

Spring 2019

Moderating Effect of Trait Mindfulness on the Relationship between Job Demands and Burnout Using the Job Demands-Resources Model

Anne O'Brien
San Jose State University

Follow this and additional works at: https://scholarworks.sjsu.edu/etd_theses

Recommended Citation

O'Brien, Anne, "Moderating Effect of Trait Mindfulness on the Relationship between Job Demands and Burnout Using the Job Demands-Resources Model" (2019). *Master's Theses*. 5012.
DOI: <https://doi.org/10.31979/etd.p2a3-k3es>
https://scholarworks.sjsu.edu/etd_theses/5012

This Thesis is brought to you for free and open access by the Master's Theses and Graduate Research at SJSU ScholarWorks. It has been accepted for inclusion in Master's Theses by an authorized administrator of SJSU ScholarWorks. For more information, please contact scholarworks@sjsu.edu.

MODERATING EFFECT OF TRAIT MINDFULNESS ON THE RELATIONSHIP
BETWEEN JOB DEMANDS AND BURNOUT USING THE JOB DEMANDS-
RESOURCES MODEL

A Thesis

Presented to

The Faculty of the Department of Psychology

San José State University

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

by

Anne O'Brien

May 2019

© 2019

Anne O'Brien

ALL RIGHTS RESERVED

The Designated Thesis Committee Approves the Thesis Titled

MODERATING EFFECT OF TRAIT MINDFULNESS ON THE RELATIONSHIP
BETWEEN JOB DEMANDS AND BURNOUT USING THE JOB DEMANDS-
RESOURCES MODEL

by

Anne O'Brien

APPROVED FOR THE DEPARTMENT OF PSYCHOLOGY

SAN JOSÉ STATE UNIVERSITY

May 2019

Dr. Howard Tokunaga

Department of Psychology

Dr. Megumi Hosoda

Department of Psychology

Silma Lange

Cisco Systems, Inc.

ABSTRACT

MODERATING EFFECT OF TRAIT MINDFULNESS ON THE RELATIONSHIP BETWEEN JOB DEMANDS AND BURNOUT USING THE JD-R MODEL

by Anne O'Brien

The Job Demands-Resources (JD-R) model was constructed to explain the antecedents, consequences, and relationships of burnout, and has provided evidence that personal resources moderate and weaken the relationship between job demands and burnout. Although much of the personal resource literature focuses on personality traits like optimism and self-esteem, the moderating effect of trait mindfulness on the relationship between job demands and job burnout has yet to be examined. The study hypothesized that mindfulness moderates the relationship between four job demands (role ambiguity, interpersonal conflict, work-life conflict, and cognitive demands) and three dimensions of burnout, such that those with higher levels of mindfulness experience less burnout when job demands are high. A total of 126 knowledge workers in the technology industry participated in the study by filling out a survey using Qualtrics. Consistent with the hypothesis, mindfulness moderated the relationship between cognitive demands and exhaustion, such that the relationship between cognitive demands and exhaustion was weakened for individuals with high mindfulness. Contrary to the hypothesis, mindfulness moderated the relationship between interpersonal demands and exhaustion such that relationship between interpersonal demands and exhaustion was stronger for individuals with high mindfulness. Thus, mindfulness does not always benefit individuals when subjected to high job demands, and organizations should consider their environment before hiring for mindful individuals.

ACKNOWLEDGEMENTS

First and foremost, I would like to thank my thesis committee for their commitment and support throughout this process. Howard, your unfailing support and your faith in my ability has gotten me through this process and has positively impacted my life inside and outside of school. Megumi, I appreciate your thoughtful guidance, dedication, and the permanent smile on your face. Silma, your insights, hard work, and our continued mentorship has enabled me to thrive in this process and beyond.

I would also like to thank my parents. Mom and Dad, you have tirelessly supported me throughout this process and my entire life. As the two pillars that I've been able to build my life on, I could not have done any of this without you. To my friends, who have (unwillingly) left me out of plans, sent me "You can do it!" messages, and who have sat with me while I worked on this project, thank you. I am overwhelmed by ability of the people surrounding me to give unconditional support and encouragement. It truly takes a village!

TABLE OF CONTENTS

List of Tables	viii
List of Figures	ix
Introduction.....	1
History of Job Burnout.....	3
The early phase	3
The empirical stage	6
Current definition and dimensions of burnout	6
The Job Demands-Resources Model	8
Job demands.....	9
Resources	12
Resources as Moderators of the Relationship between Job Demands and Burnout	12
Mindfulness.....	14
History of mindfulness.....	14
Definition of mindfulness	15
Current Study	17
Method.....	19
Participants.....	19
Measures	19
Role ambiguity.....	19
Interpersonal conflict	21
Work-life conflict.....	21
Cognitive demands.....	21
Mindfulness.....	22
Job burnout.....	22
Demographics	23
Procedure	23
Results.....	25
Descriptive Statistics.....	25
Pearson Correlations	26
Test of Hypothesis and Research Question	30
Exhaustion.....	30
Cynicism	36
Efficacy	38
Discussion.....	41
Summary of Findings.....	41

Theoretical Implications	45
Practical Implications.....	46
Strengths of the Study	47
Limitations and Future Research	48
Conclusion	49
References	51
Appendix.....	57
Questionnaire Items	57

LIST OF TABLES

Table 1. Demographic and Background Characteristics of Participants	20
Table 2. Descriptive Statistics of Variables	26
Table 3. Pearson Correlations; Predictor and Criterion Variables	28
Table 4. Hierarchical MRC for the Moderating Effect of Mindfulness (Exhaustion)	32
Table 5. Hierarchical MRC for the Moderating Effect of Mindfulness (Cynicism).....	37
Table 6. Hierarchical MRC for the Moderating Effect of Mindfulness (Efficacy)	39

LIST OF FIGURES

Figure 1. Moderating effect of mindfulness on interpersonal conflict and exhaustion relationship	35
Figure 2. Moderating effect of mindfulness on cognitive demands and exhaustion relationship.....	36

Introduction

Job burnout has become a widespread phenomenon and has been found to have a negative impact on organizations and individuals (Jawahar, Stone & Kisamore, 2007). The pervasiveness of burnout piqued the interest of human resource professionals and other policymakers of the workplace, and cause organizations to seek ways of limiting burnout of their employees (Halbesleben & Buckley, 2004). When employees experience burnout, it creates negative outcomes for organizations, threatening their survival and status. Organizations pay \$125 billion to \$190 billion every year in healthcare costs due to burnout (Garton, 2017). However, organizations are suffering losses far beyond increased healthcare costs. Maslach, Schaufeli, and Leiter (2001) stated that burnout was linked to lower job satisfaction, lower organizational commitment, and higher turnover rates. Swider and Zimmerman (2010) conducted a meta-analysis and concluded that burnout was linked to higher absenteeism and reduced job performance. Taken together, job burnout has a high financial cost and can hurt an organization's reputation with its customers, investors, and potential new hires.

In terms of individual outcomes, job burnout has been linked to an increased risk of mental disorders including depression, anxiety, eating disorders, and substance abuse (Hakanen, Schaufeli & Ahola, 2008; Melamed, Shirom, Toker, Berliner, & Shapira, 2006; Nevanperä, Hopsu, Kuosma, Ukkola, Uitti, & Laitinen, 2012). It has also been linked to health problems such as cardiovascular disease (Melamed et al., 2006). Not only does burnout affect the individual, it has been shown to be a social contagion, spreading from one employee to another (Maslach, 2003). For example, a study of ICU

nurses found that burnout complaints of colleagues could predict other colleagues' burnout (Bakker, Le Blanc, & Schaufeli, 2005). Furthermore, the consequences of burnout spill over into the home lives of employees (Maslach et al., 2001).

Because of the negative effects of burnout on organizations and employees, scientific research has examined the construct. The Job Demands-Resources (JD-R) model was developed to explain the antecedents, consequences, and relationships of job burnout. The JD-R model states that demands of the job lead to job burnout, while job and personal resources lead to work engagement (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Schaufeli and Taris (2014) revised the JD-R model, proposing that job and personal resources may moderate and weaken the relationship between job demands and job burnout. Personal resources, like optimism and self-efficacy, are related to having a positive outlook for the future and believing that they can control their environment. The pervasiveness of burnout and the need to reduce burnout in employees calls into question what other personal resources can weaken the relationship between job demands and burnout.

Mindfulness, like job burnout, has gained traction and attention of individuals, organizations, and scientific research. Mindfulness has gone mainstream in the western world due to research showing that it can reduce anxiety, depression and other mental disorders (Anderson, Lau, Segal, & Bishop, 2007; Shapiro, Schwartz, & Bonner, 1998). It has also been shown to be related to personal resources in the JD-R model like resilience and self-efficacy (Keye & Pidgeon, 2013). The increasing issue of burnout and the increasing popularity of using mindfulness to mitigate negative experiences calls into

question whether mindfulness can be used to diminish the experience of burnout in the workforce.

The purpose of this study was to examine whether trait mindfulness impacts the relationship between job demands and burnout relationship in knowledge workers, such that the experience of burnout would be lessened. It was hypothesized that the relationship between job demands and job burnout would be moderated, and effectively weakened, for individuals with higher levels of trait mindfulness. The following sections will review the history of job burnout, discuss the JD-R model describing antecedents and consequences of job burnout, and discuss the moderating role of personal resources. Next, the history and benefits of mindfulness will be discussed. Lastly, a gap in the literature will be considered followed by the present study's purpose and hypothesis.

History of Job Burnout

By the 1970s, it was apparent that there was a unique experience of emotional depletion and loss of motivation of employees at work (Maslach et al., 2001). Individuals who were once passionate and enthralled by their work faced feelings of frustration, ineffectiveness, failure, and even anger. This phenomenon was labeled “burnout” by psychiatrist Freudenberger (1975), who defined burnout as “failure or exhaustion because of excessive demands on energy, strength, or resources” (p. 73).

The early phase. Job burnout originally focused on individuals working in education, human services, and healthcare professions because they are required to interact with a large number of people in need. There was no standard definition of burnout before the period of empirical research, but there was a consensus on three themes that prevailed

many years after Freudenberger's initial definition of burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach et al., 2001). It should be noted that the definition of these early themes are aimed towards professions that require provider-recipient relationships, such as those mentioned above.

The exhaustion theme is "caused by excessive psychological and emotional demands made on people helping people" (Jackson, Schwab & Schuler, 1986, p. 630). Exhaustion occurs due to a state of continuous arousal and represents individuals' response to stress (Leiter & Maslach, 2003). As the demands of work increase, employees feel they can no longer give much of themselves to their work, or the people they serve. The theme of exhaustion is the predominant facet of job burnout as it is the most easily recognized and consequently was the focus of attention for burnout from its inception (Maslach et al., 2001).

The depersonalization theme is defined as the tendency of individuals affected by burnout to deindividuate and depersonalize people, treating people as objects with an attitude of cynicism and callousness (Jackson et al., 1986). Depersonalization can occur from emotional exhaustion and feelings of frustration and becomes a continuous reminder of the responsibilities of the job. Detaching from one's clients may be a defense mechanism to protect one from the stresses of the job. This detached concern can be helpful to employees in crisis situations, but employees suffering from burnout have excessive detached concern that could lower the level of aid they provide to their recipients. In "people-work" professions, depersonalization can be seen by employees'

negative attitude towards their clients, and perhaps their belief that their clients deserve their hardship and cannot be helped.

The theme of reduced personal accomplishment is defined as the tendency of individuals suffering from burnout to evaluate themselves negatively, especially regarding their work (Cordes & Dougherty, 1993). Reduced personal accomplishment lacked direct attention during the early phase of burnout, but the effects of it were derived from research on learned helplessness (Jackson et al., 1986). In other words, reduced personal accomplishment occurs when individuals put effort into their work, without seeing the results they expect. Those who put forth effort but fail to produce positive outcomes develop symptoms of stress and start to believe that nothing they do will make a difference, and thus they stop making the effort.

From the time Freudenberger (1975) first defined burnout but before it was under empirical investigation, burnout was considered a social issue by practitioners who sought to apply interventions to address and prevent this pervasive phenomenon, and was focused on workers in human services, educational, and healthcare professions (Maslach et al., 2001). These professions provide services that help those in need and appear to have immense emotional pressures that lead to exhaustion on the job and difficulty to find job satisfaction. Thus, the initial view of burnout was focused on social exchange and relationships in the workplace and their effects, rather than the individual's stress response.

During this early stage of burnout, workshops were held for human services, educational, and healthcare professions as the main intervention or solution to burnout.

The focus of these workshops was to teach professionals how to mitigate symptoms of exhaustion brought on by work demands. During this period in job burnout's history, there was very limited knowledge on its antecedents, consequences and correlates. Later, shaped by this mainstream notion and inception of burnout as a social problem, the initial focus of burnout research aimed to define the construct and build hypotheses regarding its causes and effects. This "bottom-up" method created a common theme in the burnout research literature of finding a solution, in which theoretical frameworks were built with the purpose of application (Maslach et al., 2001).

The empirical stage. Once the construct of burnout was under scientific research in the field of industrial and organizational (I/O) psychology, it was enhanced in three ways. First, this research extended to occupations beyond those with provider and recipient relationships. It became apparent that job burnout was a form of job stress and was therefore relevant to all types of professions, rather than solely professions based on provider-recipient interactions. Second, longitudinal studies began to appear, linking the work environment with the thoughts, feelings, and attitudes of individuals at a later time. Third, the methodology and statistical analyses were more advanced under the jurisdiction of I/O psychologists conducting empirical research. These new approaches allowed researchers to determine the antecedents, consequences, and related constructs regarding job burnout not defined by earlier work.

Current definition and dimensions of burnout. With the advancements of I/O psychology, the operational definition of burnout was formed, defining it as "a prolonged response to chronic emotional and interpersonal stressors on the job" (Maslach, 2003, p.

189), and involves the three dimensions of exhaustion, cynicism, and inefficiency.

Exhaustion is defined as feelings of being drained of emotional and physical resources.

The exhaustion dimension mirrors the exhaustion theme of early burnout work; however, it has been redefined to include all professions rather than just those with provider-recipient relationships.

Cynicism is defined by a “negative, callous, or excessively detached response to various aspects of the job” (Maslach, 2003, p. 190). Cynicism reflects the depersonalization theme of the earlier research and refers to the cognitive or emotional distancing that results when individuals feel exhausted by their work. Detachment makes demands at work more manageable by making the object of one’s work impersonal with indifferent or cynical attitudes. In other words, if one stops caring about work tasks, one is less affected by their demands. Depersonalization was renamed as cynicism to include all professions by including the detachment from work tasks, colleagues and clients, rather than just clients in health, education, and human services professions.

Inefficiency is defined as feeling inadequate or incompetent, and “is characterized by a lack of productivity and motivation at work” (Leiter & Maslach, 2003, p. 93). The dimension of inefficiency reflects the early theme of reduced personal accomplishment, merely renamed in the current definition of burnout. This has been seen as the self-evaluation dimension of burnout because it is perceived decreased professional effectiveness. When employees have an overload of demands, they are unable to see themselves as being productive and effective at work.

The Job Demands-Resources Model

With individuals suffering from burnout on the rise, the need for the scientific understanding of burnout's antecedents, consequences and relationships with other constructs grew. The most well-known and encompassing model is the JD-R model (Demerouti et al., 2001). The JD-R model is used to explain job burnout and engagement. The JD-R model is a dual-process model: the health impairment process and the motivational process. In the health impairment process, an excess of job demands leads to job burnout, which causes negative outcomes for the individual and for the organization (e.g., health impairments, reduced job performance). The motivational process shows that resources are linked to work engagement, which leads to positive work outcomes such as increased organizational commitment and increased performance.

The benefits of the JD-R model, which was missing from previous models, is that the model is flexible, and the broad span of demands and resources makes the model generalizable to all work environments and situations (Bakker & Demerouti, 2014). Demands and resources can be catered to each job and environment. For example, for construction work, there are physical demands and adequate tools as resources. On the other hand, a therapist would have high emotional demands with interactions with patients, but would experience a high sense of autonomy as resources.

There are several major underlying assumptions of the JD-R model. The first assumption is that job characteristics can be categorized as job demands or resources (Bakker & Demerouti, 2014). Job demands are any aspect of the job that puts psychological or physical stress on an individual that results in psychological or physical

costs (Bakker, Brummelhuis, Prins, & van der Heijden, 2010). Resources are aspects of the job and the person that enables employees to meet work goals, manage the demands of the job, and allows for personal and career development (Bakker et al., 2010).

Job demands. Job demands are considered to be “physical, social, or organizational aspects of the job that require sustained physical and/or psychological (i.e., cognitive or emotional) effort on the part of the employee and are therefore associated with certain physiological and/or psychological costs” (Demerouti et al., 2001, p. 9). In this study, I examine job demands relevant to knowledge workers. Knowledge workers are defined as workers who think for a living, and their main capital is their knowledge (Davenport, 2005). Knowledge work professions include scientists, engineers, physicians, pharmacists, lawyers, managers, and accountants (Davenport, 2005). The amount of these types of workers is continuously increasing year over year, and account for a third of the workforce in the U.S. (Davenport, 2005).

As mentioned previously, some demands in the JD-R model do not apply to all professions and work environments. Two notable demands that do not apply to knowledge workers are physical demands and unfavorable work environments. By definition, knowledge workers do not perform physically taxing and manual labor. Also, knowledge workers work in office buildings rather than environments that are dangerous such as factories with heavy machinery. Examples of job demands relevant for knowledge workers include role ambiguity, interpersonal conflict, work-life conflict and cognitive demands. These demands represent different aspects of an employee: the job,

relationships with co-workers, home life, and the demands that are placed on cognitive efforts when constantly using knowledge and memory to perform job tasks.

Role ambiguity is defined as “situations encountered on the job in which a worker’s prescribed behaviors are unclear and for which there is some need for certainty or predictability regarding the means for accomplishing goals” (Zellars, Perrewe, & Hochwarter, 2000, p. 1573). Uncertainty has been regarded as a demand because ambiguous scenarios are inherently stressful, and has been found to hinder workers’ ability to perform their work tasks effectively (Stamper & Johlke, 2003). The energy exerted by workers seeking information to determine their job roles is considered a demand that drains their cognitive resources. Role ambiguity is inherent in knowledge work, as it is defined by unpredictable work tasks, changing long-term goals, and varying team members (Beyerlein, Johnson, & Beyerlein, 1995).

Interpersonal conflict at work is defined as negative emotions created due to contact with colleagues that results in a change of attitudes and behaviors toward those colleagues (Leiter & Maslach, 1988). Interpersonal conflict can include minor disagreements with colleagues, spreading rumors, or overt harassment. Knowledge workers are more likely to work in teams than other professions (Beyerlein et al., 1995). Daily collaboration can lead to a higher chance of interpersonal conflict between team members, and thus interpersonal conflict is a relevant job demand for knowledge workers. When Keenan and Newton (1985) asked engineers to report a stressful event that occurred in the last two weeks, the second most prevalent source of stress was interpersonal conflict.

Work-life conflict is defined as “inter-role conflict that occurs when engaging in one role makes it more difficult to engage in another role” (Kossek, Pichler, Bodner, & Hammer, 2001, p. 290). Work-life conflict is similar to role conflict in that one role conflicts with the other, but work-life conflict refers to how one’s job may create an inability to fulfill home-life responsibilities, and vice versa. A recent Gallup study showed that Americans were working an average of 47 hours a week, and 50% of workers were working more than 40 hours a week (Adkins, 2015). The more hours employees work, the less time they have for their home responsibilities. In fact, Gallup’s State of the American Workplace 2017 survey showed that 53% of Americans reported that having a job with greater work-life balance was very important. Taken together, the importance of work-life balance and the increasing hours of work per week make work-life conflict a relevant demand for knowledge workers. A knowledge worker’s deadline to finish a project that requires long hours of work which makes it hard to fulfill parental duties (e.g., picking up children from school) illustrates one way that work-life conflict manifests itself in the real world.

Cognitive demands are defined as the degree to which job tasks require continuous mental effort (Bakker, Demerouti, & Schaufeli, 2005). Although physical demands are important in certain occupations like construction workers and nurses, cognitive demands are increasingly significant for knowledge workers because their jobs rely on their ability to process information, solve problems, and make decisions (Bakker & Demerouti, 2014). The nature of knowledge work relying on cognitive processes of the brain can fatigue employees, leading to the experience of burnout.

Resources. There are two categories of resources in the JD-R model: job and personal resources. Job resources are any physical, social, or organizational aspects of a job that reduce the demands of that job, are useful to the individual in performing job tasks, and enable personal development (Demerouti et al., 2001). Job resources include working technology, ample time to finish job tasks, feedback, job control, and opportunities for development.

Bakker and Demerouti (2007) state that personal resources are an individual's attributes that help cope with job demands. Personal resources are usually linked to resiliency and the ability to successfully impact one's environment (Grover, Teo, Pick, & Roche, 2016). Examples of personal resources include self-efficacy, optimism, and organization-based self-esteem. Self-efficacy is a mechanism of agency and is defined as the individual's beliefs in their capability to control their functioning and events in their life (Bandura, 1993). Optimism is the belief that good things will come in the future (Carver, Scheier, & Segerstrom, 2010). Organizational-based self-esteem is defined as “the degree to which organizational members believe that they can satisfy their needs by participating in roles within the context of an organization” (Pierce, Gardner, Cummings, & Dunham, 1989, p. 625). Each of these personal resources allow employees to be resilient and to bounce back after failure, adverse circumstances and stressors (Souri & Hasanirad, 2011; Ford & Smith, 2007; Mäkikangas, Kinnunen, & Feldt, 2004).

Resources as Moderators of the Relationships Between Job Demands and Burnout

The JD-R model was updated in 2014; one major addition to the model was that resources could also reduce the relationship between job demands and burnout (Schaufeli

& Taris, 2014). The original JD-R model proposed that resources predict work engagement, but ignored the interplay between job demands, resources, and burnout. Resources are believed to act as moderators because of their buffering effect on the relationship between job demands and burnout (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007). The Conservation of Resources (COR) theory states that individuals will use their resources in demanding situations to avoid negative outcomes (Hobfoll, 1989). The COR theory explains why personal resources moderate the relationship between demands and burnout. Employees with adequate resources will invest them when demands arise, weakening the adverse effect of demands and reducing the chance of burnout.

The moderating role of personal resources between job demands and burnout was supported by a longitudinal study of Finnish employees that showed that personal resources (optimism and self-esteem) had a buffering effect on the relationship between demands and burnout (Mäkikangas & Kinnunen, 2003). Furthermore, Jex and Elacqua (1999) found that organization-based self-esteem moderated the relationship between role ambiguity (a job demand) and depression and strain. This suggests that those with the disposition to believe in good things in the future, have control over their environment, and succeed in their organizational context are likely to experience burnout to a lesser degree when facing job demands than those without these personal characteristics.

As personal resources refer to personal characteristics that allow individuals to cope with job demands, there may be more personal resources that can buffer the effects of job demands that have yet to be identified. Self-efficacy and organization-based self-esteem

describe the disposition to believe in one's ability to control and succeed at work tasks. Optimism describes the belief that good things will happen in the future. However, these personal resources do not describe an employee's mindset of the present moment (rather than the future). Another limitation of these personal resources is that they do not assess the ability of individuals to stay calm in the face of job demands. One possible construct that may address these limitations is mindfulness.

Mindfulness

History of mindfulness. At the heart of Buddhist tradition, the word mindfulness, or 'sati' in Buddhist terms, means "wakefulness of the mind" or "lucidity of the mind" (Davids & Stede, 1959, p. 672). Mindfulness in Buddhist philosophy aims to deepen the conscious awareness of the present moment without judgment and attachment and is typically reached through meditation. However, despite its beginnings in the Buddhist traditions, mindfulness is regarded as secular and is increasingly practiced today worldwide (Cullen, 2011).

The main avenue in which mindfulness made its way into the mainstream is through the scientific research into the benefits of practicing mindfulness in medical and clinical settings. In 1979, Jon Kabat-Zinn started the Mindfulness-based Stress Reduction (MBSR) programs at the University of Massachusetts to treat the psychological distress of terminally ill patients. This research of mindfulness in clinical environments prompted investigation into other clinical environments, as well as non-clinical environments in the Western World.

Mindfulness has since been used to treat many illnesses, such as anxiety and depression (Anderson, Lau, Segal & Bishop, 2007; Shapiro et al., 1998). Mindfulness has been empirically shown to reduce various forms of psychological distress and manage detrimental tendencies of dealing with negative emotions and thoughts including fear, stress, anger, and rumination of negative thoughts (Hayes & Feldman, 2004; Kabat-Zinn, 1990). The robust benefits of mindfulness in clinical and non-clinical environments has brought into question whether mindfulness would benefit individuals at work.

Definition of mindfulness. Mindfulness has been shown to be difficult to define by practitioners and scientific researchers because of the reliance on experience for understanding. Popular among mindfulness practitioners, Kabat-Zinn defines mindfulness as the “awareness that arises through paying attention, on purpose, in the present moment, non-judgmentally” (Kabat-Zinn, 1994, p.4). Events in the environment and actions of others are often filtered through the perceiver’s biases, judgements, expectations, and emotions. This wakefulness, lucidity, and awareness of mindfulness refers to the clarity of attention to the present moment, without being altered through the perceiver’s filters. For example, although an employee may feel that a manager’s decision to give a project to another employee is a personal attack, mindfulness would allow this employee to see that he or she was not given the project because his or her time was already accounted for by other work projects.

One reason mindfulness has been so hard to define and operationalize is the distinction between state and trait mindfulness. State mindfulness is the state of consciousness reached through formal meditation practice. By comparison, trait

mindfulness is the “general tendency to be mindful,” and is much like a personality trait—the individual’s disposition to be mindful (Medvedev, Krägeloh, Narayanan, & Siegert, 2017). The differences between state and trait mindfulness can be described by comparing state and trait anxiety. State anxiety refers to the experience of anxiety due to a perceived threatening stimulus; trait anxiety occurs due to a perceived threatening stimulus, but the intensity, duration, and range of scenarios differs based on the individual’s natural tendency to experience anxiety (Spielberger, 1966). The difference of state and trait mindfulness lies in how individuals reach mindfulness – through mindfulness practice (e.g. meditation, yoga) or one’s natural ability to enter this state.

Because the personal resources of the JD-R model are characteristic traits, this study measures trait mindfulness. For the purposes of this study, trait mindfulness can be measured by “the non-judgmental observation of the ongoing stream of internal and external stimuli as they arise,” and contains five facets: observing, describing, acting with awareness, non-judging of inner experiences, and non-reactivity of inner experiences (Baer, Smith, Lykins, Button, Krietemeyer, Sauer, Walsh, Duggan, & Williams, 2008). Observing is “noticing or attending to internal and external experiences, such as sensations, cognitions, emotions, sights, sounds and smells” (Baer et al., 2008, p. 330). When someone is not being mindful in an aggravating situation, they may behave in an angry way (e.g., yelling) without noticing the emotion they are feeling is anger. In contrast, a mindful person will be aware of the fact that this situation is making them feel anger before behaving as such. The next dimension, describing, refers to being able to label internal experiences (Baer et al., 2008). Those with a high level of trait mindfulness

are able to describe what they are feeling or thinking in any given moment. Acting with awareness involves attending to one's behaviors in the present moment (Baer et al., 2008). This can be thought of as the opposite of acting on autopilot; the individual is aware of his or her actions and is choosing those actions purposefully. The dimension non-judging of inner experiences "refers to taking a nonevaluative stance towards thoughts and feelings" (Baer et al., 2008, p. 330). In other words, this means that one does not label thoughts or emotions as 'bad' or 'good.' Non-reactivity to inner experiences is letting thoughts, emotions, and experiences come to attention, but not getting attached to them and acting on them (Baer et al., 2008).

Current Study

As personal resources are personal characteristics that enable individuals to cope with demands, trait mindfulness may also be considered a personal resource. Keye and Pidgeon (2013) found that mindfulness and resilience had a strong positive relationship. In a study of trait mindfulness and resilience, Thompson, Arnkoff, and Glass (2011) found that mindfulness led to less rumination of depressive thoughts and increases psychological resilience. As trait mindfulness has been shown to reduce anxiety and increase resilience, trait mindfulness should act a resource that employees can use to cope when demands are present in order to minimize negative outcomes such as burnout.

The updated JD-R model states that personal resources act as moderators on the demands-burnout relationship. Because mindfulness appears to meet the personal resource criteria, it begs the question of whether it will play the role of a moderator. There have been studies that show mindfulness predicts burnout, however, there is a gap

in the literature determining whether mindfulness can be considered a personal resource in the JD-R model and whether it plays a moderating role between job demands and burnout. Therefore, the current study furthers our understanding of trait mindfulness as a personal resource and its moderating role between job demands and each dimension of burnout as stated by the JD-R model. Higher levels of mindfulness enable individuals to pay more attention to the present moment without judging and reacting, and could provide them with increased resilience and reduced stress when faced with job demands and would result in reduced sense of burnout. Thus, the following hypothesis is tested.

Hypothesis: Mindfulness will moderate the relationship between job demands and burnout, such that the relationship between job demands and the dimensions of job burnout will be weakened for individuals with higher levels of trait mindfulness.

Method

Participants

Participants for this study were recruited through my professional network. A total of 150 individuals responded to the survey and 24 responses were omitted from the study because they did not meet the eligibility requirement of being a knowledge worker. The final sample consisted of 126 participants.

The sample consisted of 78 women and 46 men. As seen in Table 1, a large percentage of the sample were between the ages of 25 and 34 (44.4%) and had completed a bachelor's degree (61.1%). As for tenure, 23% reported being in their current job for less than a year, 31.7% between 1 and 3 years, 17.5% between 3-5 years, 9.5% between 5-10, and 18.3% for over 10 years. The sample consisted of project managers (26.2%), business analysts (15.1%), engineers (12.7%), human resource professionals (12.7%) and other knowledge work jobs (26.2%).

Measures

All variables were measured using a 5-point Likert scale (1 = *Strongly disagree*, 5 = *Strongly agree*).

Role ambiguity. Role ambiguity was assessed using Rizzo, House and Lirtzman's (1970) Role Conflict and Ambiguity Scale. Six items were used to measure role ambiguity. Example items include "I feel certain about how much authority I have," and "I have clear, planned goals and objectives for my job." The items were reverse scored and averaged to determine a score for each participant in role ambiguity.

Table 1

Demographic and Background Characteristics of Participants

Variable	<i>n</i>	%
Age		
18-24 years old	12	9.5%
25-34 years old	56	44.4%
35-44 years old	25	19.8%
45-54 years old	17	13.5%
55+ years old	16	12.7%
Gender		
Female	78	61.9%
Male	46	26.5%
Other	2	1.6%
Education		
High school	5	4.0%
Associate degree	7	5.6%
Bachelor's degree	77	61.1%
Graduate degree	36	28.6%
Length of time at current job		
< 1 year	29	23%
1-3 years	40	31.7%
3-5 years	22	17.5%
5-10 years	12	9.5%
10-15 years	23	18.3%
Job title		
Business analyst	19	15.1%
Engineer	16	12.7%
Human resource professional	16	12.7%
Project manager	33	26.2%
Lawyer	5	4.0%
Other	37	29.4%

Participants could score on a scale of 1-5, with the highest scores indicating the highest levels of role ambiguity, while the lowest scores indicated the lowest levels of role ambiguity. Cronbach's alpha was .83, indicating good reliability.

Interpersonal conflict. The Workplace Interpersonal Conflict Scale (WICS) was adapted to measure interpersonal conflict (Wright et al., 2017). The WICS includes seven items; five items were used in the current study (e.g., "I am treated unfairly by others at work," "I am treated with a lack of respect at work"). The responses were averaged, giving a range of 1-5; the higher the score, the higher level of interpersonal conflict at work. Cronbach's alpha was .66, indicating slightly low reliability.

Work-life conflict. Work-life conflict was measured using the Work-Family Conflict Scale (WFC) (Netemeyer, Boles & McMurrian, 1996). The WFC consists of five items. Therefore, the higher an item was rated, the more the respondents experienced conflict at their home and work lives. Examples items include "The demands of my work interfere with my home and family life" and "My job produces strain that makes it difficult to fulfill family duties." The responses were then averaged, giving a range of 1-5; the higher the score, the higher level of work-life conflict. The scale indicated very high reliability ($\alpha = .92$).

Cognitive demands. The extent to which participants experienced cognitive demands at work was measured with four items taken from the Copenhagen Psychosocial Questionnaire (Burr, Berthelsen, Moncada, Nübling, Dupret, Demiral, Oudyk, & Lincke, 2018). Higher scores reflect higher cognitive demands at work and lower scores showing a lower level of cognitive demands. An example of an item used to measure this variable

was “My work requires me to remember a lot of things.” The responses were then averaged, giving a range of 1-5; the higher the score, the higher level of cognitive demands. The scale indicated moderate internal consistency ($\alpha = .72$).

Mindfulness. Mindfulness was measured using fifteen items from Baer, Smith, Hopkins, Krietemeyer and Toney’s (2006) Five Facet Mindfulness Questionnaire. The five dimensions of mindfulness (observing, describing, acting with awareness, non-judging of inner experiences and non-reactivity of inner experiences) were each measured using three items. An example of an item to measure the observing dimension was “I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.” An example item utilized to measure describing was “I’m good at finding words to describe my feelings.” An example item used to measure acting with awareness was “When I do things, my mind wanders off and I am easily distracted.” The items for acting with awareness were reverse coded. An example item utilized to measure the dimension of non-judging of inner experiences was “I criticize myself for having irrational or inappropriate emotions.” The items for non-judging were reverse coded. An example item used to measure non-reactivity of inner experiences was “I perceive my feelings and emotions without having to react to them.” The responses were then averaged, giving a range of 1-5; the higher the score, the higher level of trait mindfulness. Cronbach’s alpha for all mindfulness items was .83, indicating good reliability.

Job burnout. Job burnout was measured using the Maslach Burnout Inventory-General Survey (MBI-GS), a measurement tool developed and validated by Maslach, Jackson, and Leiter (1986). The MBI-GS consists of five emotional exhaustion items

(e.g., “I feel emotionally drained from my work,” “I feel used up at the end of the workday”), five cynicism items (e.g. “I have become less enthusiastic about my work,” “I doubt the significance of my work”), and five inefficacy items (e.g. In my opinion, I am good at my job,” “I have accomplished many worthwhile things in this job”). The responses are averaged to determine a score for each participant in emotional exhaustion, cynicism and inefficiency. The possible range of scores is 1-5; higher scores indicate higher levels of experienced exhaustion and cynicism. In regard to efficacy, higher scores reflect higher levels of efficacy at work; lower scores indicate more feelings of inefficacy at work. Cronbach’s alpha for the exhaustion dimension of burnout was .89, demonstrating high reliability. Cynicism also had high reliability with a Cronbach’s alpha of .92. Cronbach’s alpha for efficacy was .79, which indicates good reliability.

Demographics. Demographic information was obtained using five items: age, gender, education, job role, and tenure. These items were chosen to determine how representative the sample was of the population of knowledge workers.

Procedure

In this study, the survey was administered online to participants via an online survey tool (Qualtrics). The respondents were recruited through my professional network using social media sites and email. Those who viewed the social media post were provided with a brief description of the study along with the anonymous survey link and were reminded that their responses would be kept anonymous and confidential.

The survey was also sent via email to professional email distribution lists that allowed solicitation of research studies. The respondents receiving the email saw a brief overview

of the study and an estimate of the time it may take them to complete the survey, and were reminded that their responses would be kept anonymous and confidential. These individuals could also voluntarily opt in or out of the study.

Once they were directed to the survey, participants were provided with a more detailed description and the instructions. After reading the instructions, the respondents were asked to confirm their voluntary consent to participating in the study. If the respondent confirmed their consent, they were guided to the beginning of the survey items. If the respondent chose the option not to participate, they were led to the end of the survey and were thanked for their interest.

The respondents who gave consent to participate in the survey responded to the items that measured job burnout, role ambiguity, interpersonal conflict at work, cognitive demands, work-life conflict, and mindfulness. Lastly, the participants responded to the demographic items. Once they completed the demographic items, they were sent to the end of the survey and thanked for their participation. The collected data was analyzed using SPSS (Version 24).

Results

Descriptive Statistics

Descriptive statistics were calculated to determine the central tendency and variability of the measured variables and can be seen in Table 2. Looking first at the job demands, role ambiguity had a mean slightly lower the midpoint ($M = 2.62$) with low levels of variability ($SD = .78$). Interpersonal conflict had a mean below the midpoint ($M = 1.98$) with relatively small variability ($SD = .59$). Work-life conflict also had a mean slightly below the midpoint ($M = 2.74$) and moderate variability ($SD = 1.02$). Cognitive demands was slightly higher than the midpoint ($M = 3.39$) and had a relatively low standard deviation ($SD = .66$). These findings show that participants were somewhat not sure what their role and contributions were at work and that their job demanded them to critically think. However, participants did not report that they had issues with colleagues and that their job tasks negatively impact their home life.

The exhaustion dimension of burnout had a mean around the midpoint ($M = 3.05$) with moderate variability ($SD = .94$). Cynicism had a mean slightly lower than the midpoint ($M = 2.67$) and relatively moderate variability ($SD = 1.03$). The efficacy scale of burnout had a mean slightly lower than the midpoint ($M = 2.33$) and relatively small variability ($SD = .58$). This demonstrates that the sample as a whole was feeling cynical and inefficacious at work, and somewhat exhausted by their work.

The moderator variable mindfulness had a mean slightly higher than the midpoint ($M = 3.32$) and low variability ($SD = .56$). This means that the sample somewhat perceived

themselves as being able to observe and describe external and internal stimuli in a non-reactive and non-judgmental way.

Table 2

Descriptive Statistics of Variables (N = 126)

Variable	<i>M</i>	<i>SD</i>	Range
Job Demands			
Role ambiguity	2.62	.73	1-5
Interpersonal conflict	1.98	.59	1-4
Work-life conflict	2.74	1.02	1-5
Cognitive demands	3.39	.66	1-5
Burnout			
Exhaustion	3.05	.94	1-5
Cynicism	2.67	1.03	1-5
Efficacy	2.33	.58	2-5
Mindfulness	3.32	.56	1-5

Pearson Correlations

Pearson correlation analyses were performed to examine the relationships between the four job demands (i.e. role ambiguity, interpersonal conflict, work-life conflict, and cognitive demands) and the three dimensions of burnout (i.e. exhaustion, cynicism, and efficacy). As seen in Table 3, the job demands differed in their relationships with the burnout dimensions. Role ambiguity was strongly related to all three burnout dimensions; exhaustion ($r = .46, p < .001$), cynicism ($r = .48, p < .001$), and efficacy ($r =$

-.49, $p < .001$). These results suggested that the more role ambiguity the more employees felt exhausted, cynical, and ineffective at work.

Table 3

Pearson Correlations, Predictor and Criterion Variables ($N = 126$).

Variable	1.	2	3	4	5	6	7	8
1. Role Ambiguity	--							
2. Interpersonal Conflict	.32 ***	--						
3. Work-life Conflict	.27 **	-.33 ***	--					
4. Cognitive Demands	-.02	-.04	.47 ***	--				
5. Mindfulness	-.45 ***	-.34 ***	-.12	.29 **	--			
6. Burnout - Exhaustion	.46 ***	.37 ***	.44 ***	-.02	-.45 ***	--		
7. Burnout - Cynicism	.48 ***	.36 ***	.07	-.27 **	-.50 ***	.58 ***	--	
8. Burnout - Efficacy	-.49 ***	-.19 *	.07	.32 ***	.51 ***	-.34 ***	-.59 ***	--

* $p < .05$ ** $p < .01$ *** $p < .001$

Interpersonal conflict was moderately related to exhaustion ($r = .37, p < .001$) and cynicism ($r = .36, p < .001$), and weakly related to efficacy ($r = -.19, p < .05$). These results indicate that those who experienced more conflict with colleagues at work were likely to experience more exhaustion and cynicism, and professional efficacy. Work-life conflict had a moderate and positive relationship with exhaustion ($r = .44, p < .001$), and a non-significant relationship with cynicism or efficacy. These findings suggest that the more work-life conflict individuals experience, the more they feel exhausted. Cognitive demands were moderately related to cynicism ($r = -.27, p < .01$), and efficacy ($r = .32, p < .001$). Cognitive demands had a non-significant relationship with exhaustion. These results suggest that the higher level of cognitive demands, the more likely they feel inefficacious. Therefore, the four job demands in the current study (role ambiguity, interpersonal conflict, work-life conflict, and cognitive demands) were related to the three dimensions of burnout (exhaustion, cynicism, and efficacy) with two exceptions: the relationship between cognitive demands and exhaustion and the relationship between work-life conflict and cynicism.

Pearson correlations were also performed to determine the relationship between mindfulness and the three dimensions of burnout. Mindfulness had a moderate and negative relationship with exhaustion ($r = -.45, p < .001$) and cynicism ($r = -.50, p < .001$), and a moderate, positive relationship with efficacy ($r = .51, p < .001$). This suggests that individuals with high mindfulness are less likely to feel exhausted and cynical. However, individuals that are high in mindfulness are more likely to experience professional inefficacy.

Test of Hypothesis and Research Question

The hypothesis stated that mindfulness would moderate the relationship between job demands and burnout, such that the relationship between job demands and the dimensions of job burnout would be weakened for individuals with higher levels of trait mindfulness. Twelve hierarchical multiple regression (MRC) analyses were conducted to test the moderating effect of mindfulness on the relationship between the four job demands (i.e. role ambiguity, interpersonal conflict, work-life conflict, and cognitive demands) and the three dimensions of job burnout (exhaustion, cynicism, and efficacy). These analyses were done in two steps. In the first step, one of the four job demands and mindfulness were entered in order to assess their relationships to a particular dimension of burnout. In the second step, the interaction between the job demand and mindfulness was added to determine the moderating effect of mindfulness on the relationship between the demand and the burnout dimension.

Exhaustion. The first four hierarchical MRCs were conducted to determine whether mindfulness moderated the relationship between role ambiguity, interpersonal conflict, work-life conflict and cognitive demands and the exhaustion dimension of burnout (Table 4). In the first analysis, role ambiguity and mindfulness were entered as independent variables, which showed that 29% of the variance in exhaustion was explained by these two variables, $R^2 = .29$, $R^2_{adj} = .28$, $F(2, 123) = 24.76$, $p < .001$. Both role ambiguity ($\beta = .33$, $t = -3.83$, $p < .001$) and mindfulness ($\beta = -.30$, $t = -3.58$, $p < .001$) had significant unique contributions to exhaustion. This shows that both a lack of clarity about job tasks and low awareness of the present moment was related to higher feelings

of exhaustion. Next, the interaction of role ambiguity and mindfulness was entered and did not account for a significant amount of variance above and beyond the direct effects of role ambiguity and mindfulness, $\Delta R^2 = .02$, $F(1, 122) = 2.55$, $p > .05$. Therefore, no moderating effect of mindfulness on the relationship between role ambiguity and exhaustion was found, indicating that mindfulness did not weaken the relationship between role ambiguity and exhaustion.

Table 4

Hierarchical MRC for the Moderating Effect of Mindfulness (Exhaustion)

Predictor		R^2	ΔR^2	β	
Step 1:	Role Ambiguity	.29***	.29***	.33	***
	Mindfulness			-.30	***
Step 2:	Role Ambiguity x Mindfulness	.30***	.01	-1.60	
Step 1:	Interpersonal Conflict	.25***	.25***	.24	**
	Mindfulness			-.37	***
Step 2:	Interpersonal Conflict x Mindfulness	.28***	.03*	.83	*
Step 1:	Work-life Conflict	.35***	.35***	.39	***
	Mindfulness			-.40	***
Step 2:	Work-life Conflict x Mindfulness	.35***	.00	.06	
Step 1:	Cognitive Demands	.22***	.22***	.12	
	Mindfulness			-.48	***
Step 2:	Cognitive Demands x Mindfulness	.27***	.05***	-2.21	**

* $p < .05$, ** $p < .01$, *** $p < .001$

The next hierarchical MRC was conducted to determine whether mindfulness moderated the relationship between interpersonal conflict and exhaustion. First, interpersonal conflict and mindfulness accounted for 25% of variance in exhaustion, $R^2 = .25$, $R^2_{adj} = .24$, $F(2, 123) = 20.87$, $p < .001$. Both interpersonal conflict ($\beta = .24$, $t = 2.91$, $p < .01$) and mindfulness ($\beta = -.37$, $t = -4.42$, $p < .001$) had significant unique relationships to exhaustion. This means that conflict with colleagues and the awareness of the present moment contributed to exhaustion, such that lower levels of interpersonal conflict and higher levels of mindfulness were related to lower levels of exhaustion. Next, the interaction between interpersonal conflict and mindfulness accounted for an additional 2% of the variance in exhaustion, $\Delta R^2 = .03$, $F(1, 122) = 4.12$, $p < .05$. Therefore, a significant moderating effect of mindfulness on the interpersonal conflict-exhaustion relationship was found.

To examine the nature and direction of the moderating effect of mindfulness on the relationship between interpersonal conflict and exhaustion, a median split was used to separate the responses for mindfulness into two groups. The first group represented low mindfulness responses and was composed of scores lesser than or equal to 3.33. The second group consisted of scores higher than 3.33 and represented high mindfulness. A linear regression was conducted for the two mindfulness groups between interpersonal conflict and exhaustion (Figure 1). As seen in Figure 1, employees with high levels of mindfulness experience more exhaustion when faced with higher levels of interpersonal conflict than employees low in mindfulness. This finding contradicts the study's research hypothesis that mindfulness should weaken the relationship between interpersonal

conflict and exhaustion; possible explanations for this finding will be discussed in the Discussion section.

Next, a hierarchical MRC was conducted to test the moderating effect of mindfulness on the relationship between work-life conflict and exhaustion. Work-life conflict and mindfulness accounted for 35% of variance in exhaustion, $R^2 = .35$, $R^2_{adj} = .34$, $F(2, 123) = 33.60$, $p < .001$. Work-life conflict ($\beta = .39$, $t = 25.36$, $p < .001$) and mindfulness ($\beta = -.40$, $t = -5.53$, $p < .001$) had significant and unique relationships to exhaustion, indicating that competing demands of work and lower levels of mindfulness were related to exhaustion. The interaction between work-life conflict and mindfulness did not account for a significant amount of additional variance, $\Delta R^2 = .00$, $F(1, 122) = .02$, $p > .05$. Therefore, the relationship between work-life conflict and exhaustion was not moderated by mindfulness.

The fourth hierarchical MRC examined the moderating effect of mindfulness on the relationship between cognitive demands and exhaustion. The results showed 22% of variance in exhaustion was accounted for by cognitive demands and mindfulness, $R^2 = .22$, $R^2_{adj} = .20$, $F(2, 123) = 16.86$, $p < .001$. Only mindfulness had a significant unique contribution to exhaustion ($\beta = -.48$, $t = -5.80$, $p < .001$), indicating that experiencing the present moment without judging or reacting was related to lower exhaustion at work. Moreover, a significant moderating effect of mindfulness on the relationship between cognitive demands and exhaustion was found, $\Delta R^2 = .05$, $F(1, 122) = 8.21$, $p < .01$.

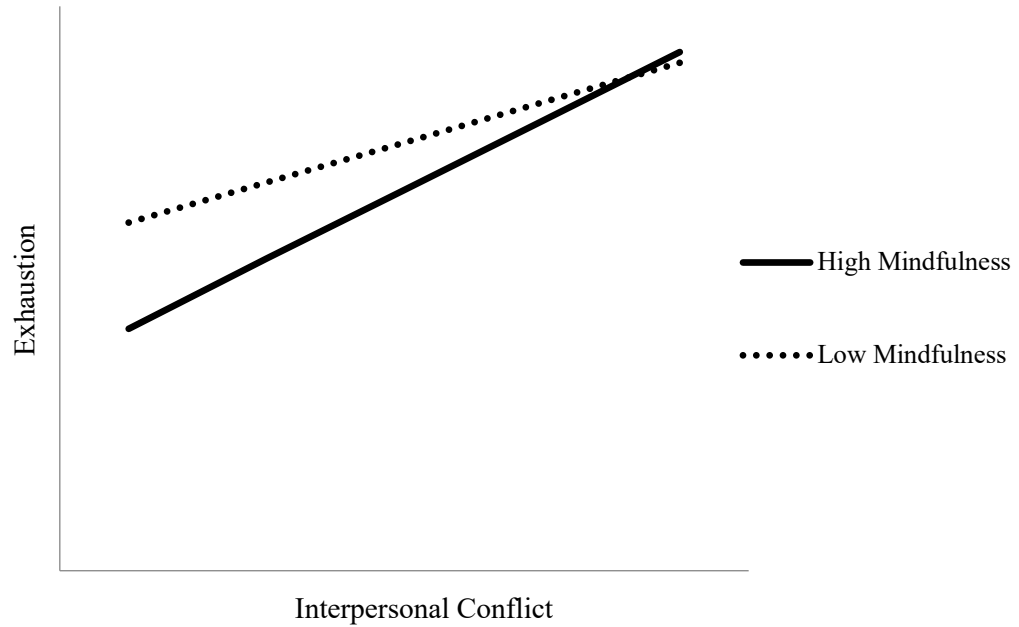


Figure 1. *Moderating effect of mindfulness on interpersonal conflict and exhaustion relationship*

In order to assess the nature and direction of the moderating effect of mindfulness on the relationship between cognitive demands and exhaustion, a median split between low and high mindfulness was again used. As seen in Figure 2, individuals with high levels of mindfulness experience less exhaustion than individuals low in mindfulness when their job required large amounts of thinking, creating and remembering. Thus, the hypothesis was supported such that the relationship between cognitive demands and the burnout dimension of exhaustion was weakened by those with high levels of mindfulness.

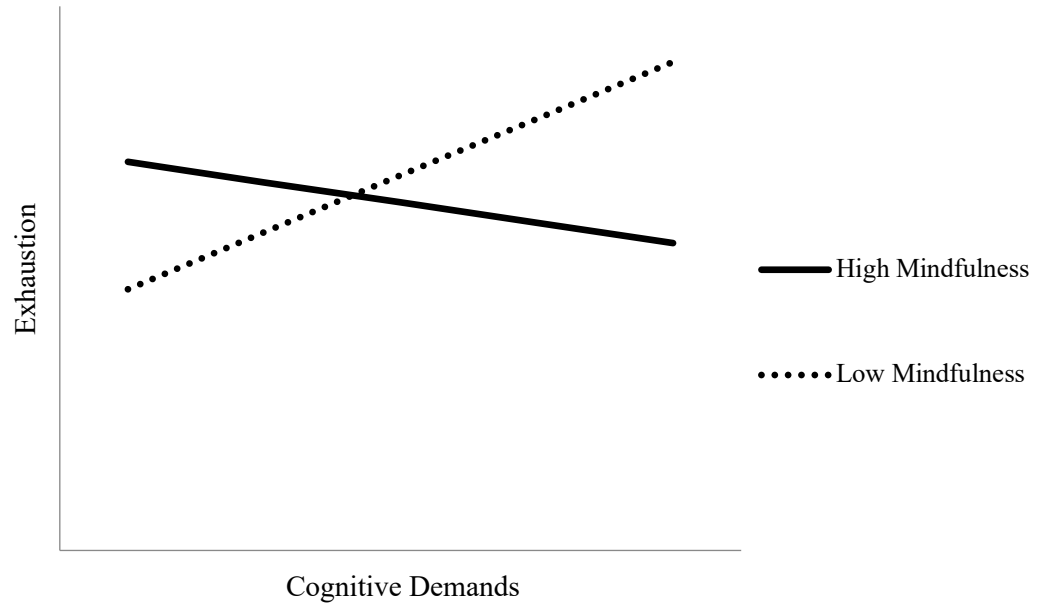


Figure 2. *Moderating effect of mindfulness on cognitive demands and exhaustion relationship*

Cynicism. Depicted in Table 5, the next four hierarchical MRCs were conducted to determine whether mindfulness moderated the relationship between the four job demands and the cynicism dimension of burnout. Similar to exhaustion, the first step entered mindfulness and the job demand as independent variables to assess their direct effects of on cynicism. The second step entered the job demand and mindfulness interaction to assess the moderating effect of mindfulness on the job demand and cynicism relationship.

Table 5

Hierarchical MRC for the Moderating Effect of Mindfulness (Cynicism)

	Predictor	R^2	ΔR^2	B	
Step 1:	Role Ambiguity	.33***	.33***	.32	***
	Mindfulness			-.36	***
Step 2:	Role Ambiguity x Mindfulness	.33***	.00	-.19	
Step 1:	Interpersonal Conflict	.29***	.29***	.01	
	Mindfulness			-.50	***
Step 2:	Interpersonal Conflict x Mindfulness	.29***	.00	-.29	
Step 1:	Work-life Conflict	.25***	.25***	-.14	
	Mindfulness			-.46	***
Step 2:	Work-life Conflict x Mindfulness	.25***	.00	-.29	
Step 1:	Cognitive Demands	.27***	.27***	.12	
	Mindfulness			-.48	***
Step 2:	Cognitive Demands x Mindfulness	.27***	.00	.02	

* $p < .05$, ** $p < .01$, *** $p < .001$

In terms of the direct effects, mindfulness had a significant and unique contribution to cynicism regardless of the job demand, such that individuals with higher levels of mindfulness experienced less cynical feelings about their job. In terms of job demands, only role ambiguity had a significant and unique ability to predict cynicism ($\beta = .32$, $t = -3.87$, $p < .001$), such that those with higher levels of confusion around work tasks experienced more cynicism. The other job demands did not account for a significant amount of variance in cynicism.

In each of the four hierarchical MRCs, there was no moderating effect of mindfulness found between the job demands and cynicism (role ambiguity: $\Delta R^2 = .00$, $F(1, 122) = .08$, $p > .05$; interpersonal conflict: $\Delta R^2 = .00$, $F(1, 122) = .04$, $p > .05$; work-life conflict: $\Delta R^2 = .00$, $F(1, 122) = .34$, $p > .05$; cognitive demands: $\Delta R^2 = .00$, $F(1, 122) = .00$, $p > .05$). This suggests that the relationships between the job demands and cynicism were not weakened by high mindfulness. These findings do not support the study's research hypothesis regarding the moderating effect of mindfulness.

Efficacy. The last set of four hierarchical MRCs were performed to examine whether mindfulness had a moderating effect on the relationship between the four job demands and the efficacy dimension of burnout, as seen in Table 6. Similar to the previous analyses performed for exhaustion and cynicism, in the first step, each job demand and mindfulness were entered to examine their direct relationship with efficacy. In the second step, the interaction between the job demand and mindfulness was entered to assess the moderating effect of mindfulness on the relationship between the job demand and efficacy.

Table 6

Hierarchical MRC for the Moderating Effect of Mindfulness (Efficacy)

	Predictor	R^2	ΔR^2	β
Step 1:	Role Ambiguity	.34***	.34***	-.33 ***
	Mindfulness			.36 ***
Step 2:	Role Ambiguity x Mindfulness	.34***	.00	-.02
Step 1:	Interpersonal Conflict	.26***	.26***	-.02
	Mindfulness			.50 ***
Step 2:	Interpersonal Conflict x Mindfulness	.27***	.01	.63
Step 1:	Work-life Conflict	.28***	.28***	.13
	Mindfulness			.52 ***
Step 2:	Work-life Conflict x Mindfulness	.28***	.00	.23
Step 1:	Cognitive Demands	.29***	.29***	.19 *
	Mindfulness			.45 ***
Step 2:	Cognitive Demands x Mindfulness	.30***	.01	-.84

* $p < .05$, ** $p < .01$, *** $p < .001$

Mindfulness had a significant and unique contribution to efficacy, such that those higher in mindfulness experienced more professional efficacy. In terms of job demands, two of them had significant and unique contributions to efficacy: role ambiguity ($\beta = -.33, t = 4.00, p < .001$) and cognitive demands ($\beta = .19, t = 2.40, p < .05$), such that those that experienced a lack of clarity regarding job tasks experienced more inefficacy, while those with jobs that required high levels of mental effort experienced professional efficacy.

The results showed no moderating effect of mindfulness on the relationship between the job demands and efficacy (role ambiguity, $\Delta R^2 = .00, F(1, 122) = .01, p > .05$; interpersonal conflict, $\Delta R^2 = .01, F(1, 122) = .04, p > .05$; work-life conflict, $\Delta R^2 = .00, F(1, 122) = .21, p > .05$; cognitive demands, $\Delta R^2 = .01, F(1, 122) = 1.24, p > .05$). Thus, contrary to the hypothesis, mindfulness did not moderate the relationships between the job demands and efficacy.

Discussion

Because of the negative implications of burnout for organizations and individuals, there has been interest by both organizations and scientific research on finding ways to mitigate the effects of burnout. Much of the current research has mainly focused on the characteristics of jobs and individuals. Particularly, individual personality traits and personal resources have been examined in terms of their ability to moderate and weaken the relationship between job demands and job burnout. This study proposed that mindfulness could be considered a personal resource that moderates the relationship between job demands and job burnout in knowledge workers. Thus, the moderating effect of mindfulness was examined to determine whether the relationship between job demands and burnout would be weakened for individuals with higher levels of mindfulness.

Summary of Findings

The hypothesis of this study predicted that mindfulness would moderate the relationship between job demands and job burnout. More specifically, the relationship between job demands of role ambiguity, interpersonal conflict, and work-life conflict and the exhaustion, cynicism, and efficacy dimensions of burnout would be weakened for those with high mindfulness versus those with low mindfulness. This hypothesis was partially supported. Mindfulness did not moderate the relationship between role ambiguity and work-life conflict and exhaustion. Mindfulness also did not moderate the relationship between the four job demands and the cynicism and efficacy dimensions of burnout. However, mindfulness did moderate the relationship between cognitive demands

and exhaustion, such that this relationship was weaker for individuals with higher levels of mindfulness. Mindfulness also moderated the relationship between interpersonal conflict and exhaustion, but in a way that was contrary to the hypothesis; the relationship between conflict with colleagues and exhaustion was strengthened for individuals high in mindfulness. It is important to note, however, that individuals with high levels of mindfulness experienced less exhaustion than those with low mindfulness when experiencing lower levels of interpersonal conflict.

As the hypothesis predicted, results showed that mindfulness moderated the relationship between cognitive demands and exhaustion. These results indicate that mindfulness may reduce the exhaustion when facing cognitive demands because highly mindful individuals are able to remain neutral and resilient in the face of continual mental effort. Thus, they are less likely to feel exhausted compared to less mindful individuals.

When looking at the moderating effect of mindfulness on interpersonal conflict and exhaustion, those with higher mindfulness experienced more exhaustion when faced with greater levels of interpersonal conflict than individuals with lower levels of mindfulness. The results also showed that individuals with high mindfulness experienced less exhaustion when interpersonal conflict was low. Thus, mindfulness actually strengthened the relationship between interpersonal conflict and exhaustion for individuals high in mindfulness. Mindfulness may have played a moderating role and strengthened the relationship between interpersonal conflict and exhaustion for highly mindful individuals because remaining mindful may be more difficult when dealing with others' behaviors

and emotions. Thus, the levels of exhaustion were reduced for these highly mindful people when there were lower levels of conflict between colleagues.

Mindfulness did not moderate the relationship between two demands, role ambiguity and work-life conflict, and exhaustion. The lack of these moderating effects may be due to the nature of role ambiguity and work-life conflict. First, because role ambiguity creates confusion, those high in mindfulness are not able to act with awareness when they do not have an underlying understanding of their environment. Thus, for both high and low mindful groups of employees, role ambiguity is equally exhausting. In regard to the work-life conflict and exhaustion relationship, work-life conflict requires individuals to respond and choose between competing tasks at home and work, while mindfulness enables the individual to focus on the present moment. Therefore, the lack of moderating effect of mindfulness on this relationship could be because although mindfulness improves the ability to focus on a single, present moment, it may not help when two separate tasks are competing for attention. Thus, the demands of work-life conflict are equally exhausting for individuals that are high and low in mindfulness.

Mindfulness did not moderate the relationship between the job demands and the cynicism and efficacy dimensions of burnout. Mindfulness may not have moderated these relationships because people high in mindfulness are acting with awareness of external stimuli. In the case of role ambiguity, confusion created by this demand makes it hard for mindful individuals to react consciously and purposefully. Thus, role ambiguity has the same negative impact on individuals with high and low levels of mindfulness. Since

interpersonal conflict, work-life conflict and cognitive demands did not predict cynicism, there was no relationship for mindfulness to weaken.

In regard to the relationship between the job demands and efficacy, the two job demands of role ambiguity and cognitive demands significantly predicted efficacy, but interpersonal conflict and work-life conflict did not. This may explain why mindfulness did not moderate the relationships between interpersonal conflict and work-life conflict and efficacy. Mindfulness may not have weakened the relationship between role ambiguity and efficacy similar to why mindfulness did not weaken the relationship between role ambiguity and cynicism: the confusion created by ambiguous work tasks inhibits highly mindful individuals to find a clear way to react. The relationship between cognitive demands and efficacy may not have been moderated by mindfulness because though mindful individuals can avoid judging whether a situation is “good” or “bad,” they may not be able to effectively meet the demands, or have the capability to do so, and may feel equally inadequate at work as low mindful individuals when cognitive demands are high. In other words, mindfulness does not impact individuals’ competency levels at work and feelings of inefficacy may still arise, similar to those with low mindfulness. It is important to note that cognitive demands had a positive relationship with professional efficacy. This may be because the sample consisted of all knowledge workers. In other words, individuals who enter a knowledge work profession may feel more efficacious when they are called on to exert mental effort.

It is important to note that the nature of the burnout construct could be the reason why the moderating effect of mindfulness was not found for the cynicism and efficacy

dimensions of burnout. It has been suggested that job burnout is a process in which exhaustion is the first dimension experienced by employees, and eventually leads to cynicism and efficacy (Maslach, 1978; Maslach, 1982). The sample was relatively new in their job roles, with over half being in their current role for three or less than three years. Perhaps the sample did not have ample time in their job to experience cynicism and efficacy to the same extent as exhaustion.

It is important to note that mindfulness significantly and uniquely predicted all three burnout dimensions regardless of the job demands. This shows the level of mindfulness in employees played a significant role in determining whether or not they experienced burnout on the job. This suggests that the more mindful individuals are, the less they will suffer the adverse effects of burnout.

Theoretical Implications

Mindfulness has yet to be investigated as a personal resource in the JD-R model and whether it, as a personal resource, moderates the relationship between job demands and burnout as a personal resource. The current study shows that trait mindfulness can be considered a personal resource in that it can moderate the relationship between cognitive demands and exhaustion. This calls into question whether mindfulness might moderate the relationships between other known job demands and exhaustion. Mindfulness also moderated the relationship between interpersonal conflict and exhaustion by strengthening the relationship for individuals with high mindfulness. This calls into question whether there are other relationships between job demands and exhaustion in which individuals with high mindfulness would be hindered by this trait. Therefore, one

theoretical implication of this study is that mindfulness may be considered a personal resource, but may moderate the relationship between some job demands and dimensions of burnout differently than with other job demands.

Job burnout has consistently been defined by three distinct dimensions and cannot be measured as a single construct (Maslach, Jackson & Leiter, 1986). The job demands differed in their relationships with each of the three dimensions of burnout, supporting the proposed dimensionality of the construct. Moreover, the job demands differed in their predictive ability of the three dimensions of burnout. This, taken altogether, supports that burnout cannot be considered one construct; each dimension of burnout must be studied separately.

Practical Implications

There has been increased excitement over mindfulness in recent years, and this excitement has led to the belief that mindfulness is a cure-all that reduces negative thoughts, behaviors and outcomes (Farias & Wikholm, 2016). However, this study found that the positive benefits of mindfulness in the workplace may be limited. Though mindfulness weakened the relationship between cognitive demands and exhaustion, it actually strengthened the relationship between interpersonal conflict and exhaustion. Moreover, mindfulness did not moderate the relationships between job demands and cynicism and efficacy. However, it is important to note that mindfulness reduced the experience of all three dimensions of burnout. Though mindfulness might not be a cure-all for organizations, it can be seen as a personal resource that employees might use to reduce the adverse symptoms of burnout. Thus, one practical implication of this study is

that organizations should be careful in thinking that hiring for high mindful individuals or training employees on mindfulness will fix their employees' burnout levels on its own.

An organization that considers hiring for high mindfulness or training to increase mindfulness should consider the amount of conflict between its employees. If an organization has a high rate of employee relation cases relating to conflicts between colleagues, hiring for or training mindfulness would be counterproductive in preventing exhaustion. In this situation, organizations should look to reduce the amount of conflict between employees in order for mindfulness to be useful in reducing exhaustion of their employees.

As previously mentioned, the literature provides some evidence that burnout is a process in which exhaustion occurs before cynicism and efficacy (Maslach, 1978; Maslach, 1982). Taking this into consideration, the results that indicate a moderating effect of mindfulness on the cognitive demands and exhaustion relationship may imply that those with high mindfulness may not only experience less exhaustion, but may be less likely to eventually experience cynicism and inefficacy when faced with mentally taxing work. In this case, an organization that requires its employees to continuously exert mental effort may want to hire employees with higher levels of mindfulness or to train their employees to be more mindful.

Strengths of the Study

One strength of this study is that it looked at mindfulness as a moderator of the relationships between job demands and burnout, whereas previous studies have only looked into whether mindfulness can predict burnout. By doing so, this study increased

the understanding of mindfulness in the workplace where job demands are placed on employees. In particular, this study provides evidence that mindfulness can weaken the negative effects of cognitive demands and reduce exhaustion. It also provides evidence that mindfulness can actually be a hinderance in the workplace and increase exhaustion, specifically when highly mindful individuals are experiencing high levels of interpersonal conflict.

Another strength of this study is the focus on knowledge workers in the technology industry. The technology industry in the Silicon Valley has a reputation for being highly demanding on their employees (Fagan, 2018). Mindfulness interventions are already being used by notable companies, like Google and LinkedIn, to reduce stress of their employees (Dickey, 2013). This study adds to the literature an understanding of the role of mindfulness on burnout when employees of technology organizations endure job demands.

Limitations of the Study and Directions for Future Research

One limitation of the study is the subjective nature of the moderator mindfulness. The results showed a negative skewness of mindfulness, such that there was a tendency for the sample to perceive themselves as mindful, and could be due to the respondents' biases; individuals with low mindfulness could not be aware of their lack of ability to pay attention to the present moment in a nonjudgmental and nonreactive way. This would result in individuals with low mindfulness falsely reporting high level of mindfulness, and could have impacted the moderating effect of mindfulness through the median split between high and low mindfulness in the analyses. Future research should aim to have a

normally distributed sample regarding mindfulness and to control for the subjectivity of the variable.

Another limitation of this survey is the relatively young sample, with 53.9% being 34 years old or younger and 54.7% being in their current job role for three years or less. The demographics of this sample could have impacted the moderating analyses. If burnout is a process, these individuals may not have had enough time in their role or being in the workforce to experience cynicism and inefficacy. It would be worthwhile for future studies to have a normally distributed sample in age and job tenure in order to examine whether mindfulness does moderate the relationship between job demands and cynicism and efficacy.

Lastly, the small amount of job demands in the study also served as a limitation. The JD-R model provides numerous job demands that lead to burnout (Schaufeli & Taris, 2014). This study chose to examine role ambiguity, interpersonal conflict, work-life conflict and cognitive demands. The sample reported very low levels of work-life conflict; technology companies pride themselves on providing a balance between work and life with benefits like working from home. This study provides evidence that work-life conflict may not be a job demand that knowledge workers endure. It would be interesting for future studies to look at different job demands that impact knowledge workers, like role conflict, in order to assess the moderating effect of mindfulness.

Conclusion

The goal of this study was to examine the moderating effect of mindfulness on the job demands-burnout relationship. This study found that mindfulness moderated and

weakened the relationship between cognitive demands and exhaustion, but moderated and strengthened the relationship between interpersonal conflict and exhaustion. Also, mindfulness was not found to have a moderating effect on the job demands and the efficacy and cynicism dimensions of burnout. However, mindfulness was shown that it could be a moderator under certain circumstances and considering the negative impact that burnout has for employees and organizations, it is important to determine whether mindfulness has other moderating effects with other known job demands and burnout. This study also found that higher levels of mindfulness were negatively related to all three dimensions of burnout.

References

- Adkins, A. (2015, January 28). *Majority of U.S employees not engaged despite gains in 2014*. Retrieved from <https://news.gallup.com/poll/181289/majority-employees-not-engaged-despite-gains-2014.aspx>
- Anderson, N. D., Lau, M. A., Segal, Z. V., & Bishop, S. R. (2007). Mindfulness-based stress reduction and attentional control. *Clinical Psychology & Psychotherapy: An International Journal of Theory & Practice*, 14, 449-463.
- Bakker, A. B., Brummelhuis, L. L., Prins, J. T., & Heijden, F. M. (2010). Applying the job demands–resources model to the work–home interface: A study among medical residents and their partners. *Journal of Vocational Behavior*, 79, 170-180. doi:10.1016/j.jvb.2010.12.004
- Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, 13, 27-45.
- Baer, R. A., Smith, G. T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., Duggan, D., & Williams, J. M. G. (2008). Construct validity of the five facet mindfulness questionnaire in meditating and nonmeditating samples. *Assessment*, 15, 329-342.
- Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2005). The crossover of burnout and work engagement among working couples. *Human Relations*, 58, 661-689.
- Bakker, A. B., & Demerouti, E. (2014). Job demands–resources theory. *Wellbeing: A Complete Reference Guide*, 3, 1-28. doi:10.1002/9781118539415.wbwell019
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, 22, 309-328.
- Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement, particularly when job demands are high. *Journal of Educational Psychology*, 99, 274-284.
- Bakker, A. B., Le Blanc, P. M., & Schaufeli, W. B. (2005). Burnout contagion among intensive care nurses. *Journal of Advanced Nursing*, 51, 276-287. doi:10.1111/j.1365-2648.2005.03494.x
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, 28, 117-148.
- Beyerlein, M. M., Johnson, D. A., & Beyerlein, S. T. (1995). *Advances in*

- interdisciplinary studies of work teams: Knowledge work in teams, Vol. 2.* Elsevier Science/JAI Press.
- Burr, H., Berthelsen, H., Moncada, S., Nübling, M., Dupret, E., Demiral, Y., Oudyk, J., & Lincke, H. J. (2018, September). The third version of the Copenhagen Psychosocial Questionnaire. In *The 13th European Academy of Occupational Health Psychology Conference. Lisbon: EAOHP* (pp. 5-7).
- Carver, C. S., Scheier, M. F., & Segerstrom, S. C. (2010). Optimism. *Clinical Psychology Review, 30*, 879-889. doi:10.1016/j.cpr.2010.01.006
- Cordes, C. L., & Dougherty, T. W. (1993). A review and an integration of research on job burnout. *Academy of Management Review, 18*, 621-656.
- Cullen, M. (2011). Mindfulness-based interventions: An emerging phenomenon. *Mindfulness, 2*, 186-193.
- Davenport, T. H. (2005). *Thinking for a living: how to get better performances and results from knowledge workers*. Boston, MA: Harvard Business Press.
- Davids, T. W. R., & Stede, W. (Eds). (1959). *The Pali Text Society's Pali-English dictionary*. London: Luzac & Company, Ltd.
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*, 499-512. doi:10.1037/0021-9010.86.3.499
- Dickey, M. R. (2013, June 25). *The secret behind the Silicon Valley elite's success: Meditation*. Retrieved from <https://www.businessinsider.com/silicon-valley-meditates-2013-6>
- Fagan, K. (2018, June 09). *Employee burnout is a huge problem in the tech industry. This survey shows which companies have it the worst*. Retrieved from <https://www.businessinsider.com/employee-burnout-tech-companies-silicon-valley-blind-survey-2018-5>
- Farias, M., & Wikholm, C. (2016). Has the science of mindfulness lost its mind? *BJPsych Bulletin, 40*, 329-332. doi:10.1192/pb.bp.116.053686
- Ford, M. E., & Smith, P. R. (2007). Thriving with social purpose: An integrative approach to the development of optimal human functioning. *Educational Psychologist, 42*, 153-171.
- Freudenberger, H. J. (1975). The staff burn-out syndrome in alternative

- institutions. *Psychotherapy: Theory, Research & Practice*, 12, 73-82.
doi:10.1037/h0086411
- Gallup, Inc. (2017). *State of the American workplace*. Retrieved from <https://www.gallup.com/workplace/238085/state-american-workplace-report-2017.aspx>
- Garton, E. (2017, April 6). *Employee burnout is a problem with the company, not the person*. Retrieved from <https://hbr.org/2017/04/employee-burnout-is-a-problem-with-the-company-not-the-person>
- Grover, S. L., Teo, S. T., Pick, D., & Roche, M. (2017). Mindfulness as a personal resource to reduce work stress in the job demands- resources model. *Stress and Health*, 33, 426-436.
- Hakanen, J. J., Schaufeli, W. B., & Ahola, K. (2008). The Job Demands-Resources model: A three-year cross-lagged study of burnout, depression, commitment, and work engagement. *Work & Stress*, 22, 224-241.
- Halbesleben, J. R., & Buckley, M. R. (2004). Burnout in organizational life. *Journal of Management*, 30, 859-879.
- Hayes, A. M., & Feldman, G. (2004). Clarifying the construct of mindfulness in the context of emotion regulation and the process of change in therapy. *Clinical Psychology: Science and Practice*, 11, 255-262.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44, 513-524.
- Jackson, S. E., Schwab, R. L., & Schuler, R. S. (1986). Toward an understanding of the burnout phenomenon. *Journal of Applied Psychology*, 71, 630-640.
doi:10.1037//0021-9010.71.4.630
- Jawahar, I. M., Stone, T. H., & Kisamore, J. L. (2007). Role conflict and burnout: The direct and moderating effects of political skill and perceived organizational support on burnout dimensions. *International Journal of Stress Management*, 14, 142-159.
- Jex, S. M., & Elacqua, T. C. (1999). Self-esteem as a moderator: A comparison of global and organization-based measures. *Journal of Occupational and Organizational Psychology*, 72, 71-81.
- Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain and illness*. New York, NY: Bantam Books.

- Kabat-Zinn, J. (1994). *Wherever you go, there you are: Mindfulness meditation in everyday life*. New York, NY: Hyperion.
- Keenan, A., & Newton, T. J. (1985). Stressful events, stressors and psychological strains in young professional engineers. *Journal of Organizational Behavior*, 6, 151-156.
- Keye, M. D., & Pidgeon, A. M. (2013). Investigation of the relationship between resilience, mindfulness, and academic self-efficacy. *Open Journal of Social Sciences*, 1, 1-4.
- Kossek, E. E., Pichler, S., Bodner, T., & Hammer, L. B. (2011). Workplace social support and work–family conflict: A meta-analysis clarifying the influence of general and work–family-specific supervisor and organizational support. *Personnel Psychology*, 64, 289-313.
- Leiter, M. P., & Maslach, C. (1988). The impact of interpersonal environment on burnout and organizational commitment. *Journal of Organizational Behavior*, 9, 297-308.
- Leiter, M. P., & Maslach, C. (2003). Areas of worklife: A structured approach to organizational predictors of job burnout. *Research in Occupational Stress and Well-being Emotional and Physiological Processes and Positive Intervention Strategies*, 91-134. doi:10.1016/s1479-3555(03)03003-8
- Mäkikangas, A., & Kinnunen, U. (2003). Psychosocial work stressors and well-being: Self-esteem and optimism as moderators in a one-year longitudinal sample. *Personality and Individual Differences*, 35, 537-557.
- Mäkikangas, A., Kinnunen, U., & Feldt, T. (2004). Self-esteem, dispositional optimism, and health: Evidence from cross-lagged data on employees. *Journal of Research in Personality*, 38, 556-575.
- Maslach, C. (1978). The client role in staff burnout. *Journal of Social Issues*, 34, 111-124.
- Maslach, C. (1982). Understanding burnout: Definitional issues in analyzing a complex phenomenon. In W. S. Paine (Ed.), *Job stress and burnout* (pp. 29-40). Beverly Hills, CA: Sage.
- Maslach, C. (2003). Job burnout: New directions in research and intervention. *Current Directions in Psychological Science*, 12, 189–192. <https://doi.org/10.1111/1467-8721.01258>
- Maslach, C., Jackson, S. E., & Leiter, M. P. (1986). Maslach Burnout Inventory Manual.

- Retrieved November 4, 2018, from
<https://transform.mindgarden.com/document/doc.php?date=November 4, 2018&quantity=1&inst=mbi4thed-s&id=631208&sig=3b47a1e4>
- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job Burnout. *Annual Review of Psychology*, 52, 397-422. doi:10.1146/annurev.psych.52.1.397
- Medvedev, O. N., Krägeloh, C. U., Narayanan, A., & Siegert, R. J. (2017). Measuring mindfulness: applying generalizability theory to distinguish between state and trait. *Mindfulness*, 8, 1036-1046.
- Melamed, S., Shirom, A., Toker, S., Berliner, S., & Shapira, I. (2006). Burnout and risk of cardiovascular disease: Evidence, possible causal paths, and promising research directions. *Psychological Bulletin*, 132, 327-353.
- Netemeyer, R. G., Boles, J. S., & McMurrian, R. (1996). Development and validation of work–family conflict and family–work conflict scales. *Journal of Applied Psychology*, 81, 400-410.
- Nevanperä, N. J., Hopsu, L., Kuosma, E., Ukkola, O., Uitti, J., & Laitinen, J. H. (2012). Occupational burnout, eating behavior, and weight among working women. *The American Journal of Clinical Nutrition*, 95, 934-943.
- Pierce, J. L., Gardner, D. G., Cummings, L. L., & Dunham, R. B. (1989). Organization-based self-esteem: Construct definition, measurement, and validation. *Academy of Management Journal*, 32, 622-648.
- Rizzo, J. R., House, R. J., & Lirtzman, S. I. (1970). Role conflict and ambiguity in complex organizations. *Administrative Science Quarterly*, 15, 150-163.
- Schaufeli, W. B., & Taris, T. W. (2014). A critical review of the Job Demands-Resources Model: Implications for improving work and health. In G.F. Bauer & O. Hämmig, In *Bridging occupational, organizational and public health* (pp. 43-68). Dordrecht: Springer.
- Shapiro, S. L., Schwartz, G. E., & Bonner, G. (1998). Effects of mindfulness-based stress reduction on medical and premedical students. *Journal of Behavioral Medicine*, 21, 581-599.
- Souri, H., & Hasanirad, T. (2011). Relationship between resilience, optimism and psychological well-being in students of medicine. *Procedia-Social and Behavioral Sciences*, 30, 1541-1544.
- Spielberger, C. D. (1966). Theory and research on anxiety. *Anxiety and Behavior* (pp.12-

19). New York, NY: Academic Press Inc.

- Stamper, C. L., & Johlke, M. C. (2003). The impact of perceived organizational support on the relationship between boundary spanner role stress and work outcomes. *Journal of Management*, 29, 569-588. doi:10.1016/s0149-2063(03)00025-4
- Swider, B. W., & Zimmerman, R. D. (2010). Born to burnout: A meta-analytic path model of personality, job burnout, and work outcomes. *Journal of Vocational Behavior*, 76, 487-506. doi:10.1016/j.jvb.2010.01.003
- Thompson, R. W., Arnkoff, D. B., & Glass, C. R. (2011). Conceptualizing mindfulness and acceptance as components of psychological resilience to trauma. *Trauma, Violence, & Abuse*, 12, 220-235.
- Wright, R. R., Nixon, A. E., Peterson, Z. B., Thompson, S. V., Olson, R., Martin, S., & Marrott, D. (2017). The Workplace Interpersonal Conflict Scale: An alternative in conflict assessment. *Psi Chi Journal of Psychological Research*, 22, 163–180. <https://doi-org.libaccess.sjlibrary.org/10.24839/2325-7342.JN22.3.163>
- Zellars, K. L., Perrewé, P. L., & Hochwarter, W. A. (2000). Burnout in health care: The role of the five factors of personality. *Journal of Applied Social Psychology*, 30, 1570-1598. doi:10.1111/j.1559-1816.2000.tb02456.x

Appendix

Demographic Items

What is your age?
What gender do you identify with?
What is the highest level of education that you have completed?
What job title best describes your job role?
How long have you been in your current role?

Scale Items

Role Ambiguity Scale Items

I feel certain about how much authority I have. *
I have clear, planned goals and objectives for my job. *
I know that I divide my time at work properly. *
I know what my responsibilities are at work. *
I feel certain about how I will be evaluated for a raise or promotion. *
I know exactly what is expected of me at work. *

Interpersonal Conflict Items

I am treated unfairly at work.
I have disagreements with others over work tasks.
I am treated with respect at work. *
I am rude to colleagues.
At work, I am blamed for things that are not my fault.

Work-life Conflict Items

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

Cognitive Demands Items

I have to keep an eye on a lot of things at work.
My work requires me to remember a lot of things.
My work demands that I am good at coming up with new ideas.
My work requires me to make difficult decisions.

Mindfulness Items

I am good at finding words to describe my feelings.

I criticize myself for having irrational or inappropriate emotions. *
I perceive my feelings and emotions without having to react to them.
When I do things, my mind wanders off and I'm easily distracted. *
I can easily put my beliefs, opinions, and expectations into words.
I don't pay attention to what I'm doing because I'm daydreaming, worrying or otherwise distracted. *
I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.
In difficult situations, I can pause without immediately reacting.
I pay attention to how my emotions affect my thoughts and behaviors.
I make judgments on whether my thoughts are good or bad. *
I rush through activities without really being attentive to them. *
When I have distressing thoughts or images, I just notice them and let them go.
I pay attention to sensations, such as the wind in my hair or the sun on my face.
I disapprove of myself when I have irrational ideas. *
My natural tendency is to put my experiences into words.

Job Burnout: Exhaustion Items

I feel emotionally drained from my work.
I feel used up at the end of the workday.
I feel tired when I get up in the morning and have to face another day on the job.
Working all day is really a strain for me.
I feel burned out by my work.

Job Burnout: Cynicism Items

I have become less interested in my work since I started this job.
I have become less enthusiastic about my work.
I just want to do my job and not be bothered.
I have become more cynical about whether my work contributes to anything.
I doubt the significance of my work.

Job Burnout: Efficacy Items

I can effectively solve the problems that arise in my work.
I feel I am making an effective contribution to what this organization does.
In my opinion, I am good at my job.
I feel exhilarated when I accomplish something at work.
I have accomplished many worthwhile things in this job.
At my work, I feel confident that I am effective at getting things done.

* Indicates that survey items were reverse-coded.