008; Crawford et al., 2010; Demerouti et al., 2001; Lo Presti & Nonnis, 2014). Broadly, there is evidence for the buffering effect of supervisor support. Research has found that perceived organizational support buffers the negative effect of neuroticism on job performance (Uppal, 2017), and that social support buffers the negative relationship between work stressors and psychological dysfunction (Frese, 1999). There is also specific evidence for a buffering effect of perceived supervisor support on strain within the JD-R framework. Willemse et al. (2012) found that perceived supervisor support can buffer the relationship between job demands and emotional exhaustion when employees have low decision authority. Research has also shown that supervisor support is negatively related to burnout and its components, including emotional exhaustion (Anagnostopoulos et al., 2015;

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Blanco-Donoso et al., 2017; Hämming, 2017; Li et al., 2013). Notably, Hämming (2017) found that a lack of supervisor support has a stronger effect on burnout than a lack of support from other sources, highlighting the importance of supervisor support on employee strain.

While there is little research specifically on the buffering effect of supervisor support on trait anxiety outcomes, there is evidence for the buffering effect of supervisor support and related constructs on the outcomes of other types of anxiety. Turnipseed (1998) found that supervisor support buffers the effect of state anxiety on burnout. Plaisier et al. (2012) found smaller negative relationships between employees with anxiety disorders and absenteeism and poor performance when they reported high job support. Finally, McCarthy et al. (2016) found that the negative relationship between workplace anxiety and job performance was buffered by Leader-Member Exchange (LMX) and the positive relationship between workplace anxiety and emotional exhaustion was buffered by coworker exchange.

In a qualitative study, employees with anxiety disorders identified supervisor support as one of the most important things they need in the workplace, and that support could help them "avoid reaching a crisis point" (Mellifont et al., 2016b, p. 554). Greene-Shortridge et al. (2007) suggested that supervisor support can help reduce the stigma of treatment-seeking for mental illness, and in turn improve functioning. The International Classification of Functioning, Disability, and Health (ICF) identifies support as an environmental factor that can affect functioning in individuals with health conditions, including mental health

conditions (WHO, 2002). Perceived supervisor support may buffer the relationship

between trait anxiety and emotional exhaustion and, in turn, positively affect

overall employee well-being. Hypotheses 10-11 are presented in Figure 4.

> Hypothesis 10: Supervisor support moderates the positive relationship
> between trait anxiety and emotional exhaustion such that the relationship is
> weaker when supervisor support is high.

> Hypotheses 11: The indirect effect of trait anxiety on employee well-being
> through emotional exhaustion is moderated by supervisor support.
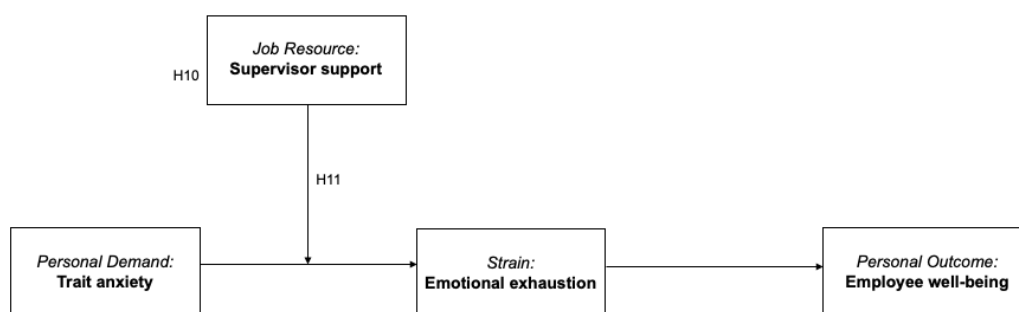
*Figure 4: Supervisor Support, Emotional Exhaustion, and Employee Well-being
Moderated Mediation Model (H10-H11)*

Trait Anxiety and the JD-R Motivational Process

The job demands-resources model can help explain why individuals high in

trait anxiety are likely to experience emotional exhaustion and can have negative

performance outcomes. Additionally, it can be used to identify resources that may

moderate these impacts of trait anxiety on the health impairment process. Yet, JD-

R alone does not sufficiently explain the phenomenon popularly referred to as

"high-functioning anxiety"; that is, it does not explain why individuals high in trait

anxiety may also be top performers.

One of the most valuable contributions of Cheng and McCarthy's (2018) theory of workplace anxiety is the idea that dispositional workplace anxiety can sometimes have a facilitative effect on performance. It is the only comprehensive theory of anxiety and performance that accounts for varied findings on anxiety and performance by suggesting that anxiety can sometimes positively affect performance (Cheng & McCarthy, 2018). Since the theory of workplace anxiety is limited to workplace-specific anxiety, there is room for research on how those with trait anxiety (i.e., a construct similar to chronic workplace anxiety), mobilize in order to perform.

While there is no empirical support for the concept of "high-functioning anxiety", some pop psychology articles on the topic have suggested that it is something about anxiety itself that contributes to success. For example, Morgan (2017) wrote "…those with high-functioning anxiety are able to push through the symptoms and sometimes use them to their advantage" (p. 1). Cheng and McCarthy (2018) specifically proposed that dispositional workplace anxiety can lead to improved performance through what they identified as reflective self-regulatory processing. "The core process by which self-regulatory processing can facilitate performance for employees experiencing chronic dispositional [workplace] anxiety is attendance to task goals" (Cheng & McCarthy, 2018, p. 545).

Combining these propositions from the theory of workplace anxiety with the job demands-resources model, it is possible that, in addition to impacting the

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JD-R strain pathway, trait anxiety could also directly and positively impact the JD-R motivation pathway.

Behavioral Drive as a Motivational Construct within the JD-R Model

In the context of JD-R, motivation has been described as employees doing their jobs (Bakker, Demerouti, et al., 2003), intrinsic versus extrinsic motivation (Bakker & Demerouti, 2007), being focused on goals and work tasks (Bakker & Demerouti, 2017), and effort (Brenninkmeijer et al., 2010). Although engagement is the construct most often used to measure the motivational process within the JD-R model, there is precedent for using other variables, such as affective commitment, dedication, organizational commitment, and cynicism, as proxies for motivation in empirical JD-R research (Bakker, Demerouti, & Schaufeli, 2003; Bakker, Demerouti, et al., 2003; Bakker, Schaufeli, et al., 2008).

The variation in operationalization of the JD-R motivational process may be due to general measurement issues with motivation. Most motivational constructs that been examined in the literature are context-dependent, concerned with motivational direction, and do not distinguish between motivational level and motivational reasons (Siegling & Petrides, 2016; Siegling et al., 2019a). Examples of these constructs include goal focus, intrinsic versus extrinsic motivation, mastery versus performance orientation, and approach versus avoid motivation (Siegling & Petrides, 2016; Siegling et al., 2019a). Responding to the need for a broader motivational construct that is more in line with how a layperson would define motivation, Siegling and Petrides (2016) introduced the concept of drive. Drive is

"a person's general baseline level of motivation, or the average of motivational states across situations" (Siegling et al., 2019a, p. 17).

Drive has to do with the extent of someone's investment in something in terms of commitment, sacrifice, effort, planning, generating ideas, initiating action, and enjoyment of this investment; regardless of why (Siegling & Petrides, 2016, Siegling et al., 2019a). There is evidence that drive is a superordinate construct comprised of affective, cognitive, and behavioral factors (Siegling & Petrides, 2016; Siegling et al., 2019a;). The affective dimension of drive has been labeled passion, and is comprised of enjoyment, enthusiasm, energy, optimism, and self-confidence (Siegling & Petrides, 2016; Siegling et al., 2019b). The cognitive dimension of drive has been labeled ideation, and is comprised of generating ideas, insightfulness, courage, and initiative (Siegling & Petrides, 2016; Siegling et al., 2019b). The behavioral dimension of drive has been labeled effort, and is comprised of self-discipline, diligence, perseverance, and pursuing goals (Siegling & Petrides, 2016; Siegling et al., 2019b).

The third sub-dimension of Siegling and Petrides' (2016) conceptualization of drive, behavioral drive, or effort, works well as a motivational construct within the JD-R model. Motivation in a JD-R context has sometimes been described as effort and focus on work tasks and goals (Bakker & Demerouti, 2017; Brenninkmeijer et al., 2010). It also aligns well with Cheng & McCarthy's (2018) conceptualization of reflective self-regulatory processing that positively affects performance in individuals high in workplace anxiety, a component of which is

attendance to task goals. This attendance to task goals includes planning, mobilizing resources, and directing action toward goal achievement (Cheng & McCarthy, 2018), which is similar to the self-discipline, diligence, perseverance, and pursuing goals components of behavioral drive (Siegling & Petrides, 2016; Siegling et al., 2019b).

There is evidence that drive can have positive implications for performance. Siegling et al. (2019a) found that the superordinate construct of drive predicted academic performance more strongly than the Big 5 personality dimensions did. While there has yet to be much research that specifically uses Siegling et al. (2019a)'s drive scale, there is ample evidence for the positive effect of their conceptualization of behavioral drive, or effort, on performance. A number of studies have shown that behavioral drive's sub-factors and related constructs can positively affect performance. Self-discipline has been found to positively predict adolescent academic performance (Duckworth & Seligman, 2005) and online course success in college students (Waschull, 2005). Additionally, self-discipline has been found to boost the effect of tenure on sales performance (Kückelhaus et al., 2020). Diligence has been found to predict GPA in college students (Arthur et al., 2006), self-efficacy (Albrecht & Marty, 2020), and engagement through self-efficacy (Albrecht & Marty, 2020). Definitions of both self-discipline and diligence include components of goal pursuit (Albrecht & Marty, 2020; Kückelhaus et al., 2020).

Finally, the perseverance sub-factor of behavioral drive is somewhat similar to the concept of grit (Duckworth et al., 2007). Grit has been defined as "perseverance and passion for long-term goals" (Duckworth et al., 2007, p. 1088), and has been measured on a two-dimensional scale comprised of consistency of interests and perseverance of effort (Duckworth et al., 2007). While there is some debate around the concept of grit, many studies that have found positive connections between grit and performance outcomes have specifically been connected to perseverance (Jachimowicz et al., 2018). Notably, the perseverance subscale of the grit scale includes items about goal pursuit and diligence (Duckworth et al., 2007).

There is empirical support for the idea that personal demands and different types of anxiety can have a positive effect on motivation. Barbier et al. (2013) found that the personal demand of personal expectations for high performance predicted higher work engagement and argued that these demands "will lead workers to increase the effort at work in order to meet those expectations" (p. 759). Individuals high in trait anxiety often have similarly high personal expectations for performance (Flett et al., 1989; Lasota & Kearney, 2017). According to processing efficiency theory, increased effort can cancel out the negative effects of state anxiety (which is determined by the interaction of trait anxiety and situational stress/threat level) on performance (Eysenck & Calvo, 1992; Eysenck et al., 2007; Wilson, 2008).

There is also evidence specifically for the role of effort in the relationship between different types of anxiety and performance. Hardy and Hutchinson (2007) found that increased performance anxiety in rock climbers led to increased effort, which in turn enhanced performance. Similarly, in a study of insurance salespeople, Mughal et al. (1996) found that employees high in trait anxiety exerted increased effort, which resulted in better sales performance. Using a JD-R framework and conceptualizing trait anxiety as a personal demand, behavioral drive as the motivational process mediator, and typical job performance as the organizational outcome of interest suggests indirect effects of trait anxiety on typical performance via behavioral drive. Hypotheses 12-14 are presented in Figure 5.

> Hypothesis 12: Trait anxiety is positively related to behavioral drive.

> Hypotheses 13: Behavioral drive is positively related to typical job performance.

> Hypothesis 14: Trait anxiety can positively affect typical job performance through behavioral drive.
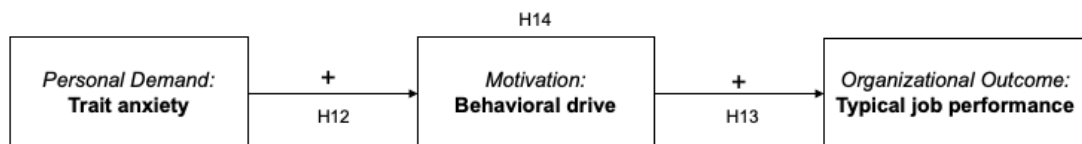
Figure 5: Trait Anxiety, Behavioral Drive, and Typical Job Performance (H12-H14)

Personal and Organizational Resources and the JD-R Motivational Process

A key proposition of the JD-R model is that job resources predict positive organizational outcomes through their positive effect on motivation. This idea has

been echoed repeatedly in the JD-R literature (Bakker, Demerouti, et al., 2003); Bakker et al., 2010; Brenninkmeijer et al., 2010; Trépanier et al., 2014; Schaufeli & Taris, 2014). Resources have been said to "promote motivation" (Bakker et al., 2010, p. 623), "foster motivation" (Trépanier et al., 2014, p. 354), and "have motivational potential" (Schaufeli & Taris, 2014, p. 55).

The motivational process of the JD-R model has frequently been conceptualized as engagement (Lesener et al., 2019), and there is ample empirical support for the positive effect of job resources on engagement and, in turn, on positive organizational outcomes. Examples of job resources that have been shown to predict engagement include craftsmanship, professional contacts, long-term and immediate results, co-worker support, opportunities for development, perceived supervisory support, and perceived organizational support (Barbier et al., 2013; Hakanen et al., 2008; Simbula, 2010). These studies also demonstrated that, in turn, engagement predicts organizational outcomes such as organizational commitment (Hakanen et al., 2008) and job satisfaction (Simbula, 2010). Personal resources have also been found to predict motivation in the form of engagement. Specifically, organization-based self-esteem, optimism, and psychological capital have all been found to positively predict engagement (Barbier et al., 2013; Grover et al., 2018).

Cognitive Reappraisal. Using a JD-R framework, habitual cognitive reappraisal was expected to indirectly affect typical job performance through behavioral drive. Similarly to job resources, personal resources instigate the motivational process within the JD-R model (Bakker & Demerouti, 2017). There is

some evidence for the motivational potential of cognitive reappraisal. Strain and D'Mello (2015) found that cognitive reappraisal had a positive effect on engagement. Using both lab and field studies, Wallace et al. (2009) demonstrated a positive relationship between cognitive reappraisal and task performance that was mediated by task focus. Individuals may be unmotivated to accomplish goals due to fear of an undesirable outcome or a closed mindset (Berkman, 2018). According to Berkman (2018), motivation, or behavior change, "can be accomplished by amplifying the value of the new (goal-related) behavior [and/or] reducing the value of old behaviors" (p. 38). Individuals can change the value of goal-related behaviors by changing the way they think about them (i.e., reappraisal), which could lead to an increased desire to achieve those behaviors.

Other research demonstrates that procrastination is a function of a failure to regulate one's emotions (Sirois & Pychyl, 2013). Specifically, individuals may procrastinate to relieve negative emotions surrounding a task (Sirois & Pychyl, 2013). It follows that regulating one's emotions through a strategy such as reappraisal may lead to the opposite of procrastination, which could be conceptualized as something like behavioral drive. For example, an individual may be procrastinating or avoiding working on a job task because of negative thoughts they are subconsciously telling themselves (Flett et al., 2012), e.g., *I'm never going to finish this,* or *my work is going to be a disaster and I'm going to get fired*. Procrastinating temporarily alleviates those negative thoughts (Sirois & Pycheyl,

2013), but reframing them may actually change behavior (Flett et al., 2012), which

can be conceptualized as motivation, or behavioral drive.

There is also support for positive effects of cognitive reappraisal on typical

job performance. Cognitive reappraisal has been shown to positively affect

academic performance (Balzarotti et al., 2017), task performance (Wallace et al.,

2009), and leadership performance (Torrence & Connelly, 2019). Keith and Frese

(2009) found that error management training led to better performance and argued

that error management training can be thought of as a form of cognitive reappraisal

"because error management instructions reframe errors positively" (p. 687).

Hypotheses 15-16 are presented in Figure 6.

Hypothesis 15: Cognitive reappraisal is positively related to behavioral
drive.

Hypothesis 16: Behavioral drive mediates the relationship between
cognitive reappraisal and typical job performance.
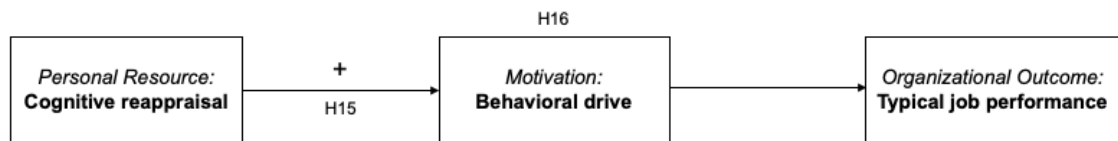
Figure 6: Cognitive Reappraisal, Behavioral Drive, and Typical Job Performance (H15-H16)

Psychological Capital. Using a JD-R framework, PsyCap was expected to

indirectly affect typical job performance through behavioral drive. Similarly to job

resources, personal resources instigate the motivation process within the JD-R

model (Bakker & Demerouti, 2017). There is evidence for the motivational

potential of PsyCap, specifically in terms of its effect on behavioral drive. Avey,

Reichard, et al. (2011) specifically argued that "PsyCap relates mainly to performance through the dimension of demonstrating effort" (p. 135), which is the definition of behavioral drive. In support of this, research has shown that PsyCap can positively affect employee focus (Paterson et al., 2014), innovative work behavior (Mishra et al., 2019), and willingness to perform extra-role behaviors (Soni & Rastogi, 2019). Focus, innovative work behavior, and extra-role behaviors can all be considered as forms of motivation. Other research has shown a positive link between PsyCap and other measures of motivation, including academic motivation (Datu et al., 2018) and intrinsic motivation (Siu et al., 2014).

There is empirical support for the positive effect of PsyCap on typical job performance. Two meta-analyses (Avey, Reichard, et al., 2011; Lupşa et al., 2019) have found evidence for the positive effect of PsyCap on job performance. Specifically, Avey, Reichard, et al. (2011) found positive relationships between PsyCap and self-rated performance ($r = .33$), supervisor-rated performance ($r = .35$), and objective measures of performance ($r = .27$). A number of other individual studies have also found a positive influence of PsyCap on job performance (Abbas et al., 2012; Luthans et al., 2005, 2010; Tsegaye et al., 2019). Most of these studies did not explicitly differentiate between typical performance, performance episodes, and maximum performance, however, the measures used in them are more indicative of typical performance. For example, items used to measure job performance in these studies include "this person adequately completes assigned duties" (Abbas et al., 2012, p. 14) and "your effectiveness at

completing tasks on time" (Tsegaye et al., 2019). Hypotheses 17-18 are presented

in Figure 7.

> Hypothesis 17: Psychological capital is positively related to behavioral
> drive.

> Hypothesis 18: Behavioral drive mediates the relationship between
> psychological capital and typical job performance.
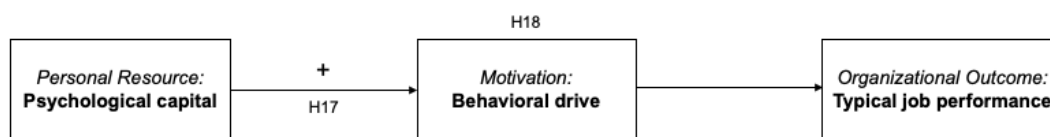
Figure 7: Psychological Capital, Behavioral Drive, & Job Performance (H17-H18)

Supervisor Support. Using a JD-R framework, supervisor support was

expected to indirectly effect typical job performance through behavioral drive. Job

resources instigate the motivation process within the JD-R model (Bakker &

Demerouti, 2017). There is evidence for the motivational potential of supervisor

support. Research has shown that perceived supervisor support has a positive effect

on engagement (Jose & Mampilly, 2015) and psychological empowerment,

conceptualized as a motivational construct that consists of meaning, competence,

self-determination, and impact (Jose & Mampilly, 2015; Spreitzer, 1995). Finally,

one study (De Clerq et al., 2019) found that supervisor support significantly

predicted doctoral students' intention to persist, which can be seen as a form of

behavioral drive. Since supervisor support has been shown to predict these other

motivational constructs, it was expected that it would also predict behavioral drive.

In the De Clerq et al. (2019) study, support from peers and relatives did not predict

intention to persist, indicating that supervisor support may be more important for motivation than other forms of social support. Supervisor support may also positively influence behavioral drive because of psychological need satisfaction or social exchange theory (McIlroy et al., 2021). In line with self-determination theory (Deci & Ryan, 2000; Deci et al., 2017), support from supervisors may satisfy psychological needs for competence, autonomy, and relatedness that can lead to motivation (Deci & Ryan, 2000; Deci et al., 2017), McIlroy et al. (2021) argued, using a social exchange theory (Cropanzano & Mitchell, 2005; Emerson, 1976) perspective, that individuals who do not receive supervisor support when they ask for it "may no longer feel obligated to reciprocate positive behavior" (p. 50). The converse of this would suggest that employees may be motivated by supervisor support because they feel the need to reciprocate positive behavior.

There is empirical support for the positive effect of supervisor support on typical job performance. While it has been shown that perceived supervisor support is more strongly related to work attitudes than to employee performance (Kuvaas & Dysvik, 2010), research has demonstrated relationships between supervisor support and performance. Studies have found positive relationships between perceived supervisor support and both in-role and extra-role performance at the individual level (Frear et al., 2018; Rhoades et al., 2006). Pazy and Ganzach (2009) found that perceived supervisor support was positively related to performance in situations in which pay is contingent on performance. Finally, Dysvik and Kuvaas (2012) found

that perceived supervisor support climate was positively related to business-unit

performance. Hypotheses 19-20 are presented in Figure 8.

Hypothesis 19: Supervisor support is positively related to behavioral drive.

Hypothesis 20: Behavioral drive mediates the relationship between
supervisor support and typical job performance.
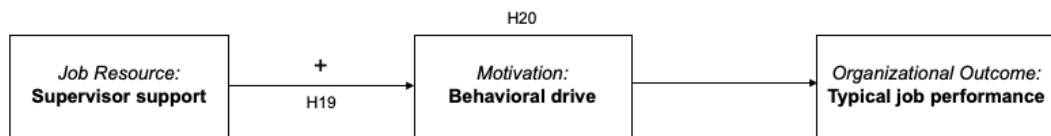
*Figure 8: Supervisor Support, Behavioral Drive, & Typical Job Performance
(H19-H20)*

The Moderating Role of Trait Anxiety in in the JD-R Motivational Process

Hypotheses 15, 17, and 19 proposed positive effects of cognitive

reappraisal, psychological capital, and supervisor support respectively, on

behavioral drive. Based on the JD-R model, trait anxiety (a personal demand) may

weaken the positive effects of job resources on behavioral drive. While there is

little research specifically on the moderating role of trait anxiety in resource-

motivation relationships, there is evidence that job demands can reduce the

beneficial effects of job resources. For example, O'Connor et al. (2018) found that

high job demands, specifically role overload, reduced the relationship between

participation in organizational change management programs and employee support

for organizational change. Specifically with relation to motivation, Kenyi and Jon

(2020) found that job demands (work pressure, disturbances, and emotion at work)

reduced the positive relationship between job resources (collaboration, feedback, and opportunity for development) and employee engagement.

Additional support for the moderating role of trait anxiety in resource-motivation relationships can be found in broad trait anxiety research. While cognitive interference theory is focused on a state-like conceptualization of anxiety (Sarason, 1984; Sarason et al., 1996), it has been argued that trait anxiety can also cause cognitive interference (Macher et al., 2012). Cognitive processes and behaviors associated with individuals high in trait anxiety, such as hypervigilance, planning, maladaptive perfectionism, procrastination, self-blame, and focus on mistakes (Cheng & McCarthy, 2018; Perkins & Corr, 2005; Thompson et al., 2000) may be cognitively distracting and reduce the positive effect of job resources on behavioral drive as a result. Hypotheses 21-23 are presented in Figure 9.

> Hypothesis 21: Trait anxiety moderates the positive relationship between cognitive reappraisal and behavioral drive such that the relationship is weaker when trait anxiety is high.
>
> Hypothesis 22: Trait anxiety moderates the positive relationship between psychological capital and behavioral drive such that the relationship is weaker when trait anxiety is high.
>
> Hypothesis 23: Trait anxiety moderates the positive relationship between supervisor support and behavioral drive such that the relationship is weaker when trait anxiety is high.
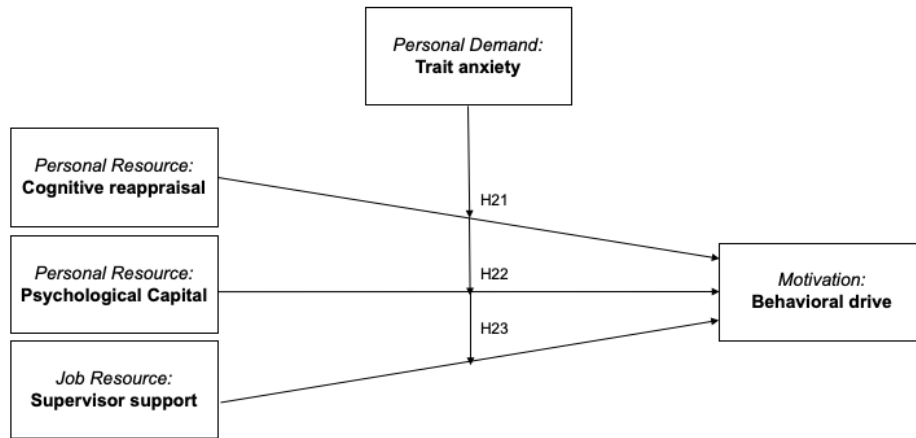
Figure 9: The Moderating Role of Trait Anxiety (H21-H23)

The full model for this study is presented in Figure 10.
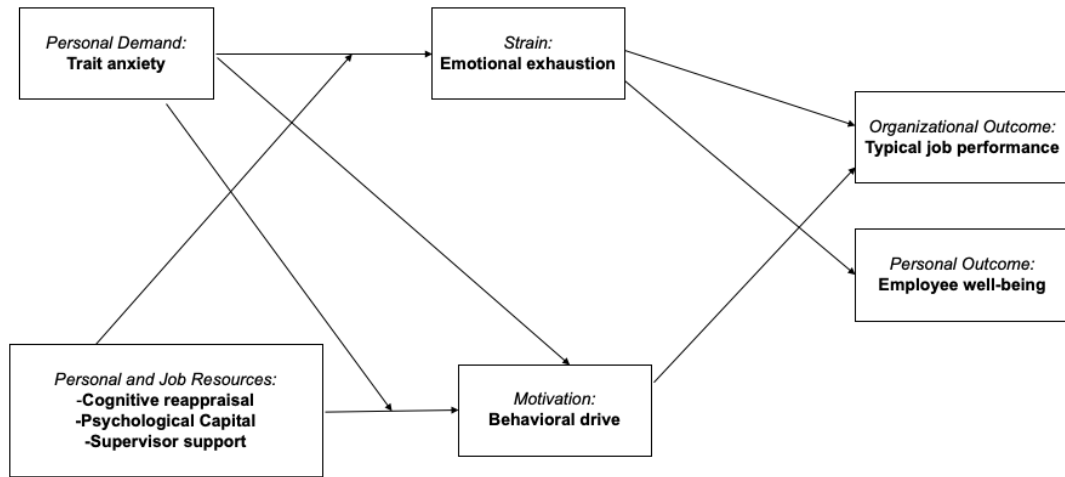
Figure 10: Full Study Model

Accounting for the COVID-19 Pandemic

The COVID-19 pandemic that began in March of 2020 has resulted in increased stress and anxiety levels in American and international employees (APA, 2020a; Gavidia, 2020; Mayer, 2020; Tucker & Czapla, 2021). It is important to

note that any data collected early in the pandemic on trait anxiety, performance, and overall employee well-being would likely have been severely skewed by the unprecedented context of the pandemic. At the time this research was conducted, the COVID-19 pandemic has persisted for over a year. Many individuals may have adjusted to some aspects of the pandemic that may have resulted in severe, acute state anxiety in spring of 2020, such as working from home, social isolation, rising case numbers, mask-wearing, and uncertainty. Additionally, as vaccines were administered, social distancing guidelines were relaxed, and workplaces began to return to "normal", the pandemic may have had as much of a psychological impact on individuals as it did six months or a year prior.

However, at the time this study's data was collected (July 2021), it was likely that some individuals were still facing high stress levels due to the COVID-19 pandemic. Factors that may have contributed to different levels of individual COVID-related stress may have included the spread of the Delta variant of the SARS-CoV-2 virus, job loss or insecurity, inadequate vaccine access, personal experience with COVID-19 (e.g., long-term COVID side effects or death of loved ones due to the virus), childcare or eldercare issues, and social distancing and quarantine requirements. These factors likely varied across individual personal experiences, states, countries, and industries. Due to this, it was still possible that COVID-19-related stress played a role in ratings of emotional exhaustion, overall employee well-being, and typical job performance. There is also some evidence for the existence of a post-COVID condition similar to Post-Traumatic Stress Disorder

(Tucker & Czapla, 2021). Based on this, this study sought to explore the following research questions:

> Research Question 1: Does an individual's current level of COVID-19-related stress affect their self-rated emotional exhaustion?

> Research Question 2: Does an individual's current level of COVID-19-related stress affect their self-rated employee well-being?

> Research Question 3: Does an individual's current level of COVID-19 related stress affect their coworker's current ratings of their typical job performance?

Chapter 4 Methods

Study participants filled out a 135-question online survey (Survey 1). At the end of the survey, they were provided a randomly generated code and asked to forward the code and another survey link (Survey 2) to a coworker who is familiar with their work and able to rate how they typically perform. Survey 2 was a nine-question survey that measured participant performance and the respondent's relationship to the participant who had sent them the survey. In order to match coworker-rated performance data to Survey 1 responses, coworkers were asked to enter the randomly generated code they were provided into the survey link the participant sent them. Coworkers were assured that their performance ratings were to go directly to the researcher, and the focal participant would not have access to them. Survey items for Surveys 1 and 2 are presented in Appendices A and B. The instructions that were provided to participants for forwarding the survey to a coworker are presented in Appendix C.

Participants

Recruitment

Full and part-time employees working at least 20 hours per week were recruited for this study. Participants for this study were recruited using internal distribution at a 300+ employee management consulting firm, social media, and snowball sampling using my professional and personal networks. A sample recruitment message that included a description of the study, directions, estimated duration, and a link to Survey 1 can be found in Appendix D. In order to

incentivize participants, they were entered into a drawing for a $50 Amazon.com gift card. Email addresses provided in the gift card drawing were not connected to participant responses.

Sample Characteristics

After data cleaning, the total sample size for Survey 1 was 552. Of these 552 participants, 93 had matching responses in Survey 2, meaning coworker-rated typical job performance data was collected for 93 of the 552 participants in this study in addition to their self-rated typical job performance data. The sample with only self-rated performance data will be referred to as the full sample (n=552), and the smaller subsample with coworker-rated performance data will be referred to as the coworker-rated performance sample (n=93). A series of independent sample t-tests were run to determine differences in key variables between the 93 participants who had coworkers rate their performance and the remaining 459 who did not. Participants who had coworkers rate their performance had significantly lower levels of trait anxiety (M = 2.03, SD = .40) than participants who did not (M = 2.17, SD = .47) t(550) = -2.74, p < .01). Interestingly, the opposite was true for workplace anxiety; that is, participants who had coworkers rate their performance had significantly higher levels of workplace anxiety (M = 3.25, SD = 1.25) than participants who did not (M = 2.78, SD = .98), t(550) = 3.98, p <.001. It is possible that employees who are anxious specifically about work (i.e., those higher in workplace anxiety) were more motivated to seek out feedback about work from other sources. Those higher in a broader type of anxiety (i.e., those higher in trait

anxiety) may have had other concerns that actually discouraged them from sharing

Survey 2 with coworkers. For example, a person high in trait anxiety might have

been worried about survey confidentiality or being a burden to others.

Participants who had coworkers rate their performance also had

significantly higher perceptions of their own performance ($M = 4.64$, $SD = 4.21$)

than participants who did not ($M = 4.22$, $SD = .68$), $t(550) = 5.77$, $p < .001$. This is

perhaps unsurprising, as someone who feels confident in their own performance is

likely more comfortable obtaining a performance assessment from someone else.

Finally, participants who had coworkers rate their performance had significantly

higher levels of overall well-being ($M = 5.77$, $SD = .84$) than participants who did

not ($M = 5.14$ $SD = .90$), $t(550) = 6.24$, $p < .001$. It is possible that employees with

lower levels of well-being were more easily overwhelmed and less motivated to

send the survey to coworkers. Notably, there were no significant differences in

emotional exhaustion levels between participants who did and did not obtain

coworker-rated performance.

The majority of participants in the full sample were 25-44 years old

(79.4%), female (65.3%), and from the United States (89.3%). 25% of the full

sample reported working in educational services, while 15.1% of the full sample

reported working in Professional, Scientific, and Technical Services, which

includes consulting (United States Census Bureau, 2020). The demographic

breakdown in the coworker-rated performance sample largely mirrored this. The

majority of participants in the coworker-rated performance sample was also 25-44

years old (81.7%), female (68.8%), and from the United States (92.5%). 26.9% of the coworker-rated performance sample reported working in educational services, while 15.1% of the coworker-rated performance sample reported working in Professional, Scientific, and Technical Services. A full breakdown of individual demographics and industries is presented in Tables 1 and 2.

Information on participants' mental health history was also collected. Participants were given the option of disclosing whether they had ever been diagnosed with Generalized Anxiety Disorder (GAD), Social Anxiety Disorder/Social Phobia, Panic Disorder, Specific Phobia, Obsessive-Compulsive Disorder (OCD), Post-Traumatic Stress Disorder (PTSD), or some other anxiety disorder. For the purpose of this study, OCD and PTSD are classified as types of anxiety disorders using the World Health Organization classification (WHO, 2017). Participants were also given the option of disclosing whether they had ever been diagnosed with Attention-deficit/Hyperactivity Disorder (ADHD) or Autism Spectrum Disorder. These two disorders have been found to be related to symptoms of anxiety (Avni et al., 2018; Gair et al., 2021). In women, ADHD symptoms are sometimes misattributed to anxiety (Quinn & Madhoo, 2014). Additionally, it seemed possible that ADHD symptoms, which include poor self-regulation, difficulty finishing tasks, and becoming bored or distracted (Brînzea, 2019) could affect participant scores on behavioral drive.

29.2% of the full sample and 19.4% of the coworker-rated performance sample reported at least one anxiety disorder diagnosis. GAD was the most

common of these, with 16.1% of the full sample and 15.1% of coworker-rated performance sample matches reporting this diagnosis. A full breakdown of participant mental health histories is presented in Table 3.

Survey 2 participants were asked to indicate their relationship to the coworker whose performance they rated. The majority of Survey 2 participants (54.8%) were coworkers at the same level or rank as the coworker being rated. 20.4% of Survey 2 participants were supervisors and 19.4% of Survey 2 participants were direct reports of the coworker being rated. Coworker ratings can provide information about job performance (Murphy & Cleveland, 1995). It appears that Survey 1 participants were more willing to send Survey 2 to coworkers than to their supervisors or direct reports. A breakdown of Survey 2 participant relationships to Survey 1 participants is presented in Table 4.

Measures

Survey 1 included measures of trait anxiety, cognitive reappraisal, psychological capital, supervisor support, emotional exhaustion, behavioral drive, typical job performance, employee well-being, perceived stress due to COVID-19, and workplace anxiety. Survey 2 included a measure of typical job performance.

A number of procedural remedies were put into place to address the possibility of common method bias. Respondents were assured that there were no wrong answers and explicitly told to answer all questions as honestly as possible (Podsakoff et al., 2003). Collecting ratings of the typical performance criterion from coworkers was done to help mitigate common method bias (Podsakoff et al.,

2003). Podsakoff et al. (2003) also suggested that using varying response scales and counterbalancing the order of measurement of the predictor and criterion variables can help mitigate common method bias. In line with these suggestions, both frequency and agreement scales were used in this study, and variables were measured in the following order: typical job performance, emotional exhaustion, supervisor support, employee well-being, trait anxiety, psychological capital, perceived stress due to the COVID-19 pandemic, cognitive reappraisal, workplace anxiety, and behavioral drive. While this study originally proposed using a marker variable technique to examine common method bias, the marker variable chosen, attitudes toward the color blue, could "substantively overlap with affective disposition" (Simmering et al., 2015 p. 215), which could be related to the affective variables in this study. Instead, the potential presence of common method bias was investigated using structural equation modeling techniques, an approach used in other studies (e.g., McNall et al., 2015; Young & Steelman, 2014). Additionally, some of the near zero correlations (Table 9) in this study provide evidence against the presence of common method bias.

The specific measures used for each of the variable in this study are described below. All items are presented in Appendices A and B. Internal consistency reliabilities for each scale are presented in Table 5.

Trait Anxiety

Trait anxiety was measured using the 20-item trait anxiety subscale of Spielberger et al.'s (1983) State-Trait Anxiety Inventory for Adults (STAI-AD)

(APA, 2020b). The STAI-AD is one of the most frequently used scales for measuring anxiety. The research permission for use of the STAID-AD is presented in Appendix E. Items were measured on a four-point frequency scale ranging from 1: "almost never" to 4: "almost always" (APA, 2020b; Spielberger et al., 1983). Sample items include "I lack self-confidence" and "I am a steady person" (Spielberger et al., 1983). In past studies, this scale has been shown to have an internal consistency reliability ranging from .86 to .95 (APA, 2020b; Spielberger et al., 1983). In this study, the trait anxiety subscale of the STAI-AD had an alpha of .90, demonstrating excellent reliability.

Cognitive Reappraisal

The tendency to cognitively reappraise (i.e., trait-like cognitive reappraisal) was measured using the six-item reappraisal subscale of Gross and John's (2003b) Emotion Regulation Questionnaire. Items were measured on a seven-point scale ranging from 1: "strongly disagree" to 7: "strongly agree" (Gross & John, 2003b). Sample items include "I control my emotions by changing the way I think about the situation I'm in" and "When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm" (Gross & John, 2003b). In past studies, this scale has demonstrated an internal consistency reliability of .79 (Gross & John, 2003a). In this study, the reappraisal subscale of the Emotion Regulation Questionnaire had an alpha of .88, demonstrating good reliability.

Psychological Capital

Psychological capital was measured using the short, 12-item version of the Psychological Capital Questionnaire (PCQ) (Avey, Avolio, & Luthans, 2011; Luthans et al., 2007). The full PCQ consists of four subscales with six items each that measure the sub-facets of PsyCap: self-efficacy, optimism, hope, and resilience (Luthans, Avolio, et al. 2007) The four subscales are combined to form an overall PsyCap measure (Luthans et al., 2007). The 24-item full PCQ was reduced to 12 items by identifying items that had the highest factor loadings, contributed most to internal reliability, and maximized construct breadth (Avey, Avolio, & Luthans, 2011). The short PCQ includes three self-efficacy items, two optimism items, four hope items, and three resilience items (Avey, Avolio, & Luthans, 2011). The research permission for use of the PCQ-12 is presented in Appendix F.

Items were measured on a 6-point scale ranging from "strongly disagree" to "strongly agree" (Luthans et al., 2007). Sample items for this scale include "I feel confident in representing my work area in meetings with management", "I can think of many ways to reach my work goals", and "I can get through difficult times at work because I've experienced difficulty before" (Luthans et al., 2007). In past studies, the PCQ scales have demonstrated internal consistency reliabilities above .70 (Avey, Avolio, & Luthans, 2011). In this study, the full PCQ -12 had an alpha of .91, demonstrating excellent reliability. The internal consistency reliabilities for the PCQ-12 subscales in this study were as acceptable: self-efficacy .84, hope .83, resilience .70, and optimism .78.

Supervisor Support

Supervisor support was conceptualized as consisting of both instrumental and emotional support. Additionally, the scales chosen measured directly observable behaviors, rather than employee perceptions of them, which may reduce common method bias effects. Instrumental supervisor support was measured using a short version of Greenhaus et al.'s (1990) Supervisory Support measure previously used by Wilk and Moynihan (2005). The Supervisory Support measure contains five items that were measured on a five-point scale from 1: "strongly disagree" to 5: "strongly agree" (Wilk & Moynihan, 2005). Sample items include "My supervisor gives me helpful feedback about my performance" and "My supervisor provides assignments that give me the opportunity to develop and strengthen new skills" (Wilk & Moynihan, 2005).

Emotional supervisor support was measured using the enhance subscale of Austin et al.'s (2018) short form Managing the Emotions of Others Scale (MEOS-VSF). The enhance subscale of the MEOS-VSF contains four items that were measured on a five-point scale from 1: "strongly disagree" to 5: "strongly agree" (Austin et al., 2018; Jankowski et al., 2016). Sample items include "If someone is feeling anxious, I try to calm them down by talking with them" and "When someone is under stress, I try to boost their confidence in their ability to cope" (Austin et al., 2018). The frames of reference were modified, i.e. "If I am feeling anxious, my supervisor tries to calm me down by talking with me."

Past studies have demonstrated an internal consistency reliability of .81 for the Supervisory Support measure (Wilk & Moynihan, 2005), and an internal reliability (omega) of .84 for the enhance subscale of the MEOS-VSF (Austin et al., 2018). In this study, both supervisor support scales together had an alpha of .92, demonstrating excellent reliability. The Supervisory Support measure had an alpha of .87, and the enhance subscale of the MEOS-VSF had an alpha of .91.

Emotional Exhaustion

Emotional exhaustion was measured using Wilk and Moynihan's (2005) four-item Measure of Emotional Exhaustion. This shortened version of Maslach and Jackson's (1981) emotional exhaustion measure was chosen to minimize respondent fatigue. Items were measured on a five-point frequency scale ranging from 1: "once a month or less" to 5: "several times a day" (Wilk & Moynihan, 2005). Sample items include "I feel burned out from my work" and "I feel fatigued when I get up in the morning and have to face another day on the job" (Wilk & Moynihan, 2005). Past studies have demonstrated an internal consistency reliability of .78 for this scale (Wilk & Moynihan, 2005). In this study, this scale had an alpha of .86, demonstrating good reliability.

Behavioral Drive

Behavioral drive was measured using the effort factor of Siegling et al.'s (2019b) Drive Inventory. This scale was chosen because it is currently the only existing measure of this construct. The effort factor of the Drive Inventory includes four seven-item subscales that measure facets of effort: self-discipline, diligence,

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perseverance, and pursuing goals (Siegling et al., 2019b). Items were measured on a six-point frequency scale ranging from 1: "almost never" to 6: "almost always or always" (Siegling et al., 2019b). Sample items include self-discipline: "The completion of work takes precedence over leisure time", diligence: "I invest the time required to execute tasks thoroughly", perseverance: "I keep at important tasks regardless of how demanding they are", and pursuing goals: "Abandoning my goals is completely unthinkable" (Siegling et al., 2019b).

Preliminary work on the Drive Inventory has shown acceptable internal consistency reliability for each facet of the behavioral drive/effort factor: self-discipline .79, diligence .75, perseverance .82, and pursuing goals .85 (Siegling et al., 2019a). In this study, behavioral drive had an alpha .91, demonstrating excellent reliability. The internal consistency reliabilities for the behavioral drive subscales in this study were acceptable: self-discipline .77, diligence .82, perseverance .81, and pursuing goals .81.

Typical Performance

Ratings of typical job performance were collected from both individual Survey 1 participants (i.e., self-rated typical job performance) and Survey 2 respondents (i.e., other-rated typical job performance) using Williams and Anderson's (1991) measure of in-role job performance. This scale consists of seven items rated on a five-point scale ranging from 1: "strongly disagree" to 5: "strongly agree" (Halbesleben & Wheeler, 2008; Williams & Anderson, 1991). This scale was chosen because of its broad applicability to many different types of jobs.

Sample items include "adequately completes assigned duties" and "performs tasks that are expected of him/her" (Williams & Anderson, 1991). Survey 1 participants were asked to fill out this scale from their supervisor's perspective (Schoorman & Mayer, 2008).

In past studies, when used specifically for coworker-rated performance, this scale has demonstrated an internal consistency reliability of 0.82 (Halbesleben & Wheeler, 2008). In this study, when used for self-rated typical job performance, this scale had an alpha of .85, demonstrating good reliability. However, when used for other-rated job performance, this scale had a relatively low alpha of .70. SPSS analyses indicated that the scale's alpha would jump to a much more acceptable .87 if item 5, "[my coworker] engages in activities that will directly affect their performance evaluation", were dropped. This was further investigated using Exploratory Factor Analysis, which indicated that item 5 did not load with the other items. Specifically, item 5 had a factor loading of .088, while the next highest-loading item had a factor loading of .765. Given these results, the decision was made to drop item 5 from the other-rated typical job performance scale. The modified six-item scale had an alpha of .87, demonstrating good reliability.

Overall Well-Being

Overall employee well-being was measured using Zheng et al.'s (2015) 18-item Employee Well-Being Scale. This scale consists of three subscales that measure life well-being, workplace well-being, and psychological well-being (Zheng et al., 2015). Items were measured on a seven-point scale ranging from 1:

"strongly disagree" to 7: "strongly agree" (Zheng et al., 2015). Sample items include life well-being: "I feel satisfied with my life", workplace well-being: "I can always find ways to enrich my work", and psychological well-being "I generally feel good about myself, and I'm confident" (Zheng et al., 2015).

Past studies have demonstrated the following internal consistency reliabilities for this scale and its subscales: overall employee well-being: .90, life well-being: .82, workplace well-being: .87, and psychological well-being: .82 (Zheng et al., 2015). In this study, the overall Employee Well-being Scale had an alpha of .93, demonstrating excellent reliability. The internal consistency reliabilities for the employee well-being subscales were good: life well-being .89, workplace well-being .91, and psychological well-being .81.

Control and Demographic Variables

Perceived Stress due to the COVID-19 Pandemic. Perceived stress levels due to the COVID-19 pandemic were measured using a modified version of the 10-item version of Cohen et al.'s (1983) Perceived Stress Scale, which aims to measure "the degree to which situations in one's life are appraised as stressful" (Cohen & Williamson, 1988, p. 33). This scale contains 10 items measured on a five-point frequency scale from 0: "never" to 4: "very often" (Cohen & Williamson, 1988). Sample items include "In the last month, how often have you felt that you were unable to control the important things in your life?" and "In the last month, how often have you been angered because of things that were outside of your control?" (Cohen et al., 1983; Cohen & Williamson, 1988). A number of

recent research articles (e.g., Dhinghra & Dhingra, 2020; Manning et al., 2021, Oducado et al., 2021; Pedrozo-Pupo et al., 2020) have used modified versions of the Perceived Stress Scale in order to measure stress due to the COVID-19 pandemic. Past studies have demonstrated internal consistency reliabilities for the Perceived Stress Scale ranging from .74-.91 (Lee, 2012). In this study, the modified Perceived Stress due to the COVID-19 Pandemic scale had an alpha of .86, demonstrating good reliability.

Workplace Anxiety. In order to tease out the effects of trait anxiety versus workplace anxiety on examined outcomes and contribute to burgeoning research on the workplace anxiety construct, a measure of workplace anxiety was also included in this study. Workplace anxiety was measured using McCarthy et al.'s (2016) Workplace Anxiety scale. The Workplace Anxiety Scale consists of eight items measured on a five-point scale from 1: "strongly disagree" to 5: "strongly agree" (McCarthy et al., 2016). Sample items include "I worry about not receiving a positive job performance evaluation" and "Even when I try as hard as I can, still worry about whether my job performance will be good enough" (McCarthy et al., 2016). Past studies have demonstrated an internal consistency reliability of .94 for this scale (McCarthy et al., 2016). In this study, the Workplace Anxiety scale had an alpha of .93, demonstrating excellent reliability.

Demographics. The following demographic variables were collected in Survey 1: industry, gender, age, country of residence, and mental health history.

The only demographic variable collected in Survey 2 was the respondent's relationship to the coworker being rated.

Open-Ended Questions

In order to supplement quantitative data with rich qualitative responses, Survey 1 participants were given the option of answering two open-ended questions. The two questions were: Q1) How has anxiety influenced your performance at work and your well-being? How have you overcome any negative effects of anxiety on your performance at work and your well-being? and Q2) Is there anything else you'd like to add?

Chapter 5 Analyses & Results

Data Cleaning

Bots

The evening the surveys were launched, I received approximately 565
responses to Survey 1 overnight. This extremely improbable number pointed to a
likely data quality issue (Storozuk et al., 2020). Cursory examination of the data as
it came in supported this, with indicators such as nonsensical answers to the two
open-ended questions, low scores on Qualtrics' fraud detection flagging system,
and extremely short response times. To avoid potential for error, the decision was
made to not modify the surveys with additional screener or attention check items
during data collection. Extreme numbers of responses continued throughout the
approximately three weeks that both surveys were open. When the surveys closed,
Survey 1 had a total of 7,217 respondents, and Survey 2 had a total of 346
respondents.

A number of researchers have recently discussed the issue of low-quality
responses in online survey data, specifically citing the increased use of bots and
related software (e.g., Buchanan & Scofield, 2018; Yarrish et al., 2019; Kennedy et
al., 2020; Newman et al., 2021; Storozuk et al., 2020; Teitcher et al., 2015).
Storozuk et al. (2020) defined bots as "malicious software applications
programmed to complete automated tasks online" (p. 472). Bots are coded to
automatically and repeatedly complete online surveys (Kennedy et al., 2020;
Newman et al., 2021; Teitcher et al., 2015). Similar software, alternatively referred

to as scripts or automated form fillers, enable human respondents to quickly fill out surveys (Buchanan & Scofield, 2018; Kennedy et al., 2020), by, for example, "complet[ing] entire surveys with one or two clicks" (Buchanan & Scofield, 2018, p. 2588). The purpose of using this software is often to gain quick and additional compensation (Storozuk et al., 2020; Teitcher et al., 2015). A less sophisticated approach with the same goal involves human participants who repeatedly take surveys inattentively (Yarrish et al., 2019).

This study follows Storozuk et al.'s (2020) approach, using "bots" as an umbrella term for all of the above. The use of bots has increased over the last six years or so (Kennedy et al., 2020; Teitcher et al., 2015), however, it is possible that this problem goes back to even earlier than that (Kennedy et al., 2020). The bot problem has been referred to as a "quality crisis" (Kennedy et al., 2020, p. 615) which threatens validity and can lead to increased Type I and Type II errors (Storozuk et al., 2020). It is unclear why this problem has increased recently (Kennedy et al., 2020), but bots are becoming more sophisticated and usage of them will likely continue to increase (Storozuk et al., 2020).

Two key characteristics of this study make the fact that it attracted bots particularly notable. First, participants were not compensated for this study. They were given the option of entering a drawing for a $50 Amazon gift card that was hosted on a different survey platform, but no compensation was guaranteed. Second, this study utilized snowball sampling and internal recruitment within a consulting firm. Almost all of the research that discusses bots does so in the context

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of Amazon Mechanical Turk (MTurk) and similar online platforms (e.g., Buchanan & Scofield, 2018; Kennedy et al., 2020; Newman et al., 2021; Yarrish et al., 2019). The results of this study indicate that bots are a threat to survey data even without compensation and outside of MTurk and similar platforms. According to Storozuk et al. (2020), "Twitter and Facebook are some of the main platforms bot hackers use to find research studies" (p. 474). Given that I requested that hundreds of people in my network share the study on social media, it is likely that attracted bots.

Many researchers do not report data cleaning methods used to identify bots (Storozuk et al., 2020). There is broad agreement that multiple indicators should be used to identify and eliminate bots (Bernerth et al., 2021; Brühlmann et al., 2020; Storozuk et al., 2020; Yarrish et al., 2019). A summary of how bots and likely low-quality data, such are careless and inattentive responses (Meade & Craig, 2012) were identified in and eliminated from this study is presented below and summarized in Figure 11.

```
                    ┌─────────────────────────┐
                    │  Total Survey 1 Responses│
                    │    in Qualtrics (7,217)  │
                    └─────────────────────────┘
                                                    ┌──────────────────────────────────────────────────┐
                                                    │ Did not consent or failed at least one screening question (1441) │
    ┌──────────────────────┐                        └──────────────────────────────────────────────────┘
    │ Blank responses (147)│
    └──────────────────────┘                        ┌──────────────────────────────────┐
                                                    │ Failed attention check 1 (2361)  │
┌───────────────────────────────────┐               └──────────────────────────────────┘
│ Qualtrics reCAPTCHA score below 0.5 (887)│
└───────────────────────────────────┘               ┌──────────────────────────────────┐
                                                    │ Responses in other languages (61)│
        ┌──────────────────────────┐                └──────────────────────────────────┘
        │ Short response time (259)│
        └──────────────────────────┘                ┌──────────────────────────────────────────┐
                                                    │ Irrelevant or nonsensical open-ended responses (668) │
    ┌─────────────────────────────────┐             └──────────────────────────────────────────┘
    │ Questionable open-ended response +│
    │ Qualtrics reCAPTCHA score below .8 (94)│       ┌──────────────────────────────────────────┐
    └─────────────────────────────────┘             │ Latitude/longitude and reported data mismatches (15) │
┌─────────────────────────────────┐                 └──────────────────────────────────────────┘
│ Met 2 criteria for possible bots (e.g., VPS and│
│ Qualtrics reCAPTCHA score below 0.8 (20)│          ┌──────────────────┐
└─────────────────────────────────┘                 │ Longstring (63)  │
        ┌──────────────────────────┐                 └──────────────────┘
        │ Mahalanobis distance (11)│
        └──────────────────────────┘                 ┌──────────────────────────────────┐
                                                    │ Failed attention check 2 (627)   │
                    ┌─────────────────────────┐      └──────────────────────────────────┘
                    │   Total Removed: 6,654  │
                    │     563 remaining       │
                    └─────────────────────────┘
```

Figure 11: Low-Quality Data Removal Process

Originally, Survey 2 respondents were examined independently of Survey 1 respondents, but it quickly became evident through Qualtrics' internal fraud flagging system that bots were an issue in Survey 2 as well, and that having a matching code in Survey 1 did not equate to the respondent being a legitimate one. The decision was made to first focus on eliminating bad data from Survey 1 and then identifying the Survey 2 codes that matched up with the data that remained. Of the 7,217 Survey 1 respondents, 1,441 respondents who did not consent to the study or failed at least one of the two screening questions (i.e., "I am employed at least 20 hours per week" and "I am self-employed") were eliminated. An additional 147 completely blank responses were also eliminated. 5,629 respondents remained.

First, 2,361 respondents (approximately 42%) who failed the first attention check question, "I have never used a computer" were eliminated. Curran and

Hauser (2019) suggested this question as an effective attention check that had a false positive rate of 0% and a false negative rate of 5%. Using questions like these has been cited as a moderately effective way to identify bots (Storozuk et al., 2020; Yarrish et al., 2019).

Next, I utilized Qualtrics' internal reCAPTCHA bot flagging system. It is important to note that CAPTCHA and reCAPTCHA are two different types of technology (Qualtrics, 2021). According to Yarrish et al. (2019), "CAPTCHAs require [participants] to complete a brief task that is easy for humans but hard for computers" (p. 236). CAPTCHAs are not foolproof—some bots can work around them (Teitcher et al., 2015; Yarrish et al., 2019), and they can cause issues for legitimate respondents with low computer literacy or disabilities (Teitcher et al., 2015). Still, CAPTCHA has been identified as a moderately effective way of identifying bots (Storozuk et al., 2020). CAPTCHA questions can be added to surveys in Qualtrics' survey builder.

Qualtrics' reCAPTCHA system uses similar technology to assign scores to respondents based on the probability that they are a bot (Qualtrics, 2021). In contrast with CAPTCHA, Qualtrics' reCAPTCHA system is invisible and does not require the respondent to interact with a task (Qualtrics, 2021). reCAPTCHA scores are "based on interactions with [the] site" (Google, 2021). To conserve the integrity of the data, I made the decision to not add a CAPTCHA question once data collection had begun and it was clear that bots were an issue. Instead, I used Qualtrics' reCAPTCHA scoring system. Respondents with reCAPTCHA scores of

less than 0.5 are likely bots (Qualtrics, 2021). 887 respondents (approximately 16%) were eliminated based on a Qualtrics reCAPTCHA score of below 0.5.

Next, I eliminated 61 respondents (approximately 1%) whose answers to the open-ended questions were in languages other than English (e.g., Spanish, Mandarin Chinese) and 259 respondents (approximately 5%) who completed the survey in less than eight minutes. Short completion time has been identified as an effective way to screen for bots and careless respondents (Curran, 2016; Meade & Craig, 2012; Storozuk et al., 2020; Yarrish et al., 2019). Cut scores that have been suggested for this metric include two seconds per item (Curran, 2016) and two standard deviations below the mean completion time (Teitcher et al., 2015), but Curran (2016) noted that "even established cut scores…should be applied with care and thoughtfulness" (p. 15). It was impossible to obtain an accurate estimate of mean completion time, as the survey was set to allow individuals to return to the survey instead of completing it all in one sitting. Using the two seconds an item rule, the respondent cut score would have been approximately five minutes. Given the sheer amount of data, the fact that this cutoff score has been identified as a conservative estimate (Curran, 2016), and a small pilot of the survey using a group of I/O psychology graduate students resulted in an average completion time of approximately 15 minutes, the decision was made to increase the completion cutoff score from five minutes to eight minutes.

Examining responses to open-ended questions is another way of checking for bots (Kennedy et al., 2020; Storozuk et al., 2020; Yarrish et al., 2019).

Responses to these questions that can indicate bots include answers that are nonsensical, irrelevant to the question being asked, contradictory, identical, or very similar to each other (Kennedy et al., 2020; Storozuk et al., 2020; Yarrish et al., 2019). While one of the most effective ways to identify bots (Storozuk et al., 2020), it is also one of the most time-consuming (Yarrish et al., 2019). A total of 668 responses (approximately 12%) were deleted using this method. Examples of the responses that were deleted are presented in Table 6. There were a handful of open-ended responses that were less clear-cut in terms of whether or not they were bots, for example "I was so afraid of choice because of my anxiety that it had a huge impact on my productivity". For these, I used an additional criterion for deletion. According to Qualtrics (C. Bautista Rosell, personal communication, July 22, 2021), while below 0.5 is the cutoff score at which their reCAPTCHA system is most certain a respondent is a bot, a cutoff score of 0.8 can also be used to eliminate bots. Using this metric, an additional 94 responses (approximately 2%) that had been identified as possible bots based on open-ended responses were deleted.

Next, 15 respondents (approximately .3%) who indicated their location as a country other than the United States, but whose latitude and longitude location recorded in Qualtrics didn't match their reported location, were deleted. Examples include a respondent who indicated that they were in Tanzania, but the recorded latitude and longitude reported that they were in North Carolina, and another who

indicated that they were in Germany, but the recorded latitude and longitude reported that they were in Toronto.

The next batch of deletions included respondents who met at least 2 criteria for possible bots. For example, according to Kennedy et al. (2020), the use of virtual private servers (VPS) can indicate bot activity. However, "just because a respondent is using a VPS…does not necessarily imply that they are providing low-quality data" (Kennedy et al., 2020, p. 616). Given this, respondents were deleted if they were identified as using a VPS and meeting one other deletion criterion, for example, a Qualtrics reCAPTCHA score of below 0.8. VPS users were identified using Kennedy et al.'s (2020) online Shiny app. An example of another criteria combinations used in this step is a suspicious location reported (e.g., Afghanistan) combined with having been labeled as possibly bots based on their open-ended responses. A total of 20 respondents (approximately .4%) who met at least two possible criteria for deletion were removed.

Next, possible bots and inattentive respondents were identified and eliminated using two indicators from the careless package for R (Yentes & Wilhelm, 2021) - longstring and Mahalanobis distance. Longstring is "the longest string of identical responses from each participant" (Curran, 2016, p. 13). Upon examining the histogram of longstring results from the data, presented in Figure 12, the decision was made to remove respondents with a longstring value above 30. A total of 63 respondents (approximately 1%) were removed using this metric. Mahalanobis distance is a multivariate outlier index (Meade & Craig, 2012) that

can "inform a researcher that an individual is on the outskirts of the multivariate distribution formed by responses to all items" (Curran, 2016, p. 18). The biggest jump in Mahalanobis distance values was between 254 and 266, so respondents with a Mahalanobis distance value above 266 were eliminated. A total of 11 responses (approximately .2%) were eliminated using this metric.
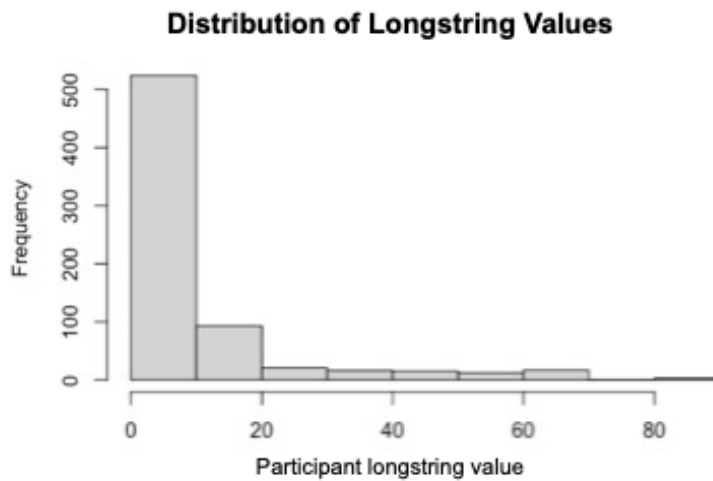
Figure 12: Longstring Analysis Results

Finally, 627 respondents (approximately 11%) who failed the second attention check question, "I work 14 months in a year" were eliminated. Curran and Hauser (2019) suggested this question as an effective attention check that had a false positive rate of 0%-3% and a false negative rate of 3%. Originally, I had eliminated all respondents who failed attention check 2. However, upon closer inspection of open-ended responses, it became evident that there were some legitimate, human participants who failed this question. According to Yarrish et al. (2019), items like this "may confuse well-meaning participants" (p. 234). This was

supported by a participant comment: "I wasn't sure about the question I work 14 months in a year. Sarcasm? It feels like I work that much? A test to see if people are reading the question?". Given this, I examined the respondents that remained after passing all the deletion criteria above and who failed attention check 2. Of these, 39 were identified as definitely not bots based on their open-ended responses and kept in the data.

There are a few caveats to note in terms of bot removal in this dataset. While Qualtrics identifies 0.5 as their reCAPTCHA cutoff score for bots, there is some evidence that their system is not always 100% accurate (Yarrish et al., 2019; Teitcher et al., 2015). Given this, I went back and examined respondents who scored below 0.5 on the Qualtrics reCAPTCHA metric who had apparently valid answers to the open-ended questions. Based on this, four respondents who scored below 0.5 on the Qualtrics reCAPTCHA metric were kept in the dataset. Additionally, 223 responses in the dataset did not have a Qualtrics reCAPTCHA score. There are two possible reasons for this. First, Qualtrics is sometimes unable to record a reCAPTCHA score (C. Bautista Rosell, personal communication, July 22, 2021). Second, Qualtrics reCAPTCHA bot detection is not an automatic feature; it has to be enabled, and I did not enable it until the second day the surveys were open, after realizing that bots were an issue. Since these respondents passed all of the other bot detection checks, the decision was made to keep them in the dataset. After cleaning the data for bots, 563 responses remained in Survey 1. Of these 563, 94 had matching data in Survey 2.

Missing Data

Across the 563 remaining cases in Survey 1, there was an average of 4 items missing for each case. Missing data points were replaced with the series mean. Of the 94 cases in Survey 2, one was completely blank and was deleted for a new total of 93.

Outliers

Potential outliers were flagged by converting values on all variables to z-scores. Individuals in the sample who had a z-score value of above 3.29 on any composite variable were flagged. Using this metric, 23 potential outliers were identified. Notably, the variables with the most outliers were higher emotional exhaustion and lower psychological well-being. It is possible that the ongoing COVID-19 pandemic contributed to these numbers. 14 of the 23 potential outliers did not have a Qualtrics ReCAPTCHA score. Of these 14, three had legitimate qualitative responses. Since none of the outliers were extreme, the decision was made to delete the 11 outliers that did not have a Qualtrics reCAPTCHA score or a legitimate qualitative response and keep the remaining 12. Based on this, the final full sample dataset had an n size of 552, and the final coworker-rated performance dataset had an n size of 93.

Checking for Normality

Analyses were run to examine the data's normality using the skewness, kurtosis, and Kolmogorov-Smirnov statistic of each composite variable. These

statistics are presented in Table 7. Because the data were not extremely skewed and all of these normality statistics are sensitive to large sample sizes (Field, 2013; Pallant, 2007), the decision was made not to transform the data to increase normality.

Preliminary Analyses

Descriptive Statistics and Correlations

Descriptive statistics for both the full sample of participants and the coworker-rated performance sample are presented in Table 8. Correlations for all superordinate scales and subscales for both the full sample of participants and the sample with Survey 2 matches are presented in Tables 9-10. Some notable results emerged from the correlation analyses. Trait anxiety was significantly positively correlated with workplace anxiety at between $r = .32$ in the coworker-rated performance sample and $r = .47$ in the full sample. Additionally, while a negative relationship between trait anxiety and supervisor support was found, there was actually a small, but significantly positive relationship between supervisor support and workplace anxiety in both samples, $r = .11$ in the full sample and $r = .45$ in the coworker-rated performance sample. This could be a function of social exchange theory (Cropanzano & Mitchell, 2005; Emerson, 1976). Employees may feel like they owe their supervisors better quality work when they feel supported by them, which could lead to increased work-related anxiety. There was a significant negative relationship between trait anxiety and self-rated typical job performance ($r = -.34$ in the full sample and $r = -.24$ in the coworker-rated performance sample).

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However, there was no significant relationship between trait anxiety and coworker ratings of performance. This provides support for the idea that those higher in trait anxiety are harder on themselves and thus may not provide accurate ratings about their typical job performance.

In the full sample, workplace anxiety, one of the control variables in this study, was not significantly related to behavioral drive or overall employee well-being, but it was significantly related to emotional exhaustion ($r = .16$) and self-rated typical job performance ($r = -.18$). Perceived stress to due to the COVID-19 pandemic, the other control variable in this study, was significantly related to behavioral drive ($r = -.23$), emotional exhaustion ($r = .20$), overall employee well-being ($r = -.18$), and typical job performance ($r = -.35$). In the coworker-rated performance sample, workplace anxiety was significantly related to behavioral drive ($r = .32$), employee well-being ($r =.42$), and other-rated typical job performance ($r = .53$). Perceived stress due to the COVID-19 pandemic was not significantly related to any of the mediator or outcome variables in the coworker-rated performance sample.

ANOVAs

A series of one-way analysis of variance (ANOVAs) were run to determine other factors that may affect the mediator and outcome variables in this study: emotional exhaustion, behavioral drive and its four components, self-rated typical job performance, coworker-rated typical job performance, and overall employee well-being and its three components.

Presence of an anxiety disorder diagnosis, presence of an ADHD diagnosis, industry, gender, and age were found to significantly affect the mediator and outcome variables in this study. Participants who reported an anxiety disorder diagnosis (including OCD and PTSD) had a higher mean emotional exhaustion score and had significantly lower mean scores on behavioral drive and 3 of its 4 facets—self-discipline, diligence, and perseverance. These participants also had significantly lower mean scores on overall well-being, life-well-being, and psychological well-being, but not workplace well-being. Finally, participants who reported an anxiety disorder diagnosis also had a lower mean self-reported typical job performance score. Notably, there were no significant differences in coworker-rated performance by presence of an anxiety disorder diagnosis.

Participants who reported an ADHD diagnosis ($n = 34$) had significantly lower mean behavioral drive self-discipline scores than those who did not, however, no other significant differences by ADHD diagnosis were found on overall behavioral drive or its other 3 facets, i.e., diligence, perseverance, and pursuing goals. Participants who reported an ADHD diagnosis also had significantly lower coworker-rated typical job performance scores. Notably, there were no significant differences in self-rated typical job performance by presence of an ADHD diagnosis.

Industry had a significant effect on self-rated typical job performance scores. Participants who reported working in Accommodation and Food Service and in Transportation and Warehousing had significantly lower mean self-rated

typical job performance scores than those who reported working in some other industries (e.g., Educational Services). Notably, there were no significant differences in coworker-rated typical job performance by industry.

Gender had a significant effect on behavioral drive diligence, behavioral drive perseverance, self-rated typical job performance, overall well-being, life well-being, and psychological well-being. Female participants had significantly higher mean scores on these variables than male participants.

Finally, age had a significant effect on behavioral drive, behavioral drive self-discipline, self-rated typical job performance, overall well-being, and psychological well-being. Broadly, older participants (e.g., 45-54, 65+) had significantly higher mean scores on these variables than younger participants (e.g., 18-24). A summary of mean differences found in the ANOVA analyses is presented in Table 11. Notably, most of these mean differences, while significant, were small. The largest significant mean difference was in overall well-being between employees aged 65+ ($M = 6.08$) and those aged 18-24 ($M = 4.82$), but the average significant mean difference in these variables was .12. Still, these variables were controlled for in later analyses.

Hypothesis Testing

Hypothesis testing was conducted using a variety of analytic approaches: regression analyses, conditional process analyses using Hayes' (2018) PROCESS macro for SPSS, and structural equation modeling (SEM). In addition to perceived stress due to COVID-19 and workplace anxiety, the control variables originally

identified for this study, variables that ANOVA results indicated had a significant effect on the dependent variables in this study were also controlled for. Participants who selected "prefer not to answer" for the mental health diagnosis disclosure question were treated as missing data ($n = 18$).

Trait Anxiety and the JD-R Impairment Process

    Hypothesis 1. Hypothesis 1 states that trait anxiety is positively related to emotional exhaustion. In order to determine if trait anxiety predicted emotional exhaustion, a hierarchical regression analysis was run controlling for the presence of an anxiety disorder, perceived stress due to COVID-19, and workplace anxiety. The control variables together significantly predicted 8% of the variance in emotional exhaustion [$R^2 = .08$, $F(3, 530) = 16.27$, $p < .001$]. When trait anxiety was added to the model, it explained an additional 12% of the variance in emotional exhaustion [$\Delta R^2 = .12$, $F(1, 529) = 82.05$, $p < .001$]. Controlling for the presence of an anxiety disorder, COVID-19 stress, and workplace anxiety, trait anxiety significantly positively predicted emotional exhaustion ($\beta = .43$, $p < .001$), thus supporting Hypothesis 1. Results are presented in Table 12.

    Hypothesis 2. Hypothesis 2 states that emotional exhaustion is negatively related to typical job performance. This hypothesis was tested in both the full sample and the coworker-rated performance sample. Emotional exhaustion significantly predicted 1% of the variance in self-rated job performance over and above the variables controlled for [$\Delta R^2 = .01$ $F(1, 496) = 4.20$, $p < .05$]. Controlling for presence of an anxiety disorder, perceived stress due to COVID-19, workplace

anxiety, industry, gender, and age, emotional exhaustion negatively predicted self-rated typical job performance ($\beta = -.09$, $p < .05$). Results are presented in Table 13. Controlling for presence of ADHD, perceived stress to COVID-19, and workplace anxiety, emotional exhaustion did not significantly predict other-rated typical job performance. Thus, Hypothesis 2 was partially supported—supported for self-rated performance, but not supported for other-rated performance.

Hypothesis 3. Hypothesis 3 states that emotional exhaustion mediates the relationship between trait anxiety and typical job performance. It was tested using Hayes' (2018) PROCESS macro for SPSS. Perceived stress due to the COVID-19 pandemic and workplace anxiety were included as control variables. The number of bootstraps was set to 5,000, and a 95% Bca confidence interval was specified. The mediation effect was tested by examining the specific indirect effect for the hypothesized mediator (i.e., emotional exhaustion) (Preacher & Hayes, 2004). This testing for mediation was run in both the full sample and the coworker-rated performance sample. The indirect effect of trait anxiety on typical job performance through emotional exhaustion was not significant in either sample. Thus, Hypothesis 3 was not supported.

Hypothesis 4. Hypothesis 4 states that emotional exhaustion is negatively related to employee well-being. Emotional exhaustion significantly predicted 17% of the variance in overall employee well-being over and above the variables controlled for [$\Delta R^2 = .17$ $F(1, 497) = 107.97$, $p < .001$]. Controlling for the presence of an anxiety disorder perceived stress due to COVID-19, workplace

anxiety, gender, and age, emotional exhaustion significantly negatively predicted overall employee well-being (β = -.43, p < .001), thus supporting Hypothesis 4. Results are presented in Table 14. Furthermore, emotional exhaustion also significantly negatively predicted all facets of overall employee well-being: life well-being (β = -.32, p < .001), workplace well-being (β = -.52, p < .001), and psychological well-being (β = -.19, p < .001).

Hypothesis 5. Hypothesis 5 states that emotional exhaustion mediates the relationship between trait anxiety and employee well-being. Mediation analyses in PROCESS (Hayes, 2018) was run with the number of bootstraps set to 5,000, a 95% Bca confidence interval specified, and including perceived stress due to the COVID-19 pandemic and workplace anxiety as control variables. In the sample with self-rated job performance data (n = 552), trait anxiety exhibited a significant indirect effect on overall employee well-being through emotional exhaustion (β = -.10; [-.133, -.060]). Thus, Hypothesis 5 was supported.

The Moderating Role of Personal and Organizational Resources in the JD-R Health Impairment Process

Hypothesis 6. Hypothesis 6 states that cognitive reappraisal moderates the relationship between trait anxiety and emotional exhaustion such that the relationship is weaker when cognitive reappraisal is high. A moderation analyses was run using PROCESS (Hayes, 2018), controlling for perceived stress due to the COVID-19 pandemic and workplace anxiety. The interaction term between trait anxiety and cognitive reappraisal was not significant. Thus, Hypothesis 6 was not supported.

Hypothesis 7. Hypothesis 7 states that the indirect effect of trait anxiety on employee well-being through emotional exhaustion is moderated by cognitive reappraisal. A moderated mediation analysis was run using Hayes' (2018) PROCESS macro with the number of bootstraps set to 5,000, a 95% Bca confidence interval specified, and including perceived stress due to the COVID-19 pandemic and workplace anxiety as control variables. While the indirect effect of trait anxiety on overall employee well-being through emotional exhaustion was significant (Hypothesis 5), the index of moderated mediation with cognitive reappraisal as the moderator was not significant. Thus, Hypothesis 7 was not supported.

Hypothesis 8. Hypothesis 8 states that psychological capital moderates the relationship between trait anxiety and emotional exhaustion such that the relationship is weaker when psychological capital is high. A moderation analyses was run using PROCESS (Hayes, 2018), controlling for perceived stress due to the COVID-19 pandemic and workplace anxiety. The interaction term between trait anxiety and psychological capital was not significant. Thus, Hypothesis 8 was not supported.

Hypothesis 9. Hypothesis 9 states that the indirect effect of trait anxiety on employee well-being through emotional exhaustion is moderated by psychological capital. A moderated mediation analysis was run using Hayes' (2018) PROCESS macro with the number of bootstraps set to 5,000, a 95% Bca confidence interval specified, and including perceived stress due to the COVID-19 pandemic and

workplace anxiety as control variables. While the indirect effect of trait anxiety on overall employee well-being through emotional exhaustion was significant (Hypothesis 5), the index of moderated mediation with psychological capital as the moderator was not significant. Thus, Hypothesis 9 was not supported.

Hypothesis 10. Hypothesis 10 states that supervisor support moderates the relationship between trait anxiety and emotional exhaustion such that the relationship is weaker when supervisor support is high. A moderation analyses was run using PROCESS (Hayes, 2018), controlling for perceived stress due to the COVID-19 pandemic and workplace anxiety. The interaction term between trait anxiety and supervisor support was not significant. Thus, Hypothesis 10 was not supported.

Hypothesis 11. Hypothesis 11 states that the indirect effect of trait anxiety on employee well-being through emotional exhaustion is moderated by supervisor support. A moderated mediation analysis was run using Hayes' (2018) PROCESS macro with the number of bootstraps set to 5,000, a 95% Bca confidence interval specified, and including perceived stress due to the COVID-19 pandemic and workplace anxiety as control variables. While the indirect effect of trait anxiety on overall employee well-being through emotional exhaustion was significant (Hypothesis 5), the index of moderated mediation with supervisor support as the moderator was not significant. Thus, Hypothesis 11 was not supported.

Trait Anxiety and the JD-R Motivational Process

Hypothesis 12. Hypothesis 12 states that trait anxiety is positively related to behavioral drive. Trait anxiety significantly predicted 7% of the variance in behavioral drive over and above the variables controlled for [$\Delta R^2 = .07$ $F(1, 506) = 43.18, p < .001$]. Controlling for the presence of an anxiety disorder, perceived stress due to COVID-19, workplace anxiety, and age, trait anxiety significantly negatively predicted behavioral drive ($\beta = -.33, p < .001$). This result is opposite of what was hypothesized; thus, Hypothesis 12 was not supported. Results are presented in Table 15. Furthermore, trait anxiety also significantly negatively predicted all facets of behavioral drive: self-discipline ($\beta = -.29, p < .001$), diligence ($\beta = -.25, p < .001$), perseverance ($\beta = -.25, p < .001$), and pursuing goals ($\beta = -.30, p < .001$). Note that while it could be argued that ADHD should be controlled for when looking at all facets of behavioral drive, ANOVA results indicated that it only significantly affected self-discipline; thus, it was only controlled for on that facet of behavioral drive.

Hypothesis 13. Hypothesis 13 states that behavioral drive is positively related to typical job performance. This hypothesis was tested in both the full sample and the coworker-rated performance sample. Behavioral drive explained an additional 16% of the variance in self-rated typical job performance over the variables controlled for [$\Delta R^2 = .16, F(1, 496) = 123.02 \ p < .001$]. Controlling for the presence of an anxiety disorder, perceived stress due to COVID-19, workplace anxiety, industry, and gender, behavioral drive significantly positively predicted

self-rated typical job performance (β = .45, p < .001), thus supporting Hypothesis 13. Results are presented in Table 16. Furthermore, all facets of behavioral drive also significantly positively predicted self-rated typical job performance.

Behavioral drive explained an additional 6% of the variance in other-rated typical job performance over the variables controlled for [ΔR^2 = .06, F(1, 85) = 5.72 p < .05]. Controlling for the presence of an ADHD diagnosis, perceived stress due to COVID-19, and workplace anxiety, behavioral drive significantly positively predicted other-rated typical job performance (β = .26, p < .05). Results are presented in Table 17. All facets of behavioral drive except self-discipline predicted other-rated typical job performance. Thus, Hypothesis 13 was supported.

Hypothesis 14. Hypothesis 14 states that behavioral drive mediates the relationship between trait anxiety and typical job performance. Mediation analyses in PROCESS (Hayes, 2018) were run in both samples with the number of bootstraps set to 5,000, a 95% Bca confidence interval specified, and including perceived stress due to the COVID-19 pandemic and workplace anxiety as control variables. In the full sample (n = 552), trait anxiety had a significant indirect effect on typical job performance through behavioral drive in the opposite direction of what was hypothesized – trait anxiety exhibited a significant indirect effect on typical job performance through behavioral drive (β = -.14; [-.193, -.100]). The indirect effect was not significant in the sample with other-rated job performance data (n = 93). Hypothesis 14 was not supported.

Hypothesis 15. Hypothesis 15 states that cognitive reappraisal is positively related to behavioral drive. Cognitive reappraisal significantly predicted 7% of the variance in behavioral drive over and above the variables controlled for [$\Delta R^2 = .07$ $F(1, 506) = 44.00, p < .001$]. Controlling for the presence of an anxiety disorder, perceived stress due to COVID-19, and workplace anxiety, cognitive reappraisal significantly positively predicted behavioral drive ($\beta = .28, p < .001$), supporting Hypothesis 15. Results are presented in Table 18. Furthermore, cognitive reappraisal also significantly positively predicted all facets of behavioral drive: self-discipline ($\beta = .20, p < .001$), diligence ($\beta = .24, p < .001$), perseverance ($\beta = .14, p < .001$), and pursuing goals ($\beta = .35, p < .001$).

Hypothesis 16. Hypothesis 16 states that behavioral drive mediates the relationship between cognitive reappraisal and typical job performance. Mediation analyses in PROCESS (Hayes, 2018) were run in both samples with the number of bootstraps set to 5,000, a 95% Bca confidence interval specified, and including perceived stress due to the COVID-19 pandemic and workplace anxiety as control variables. In the sample with self-rated job performance data ($n = 552$), cognitive reappraisal exhibited a significant indirect effect on typical job performance through behavioral drive ($\beta = .08; [.104, .186]$). In the sample with other-rated job performance data ($n = 93$), the indirect effect of cognitive reappraisal on typical job performance through behavioral drive was not significant. Thus, Hypothesis 16 was partially supported.

Hypothesis 17. Hypothesis 17 states that psychological capital is positively related to behavioral drive. When psychological capital was added to the model, it explained an additional 23% of the variance in behavioral drive over and above the variables controlled for [$\Delta R^2 = .23$ $F(1, 506) = 165.43$, $p < .001$]. Controlling for the presence of an anxiety disorder, perceived stress due to COVID-19, and workplace anxiety, psychological capital significantly positively predicted behavioral drive ($\beta = .50$, $p < .001$), supporting Hypothesis 17. Results are presented in Table 19. Furthermore, psychological capital also significantly positively predicted all facets of behavioral drive: self-discipline ($\beta = .39$, $p < .001$), diligence ($\beta = .45$, $p < .001$), perseverance ($\beta = .34$, $p < .001$), and pursuing goals ($\beta = .47$, $p < .001$).

Hypothesis 18. Hypothesis 18 states that behavioral drive mediates the relationship between psychological capital and typical job performance. Mediation analyses in PROCESS (Hayes, 2018) were run in both samples with the number of bootstraps set to 5,000, a 95% Bca confidence interval specified, and including perceived stress due to the COVID-19 pandemic and workplace anxiety as control variables. In the sample with self-rated job performance data ($n = 552$), psychological capital exhibited a significant indirect effect on typical job performance through behavioral drive ($\beta = .14$; [.095, .178]). In the sample with other-rated job performance data ($n = 93$), the indirect effect of psychological capital on typical job performance through behavioral drive was not significant. Thus, Hypothesis 18 was partially supported.

Hypothesis 19. Hypothesis 19 states that supervisor support is positively related to behavioral drive. When supervisor support was added to the model, it explained an additional 3% of the variance in behavioral drive over and above the variables controlled for [$\Delta R^2 = .03$ $F(1, 506) = 15.88$, $p < .001$]. Controlling for the presence of an anxiety disorder, perceived stress due to COVID-19, and workplace anxiety, overall supervisor support significantly positively predicted behavioral drive ($\beta = .17$, $p < .001$), supporting Hypothesis 19. Results are presented in Table 20. Instrumental ($\beta = .18$, $p < .001$), and emotional supervisor support ($\beta = .13$, $p < .05$) individually also significantly positively predicted behavioral drive. Furthermore, supervisor support also significantly positively predicted all facets of behavioral drive except perseverance: self-discipline ($\beta = .12$, $p < .05$), diligence ($\beta = .17$, $p < .001$), and pursuing goals ($\beta = .22$, $p < .001$). Thus, Hypothesis 19 was supported.

Hypothesis 20. Hypothesis 18 states that behavioral drive mediates the relationship between supervisor support and typical job performance. Mediation analyses in PROCESS (Hayes, 2018) were run in both samples with the number of bootstraps set to 5,000, a 95% Bca confidence interval specified, and including perceived stress due to the COVID-19 pandemic and workplace anxiety as control variables. In the sample with self-rated job performance data ($n = 552$), supervisor support exhibited a significant indirect effect on typical job performance through behavioral drive ($\beta = .08$; [.041, .128]). In the sample with other-rated job performance data ($n = 93$), the indirect effect of supervisor support on typical job

performance through behavioral drive was not significant. Thus, Hypothesis 20 was partially supported.

The Moderating Role of Trait Anxiety in in the JD-R Motivational Process

Hypothesis 21. Hypothesis 21 states that trait anxiety moderates the positive relationship between cognitive reappraisal and behavioral drive such that the relationship is weaker when trait anxiety is high. A moderation analyses was run using PROCESS (Hayes, 2018), controlling for perceived stress due to the COVID-19 pandemic and workplace anxiety. The interaction term between cognitive reappraisal and trait anxiety was not significant. Thus, Hypothesis 21 was not supported.

Hypothesis 22. Hypothesis 22 states that trait anxiety moderates the positive relationship between psychological capital and behavioral drive such that the relationship is weaker when trait anxiety is high. A moderation analyses was run using PROCESS (Hayes, 2018), controlling for perceived stress due to the COVID-19 pandemic and workplace anxiety. The interaction term between psychological capital and trait anxiety was not significant. Thus, Hypothesis 22 was not supported.

Hypothesis 23. Hypothesis 23 states that trait anxiety moderates the positive relationship between supervisor support and behavioral drive such that the relationship is weaker when trait anxiety is high. A moderation analyses was run using PROCESS (Hayes, 2018), controlling for perceived stress due to the COVID-19 pandemic and workplace anxiety. The interaction term between supervisor

support and trait anxiety was not significant. Thus, Hypothesis 23 was not supported.

Structural Equation Modeling Analyses

In addition to the regression and conditional process analyses above, additional analyses were conducted using structural equation modeling (SEM). SEM facilitates the examination of complex relationships between variables and reduces measurement error (Sardeshmukh & Vandenberg, 2017; Schumaker & Lomax, 2010; Ullman, 2013). There is some debate in literature and practice about the sample size required for SEM analyses (Nicalaou & Masoner, 2013). The traditional rule of thumb is five observations per parameter (Nicalaou & Masoner, 2013). Baldwin (1989) recommended using a sample size of at least 200 in SEM analyses, which has also been accepted (Hox & Bechger, 1999). According to Deng et al. (2018), "…recommendations on sample sizes in the literature of SEM and [exploratory factor analysis] are all simply *ad-hoc* conjectures" (p. 3). Still, since the 200-sample size rule is widely accepted, the decision was made to run SEM analyses on the full sample ($n = 522$) and not on the coworker-rated performance sample ($n = 93$).

Since the moderation and moderated mediation hypotheses (i.e., H6-H11, H21, H22, H23) in this study were not supported, the decision was made to remove the moderation pathways from the model prior to SEM analysis. There were a number of reasons for this decision. First, researchers have often pointed out that moderation analyses in SEM with latent variables can be extremely challenging and

complex (e.g., Hayes & Rockwood, 2020; Hayes & Preacher, 2017; Sardeshmukh & Vandenberg, 2017). Murphy and Russell (2017) advocated for a cost-benefit analysis approach to the inclusion of moderators in terms of complexity versus what including a moderator actually contributes to a model. Specifically, they argued that "a moderator that adds more boxes and arrows to a model but does not add to that model's ability to explain things is not important" (p. 562). Hayes and Rockwood (2020) asserted that analyses using the PROCESS macro usually produce the same results as SEM analyses. Given the fact that the moderation hypotheses were shown to be insignificant using PROCESS analyses, the cost of including the moderating variables in the SEM analyses outweighed any potential benefit of doing so. Additionally, there is precedent in the literature for testing moderation effects using PROCESS and mediation effects using SEM (e.g., Nauman et al., 2018).

Parceling

Because of the number of indicators in this study, the decision was made to use parceling for SEM analyses. According to Little et al., (2002), "a parcel can be defined as an aggregate-level indicator comprised of the sum (or average) or two or more items, responses, and behaviors" (p. 152). While sometimes controversial, research supports the use of parceling, even for multidimensional constructs (Little et al., 2013). Benefits of parceling include fewer parameter estimates, higher reliability, reduction of random error, greater scale communality, higher common-

to unique factor variance ration, lower likelihood of distributional violations, and improvement of model convergence (Little et al., 2002, 2013; Rioux et al., 2020).

Parcel creation was guided by the methods outlined in Little et al. (2002, 2013) and Rioux et al. (2020). Each construct should have three indicators (Little et al., 2013). If the items for a construct have relatively equal factor loadings, items can be randomly distributed across the three parcels (Little et al., 2002; Rioux et al., 2020). When factor loadings are less equal, the item-to-construct balance approach should be used (Little et al., 2002). In the item-to-construct balance approach, higher loading items are matched with lower-loading items to achieve balance within each parcel (Little et al., 2002). Importantly, "…parcels may have differential numbers of items in order to achieve a reasonable balance" (Little et al., 2002, p. 155).

Three parcels were created for each of the following variables: trait anxiety, cognitive reappraisal, psychological capital, supervisor support, emotional exhaustion, behavioral drive, self-rated typical job performance, and overall employee well-being. For the unidimensional variables in this study, i.e., trait anxiety, cognitive reappraisal, emotional exhaustion, and self-rated typical job performance, confirmatory factor analyses (CFA) of general factor models for each scale were run in R to determine individual item factor loadings. Factor loadings for parcels can be obtained using either EFA (e.g., Buckett et al., 2021) or CFA (e.g., Kern & Zapf, 2021; Sherf & Morrison, 2019), however, CFA is the approach

currently recommended (Little et al., 2021; T. Little, personal communication, November 8, 2021).

For this study's unidimensional measures, results of the CFA indicated that trait anxiety and emotional exhaustion had relatively equal factor loadings, and the factor loadings for cognitive reappraisal and self-rated typical job performance were less equally distributed. Based on this, in line with Little et al.'s (2002) recommendations, the random distribution approach to parcel creation was used for trait anxiety and emotional exhaustion, and the item to-construct balance approach was used for cognitive reappraisal and self-rated typical job performance.

Adhering to Little et al.'s (2013) three-parcel per variable rule, general factor models were also run for psychological capital and behavioral drive, the two four-dimensional variables in this study, and supervisor support, the one two-dimensional variable in this study. The factor loadings for all of these variables, respectively, were less equally distributed. Based on this, the item-to-construct balance approach was used for creating parcels for these variables (Little et al., 2002), occasionally modifying it to ensure for somewhat even distribution of each dimension across the three parcels when possible.

Since overall well-being is a three-dimensional variable, ideally, when adhering to the three parcels per variable rule (Little et al., 2013), each dimension could serve as a parcel. In order to determine if creating one parcel for each of the three dimensions was appropriate, I ran both a general factor model and a three-factor model for overall well-being and examined how each factor loaded onto

overall well-being. Results indicated that the three-factor model was a better fit to the data than a general model. Additionally, the three factors had similar loadings onto overall well-being; therefore, each factor of overall well-being, that is, life well-being, employee well-being, and psychological well-being, served as a parcel. Each parcel was calculated as the average of the items it contains. CFA item factor loadings for each parcel are presented in Table 21. The hypothesized structural equation model is presented in Figure 13.
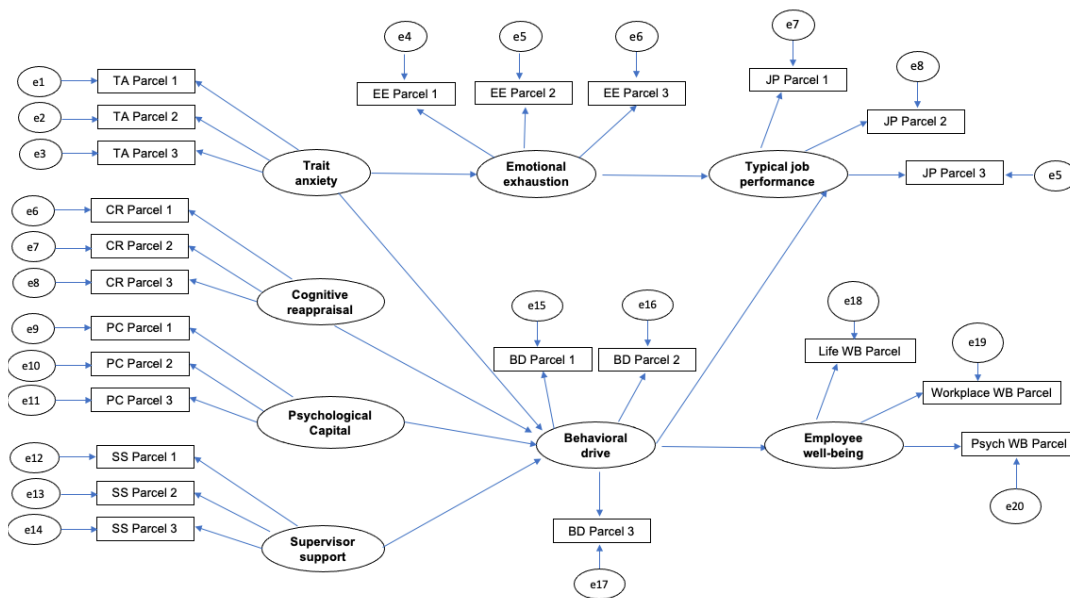
Figure 13: Hypothesized Structural Equation Model

Measurement Model

The measurement model, including eight latent constructs representing trait anxiety, cognitive reappraisal, psychological capital, supervisor support, emotional exhaustion, behavioral drive, self-rated typical job performance, and overall

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employee well-being was tested using R, and it demonstrated acceptable fit, X^2(224, n=552) = 944.83, p <.01; CFI =.93; TLI = .91; RMSEA = .08. Good fit is indicated by CFI and TLI values greater than or equal to .95 and RMSEA values less than or equal to .06 (Shi et al., 2019). To alleviate concerns regarding common method bias, I tested an alternative measurement model in which all indicators were loaded onto a single method factor. This alternative model fit the data extremely poorly, X^2(252, n=552) = 5639.24; CFI = .47, TLI = .42, RMSEA = .20, indicating that common method bias is likely not a large issue in this study. Fit statistics for these models are presented in Table X.

Structural Model

The hypothesized structural model pictured in Figure 13 was tested using R. Results indicated that it fit the data poorly, X^2(232, n=552) = 1299.46, CFI = .90, TLI = .88, RMSEA = .09. Based on modification indices calculated in R, I then tested a model in which a direct path from psychological capital to overall employee well-being was added. The addition of this path resulted in slightly better model fit, X^2(231, n=552) = 1027.82; CFI=.92, TLI = .91, RMSEA = .08. Fit statistics for this model are presented in Table 22. The other changes to the model suggested by calculated fit indices did not make theoretical sense, for example, the psychological well-being parcel loading onto self-rated job performance, or a direct path from overall employee well-being to supervisor support. Standardized path coefficients for the model are presented in Figure 14.
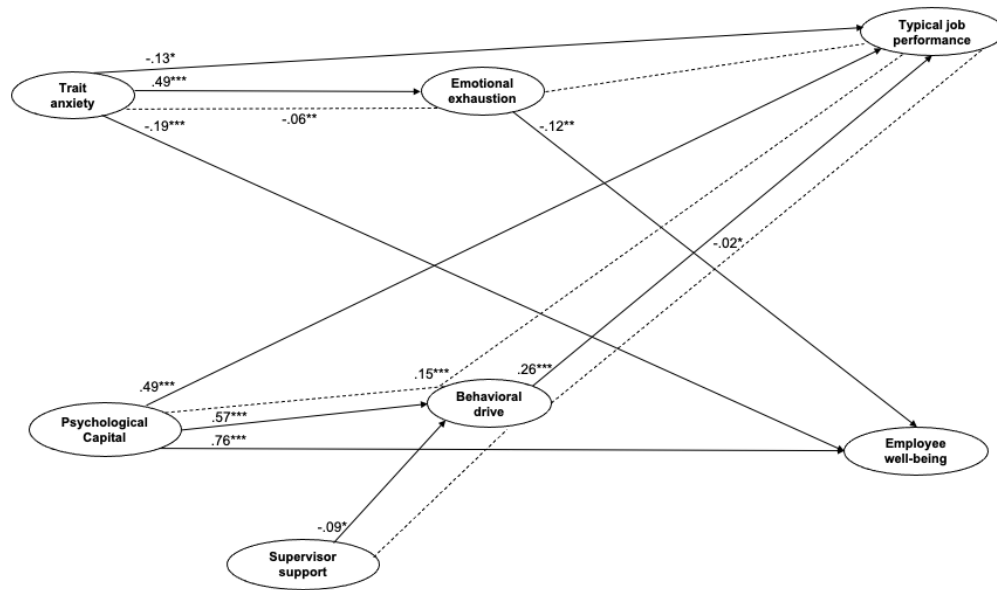
Figure 14: Modified Structural Equation Model Including Standardized Path Estimates

*p<.05, **p< .01, ***p<.001
Note. Solid lines indicate direct effects; dashed lines indicate indirect effects.
Note. For ease of interpretation, only significant effects are presented.

Some notable findings emerged from the SEM mediation analyses as compared to the PROCESS mediation analyses. Hypotheses 1, 4. 5, 13, 17, 18 were supported in PROCESS analyses and were also supported in the SEM analyses. Hypotheses 3, 12, and 14 were not supported in PROCESS analyses and were also not supported in the SEM analysis. However, different results were obtained for Hypotheses 2, 15, 16, and 19, and 20 in the SEM analyses. Hypothesis 2, which had been supported for the sample with self-rated performance data (*n*=552), but not for the sample with other-rated performance data (*n*=93) in PROCESS, was not supported in SEM. Specifically, the relationship between emotional exhaustion and typical performance was not significant in the SEM analyses. Hypothesis 15, which

states that cognitive reappraisal is positively related to behavioral drive, was

supported in the PROCESS analysis but not supported in the SEM analyses.

Hypothesis 16, which states that behavioral drive mediates the relationship between

cognitive reappraisal and typical job performance, was supported in the PROCESS

analyses, but not supported in the SEM analyses. Specifically, the indirect effect of

cognitive reappraisal on typical job performance through behavioral drive was not

significant.

Hypothesis 19, which states that supervisor support is positively related to

behavioral drive, was supported in the PROCESS analysis, but not in the SEM

analyses, where the direction of the relationship actually changed (i.e., supervisor

support was negatively related to behavioral drive). The indirect effect of

supervisor support on typical job performance through behavioral drive

(Hypotheses 20), which had been supported in the sample with self-rated

performance data ($n = 552$) but not in the sample with other-rated performance data

($n = 93$), was also not supported in the SEM analyses, where instead the indirect

effect was negative.

There are a few potential reasons for these differing results In the

PROCESS analyses, Hypotheses 2, 15, 16, and 19, and 20 had small r^2 values

and/or small effect sizes. For Hypotheses 2, the r^2 value was .01, and the size of the

relationship between emotional exhaustion and typical job performance was quite

small, $\beta = -.09$. For Hypotheses 15, the r^2 value was .07. For Hypothesis 16, the

size of the indirect effect of cognitive reappraisal on typical job performance

through behavioral drive was relatively small, $\beta = -.11$. For Hypotheses 19, the r^2

value was .03, and the size of the relationship between supervisor support and

emotional exhaustion was relatively small, $\beta = .17$. Finally, for Hypothesis 20, the

size of the indirect effect of supervisor support on typical job performance through

behavioral drive was quite small at $\beta = -.08$. In contrast, the r^2 values and effect

sizes for Hypotheses 1, 4. 5, 13, 17, and 18 were larger. It is possible that the small

effects found for Hypotheses 2, 15, 16, 19, and 20 in the PROCESS analyses were

due to measurement error, which was accounted for and corrected in the SEM

analyses (Ullman, 2013).

Qualitative Analyses

Answers to the open-ended survey item "How has anxiety influenced your

performance at work and your well-being? How have you overcome any negative

effects of anxiety on your performance at work at your well-being?" were analyzed

for common themes. Braun and Clarke (2006) defined thematic analysis as

"identifying, analyzing, and reporting patterns within data" (p. 79). First, I read

through the approximately 300 responses to the question and removed any that

were irrelevant or did not answer the question (e.g., "none"). 273 comments

remained. I took an approach to identifying patterns in the comments based on

"theoretical or analytic interest" (Braun & Clarke, 2006), for example, identifying

themes such as using therapy to manage anxiety and anxiety having a motivational

effect. Initial themes were collapsed into broader themes for ease of analysis. The

final coding scheme included 18 themes for the first question in the survey item

(Q1, i.e, "How has anxiety influenced your performance at work and your well-being?") and 21 themes for the second question in the survey item (Q2, i.e., "How have you overcome any negative effects of anxiety on your performance at work at your well-being?").

After initial coding by me based on this coding scheme, the comments were divided among four independent I/O psychology Ph.D. student coders to investigate agreement. Agreement statistics ranged from 90-99%. Discrepancies were resolved through further review of comments, and, at times, discussion. The majority of discrepancies involved added another theme to a comment rather than changing any themes that had been previously identified. The themes that emerged most frequently for Q1 were a negative effect of anxiety on well-being, perfectionism and confidence, and cognitive disturbances. Notably, some individuals did indicate that anxiety can be motivating and have a positive effect on performance. The themes that emerged most frequently for Q2 were having a supportive workplace, reappraisal, therapy, and meditation/mindfulness/prayer. The full lists of themes and example comments for each theme for Q1 and Q2, respectively, are presented in Tables 23 and 24.

Exploratory Analyses

A series of exploratory analyses were run in order to shed additional light on the results of this study. It is particularly notable that having a supportive workplace and reappraisal emerged as common qualitative answers to how individuals manage anxiety, given that neither cognitive reappraisal nor supervisor

support were shown to moderate the relationships between trait anxiety and emotional exhaustion. It seems possible that perhaps these variables (and, additionally, PsyCap, the other insignificant moderator in this study), could moderate the relationship between state anxiety and emotional exhaustion, rather than trait anxiety and emotional exhaustion. While I did not specifically measure state anxiety, there is evidence that workplace anxiety can be state-like (e.g., Cheng & McCarthy, 2018; Muschalla et al., 2013). The results indicate that both psychological capital and supervisor support buffer the negative effect of workplace anxiety on emotional exhaustion.

I also examined whether reappraisal, PsyCap, and supervisor support moderate the relationships between workplace anxiety and self-rated typical job performance and employee well-being and the relationship between COVID -19 stress and self-rated typical job performance and overall employee well-being, respectively. The results indicate that supervisor support buffers the negative effect of workplace anxiety on self-rated typical job performance, and that cognitive reappraisal and psychological capital buffer the negative effect of COVID-19 stress on self-rated typical job performance. Additionally, cognitive reappraisal buffered the negative effect of COVID-19 stress on overall well-being.

Since many respondents specifically discussed cognitive reappraisal and supervisor support in their qualitative comments, these variables were explored further. Cognitive reappraisal buffered the negative relationship of trait anxiety on overall well-being. Further, cognitive reappraisal and supervisor support were

found to have a facilitative effect on self-rated typical job performance through their positive effect on overall employee well-being and through reduction in emotional exhaustion. Cognitive reappraisal, supervisor support, and PsyCap all had a facilitative effect on employee well-being through reduction in emotional exhaustion.

Finally, additional exploratory analyses were run to further examine behavioral drive. Most notably, behavioral drive buffered the negative relationships between trait anxiety and self-rated typical job performance, workplace anxiety and self-rated typical job performance, and COVID-19 stress and self-rated typical job performance. Drive also buffered the negative relationships between COVID-19 stress and overall well-being and workplace anxiety on emotional exhaustion. Providing empirical support for a portion of Cheng & McCarthy's (2018) theory of workplace anxiety, workplace anxiety negatively affected self-rated typical job performance through its negative effect on emotional exhaustion.

Chapter 6 Discussion

I undertook this study for a variety of reasons. While the amount of research on employee well-being within the field of I/O psychology is growing, anxiety specifically has not been a focus within the field. Given the prevalence of anxiety disorders in the general population and the growing conversation about anxiety in the popular press, anxiety is something that affects employees, and thus, it is something I/O psychologists should care about. Anxiety and other mental health concerns in the workplace have become even more prevalent in the wake of the COVID-19 pandemic. While the pandemic has, in many cases, resulted in worsening mental health concerns, it has also had a positive effect on how mental health is treated in the workplace. As a result of the pandemic, anxiety and other mental health concerns have been more normalized and employees are more likely to expect mental health support from their employers (Greenwood & Anas, 2021). In the context of the Great Resignation, many employees have left their jobs for mental health reasons (Greenwood & Anas, 2021). Researching employee mental health in I/O psychology also answers the call for a more humanistic field that puts employees and their experiences first (Lefkowitz, 2008; 2012; 2012; Weiss & Rupp, 2011).

Through this work, I also sought to help reduce the stigma around anxiety. Time and time again, people are shocked when high performers, such as Olympian Michael Phelps, disclose an anxiety disorder, despite the evidence that there are extremely high performers who suffer from anxiety disorders, such as academics

and graduate students (Evans et al., 2018; Wilcox, 2014). And, while the conversation around anxiety is growing, the stigma around anxiety disorders persists. For example, although the symptoms of "high-functioning anxiety" essentially describe Generalized Anxiety Disorder, people are more willing to admit to "high-functioning anxiety" than they are to GAD. Those with anxiety disorders are seen as separate and "other", while, statistically speaking, any reader of this paper has likely worked with someone with an anxiety disorder. While not all of this study's hypothesis were supported, my goal of demonstrating that the anxiety-performance relationship is complicated and should not be oversimplified was met.

Trait Anxiety and the JD-R Health Impairment Process

The results of this study provide additional evidence that trait anxiety is positively related to emotional exhaustion, a component of burnout. This is consistent with prior studies (e.g., McInerney et al., 2012; Turnipseed, 1998). Burnout has negative consequences for employees and organizations, including lower job satisfaction, physical exhaustion, and organizational commitment, and increased turnover (Gillet et al., 2021; Swider et al., 2010). Given the relationship between trait anxiety and burnout, these negative outcomes may be more likely for highly anxious employees. Additionally, the results of this study indicate that emotional exhaustion is negatively related to overall employee well-being. As emotional exhaustion is often used as an indicator of employee well-being (Grandey & Gabriel, 2015) and Zheng et al.'s (2015) employee well-being scale is

relatively new, this is actually a new contribution to the literature, one that is somewhat in line with Page and Vella-Brodrick's assertion that mental health is "the presence of well-being rather than the absence of illness" (p. 441). Given that, highly anxious employees may be performing well, but struggling with their well-being, and they more have more well-being needs than other employees.

Emotional exhaustion did not mediate the negative relationship between trait anxiety and self-rated typical job performance. It is possible that this has to do with anxious employees' perceptions of their own performance. Highly anxious individuals tend to be harder on themselves (Mughal et al., 1996); indeed, there was no relationship between trait anxiety and other-rated typical job performance. Given this, it seems more plausible that something like low self-compassion (Neff et al., 2017; Reizer, 2019) may mediate this relationship instead.

Cognitive Reappraisal, Psychological Capital, and Supervisor Support

Results indicated that cognitive reappraisal, PsyCap, and supervisor support did not moderate the relationship trait anxiety and emotional exhaustion. Instead, results indicate that these variables directly reduce emotional exhaustion, which, in turn, leads to better self-rated performance and better overall well-being. Notably, these results did not hold in the subsample of employees diagnosed with an anxiety disorder ($n = 160$). For that subsample, PsyCap was the only variable of the three originally proposed moderators that was directly negatively related to reduced emotional exhaustion and, in turn, increased well-being. Takeaways from this may be that cognitive reappraisal and supervisor support are helpful for performance

and overall well-being in all employees, but PsyCap is particularly important for employees with anxiety disorders.

Overall, these variables had more moderating effects on state-like than trait-like anxiety constructs. For example, PsyCap buffered the negative relationships between workplace anxiety and emotional exhaustion and between COVID-19 stress and self-rated performance. Cognitive reappraisal buffered the negative relationships between COVID-19 stress and overall well-being and COVID-19 stress and self-rated performance. Supervisor support buffered the negative relationship between workplace anxiety and performance. Perhaps some of these variables are more useful for managing acute anxiety, and perhaps individuals high in trait anxiety are so accustomed to operating at high levels of anxiety that these variables do not make a difference in the effects of that anxiety. The only finding in which one of these variables moderated trait anxiety—outcome relationship was the one that indicated that cognitive reappraisal buffered the negative relationship between trait anxiety and overall well-being. This is unsurprising, given the effectiveness of cognitive-behavioral therapy for treating anxiety (Aho et al., 2014)—treatment which is focused on overall well-being and not necessarily acute emotional exhaustion or performance.

Finally, in some instances, these variables actually enhanced rather than buffered negative relationships. Both PsyCap and supervisor support enhanced the negative relationship between emotional exhaustion and well-being. Examining the interactions, it appears that both PsyCap and supervisor support are most beneficial

when someone is low in emotional exhaustion. Perhaps high emotional exhaustion takes up so many resources that employees do not have capacity remaining to take advantage of PsyCap or supervisor support. Another possible interpretation for the enhancing effect of supervisor support on the relationship between emotional exhaustion and well-being is that idea that there is another, contextual variable affecting the relationship. For example, perhaps an employee is struggling with contextual factors in the workplace, such as an unmanageable workload, and is getting more supervisor support as a result. However, the supervisor support may not actually be fixing the root problem of an unmanageable workload.

For those with low supervisor support, there was a very small, positive relationship between emotional exhaustion and performance. However, for those with high supervisor support, the relationship between emotional exhaustion and performance became negative. It appears that, when employees are highly emotionally exhausted, supervisor support may actually impede performance. It is possible that this is related to the above idea that supervisor support may not be the appropriate solution to other workplace issues that may affect performance. Potentially, supervisor support could also result in rumination about negative circumstances that could, in turn, negatively affect performance. The idea that not all resources are necessarily good for employee performance and well-being has some support in the literature (Van Veldhoven et al., 2020). Van Veldhoven et al. (2020) argued for the importance of looking at context and a more nuanced perspective on "why, when, and for whom job resources work" (p. 17).

Trait Anxiety and the JD-R Motivational Process

Perhaps the most disappointing result of this study was that trait anxiety actually had a negative relationship with behavioral drive, and subsequently, a negative relationship with self-rated typical performance. Behavioral drive is a motivational construct comprised of self-discipline, diligence perseverance, and pursuing goals (Siegling & Petrides, 2016; Siegling et al., 2019b). Past research has shown positive relationships between performance anxiety and effort (Hardy & Hutchinson, 2007) and trait anxiety and effort (Mughal et al., 1996), and many participants mentioned the motivating effect of anxiety in their qualitative responses to this study. Perhaps trait anxiety *can be* motivating, but behavioral drive is not the appropriate motivational construct to measure. Other potential motivational constructs that could be examined in this context include goal orientation (Cellar et al., 2011) or accomplishment striving (Barrick et al., 2002; Cheng & McCarthy, 2018).

This mediating relationship between trait anxiety, behavioral drive, and performance did not hold for other-rated typical job performance. It is possible that the same self-critical tendencies that lead highly anxious individuals to rate their performance more poorly may also lead them to rate their behavioral drive more poorly. For example, in this study, individuals diagnosed with an anxiety disorder rated their performance significantly lower than individuals without an anxiety disorder.

Despite this disappointing result, some of the most interesting results of this study emerged from further exploration of the behavioral drive construct. Behavioral drive buffered the negative effects of trait anxiety, workplace anxiety, and COVID-19 stress on self-rated typical job performance. These results are particularly notable, since they provide an answer to one of this study's original research questions: what separates employees with anxiety who typically perform well on the job from those with anxiety who do not? It appears that highly anxious employees who are also high in behavioral drive may perform better than highly anxious employees who are not.

Behavioral drive also buffered the negative effects of workplace anxiety and COVID-19 stress on emotional exhaustion, indicating that the construct has implications for well-being as well as for performance. Notably, however, behavioral drive actually enhanced the relationship between emotional exhaustion and employee well-being. Given the limited existing research on behavioral drive, more exploration is needed to understand this. Finally, behavioral drive improved self-rated typical job performance through reduced emotional exhaustion. This result held for the subsample of employees with an anxiety disorder diagnosis and the remaining subsample of employees without an official anxiety disorder diagnosis.

Overall, the results of this study did not neatly fit into the JD-R framework as proposed. One of the hallmarks of JD-R is its flexibility, and researchers have argued that both demands and resources can fit into the model in a variety of ways.

However, according to Bakker and Demerouti (2017), the JD-R model's flexibility could be its "Achilles heel…as [it] comes at the cost of specificity and the quality of its predictions" (p. 278). Exploratory results suggest that at least one of this study's variables, behavioral drive, can be seen as a personal resource that mitigates the personal demands of trait anxiety. Future research should further examine the ways that the variables in this study could fit into the JD-R model.

Theoretical and Methodological Implications

The results of this study have a number of both theoretical and methodological implications. First, they contribute to the growing conversation around anxiety in the I/O psychology research literature. Recent I/O research (e.g., Cheng & McCarthy, 2018; Mellifont, 2019) reflects a growing interest in anxiety-related topics within the field. This interest has continued to grow in the wake of the COVID-19 pandemic (e.g., De Clerq et al., 2021; Fu et al., 2021; Hu et al., 2020). The exploration of the predicted facilitative effects of trait anxiety and performance, while not supported, specifically contributes to some of the ideas presented in the theory of workplace anxiety (Cheng & McCarthy, 2018) and in the concept of high-functioning anxiety.

The results also contribute to the conversation about high-functioning anxiety. The term is a bit of a double-edged sword. On the one hand, the term high-functioning anxiety can be extremely problematic if it is used in a way that implies that someone with a diagnosed mental disorder inherently cannot be high-functioning. Instead of the term being used as a way to demonstrate that an anxiety

disorder does not preclude an individual from being successful, it appears that sometimes those who identify with it do so precisely because it is *not* a disorder, even though it shares most of its symptoms with common anxiety disorders. It actually contributes to the stigma around anxiety disorders if the main usage of the term is to differentiate someone as better than someone else who has an anxiety disorder, facilitate internalized stigma about anxiety disorders and subsequently preclude someone from seeking out needed help, or discourage individuals with anxiety disorders from disclosing them. Much of this is wrapped up in the stigma of identifying with an anxiety disorder and, often, a lack of understanding about anxiety disorders.

On the other hand, it can be a helpful term in that it describes a very real experience for many employees. Interestingly, the limited academic literature on the topic does not shy away from the term "disorder" the way pop psychology and casual news articles and blog posts often do when describing high-functioning anxiety. Mellifont (2019) described "employees who identify with high-functioning dimensions of their anxiety disorder" (p. 435). When used in this way, the high-functioning anxiety term can be helpful, especially in terms of reducing the stigma around anxiety disorders.

It appears that anxious employees can sometimes perform very well and sometimes perform very badly. It is unclear how useful a new term like high-functioning anxiety is for when anxious employees perform very well. Indeed, it seems more useful to continue examining the conditions in which anxious

employees perform well and the ones in which they do not. It is important to also consider well-being here in order to adopt the humanistic I/O perspective. An anxious employee could typically perform extremely well, but still struggle with impaired well-being. Related to this, Mellifont (2019) also mentioned the idea that anxiety can be helpful when "kept under control" (p. 437). Perhaps this means harnessing the good and useful parts of anxiety (e.g., attention to detail, critical thinking) while getting help with the detrimental parts of anxiety (e.g., intense self-criticism, harmful perfectionism), through things like therapy or medication, and, importantly, organizational cultural change.

A theoretical advantage of this study as compared to a number of prior studies on anxiety and performance is the explicit identification and definition of what was examined—trait anxiety and typical job performance. A common issue in the anxiety and performance literature is the lack of explicit conceptualizations of both anxiety and performance (Bushman et al., 2005; Ford et al., 2011; Seipp, 1991; Spielberger, 1966a). Both the type of anxiety and the type of performance studied were explicitly defined in this research, which makes it easier to interpret results.

This research expands upon existing constructs and theories. It provides some of the first empirical research using Siegling et al.'s (2019a) Drive Inventory. It provides additional evidence for the reliability of the behavioral drive/effort subscale of the inventory, and it expands research on the construct's nomological net. Specifically, this study's results indicate strong predictive relationships

between psychological capital and behavioral drive, behavioral drive and typical job performance, and provide evidence for the mediating effect of behavioral drive. This study also contributes to research on Zheng et al.'s (2015) employee well-being construct. It provides additional evidence for the scale's reliability and expands its nomological net specifically with its findings on antecedents and mediators. Finally, this study answers the call for more research on the role of personal resources in the job demands-resources model (e.g., Bakker & Demerouti, 2017; Grover et al., 2018; Lesener et al., 2019; Wang et al., 2016), and it provides additional support for the use of psychological capital as a personal resource within the model.

The results of this study also provide more specific theoretical contributions. They shed light on the mechanisms between cognitive reappraisal, supervisor support, psychological capital, respectively, and employee well-being and typical job performance. Findings on the differences between self-rated and other-rated typical job performance are particularly notable. This study's results indicate that there was a significant negative relationship between trait anxiety and self-rated job performance, but no significant relationship between trait anxiety and coworker-related job performance. This may support the idea that those high in trait anxiety are harder on themselves and be a warning for researchers to proceed with caution with drawing conclusions about anxiety and performance based on self-ratings of performance. Also notable was the result that having an anxiety disorder was not significantly related to coworker ratings of performance; however, having

ADHD was. Specifically, coworkers rated individuals with ADHD as lower performers.

Finally, this study also has methodological implications in terms of the increase of bots in survey research. Most recent research articles that discuss bots do so in terms of panel research (e.g., mTurk; Buchanan & Scofield, 2018; Kennedy et al., 2020; Newman et al., 2021; Yarrish et al., 2019); however, this study demonstrated that bots can also be a significant issue in snowball sampling designs. In order to proactively manage bots, future researchers should ensure that bot-tracking software is enabled at the start of data collection, be cautious about how surveys are distributed, include open-ended questions, and require that participants complete surveys in one sitting.

Practical Implications

The results of this study also have a number of practical implications for organizations. The differences in typical performance ratings between self and other-rated typical job performance support the idea that employers should use caution when considering trait anxiety for selection purposes. Organizations are currently facing what has been described as a "talent uprising" (Kissack & MacArthur, 2021, p. 1). Employees experienced new organizational offerings during the COVID-19 crisis, like increased flexibility, and organizations are currently experiencing a labor shortage. These factors combined have given employees more leverage when it comes to demanding aspects of workplace culture (Kissack & MacArthur, 2021). One of those aspects of culture is a genuine

focus on employee well-being. A recent Gallup poll found that employees across generations ranked caring about employee well-being in their top three criteria for what they look for most in an employer (Morgan, 2021).

This study's findings on employee well-being can inform organizational strategies to increase or maintain employee well-being, such as training on cognitive reappraisal skills and psychological capital. Related to this, the discussion and exploration of anxiety as it relates to the working population could contribute to a reduction in stigma around psychological disorders in the workplace. This aligns well with recent interest in and calls for inclusion of neurodiversity in the workplace (Brîzea, 2019; Mellifont, 2019). Findings indicate that highly anxious employees may be struggling with their well-being even when performing well, and organizations should be aware of this so that they can provide appropriate support without contributing to stigma.

Limitations

A number of limitations may have affected the results of this study. The single administration, cross-sectional nature of the survey used in this study could raise some concerns about potential common method bias. However, both procedural and statistical remedies were put into place to mitigate potential common method bias effects. In order to minimize survey respondent fatigue, as this study's survey was quite lengthy, only workplace anxiety and perceived stress related to the COVID-19 pandemic were included as control variables. It is possible that contextual organizational factors, such as workload or abusive supervisor

practices, could have also affected the results of this study. Both of these factors were specifically mentioned by participants in this study's qualitative comments. Due to sample size constraints, I was unable to perform SEM analyses using the sample with coworker-rated typical job performance data. Given the differences in self and other-rated performance data, it is possible that the SEM results of this study could differ if coworker-rated typical job performance was used instead of self-rated typical job performance. Results may have also been skewed in term of demographics. A majority of study participants were females between the ages of 25 and 44 who live in the United States, which may limit generalizability of results.

Future Research Directions

The results of this study suggest several directions for future research. Trait anxiety was negatively related to behavioral drive. However, both the theory of workplace anxiety (Cheng & McCarthy, 2018) and the qualitative comments from this study support the idea that trait anxiety can have motivating effects. Future research should examine if trait anxiety positively affects other motivational constructs. Cheng and McCarthy (2018) specifically argued that dispositional workplace anxiety can facilitate performance through self-regulatory processes and "attendance to task goals" (p. 545). Future research is also needed related to this study's partially-supported hypotheses. For example, in what circumstances is emotional exhaustion negatively related to typical job performance? In what circumstances are cognitive reappraisal and psychological capital positively related to typical job performance? Additional research should also examine the

inconclusive relationships between trait anxiety, supervisor support, and typical job performance.

Work is also needed on what moderates the relationship between trait anxiety and emotional exhaustion. Researchers have argued different resources may have different buffering effects within the job demands-resources model (e.g., Searle & Lee, 2015; Xanthopoulou et al., 2007). While cognitive reappraisal, psychological capital, and supervisor support did not buffer the relationships between trait anxiety and emotional exhaustion, it is plausible that other constructs do, and those should be investigated. Future research could also explore whether these factors moderate the relationship between trait anxiety and state anxiety instead of trait anxiety and emotional exhaustion.

Additional research should further examine some of the constructs investigated in this study. Some differences were found using the different subscales of behavioral drive and employee well-being. For example, an ADHD diagnosis was significantly related to mean scores of the behavioral drive self-discipline subscale, but not its other subscales. Similarly, a number of factors (e.g., presence of an anxiety disorder, gender) were significantly related to mean scores of the life and psychological well-being employee well-being subscales, but not the workplace well-being subscale. Future research should further examine these subscales and their respective nomological nets. Future research should continue to examine the differences between workplace anxiety and trait anxiety and how the concept of high-functioning anxiety fits in with those two constructs. Specifically,

developing a scale that measures high-functioning anxiety could be a fruitful research direction, especially given the preliminary qualitative research (Mellifont, 2019) that has emerged about the construct.

Future research should also examine the role of culture in the relationships between anxiety and performance. Quite a few studies that have examined anxiety and performance are from outside of the United States (e.g., Jones et al., 2016; Mellifont et al., 2016; Muschalla et al., 2013), but fewer have examined the effects of culture on anxiety.

By including employee well-being in its examination of anxiety, performance, and other workplace outcomes, this study adds a sorely needed occupational health psychology perspective to work on anxiety and performance. Related to this, it answers the calls that I/O psychology should keep the humanistic goals of the field of psychology at the forefront of its work (Lefkowitz, 2008, 2012, 2013) and adopt a person-centric perspective (Weiss & Rupp, 2011).

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Tables

Table 1: Participant Demographics

Characteristic	Full Sample (*n*=552)		Coworker-Rated Performance Sample (*n*=93)	
	n	*%*	*n*	*%*
Gender				
Female	340	65.3%	64	68.8%
Male	176	33.8%	29	31.2%
Non-binary/third gender	4	.8%	0	0%
Prefer not to say	1	.2%	0	0%
Age				
25-34	231	43.6%	39	41.9%
35-44	190	35.8%	37	39.8%
45-54	51	9.6%	10	10.8%
18-24	36	6.8%	4	4.3%
55-64	17	3.2%	2	2.2%
65 and over	5	.9%	1	1.1%
Country				
United States	469	89.3%	86	92.5%
Canada	9	1.7%	0	0%
United Kingdom	9	1.7%	2	2.2%
Germany	7	1.3%	2	2.2%
Malaysia	4	.8%	0	0%
Thailand	4	.8%	0	0%
Australia	3	.6%	0	0%
Philippines	3	.6%	0	0%
Netherlands	2	.4%	0	0%
Algeria	1	.2%	0	0%
Armenia	1	.2%	0	0%
Bahamas	1	.2%	0	0%
Belgium	1	.2%	0	0%
Brazil	1	.2%	0	0%
Czech Republic	1	.2%	1	1.1%
Ghana	1	.2%	0	0%
India	1	.2%	0	0%
Ireland	1	.2%	0	0%
Japan	1	.2%	0	0%
Mexico	1	.2%	0	0%
Romania	1	.2%	1	1.1%
Spain	1	.2%	1	1.1%
Sweden	1	.2%	0	0%
Zimbabwe	1	.2%	0	0%

Table 2: Participant Industries

Industry	Full Sample (*n*=552)		Coworker-Rated Performance Sample (*n*=93)	
	n	*%*	*n*	*%*
Educational Services	135	25.5%	25	26.9%
Professional, Scientific, and Technical Services	80	15.1%	14	15.1%
Healthcare and Social Assistance	52	9.8%	11	11.8%
Finance and Insurance	35	6.6%	7	7.5%
Information	27	5.1%	3	3.2%
Other	25	4.7%	3	3.2%
Manufacturing	20	3.8%	1	1.1%
Management, Administrative and Waste Support, and Waste Management Services	18	3.4%	4	4.3%
Other Services (Except Public Administration)	15	2.8%	3	3.2%
Construction	14	2.6%	4	4.3%
Retail Trade	12	2.3%	3	3.2%
Transportation and Warehousing	12	2.3%	0	0%
Utilities	12	2.3%	3	3.2%
Arts, Entertainment, and Recreation	11	2.1%	0	0%
Accommodation and Food Service	10	1.9%	0	0%
Public Administration	10	1.9%	1	1.1%
Real Estate and Rental and Leasing	10	1.9%	3	3.2%
Wholesale Trade	10	1.9%	2	2.2%
Armed Forces	8	1.5%	1	1.1%
Agriculture, Forestry, Fishing, and Hunting	7	1.3%	3	3.2%
Mining	7	1.3%	2	2.2%

Table 3: Participant Mental Health Diagnoses

Mental Health Diagnosis	Full Sample (*n*=552)		Coworker-Rated Performance Sample (*n*=93)	
	n	*%*	*n*	*%*
Specific Diagnosis				
Generalized Anxiety Disorder	89	16.1%	14	15.1%
Attention-deficit/Hyperactivity Disorder (ADHD)	34	6.2%	6	6.5%
Social Anxiety Disorder/Social Phobia	28	5.1%	1	1.1%
Other Anxiety Disorder	27	4.9%	1	1.1%
Post-Traumatic Stress Disorder (PTSD)	25	4.5%	2	2.2%
Obsessive-Compulsive Disorder (OCD)	23	4.2%	2	2.2%
Panic Disorder	10	1.8%	1	1.1%
Specific Phobia	10	1.8%	0	0%
Autism Spectrum Disorder	2	.4%	0	0%
Overview				
No Prior Anxiety, ADHD, or Autism Diagnosis	360	65.2%	69	74.2%
Any Anxiety Disorder Diagnosis[a]	161	29.2%	18	19.4%
Multiple Disorders Diagnoses[b]	56	10.1%	5	5.4%

[a]Participants who indicated at least one anxiety disorder diagnosis, including OCD or PTSD.
[b]Participants who indicated more than one diagnosis.

Table 4: Survey 2 Coworker Relationship to Survey 1 Participant (n=93)

Relationship	*n*	*%*
Coworkers at same level/rank	51	54.8%
Supervisor	19	20.4%
Direct report	18	19.4%
Coworker at lower level/rank, not direct report	3	23.2%
Other[a]	2	3.2%

[a]Other included direct support staff and former supervisor

Table 5: Scale Reliabilities

Scale	Number of Items	α
Trait Anxiety	20	.90
Cognitive Reappraisal	6	.88
Psychological Capital	12	.91
Self-efficacy	3	.84
Hope	4	.83
Resilience	3	.70
Optimism	2	.78
Supervisor Support	9	.92
Instrumental Supervisor Support	5	.87
Emotional Supervisor Support	4	.91
Emotional Exhaustion	4	.86
Behavioral Drive	28	.91
Self-discipline	7	.77
Diligence	7	.82
Perseverance	7	.81
Pursuing Goals	7	.81
Typical Job Performance (self-rated)	7	.85
Typical Job Performance (other-rated)	6	.87
Employee Well-being	18	.93
Life Well-being	6	.89
Workplace Well-being	6	.91
Psychological Well-being	6	.81
Perceived COVID-19 Stress	10	.86
Workplace Anxiety	8	.93

Table 6: Bot Response Examples

Open-ended Question	Deleted Response	Reason for Deletion
How has anxiety influenced your performance at work and your well-being? How have you overcome any negative effects of anxiety on your performance at work and your well-being?	Anxiety in the workplace will be repeated self-suggestion, easy to take a seat, will aggravate anxiety symptoms. Serious will make panic response to external stimulation, often accompanied by sleep disorders and plant nervous instability, such as insomnia, much dream, easy to wake up, pale or flushing, easy to sweat, chest pressure or asphyxia, inappetence To overcome anxiety, we need to improve our willpower and psychological endurance. In the face of pressure, we should learn to resolve the pressure reasonably, communicate with friends and family more, socialize more, and contact the outside world more	Nonsensical
	It will be my positive heart to give up work Think of happy things to overcome	Nonsensical, repeated 49 times
	Generalized anxiety disorder (GAD) is characterized by excessive thinking. If you worry for more than 4 days a week for half a year, and your bad mood is painful and affects your life and work, it may be anxiety disorder.	Irrelevant to the question
Is there anything else you'd like to add?	I feel that this questionnaire survey is very good. I know a lot about the work and I feel anxious"	Nonsensical
	without the	Nonsensical, repeated answer

Table 7: Variable Skewness, Kurtosis, & Kolmogorov-Smirnov Significance Level Statistics

Variable	Skewness	Kurtosis	Kolmogorov-Smirnov Significance Level
Trait Anxiety	.16	-.19	.04
Cognitive Reappraisal	-.37	.35	< .001
Psychological Capital	-.41	-.18	< .001
Self-efficacy	-.78	.43	< .001
Hope	-.46	-.12	< .001
Resilience	-.54	.07	< .001
Optimism	-.34	-.39	< .001
Supervisor Support	-.38	-.05	< .001
Instrumental Supervisor Support	-.25	-.32	< .001
Emotional Supervisor Support	-.53	-.15	< .001
Emotional Exhaustion	1.68	2.44	< .001
Behavioral Drive	.11	-.79	< .001
Self-discipline	.11	-.61	< .001
Diligence	-.15	-.79	< .001
Perseverance	-.06	-.67	< .001
Pursuing Goals	.07	-.61	< .001
Typical Job Performance (self-rated)	-.81	-.16	< .001
Typical Job Performance (other-rated)	-1.97	3.36	< .001
Employee Well-being	-.36	-.10	< .001
Life Well-being	-.50	-.12	<. 001
Workplace Well-being	-.48	-.30	< .001
Psychological Well-being	-.87	.99	< .001
Perceived COVID-19 Stress	-.24	-.38	< .001
Workplace Anxiety	.01	-.78	< .001

Table 8: Means and Standard Deviations

Variable	Full Sample (*n*=552)		Coworker-Rated Performance Sample (*n*=93)	
	M	*SD*	*M*	*SD*
Trait Anxiety	2.15	.47	2.03	.40
Cognitive Reappraisal	4.81	1.07	4.94	.97
Psychological Capital	4.61	.78	5.07	.64
Self-efficacy	4.77	.98	5.23	.79
Hope	4.61	.87	5.07	.69
Resilience	4.69	.85	5.15	.73
Optimism	4.27	1.07	4.73	1.08
Supervisor Support	3.44	.89	3.86	1.01
Instrumental Supervisor Support	3.41	.94	3.80	1.09
Emotional Supervisor Support	3.47	1.02	3.93	1.09
Emotional Exhaustion	2.26	1.38	2.05	1.37
Behavioral Drive	4.28	.67	4.50	.71
Self-discipline	4.21	.82	4.49	.91
Diligence	4.53	.79	4.77	.74
Perseverance	4.31	.85	4.43	.82
Pursuing Goals	4.07	.84	4.31	.89
Typical Job Performance (self-rated)	4.29	.66	4.64	.36
Typical Job Performance (other-rated)			4.75	.42
Employee Well-being	5.25	.92	5.77	.84
Life Well-being	5.04	1.13	5.51	1.16
Workplace Well-being	5.06	1.24	5.70	1.16
Psychological Well-being	5.65	.86	6.12	.61
Perceived COVID-19 Stress	2.59	.68	2.53	.63
Workplace Anxiety	2.86	1.04	3.25	1.25

Table 9: Superordinate Scale Correlations (Full Sample, n=552)

Variable	1	2	3	4	5	6	7	8	9	10
1. Trait Anxiety										
2. Cognitive Reappraisal	-.40**									
3. PsyCap	-.54**	.44**								
4. Supervisor Support	-.27**	.20**	.41**							
5. Emotional Exhaustion	.44**	-.16**	-.31**	-.33**						
6. Behavioral Drive	-.35**	.32**	.53**	.19**	-.12**					
7. Typical performance (self-rated)	-.34**	.26**	.58**	.23**	-.14**	.49**				
8. Employee Well-being	-.60**	.38**	.74**	.53**	-.44**	.43**	.44**			
9. COVID-19 Stress	.36**	-.14**	-.22**	-.03	.20**	-.23**	-.35**	-.18**		
10. Workplace Anxiety	.47**	-.21**	-.18**	.11**	.16**	-.08	-.18**	-.07	.33**	

*p < .05; **p < .01

Table 10: Superordinate Scale Correlations (Coworker-rated performance sample, n=93)

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Trait Anxiety											
2. Cognitive Reappraisal	-.35**										
3. PsyCap	-.40**	.06									
4. Supervisor Support	-.27**	-.07	.56**								
5. Emotional Exhaustion	.57**	-.18	-.40**	-.38**							
6. Behavioral Drive	-.30**	.06	.56**	.40**	-.37**						
7. Typical Job Performance (other-rated)	-.01	-.16	.22*	.17	-.10	.24*					
8. Typical Job Performance (self-rated)	-.24*	-.03	.39**	.28**	-.21*	.56**	.16				
9. Employee Well-being	-.46**	.09	.75**	.66*	-.49**	.57**	.21*	.29**			
10. COVID-19 Stress	.37**	-.20	.16	.24*	.08	.13	.08	-.09	.18		
11. Workplace Anxiety	.32**	-.14	.36**	.45**	-.09	.32**	.06	-.003	.42**	.53**	

*p < .05; **p < .01

Table 11: Summary of Significant Mean Differences from ANOVA Results

Factor	Means									
	Emotional Exhaustion	Drive	Self-discipline	Diligence	Perseverance	Self-rated Performance	Coworker-Rated Performance	Employee Well-being	Life Well-being	Psychological Well-being
Anxiety Disorder	2.69	4.11	4.05	4.32	4.12	3.38		5.37	4.67	5.46
No Anxiety Disorder	2.08	4.37	4.29	4.64	4.41	4.12		4.75	5.22	5.76
ADHD			3.93				4.78			
No ADHD			4.23				4.36			
Gender: Male			4.43	4.13		4.08		5.14	4.96	5.46
Gender: Female			4.60	4.40		4.42		5.30	5.06	5.76
Age: 18-24		4.11	3.94			3.93		4.82		5.24
Age: 25-34			4.17			4.30				5.64
Age: 35-44										5.59
Age: 45-54		4.55	4.55			4.53		5.43		6.03
Age: 55-64						4.68				
Age: 65+								6.08		

Factor	Means									
	Emotional Exhaustion	Drive	Self-discipline	Diligence	Perseverance	Self-rated Performance	Coworker-Rated Performance	Employee Well-being	Life Well-being	Psychological Well-being
Accommodation and Food Service						3.56				
Finance and Insurance						4.47				
Professional, Scientific, and Technical Services						4.42				
Educational Services						4.47				
Health Care and Social Assistance						4.39				
Transportation and Warehousing						3.68				
Information						3.99				

Note. This table indicates mean differences in this study's variables by demographics that were found to be significant based on ANOVA results.

Table 12: Hierarchical multiple regression results for effect of trait anxiety on emotional exhaustion (Hypothesis 1)

| | Emotional Exhaustion | | | | |
Model	R^2	$\varDelta R^2$	B	SE	β
Step 1	.08*				
Presence of anxiety disorder: Yes			.54	.13	.18*
COVID stress			.34	.09	.16*
Workplace anxiety			.11	.06	.09*
Step 2		.12*			
Presence of an anxiety disorder			.24	.12	.08**
COVID stress			.15	.09	.08
Workplace anxiety			-.10	.06	-.08
Trait anxiety			1.25	.14	.43*

* *p* < .001
** *p* < .05

Table 13: Hierarchical multiple regression results for effect of emotional exhaustion on self-rated typical job performance (Hypothesis 2)

Model	Typical Job Performance (Self-rated)				
	R^2	ΔR^2	B	SE	β
Step 1	.19*				
Presence of anxiety disorder: Yes			-.21	.06	-.16*
COVID stress			-.24	.04	-.27*
Workplace anxiety			-.02	.03	-.27
Industry			.01	.01	.08
Gender			.24	.05	.19*
Age					
Step 2		.01**			
Presence of anxiety disorder: Yes			-.19	.06	-.14*
COVID Stress			-.23	.04	-.25*
Workplace Anxiety			-.02	.03	-.03
Industry			.01	.01	.08
Gender			.25	.05	.19*
Age			.05	.03	.07
Emotional exhaustion			-.04	.02	-.09**

*p < .001
** p < .05

Table 14: Hierarchical multiple regression results for effect of emotional exhaustion on overall employee well-being (Hypothesis 4)

Model	R^2	ΔR^2	B	SE	β
		Employee Well-being (Overall)			
Step 1	.05*				
Presence of anxiety disorder: Yes			-.31	.09	-.16*
COVID stress			-.18	.06	-.14*
Workplace anxiety			.03	.04	.03
Gender			.10	.08	.05
Age			.08	.05	.08
Step 2		.17*			
Presence of anxiety disorder: Yes			-.17	.08	-.08**
COVID stress			-.08	.06	-.06
Workplace anxiety			.06	.04	.07
Gender			.18	.08	.09**
Age			.06	.04	.06
Emotional exhaustion			-.28	.03	-.43*

*p < .001
** p < .05

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Table 15: Hierarchical multiple regression results for effect of trait anxiety on behavioral drive (Hypothesis 12)

			Behavioral Drive		
Model	R^2	ΔR^2	B	SE	β
Step 1	.08*				
Presence of anxiety disorder: Yes			-.22	.06	-.15*
COVID stress			-.20	.05	-.20*
Workplace anxiety			.02	.03	.03
Age			.06	.03	.09
Step 2		.07*			
Presence of anxiety disorder: Yes			-.11	.06	-.08
COVID stress			-.13	.04	-.13**
Workplace anxiety			.09	.03	.14**
Age			.03	.03	.05
Trait anxiety			-.49	.07	-.33*

*p < .001
** p < .05

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Table 16: Hierarchical multiple regression results for effect of behavioral drive on self-rated typical job performance (Hypothesis 13)

Model	R^2	ΔR^2	B	SE	β
		Typical Job Performance (Self-rated)			
Step 1	.34*				
Presence of an anxiety disorder			-.21	.06	-.16*
COVID stress			-.24	.04	-.27*
Workplace anxiety			-.02	.03	-.03
Industry			.01	.01	.08
Gender			.24	.05	.19*
Age			.05	.03	.07
Step 2		.16*			
Presence of an anxiety disorder			-.12	.05	-.09**
COVID stress			-.17	.04	-.19*
Workplace anxiety			-.03	.02	-.05
Industry			.01	.01	.08**
Gender			.20	.05	.15*
Age			.02	.03	.04
Behavioral drive			.39	.04	.42*

*p < .001
** p < .05

Table 17: Hierarchical multiple regression results for effect of behavioral drive on other-rated typical job performance (Hypothesis 13)

Model	Typical Job Performance (Other-rated)				
	R^2	ΔR^2	B	SE	β
Step 1	.06				
Presence of an ADHD diagnosis: Yes			-.40	.18	-.24**
COVID stress			.03	.08	.04
Workplace anxiety			.01	.04	.02
Step 2		.06**			
Presence of an ADHD diagnosis: Yes			-.36	.18	-.21**
COVID stress			.04	.08	.06
Workplace anxiety			-.03	.04	-.08
Behavioral drive			.16	.07	.26**

*p < .001
** p < .05

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Table 18: Hierarchical multiple regression results for effect of cognitive reappraisal on behavioral drive (Hypothesis 15)

			Behavioral Drive		
Model	R^2	ΔR^2	B	SE	β
Step 1	.08*				
Presence of anxiety disorder: Yes			-.22	.06	-.15*
COVID Stress			-.20	.05	-.20*
Workplace anxiety			.02	.03	.03
Age			.06	.03	.09
Step 2		.07*			
Presence of anxiety disorder: Yes			-.17	.06	-.12**
COVID Stress			-.18	.04	-.18*
Workplace anxiety			.05	.03	.08
Age			.05	.03	.06
Cognitive reappraisal			.18	.03	.28*

*p < .001
** p < .05

Table 19: Hierarchical multiple regression results for effect of psychological capital on behavioral drive (Hypothesis 17)

			Behavioral Drive		
Model	R^2	ΔR^2	B	SE	β
Step 1	.07*				
Presence of anxiety disorder: Yes			-.22	.06	-.15*
COVID stress			-.20	.05	-.20*
Workplace anxiety			.02	.03	.03
Age			.06	.03	.09
Step 2		.23*			
Presence of anxiety disorder: Yes			-.09	.06	-.06
COVID stress			-.12	.04	-.13**
Workplace anxiety			.04	.03	.07
Age			.02	.03	.02
Psychological capital			.44	.03	.50*

*p < .001
** p < .05

Table 20: Hierarchical multiple regression results for effect of supervisor support on behavioral drive (Hypothesis 17)

			Behavioral Drive		
Model	R^2	ΔR^2	B	SE	β
Step 1	.07*				
Presence of anxiety disorder: Yes			-.22	.06	-.15*
COVID stress			-.20	.05	-.20*
Workplace anxiety			.02	.03	.03
Age			.06	.03	.09
Step 2		.03*			
Presence of anxiety disorder: Yes			-.20	.06	-.13**
COVID stress			-.19	.04	-.19*
Workplace anxiety			.00	.03	.00
Age			.07	.03	.10**
Supervisor support			.13	.03	.17*

*$p < .001$
** $p < .05$

Table 21: Structural Equation Modeling Parcels and CFA Factor Loadings

Variable	Parcel	Items	Factor Loading
Trait anxiety	Parcel 1		
		Trait anxiety item 11	.523
		Trait anxiety item 18	.579
		Trait anxiety item 15	.621
		Trait anxiety item 16R	.587
		Trait anxiety item 6R	.419
		Trait anxiety item 1R	.539
		Trait anxiety item 14R	.403
	Parcel 2	Trait anxiety item 12	.639
		Trait anxiety item 7R	.462
		Trait anxiety item 3R	.606
		Trait anxiety item 8	.596
		Trait anxiety item 5	.649
		Trait anxiety item 4	.457
		Trait anxiety item 20	.617
	Parcel 3	Trait anxiety item 17	.535
		Trait anxiety item 10R	.660
		Trait anxiety item 19R	.562
		Trait anxiety item 2	.593
		Trait anxiety item 9	.529
		Trait anxiety item 13	.599
Cognitive reappraisal	Parcel 1	Reappraisal item 5	.842
		Reappraisal item 2	.611
	Parcel 2	Reappraisal item 4	.824
		Reappraisal item 1	.661
	Parcel 3	Reappraisal item 6	.820
		Reappraisal item 3	.717
Psychological capital	Parcel 1	Hope item 2	.678
		Resilience item 1	.580
		Self-efficacy item 2	.730
		Resilience item 3	.627

Variable	Parcel	Items	Factor Loading
	Parcel 2	Hope item 3	.755
		Optimism item 2	.597
		Hope item 1	.711
		Hope item 4	.638
	Parcel 3	Self-efficacy item 1	.731
		Optimism item 1	.597
		Self-efficacy item 3	.683
		Resilience item 2	.670
Supervisor support	Parcel 1	Emotional support item 3	.902
		Instrumental support item 5	.663
		Instrumental support item 1	.830
		Emotional support item 4	.822
	Parcel 2	Emotional support item 1	.840
		Instrumental support item 3	.713
		Instrumental support item 2	.829
	Parcel 3	Emotional support item 2	.833
		Instrumental support item 4	.745
Emotional exhaustion	Parcel 1	Emotional exhaustion item 1	.828
		Emotional exhaustion item 4	.748
	Parcel 2	Emotional exhaustion item 3	.795
	Parcel 3	Emotional exhaustion item 2	.749
Behavioral drive	Parcel 1	Pursuing goals item 4	.744
		Pursuing goals item 1R	.029
		Diligence item 2	.699
		Diligence item 5R	.331
		Diligence item 7	.672
		Perseverance item 4R	.466
		Pursuing goals item 5	.627
		Perseverance item 3R	.522
		Self-discipline item 3	.582
		Self-discipline item 7	.555

Variable	Parcel	Items	Factor Loading
	Parcel 2	Perseverance item 2	.709
		Perseverance item 1R	.033
		Pursuing goals item 7	.697
		Diligence item 4R	.385
		Pursuing goals item 6	.667
		Perseverance item 6R	.489
		Diligence item 6	/634
		Self-discipline item 2	.523
		Pursuing goals item 2	.582
		Self-discipline item 6	.581
	Parcel 3	Diligence item 3	.704
		Self-discipline item 1R	.302
		Diligence item 1	.683
		Self-discipline item 5R	.447
		Pursuing goals item 3	.663
		Self-discipline item 4R	.489
		Perseverance item 7	.596
		Perseverance item 5R	.531
Self-rated typical job performance	Parcel 1	Performance item 2	.866
		Performance item 5	.377
		Performance item 4	.814
	Parcel 2	Performance item 3	.859
		Performance item 6R	.538
	Parcel 3	Performance item 1	.831
		Performance item 7R	.646
Overall well-being	Parcel 1: Life Well-being	Life WB item 1	.852
		Life WB item 2	.782
		Life WB item 3	.803
		Life WB item 4	.749
		Life WB item 5	.794
		Life WB item 6	.630
	Parcel 2: Workplace Well-being	Workplace WB item 1	.773
		Workplace WB item 2	.809
		Workplace WB item 3	.787

Variable	Parcel	Items	Factor Loading
		Workplace WB item 4	.817
		Workplace WB item 5	.791
		Workplace WB item 6	.709
	Parcel 3: Psychological Well-being	Psychological WB item 1	.673
		Psychological WB item 2	.767
		Psychological WB item 3	.717
		Psychological WB item 4	.619
		Psychological WB item 5	.646
		Psychological WB item 6	.479

Note. R indicates reverse-coded item

Table 22: SEM Fit Indices and Statistics

	X^2	df	CFI	TLI	RMSEA	SRMR
Measurement model	944.83	224	.93	.91	.08	.06
One factor model	5639.24	252	.47	.42	.20	.14
A priori structural model	1299.46	232	.90	.88	.09	.10
Modified structural model	1027.82	231	.92	.91	.08	.07

Note. CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, RMSEA = root mean square error of approximation, SRMR = standardized root mean square residual

Table 23: Q1: How has anxiety influenced your performance at work and your well-being? Qualitative Themes

Theme	Theme Definition	Example	*n*	%
Cognitive disturbances	participant indicated cognitive disturbances: e.g., rumination, difficulty focusing, intrusive thoughts	*Sometimes I am consumed by thoughts of work during non-work hours.*	37	14%
COVID	participant indicated that COVID or COVID-related changes affected anxiety	*I've detached from anxiety about performance recently due to burnout and working non stop through COVID.*	18	7%
Different effects work vs well-being	participant indicated anxiety has different effects on work performance vs on well-being	*Anxiety is a double-edged sword. I constantly feel like I'm not doing enough or working hard enough. But my anxiety also propels me to achieve things that many of my peers don't.*	4	1%
Motivation	participant indicated positive effect of anxiety in the form of motivation	*While working, I feel my anxiety is motivating to getting more done. My job is demanding and changes pace moment by moment. I feel overwhelmed one moment and comfortable in the next. When overwhelmed I push myself harder to get more done to meet and exceed expectations set by my management team.*	16	6%
Negative effect on performance	participant indicated anxiety has a negative effect on work performance	*Sometimes when I'm anxious, I can be short with my clients (in emails), which my boss/supervisor have noticed and commented upon. Anxiety also tires me out, and I'm less productive when I'm having a particularly anxious day.*	34	13%

Theme	Theme Definition	Example	*n*	%
Negative effect on well-being	participant indicated anxiety has a generally negative effect on well-being	*Anxiety and burnout is starting to prevent me from having hope of things improving in Healthcare. I wanted to be part of the improvement now I feel lost and want to make a career change but love Healthcare too much to leave.*	60	22%
Negative emotions	participant indicated negative effect of anxiety in the form of negative emotions (e.g., anger, crying)	*It can lead to irritability and anger.*	9	3%
Negative work context	participant indicated that negative work context led to or exacerbated anxiety (e.g., low pay, abusive supervision, unrealistic expectations, market issues)	*My previous job exposed me to work trauma. Many of these questions would be answered differently if I still worked there. I was constantly anxious and stressed, taking work with me and never looking away from my email. With COVID, this was enhanced because I was working from home for about 12 hours a day. I had no support from supervisors and was diagnosed with PTSD. I left that job about 4 months ago, and it has truly changed how I perform at work and how I can focus on my personal goals at home.*	22	8%
No/little effect on either	participant indicated anxiety did not affect or did not have a large effect on work performance or on well-being	*No - very rarely effected by anxiety.*	25	9%

Theme	Theme Definition	Example	*n*	%
No/little effect on well-being only	participant indicated anxiety had no or little effect on well-being	*Not much effect on my happiness*	2	.7%
No/little effect on work performance only	participant indicated that anxiety had no or little effect on work performance	*I would say that anxiety has not affected my performance at work, instead it played a role in my personal life for many years.*	19	7%
Perfectionism and confidence	participant indicated perfectionism and reduced confidence as effect of anxiety	*Even though I have received good marks at work on my performance and have received promotions, I still get anxiety thinking I will not live up to my standards and that my promotions were a mistake and I can't properly execute my role.*	42	15%
Physical symptoms	participant indicated negative effect on well-being in the form of physical symptoms: (e.g., panic attacks, pre-hypertension, weight fluctuations, sleep disruptions, restlessness)	*It has at times given me chest-tightness, caused me sleepless nights, and has made me not care as much about work.*	21	8%
Positive effect on performance	participant indicated anxiety has a positive effect on work performance	*If anything, it positively influences my performance at work because I put in extra time and effort in an attempt to lessen my anxiety surrounding the task.*	25	9%
Procrastination and slower completion	participant indicated anxiety can lead to procrastination and more time needed to complete tasks	*It has manifested into procrastination. I have to really focus and motivate myself to keep going, and it's hard.*	6	2%

Theme	Theme Definition	Example	*n*	%
Reduced work quality	participant indicated negative effect on performance in terms of work quality (e.g., making mistakes, turning things in late)	*If it gets overwhelming then the quality of my work tends to be much worse (incomplete, late, mistakes, etc).*	6	2%
Relationships	participant indicated anxiety has negatively affected relationships (e.g., personal relationships, with clients, with coworkers)	*It interferes with the relationships among colleagues and can't concentrate on a project with everyone.*	3	1%
Workload	participant indicated negative effect of anxiety in the form of feeling overwhelmed or overcommitted, stressed, or dealing with deadlines or large workloads	*I left the job I was qualified for (education and work experience) because it was so anxiety inducing (academic counselor and registrar). I was advising over 500 students, serving as a departmental registrar of sorts, and just could not take it anymore. Covid-19 and the unspoken rule of always needing to be on-call blurred the lines between my home, life with my husband, and where the university was. After eight months of blurred lines (honestly longer but started counting when we went remote), I simply could not handle the anxiety.*	34	12%

Table 24: Q2: How have you overcome any negative effects of anxiety on your performance at work at your well-being? Qualitative Themes

Theme	Theme Definition	Example	*n*	%
Attentional deployment (general)	participant indicated using attentional deployment (Gross, 1998) to manage anxiety (i.e., distraction, diverting attention, switching to a different task)	*I usually choose to divert my attention and selectively forget.*	6	2%
Boundaries	participant indicated using boundaries to manage anxiety (e.g., work-life balance, turning off tech, taking time off)	*I have recently stopped working in the evenings to stay caught up, and that has made a world of difference in my well-being.*	17	6%
Breaks	participant indicated managing anxiety by taking breaks	*Take intermittent breaks throughout the day to destress and refocus*	14	5%
Broader goals	participant indicated managing anxiety by thinking about broader goals (i.e., a broad goal they're working towards)	*I try to overcome the hold that anxiety has on my life by…keeping my ultimate goals in mind.*	6	2%
Diet	participant indicated using diet to manage anxiety	*I have tried to…be more careful with my diet.*	3	1%

Theme	Theme Definition	Example	*n*	%
Entertainment	participant indicated using entertainment (e.g., watching movies, reading books, listening to music, puzzles, hobbies, travel) to manage anxiety	*Often I overcome the anxiety by watching series, play games on my phone.*	10	4%
Experience/time	participant indicated managing anxiety by building skills and experience (e.g., getting more experience with something mitigated anxiety, had anxiety earlier in career but learned how to manage)	*I've learned to discredit some of the anxiety through the sheer passage of time (and advancement despite my anxiety).*	14	5%
Fitness	participant indicated using fitness (e.g., exercise, yoga) to manage anxiety	*To manage if, I typically engage in some physical activities (I.e., going to the gym, or go on a walk).*	24	9%
General/social support	participant indicated using general social support to manage anxiety (not supervisor or coworker support)	*Support of my loved ones and friends*	18	7%
Medication	participant indicated using medication to manage anxiety	*I am taking medication and it helps a lot.*	18	7%
Meditation/mindfulness/prayer	participant indicated using meditation, mindfulness, prayer, "calming down", breathing, and similar techniques to manage anxiety	*I use meditations to help me unwind at night and create a sense of being able to control something.*	26	10%

Theme	Theme Definition	Example	*n*	%
Organization and time management	participant indicated using organization and/or time management techniques to manage anxiety	*I typically do not suffer from anxiety, however when I do, it forces me to become more organized and systematic in how I approach the particular challenge that is causing the anxiety.*	7	3%
Pushing through	participant indicated managing anxiety by "powering through" or "pushing through" or working harder	*It's been an issue I've had to push through because my students rely on me to be steady and present.*	17	6%
Reappraisal	participant indicated using reappraisal to manage anxiety (e.g., reframing thoughts, specific reframing of cognitive distortions like catastrophizing)	*Frame-shifting. The best way I've learned to combat anxiety is by shifting my viewpoint so that it can be put into perspective and what the realistic outcomes of it are.*	27	10%
Situation modification	participant indicated managing anxiety by situation modification i.e., changing a situation (Gross, 1998)	*could not perform specific tasks - solution was not having to do them anymore*	3	1%

Theme	Theme Definition	Example	*n*	*%*
Situation selection	participant indicated managing anxiety by situation selection, i.e., entering into or avoiding a specific situation (Gross, 1998) (e.g., changing to a different job)	*I overcame by quitting and finding a career that allowed for better work life balance and was a healthier environment.*	6	2%
Sleep	participant indicated using sleep or healthy sleep habits to manage anxiety	*I try to catch up on sleep.*	4	1%
Substances	participant indicated using non-medical substances (e.g., alcohol, drugs) to manage anxiety	*I used to smoke weed to combat the stress.*	2	.7%
Supportive workplace	participant indicated using a supportive workplace (including supervisor and coworker support) to manage anxiety	*I have frequent check-ins with leadership to ensure we're on the same page about project progress and expectations. Regular check-ins help me keep the anxiety of underperforming at bay.*	45	16%
Task completion	participant indicated that completing tasks or producing good work reduced anxiety	*Working hard to get your work done reduces anxiety on your own.*	7	3%
Therapy	participant indicated using therapy to manage anxiety	*My primary method of managing this is going to therapy.*	27	10%

Appendix A: Survey 1 Items

*Trait Anxiety**

Directions: A number of statements which people have used to describe themselves are given below. Read each statement and then choose the number that indicates how you *generally* feel.

Response Scale:
1 – Almost Never, 2 – Sometimes, 3 – Often, 4 – Almost Always

1. X
2. X
3. X
4. X
5. X
6. X
7. X
8. X
9. X
10. X
11. X
12. I lack self-confidence.
13. X
14. X
15. X
16. X
17. X
18. I am a steady person.
19. X
20. X

*Research permission for the STAID only permits that these two items from the trait anxiety subscale be published in a thesis or dissertation.

Cognitive Reappraisal

Directions: The following questions ask about your emotional life and how you control it (that is, how you regulate and manage your emotions). Choose the number that indicates how much you agree with each statement below.

1	2	3	4	5	6	7
Strongly disagree			neutral			strongly agree

1. When I want to feel more *positive* emotion (such as joy or amusement), I *change what I'm thinking about*.
2. When I want to feel less negative emotion (such as sadness or anger), I *change what I'm thinking about*.
3. When I'm faced with a stressful situation, I make myself *think about it* in a way that helps me stay calm.
4. When I want to feel more *positive* emotion, I *change the way I'm thinking* about the situation.
5. I control my emotions by *changing the way I think* about the situation I'm in.
6. When I want to feel less negative emotion, I *change the way I'm thinking* about the situation.
7. I work 14 months in a year **[attention check item]**

Psychological Capital*

Instructions: Below are questions that describe how you may think about yourself **right now**. Use the following scale to indicate your level of agreement or disagreement with each statement.

Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6

Self-Efficacy
1. **I feel confident in representing my work area in meetings with management.**
2. X
3. X

Hope
4. X
5. X
6. **I can think of many ways to reach my current work goals.**
7. X

Resilience
8. X
9. X
10. **I can get through difficult times at work because I've experienced difficulty before.**

Optimism
11. X
12. X

*Research permission for the PCQ-12 only permits that three items be published in a thesis or dissertation.

Supervisor Support

Directions: Please indicate how much you agree with each statement below.

Response Scale:
1 – Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly agree

Instrumental support
1. My supervisor gives me helpful feedback about my performance.
2. My supervisor gives me helpful advice about improving my performance when I need it.
3. My supervisor keeps me informed about different career opportunities for me in the organization.
4. My supervisor provides assignments that give me the opportunity to develop and strengthen new skills.
5. My supervisor assigns me special projects that increase my visibility in the organization.

Emotional support
6. If I am feeling anxious, my supervisor tried to calm me down by talking with me.
7. If I am anxious about a problem, my supervisor tries to help me work out a solution.
8. If I am anxious, my supervisor tries to reassure me.
9. If I am under stress, my supervisor tries to boost my confidence in my ability to cope.

Emotional Exhaustion

Directions: Please indicate how frequently you feel each statement below.

Response Scale:
1 – Once a month or less, 2 – Once a week, 3 – Several times a week, 4 – Once a day, 5 – Several times a day

1. I feel burned out from my work.
2. I feel fatigued when I get up in the morning and have to face another day on the job.
3. I feel frustrated by my job.
4. I feel like I'm at the end of my rope.

Behavioral Drive*

Directions: The statements below refer to some of your experiences in everyday life. Please read each statement and indicate how frequently or infrequently it applies to you. Please rate yourself as you see yourself generally, not as you wish to be in the future or would like to be seen by others.

Response Scale:

1	2	3	4	5	6
Almost never or never					Almost always or always

<u>Self-Discipline</u>
1. X
2. The completion of work tasks takes precedence over leisure time
3. X
4. X
5. X
6. X
7. X

<u>Diligence</u>
1. X
2. X
3. X
4. X
5. X
6. I invest the time required to execute tasks thoroughly.
7. X

<u>Perseverance</u>
1. X
2. X
3. X
4. X
5. X
6. X
7. I keep at important tasks regardless of how demanding they are.

<u>Pursuing goals</u>
1. X
2. Abandoning my goals is completely unthinkable.
3. X

4. X
5. X
6. X
7. X

*Permission was granted to use the Drive Inventory, but not to reprint it in a publication or dissertation.

Typical Job Performance

Directions: Please indicate how your supervisor would rate how you usually perform at work.

Response Scale:
1 – Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly agree

My supervisor would say I…
1. Adequately complete assigned duties
2. Fulfill responsibilities specified in job description
3. Perform tasks that are expected of me
4. Meet formal performance requirements of the job
5. Engage in activities that will directly affect my performance evaluation
6. Neglect aspects of the job I am obligated to perform
7. Fail to perform essential duties

Employee Well-being

Directions: Please indicate how much you agree with each statement below.

Response Scale:
1 – Strongly disagree 2 – Somewhat Disagree, 3 – Disagree, 4 – Neutral, 5 – Agree,
6 – Somewhat Agree, 7 – Strongly Agree

<u>Life Well-Being</u>
1. I feel satisfied with my life.
2. I am close to my dream in most aspects of my life.
3. Most of the time, I do feel real happiness.
4. I am in a good life situation.
5. My life is very fun.
6. I would hardly change my current way of life in the afterlife.

<u>Workplace Well-Being</u>
1. I am satisfied with my work responsibilities.
2. In general, I feel fairly satisfied with my present job.
3. I find real enjoyment in my work.
4. I can always find ways to enrich my work.
5. Work is a meaningful experience for me.
6. I feel basically satisfied with my work achievements in my current job.

<u>Psychological Well-Being</u>
1. I feel I have grown as a person.
2. I handle daily affairs well.
3. I generally feel good about myself, and I'm confident.
4. People think I am willing to give and to share my time with others.
5. I am good at making flexible timetables for my work.
6. I love having deep conversations with family and friend so that we can better understand each other.
7. I have never used a computer. **[attention check item]**

Perceived Stress due to the COVID-19 Pandemic

The following questions ask you about your feelings and thoughts related to the COVID-19 pandemic during the last month. Please indicate how often you have felt or thought a certain way **during the last month**.

Response scale:
0 – Never, 1 – Almost Never, 2 – Sometimes, 3 – Fairly Often, 4 – Very Often

1. In the last month, how often have you been upset because of something that happened unexpectedly related to the COVID-19 pandemic?
2. In the last month, how often have you felt that you were unable to control the important things in your life related to the COVID-19 pandemic?
3. In the last month, how often have you felt nervous and "stressed" related to the COVID-19 pandemic?
4. In the last month, how often have you felt confident about your ability to handle your personal problems related to the COVID-19 pandemic?
5. In the last month, how often have you felt that things were going your way related to the COVID-19 pandemic?
6. In the last month, how often have you felt that you could not cope with all the things you had to do related to the COVID-19 pandemic?
7. In the last month, how often have you been able to control irritations in your life related to the COVID-19 pandemic?
8. In the last month, how often have you felt that you were on top of things related to the COVID-19 pandemic?
9. In the last month, how often have you been angered because of things that were outside your control related to the COVID-19 pandemic?
10. In the last month, how often have you felt difficulties related to the COVID-19 pandemic were piling up so high that you could not overcome them?

Workplace Anxiety
Directions: Please indicate how much you agree with each statement below.

Response Scale:
1 – Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly agree

1. I am overwhelmed by thoughts of doing poorly at work.
2. I worry that my work performance will be lower than that of others at work.
3. I feel nervous and apprehensive about not being able to meet performance targets.
4. I worry about not receiving a positive job performance evaluation.
5. I often feel anxious that I will not be able to perform my job duties in the time allotted.
6. I worry about whether others consider me to be a good employee for the job.
7. I worry that I will not be able to successfully manage the demands of my job.
8. Even when I try as hard as I can, I still worry about whether my job performance will be good enough.

Demographics

1. Which of the following categories best describes the industry you primarily work in? If you are unsure which category your job falls under, you can reference this [list](#).

   -Accommodation & Food Service
   -Agriculture, Forestry, Fishing, & Hunting
   -Armed Forces
   -Arts, Entertainment, & Recreation
   -Construction
   -Educational Services
   -Finance & Insurance
   -Health Care & Social Assistance
   -Information
   -Management, Administrative & Support, & Waste Management Services
   -Manufacturing
   -Mining
   -Other Services (Except Public Administration)
   -Professional, Scientific, & Technical Services
   -Public Administration
   -Real Estate and Rental & Leasing
   -Retail Trade
   -Transportation & Warehousing
   -Utilities
   -Wholesale Trade

2. Gender

   -Male
   -Female
   -Non-binary/third gender
   -Prefer not to say

3. Age

   -Under 18
   -18-24
   -25-34
   -35-44

-45-54
-55-64
-65 and over

4. In which country do you currently reside?
   -Qualtrics drop-down list of countries

5. Have you ever been diagnosed with any of the following mental health conditions (select all that apply)? Note that this question is optional, and your response is completely anonymous and will not be shared with anyone except the researcher.

   -Prefer not to answer
   -Generalized Anxiety Disorder (GAD)
   -Social Anxiety Disorder/Social Phobia
   -Specific Phobia
   -Panic Disorder
   -Obsessive-compulsive Disorder (OCD)
   -Post-traumatic Stress Disorder (PTSD)
   -Other anxiety disorder
   -Attention-deficit/hyperactivity Disorder (ADHD)
   -Autism Spectrum Disorder
   -None of the above

Optional Open-Ended Questions

1. How has anxiety influenced your performance at work and your well-being? How have you overcome any negative effects of anxiety on your performance at work and your well-being?

2. Is there anything else you'd like to add?

Appendix B: Survey 2 Items

1. Please enter the code that your coworker provided when they forwarded you this survey.

2. What is your relationship to the coworker who forwarded you this survey?

    -The coworker who forwarded me this survey is a colleague at approximately my same level/rank in my organization.
    -I am the coworker who forwarded me this survey's supervisor/they directly report to me.
    -The coworker who forwarded me this survey is my supervisor/someone I directly report to.
    -Other (please specify)

Typical Job Performance

Directions: Please indicate how the coworker who sent you this survey usually performs at work.

Response Scale:
1 – Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly agree

My coworker…
1. Adequately completes assigned duties
2. Fulfills responsibilities specified in his/her job description
3. Performs tasks that are expected of him/her
4. Meets formal performance requirements of the job
5. Engages in activities that will directly affect his/her performance evaluation*
6. Neglects aspects of the job he/she am obligated to perform
7. Fails to perform essential duties

*Item eliminated after reliability analysis and Exploratory Factor Analysis.

Appendix C: Survey Forwarding Instructions

As part of this study, we are collecting data from pairs of employees. Please copy and send (via email, chat, etc.) the below message to a colleague whom/who:

- You work with frequently
- Is able to provide objective, candid feedback on your work performance

Please note that the data to be collected is purely for research purposes.

"Hi [coworker name],

I just completed a questionnaire about employee well-being, motivation, and performance. In order to collect data, the researcher has requested that I ask a coworker who can objectively rate my job performance to fill out a brief survey. Responses will be kept anonymous, and all participants have the option of entering a drawing to win a $50 Amazon.com gift card. The survey should take approximately 5 minutes. Your responses will go directly to the researcher and will not be shared with me. Please be objective and candid, and note that the data to be collected is purely for research purposes.

The survey can be found at **[survey 2 link]**. When it asks you to input a code from the coworker who forwarded you the survey, please enter this one: **[randomly-generated code]**.

Appendix D: Sample Recruitment Message

Hello,

I am writing to respectfully request your assistance with my doctoral dissertation research. I am conducting a study about employee well-being, motivation, and job performance, with the goal of understanding how organizations can both support employee well-being and help employees perform at their best.

The study consists of a survey that will take approximately 20 minutes to complete, along with a request to forward another, brief survey to a coworker. Responses will be kept anonymous.

The survey is open to any English-speaking individual who is employed either part-time or full-time (i.e., works at least 20 hours per week) in any country.

All participants have the option of entering a drawing (not connected to survey responses) to win a $50 Amazon.com gift card and to indicate if they would like to receive a summary of the research results upon study completion.

If you are able to assist, please follow the link below to participate in the survey. At the end of the survey, you will be asked to forward another survey link to a coworker who is able to objectively assess your performance at work. Responses will not be shared between colleagues, and all data will be matched with a randomly-generated code in order to protect anonymity. No individual or employer names will be collected.

Please contact me at tdieguez2015@my.fit.edu if you have any questions, and thank you in advance for your help with my doctoral research!

To participate, please follow the link below.

Link: XXXXXXXXXXXXXXXXXXXXXXX

Appendix E: STAI-AD Research Permission

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www.mindgarden.com

To Whom It May Concern,

The above-named person has made a license purchase from Mind Garden, Inc. and has permission to administer the following copyrighted instrument up to that quantity purchased:

State-Trait Anxiety Inventory for Adults

The four sample items only from this instrument as specified below may be included in your thesis or dissertation. Any other use must receive prior written permission from Mind Garden. The entire instrument may not be included or reproduced at any time in any other published material. Please understand that disclosing more than we have authorized will compromise the integrity and value of the test.

Citation of the instrument must include the applicable copyright statement listed below.
Sample Items:

    I feel at ease
    I feel upset
    I lack self-confidence
    I am a steady person

Sincerely,

Robert Most
Mind Garden, Inc.
www.mindgarden.com

Appendix F: PCQ-12 Research Permission

Tessly Dieguez

mind garden

To whom it may concern,

This letter is to grant permission for Tessly Dieguez to use the following copyright material:

Instrument: *Psychological Capital (PsyCap) Questionnaire (PCQ)*

Authors: *Fred Luthans, Bruce J. Avolio & James B. Avey.*

for his/her thesis/dissertation research.

Three sample items from this instrument may be reproduced for inclusion in a proposal, thesis, or dissertation.

The entire instrument may not be included or reproduced at any time in any other published material.

Sincerely,

Mind Garden, Inc.
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