

The Correlates of Work Role Stress with Employee Burnout, Engagement
and Turnover Intent in Non-Exempt Employees

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DEDICATION

To my loves: James, Bo, and new baby girl on the way.

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ABSTRACT

The current study assessed the effects of work role stress on burnout, engagement and turnover intention. In addition, the mediating effects of satisfaction with one's supervisor were assessed. The Job Demands Resources theory was used as a basis for the construction of the current theoretical model. The study utilized a population of non-exempt employees from a large land grant university who worked at Research and Education Centers performing manual agricultural labor. This non-exempt population is a population that is largely overlooked in literature. Findings confirmed that work role stress does have an effect on burnout and engagement, but no effect on turnover intention was supported. In addition, satisfaction with my supervisor was found to partially mediate the effects of work stress on burnout and fully mediate the effects of work stress on engagement. Implications of these findings are included with ideas to implement directives that can reduce stress and burnout and increase engagement and satisfaction with one's supervisor.

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CHAPTER I: INTRODUCTION

Stress is a significant and expensive workplace challenge for employees and employers. For example, it has been estimated that workplace stress costs US employers an estimated \$200 billion dollars a year through absenteeism, decreased productivity, turnover, workers compensation claims and health insurance costs (Maxon, 1999). In fact, health care expenditures are nearly 50% more for employees who report having high levels of stress (Goetzel, Anderson, Whitmer, Ozminkowski, Dunn & Wasserman, 1998). The Bureau of Labor Statistics (BLS, 1997) reports that the average amount of time a worker with a stress complaint takes off from work is 23 days, with 44% of employees who take time off due to stress taking off over 31 days. Northwestern National Life (1991) found that 25% of employees report that their job is the number one stressor in their lives. Work stress is linked to health issues more strongly than any other life stressor, including family issues and financial problems (The St. Paul Fire and Marine Insurance Company, 1992). Living with this stress will take a toll on the employee which in turn will take a toll on the organization through increased burnout, decreased engagement, decreased productivity, decreased retention and decreased participation (Bryner, 2006; Weaver, 2003).

Additionally, work stress has been exacerbated by the current economic downfall; unemployment is the highest it has been in at least 10 years (9.4%) (BLS, 2010), with stress symptoms, including turnover, being at 10 year highs (Segal, Howitz, Jaffe-Gill, Smith & Segal, 2010). The economic downfall has only added to the level of stress of employees, and the poor state of the economy only feeds this issue through reorganization and layoffs. Employees who have kept their jobs through this economic

recession fear losing their jobs to new technology or are faced with retraining and extra work to accommodate the loss of other employees (Maxon, 1999). Employees are distracted by worries of losing their job through budget cuts and layoffs resulting in increased fear, uncertainty and stress levels. Demands such as time, energy, and exertion on employees have increased, while resources such as money, technology and support are shrinking, generally to the detriment of the employees' well-being and personal lives (Cartwright & Holmes, 2006). This can lead to frustration and disenchantment among employees who instead look for a different outlet (Bunting, 2004). In fact, to put it bluntly, stress can be a killer. Studies have shown that stress can cause deterioration in many organs and systems of the body, including the heart, and can weaken the immune system (Science Daily, 2008). Minimizing job stress could be a productive endeavor for organizations. In addition, researching some of the factors of stress such as conflict, ambiguity and overload can help us better identify when stress is present. Reducing these stress levels through increased engagement will increase productivity and retention of key personnel through the reduction of stress and subsequent burnout.

As these statistics suggest, stress is a significant workplace problem for employees and their employers. As noted earlier, previous research has found that work-related stress takes a toll on the employee by contributing to increased job burnout and decreased engagement, which in turn, can take a toll on the organization through decreased productivity, decreased retention and decreased reliability (Bryner, 2006; Weaver, 2003). As a result, it is imperative that empirical research be done exploring the role that work-related stress has on employee burnout, engagement and turnover intent,

and also to determine empirically what mediates these relationships. This is the purpose of this study.

Regarding stress and job burnout more than half of all workers say they work under a great deal of stress with 77% reporting that they feel burned out on the job (Careerbuilder.com, 2009). Over 75% of employees report some type of stress symptom in any given month, including physical and psychological symptoms (American Psychological Association Study, 2007). The Cleveland Clinic (2010) reports that when one's job lacks positive stress (a healthy level of stress that keeps us motivated and challenged) that person can develop the symptoms of job burnout (decreased efficiency and productivity, boredom, depression and negative attitude); with resignation from ones' position as the ultimate effect of job burnout. Multiple studies have found positive correlations between work stress and job burnout, showing that as stress increased, burnout also increased (Devereux, Hastings, Noone, Firth & Totsika, 2009; Fogarty, Singh, Rhoads & Moore, 2000; Lee & Ashforth 1996). This increase in burnout could result in an abundance of employees who are emotionally exhausted, physically fatigued and cognitively weary (Bryner, 2006).

Regarding stress and employee engagement, a study by the Research Works (2009) group of the American Psychiatric Association found multiple studies that report that decreased resources, low level of support and high stressor levels were found in employees with low engagement. Providing job resources was effective in reversing this trend and increasing engagement. With the current economic concerns it is even more important to keep an organization's employees engaged or end up losing the best employees. In addition, the engagement level of employees has been found to decrease

when presented with increased stress (Hakanen, Bakker and Schaufeli, 2006; and Koyuncu, Burke and Fiksenbaum, 2006). Studies have shown that only 29% of active employees are fully engaged with the job and 19% of these employees are actually disengaged (BlessingWhite, Inc; 2008). For an employee and his/her organization, this can make a big difference in productivity and outcomes.

More recent research has been focusing on the correlations of engagement and business performance. This research is consistently finding that increased engagement equals increased productivity. For example, a study by Towers Perrin (2010) found that firms who were considered high engagement had earnings per share growth rate of 28% while those organizations considered low engagement actually had an 11.2% decline. Gallup's research shows that disengaged employees actually cost US organizations up to \$350 billion in lost productivity.

Recent research involving stress, engagement and burnout has raised several important questions. One question is if it is better to measure engagement or burnout levels of an individual or of that of the unit or entire organization. Macey and Schneider (2008) reported that in order for the research to be helpful to organizations, the research should be completed on the organization rather than on the individual. Human resource development (HRD) has tended to focus on the individual, the unit, and the organization.

Another point to consider is what relationship, if any, would be introduced by using antecedents and mediators. Would work role stress as an antecedent have any effect on burnout and/or engagement? What part would these constructs or others, even unknowns, play regarding a relationship to engagement and burnout? Would introducing mediators make a difference, specifically mediators that focus on the work environment?

Part of this research will explore satisfaction with one's supervisor as a mediator and whether it would make a difference. Blessing White (2008) found that lack of managers' support was the third most common reason for leaving a job. This study will explore some of these research questions.

Other research questions involve the populations and samples used in stress, engagement and burnout research. For example, non-exempt workers, sometimes called blue-collar workers, seem to be taking the brunt of the economic decline. A study by Northeastern University's Center for Labor Market Studies (2009) found that blue collar industries have cut one in six jobs since 2007, compared with one in 20 jobs for most other industries. The stress caused by lack of work or fear of losing one's job is a constant within the non-exempt workers community. In addition, stress is added through the knowledge that many manufacturing jobs are going overseas; for example, Michigan lost 50% of its industrial workforce when China was admitted to the North American Free Trade Agreement (NAFTA) in 2001. Finally, wages are not increasing for these non-exempt workers; in fact, according to the BLS, the average hourly wage for the American worker decreased by 2% in 2009. Because many studies focus solely on exempt level, or white-collar employees, with much research overlooking the difference that could be present for non-exempt level employees this study will explore the influence of stress on engagement and burnout of non-exempt level employees. Further, we explore the mediating effects of satisfaction with one's supervisor.

Statement of the Problem

Despite extensive research on work roles stress, it has been found that work role stress as a predictor of engagement, burnout and turnover intent with satisfaction with one's supervisor has not been researched. By adding new dimensions to the burnout/engagement theories, the hope is to reveal the strengths or weaknesses of certain antecedents at predicting burnout and engagement. In addition, research has been limited within the blue-collar/non-exempt employee group. This research will be a benefit to organizations with non-exempt level employees wishing to retain employees.

Research Questions

The research questions posed in this study were:

- 1.) What is the relationship between role related stress, as measured by conflict, ambiguity and overload, in predicting work engagement, work burnout and turnover intent among non-exempt level employees?
- 2.) What is the relationship between role related stress as measured by conflict, ambiguity and overload in predicting work engagement, work burnout, and turnover intent when mediated by satisfaction with one's supervisor among non-exempt level employees?

Purpose of the Study

The purpose of this study was to determine the extent to which role related stress is a predictor of work engagement, work burnout, and turnover intent among non-exempt

level employees, and the role of the supervisor in mediating this relationship. The work force has a need to retain engaged employees and to re-engage and motivate employees who suffer from burnout. By defining some of these other variables and determining how extreme the impacts of these variables are, more employers can focus on reducing stress, increasing engagement and reducing burnout and turnover. Despite research on work role stress, burnout, engagement, turnover intent and satisfaction with one's supervisor, there is limited research that presents each of these variables in a single model. Further, research on the before mentioned variables within the non-exempt group is limited.

Proposed Conceptual Model:

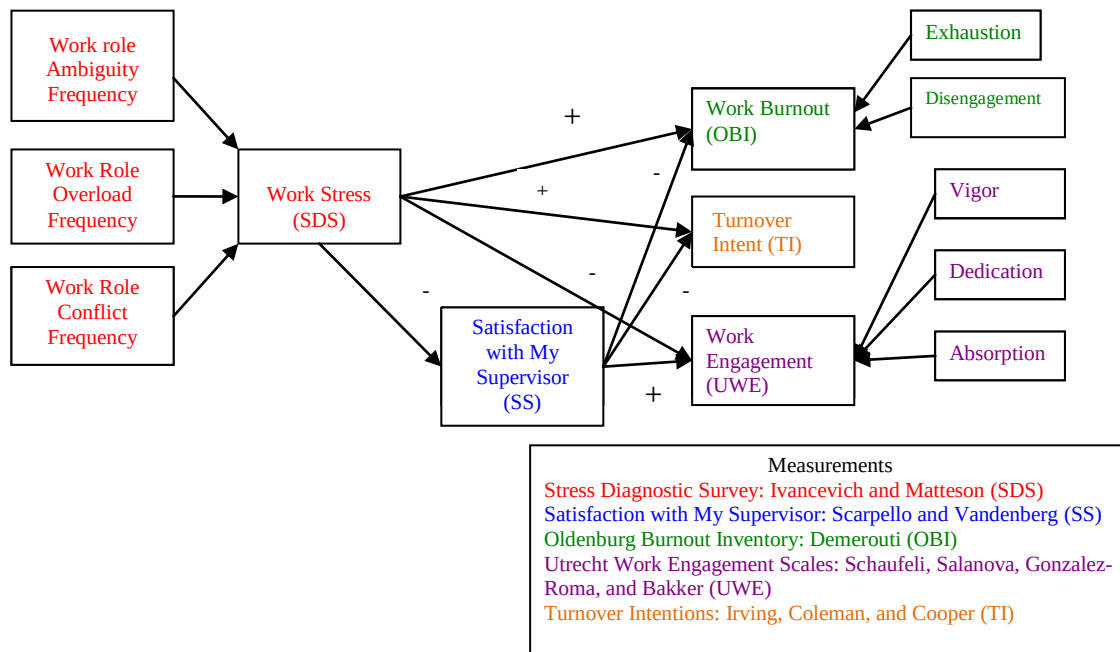


Figure 1- Current Theoretical Model

Definition of Terms

Predictor variable nominal/conceptual definitions.

The antecedent variable for this study is work role stress. The working definition used by Ivancevich and Matteson (1980) describes stress as “an adaptive response, mediated by individual characteristics and/or psychological processes, that is a consequence of any external action, situation or event that places special physical and/or psychological demands upon a person” (p9). Ivancevich and Matteson (1980) go on to define stress through the Stimulus-Response definition where “...stress is the consequence of the interaction between an environmental stimulus and the idiosyncratic response of the individual” (p8). The individual level stressors are sources of stress. This latent construct of work role stress is defined by three manifest variables: role conflict, role ambiguity and work overload.

1. *Work role ambiguity* is defined as “... a lack of clarity about one’s role, job objectives, and the scope of the responsibilities of one’s job” (Ivancevich & Matteson, 1980, p110).
2. *Work role overload* (quantitative) occurs when an employee “...perceives that they have too much work to do, too many different things to do, or insufficient time to complete assigned work.” Where *work role overload* (qualitative) ‘...occurs when employees feel they lack the ability to complete their jobs or that performance standards are too high, regardless of how much time they have” (Ivancevich & Matteson, 1980, p113).

3. *Work role conflict* is “A combination of the expectations and demands an employee places upon himself or herself and those of other members of the organization results in a set of forces which may be termed role pressures. When a situation arises in which two or more role pressures are in conflict with one another, a condition of role conflict exists. Role conflict is present whenever compliance with one set of pressures makes compliance with another set of pressures difficult, objectionable or impossible” (Ivancevich & Matteson, 1980, p110).

Mediator variable nominal/conceptual definition.

The mediator for this study will be satisfaction with one’s supervisor.

1. *Satisfaction with one’s supervisor* is defined as “...the degree of subordinate satisfaction with supervision as an organizational role whose effective enactment entails the ability to reconcile and coordinate the needs and goals of work group’s members with organizational requirements” (Vandenberg & Scarpello, 1991, p203).

Outcome variable nominal/conceptual definitions.

For this study we will be looking at three outcome variables: burnout, engagement, and turnover intention.

1. For *burnout* the definition from Demerouti and Bakker (2007) will be used. This definition regards two variables as the core of burnout: exhaustion and disengagement.

Exhaustion is defined as “...a consequence of intense physical, affective and cognitive strain, i.e. as a long-term consequence of prolonged exposure to certain job demands” (p4).

Disengagement is defined as “... distancing oneself from one’s work in general, work object and work content” (p5).

2. *Engagement* is defined as “... a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication and absorption. Rather than a momentary and specific state, engagement refers to a more persistent and pervasive affective cognitive state that is not focused on any particular object, event, individual or behavior” (Schaufeli et al, 2001, pg 74). From the above definition there are three manifest variables of the ‘engagement’ construct: (a) *Vigor* is defined as being “...characterized by high levels of energy and mental resilience while working, the willingness to invest in one’s work and persistence in the face of difficulties” (Schaufeli et al, 2001, pg 74); (b) *Dedication* is defined as being “...characterized by a sense of significance, enthusiasm, inspiration, pride and challenge” (Schaufeli et al, 2001, pg 74); and, (c) *Absorption* is defined as being “...characterized by being fully concentrated and deeply engrossed in one’s work, whereby time passes quickly and one has difficulties with detaching oneself from work” (Schaufeli et al, 2001, pg 75).
3. *Turnover Intent* is defined as “...a conscious and deliberate willingness to leave the organization” (Tett & Meyer, 1993).

Control variable nominal/conceptual definitions.

Nonexempt: These employees are defined as employees who are paid an hourly wage, are eligible for overtime and perform non-exempt job duties (i.e. clerical work). For a more complete definition please see:

<http://www.dol.gov/whd/regs/compliance/hrg.htm>

Gender: Male, Female

Ethnicity: African-American, Asian, Caucasian, Hispanic, Native American, Multi-Racial, Other.

Marital Status: Married, Single

Age of Participant: Current age of participant

Length of Employment with Current Employer: The total amount of time the employee has been with the current employer.

Present Job Title: Present working job title

Time in Present Position: Amount of time that the employee has had the current title.

Assumptions

Assumptions of the study included the following:

1. Subjects had time, could access, and were able to read and complete the survey.
2. Subjects honestly responded to questions in spite of potential concerns they had regarding the security of their jobs.

3. The study produced results generalizeable only to the organizations or work sites serving as data collection points.

Theoretical Foundations

Many theories have researched the connections and implications of stress, beginning with Seyle's (1936) original research and definition of stress. Since then multiple studies have connected the effects of stress on burnout and engagement (Lee & Ashforth, 1996; Hakanen, Bakker & Schaufeli, 2006; Schaufeli & Bakker, 2004). Considering the multitude of research on these topics, this study will focus on one model that incorporates stress, engagement and burnout: the Job-Demands Resources Model (Demerouti, Nachreiner, Bakker and Schaufeli 2001).

Early theoretical work commonly used burnout to describe a state of mental weariness generally among people who work in the social services field, although later expanded to include all service fields by Maslach and Leiter (Schaufeli & Bakker, 2004). In this model, engagement was seen only as an opposite pole of burnout and, therefore, measurable by the opposite scoring of the same instrument measuring burnout, generally the Maslach Burnout Inventory (Maslach and Jackson, 1986). In work by Schaufeli, et al (2000) it was posited that previous research on engagement had been primarily based on these concepts of Maslach and Leiter (1997) who considered engagement to be the opposite of burnout and measurable as such. Schaufeli et al (2000) took a different perspective by viewing burnout and engagement as independent and negatively correlated variables; however, each variable needed to be independently measured with different instruments. Demerouti, Nachreiner, Bakker and Schaufeli (2001) went on to develop the Job Demands Resources Model (JD-R) based on the beliefs of Schaufeli et al (2000).

The JD-R model is based on early job stress models such as the demands-control model (DCM) of Karasek (1979). In the DCM model, job stress is caused by high job demands and low job control. The JD-R model uses this model as a basis and expands upon it. The JD-R Model has an overarching theme that every occupation has its own risk factors for job stressors, but these factors can be classified as job demands and job resources regardless of the type of work done (Bakker & Demerouti, 2007).

The JD-R is based on two main components. The first component proposes that working conditions are broken down into job demands and job resources. Job demands are composed of certain aspects of the job that require more intense physical or mental effort and can, therefore, lead to certain physiological or psychological effects, including stress (Bakker & Demerouti, 2007). Job resources are features of the job that are helpful in completing work goals, lessen job demands and the effects of those demands and can cultivate the employee's growth and development (Bakker & Demerouti, 2007).

The second component in the JD-R model proposes that these job demands and job resources bring forth two psychological processes which in turn bring about burnout and engagement. The first psychological process is that of health impairment which begins with persistent job demands and in turn diminishes the employee's energy and leads to weakened health and burnout (Hakanen, Bakker & Schaufeli, 2006). The second process is that of motivation, which starts with job resources and leads to engagement (Salanova, Agut & Peiro, 2005). Schaufeli and Bakker (2004) call this the Dual Process Model (see figure 2) since the two components are coinciding. Using this Dual Process Model, job demands can turn into job stressors (Schaufeli and Bakker, 2004) as can lack of job resources, leading to burnout. Increased job resources can buffer the stressors, like

satisfaction with supervisor used in this study, and increase engagement (Bakker and Demerouti, 2007). For this study we will examine the burnout and engagement components of this model.

The JD-R model incorporates the idea of stress in with the job demands variable; however it does not define stress. Therefore, this study will incorporate the ideas of work stress from the organizational stress research model of Ivancevich and Matteson (1980). Both theories will be discussed in more detail in chapter II.

Summary and Overview

Guided by the JD-R model, this study researches the effects of work role stress on work burnout, work engagement and turnover intent. In addition, we examine the role of satisfaction with one's supervisor in mediating the effects of work role stress on engagement, burnout and turnover intent. Chapter II includes a detailed review of the pertinent literature from human resources, business, organizational behavior, psychology and other fields. Chapter III is the methods section; which details the research design, survey methods, sampling and data collection measurement and analysis. Chapter IV presents the results of the study. Conclusions and implications are discussed in chapter V, along with the limitations of the study and suggestions for future research.

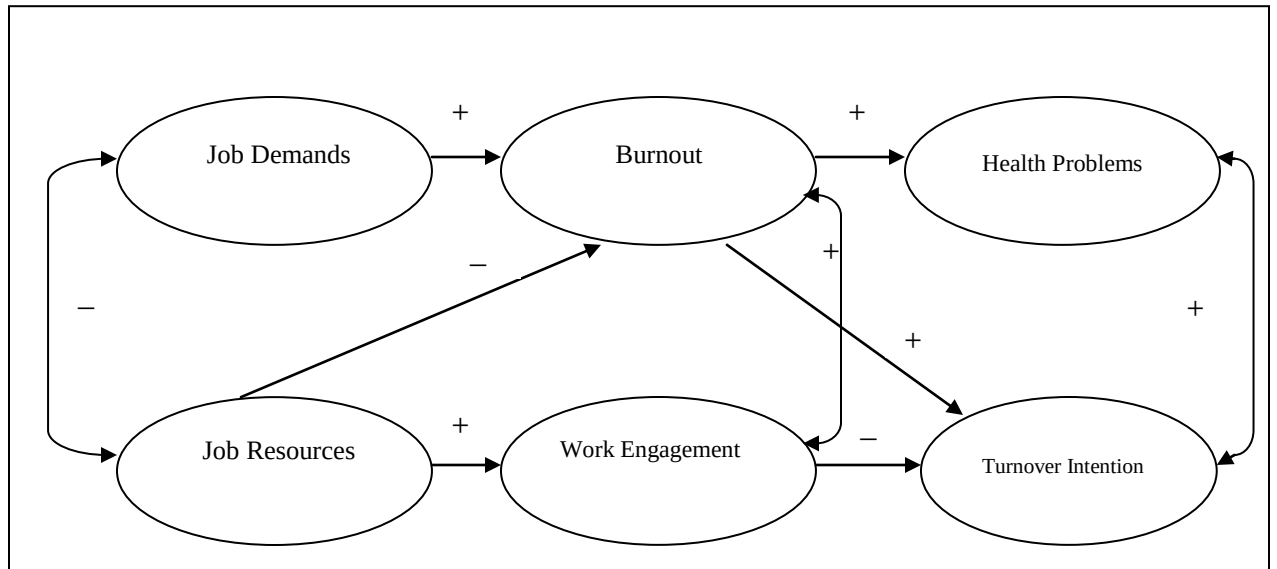


Figure 2-Dual Process of the Job Demands Resources Model (adapted from Demerouti, et al., 2001; Schaufeli & Bakker, 2004).

CHAPTER II: REVIEW OF THE LITERATURE

Overview

Guided by the Job Demands-Resources Model, the current study investigated the direct relationship between work role stress (ambiguity, overload and conflict) and work burnout, work engagement and turnover intent of non-exempt employees. Additionally, this study examined the mediating relationship of satisfaction with one's supervisor.

A review of related literature will be presented in the following order: predictor latent variable work role stress consisting of manifest variables of ambiguity, overload, and conflict; three outcome variables: burnout, engagement and turnover intent and the mediating variable satisfaction with one's supervisor. This will be followed by the interrelationships of these variables and the hypotheses.

Work Role Stress

Theories and research

This section will include an historical review of the literature on stress. This review is not cumulative, as research on stress has been ongoing for many years. Certain theories will be examined though, including: (a) general adaptation syndrome, (b) cognitive-motivational-relational theory of emotion, (c) person-environment fit model, (d) role stress model, (e) facet analysis model, (f) McGrath's theory, and (g) Ivancevich and Matteson model.

The original concept of *stress* was first adapted by Dr. Hans Selye (1936). Originally Selye, an endocrinologist, was doing research trying to discover a new sex

hormone and ended up finding that tissue damage was precipitated by a host of factors including: cold, X-rays, mechanical trauma, and nervous stimuli. From his research on lab animals he determined that the damage to the tissue was indicative of a random response to virtually all noxious stimuli. He termed this: General Adaptation Syndrome. In 1946, Selye introduced the term *stress* as the effects of life on the body. In 1950 Selye published a compilation of work entitled: Stress. In this compilation he shifted his emphasis on stress to that of an internal condition that results as a response to stimulation. He referred to these stimulating events as *stressors*, opening the door for multitudes of research into this field.

Research by Selye, and later by Richard Lazarus, is credited with creating the direction of current stress research (Ganster & Schaubroeck, 1991). Selye created the General Adaptation Syndrome (G.A.S) theory of stress (Ivancevich & Matteson, 1980). G.A.S. defines stress as a nonspecific response to any demand made upon an individual. This theory breaks down the biological response of the individual during a stress incident. The G.A.S. process has a 3 stage response: (a) alarm, (b) resistance, and (c) exhaustion. The *alarm stage* starts the biochemical change of the individual. The *resistance stage* occurs during longer stress events where resistance against the stressor increases. Adaptive energy is focused on organs/systems and, therefore, redirected from other areas. The *exhaustion stage* occurs when the prolonged exposure to the stressor burns up any adaptive energy, and the system becomes exhausted. This triggers the alarm stage to start over, and the G.A.S becomes cyclical and adapts to another system. The longer it continues, the more demands are placed on the body. This leads to biological impacts

such as fatigue, disease, and disability. This also leads to performance deficiencies at work (Ivancevich and Matteson, 1980).

Although early explorations of stress was predominantly pursued in the medical community (i.e. medical doctors), overtime it has shifted into the realm of behavioral social sciences researcher (Ivancevich and Matteson, 1980). The original medical focus is pertinent to the study of stress, though, as the effects on the physical and emotional well-being of people can be altered greatly by stress. In fact, in a medical study it was found that heart attacks can be precipitated by emotional stress in patients with no prior coronary disease (Wittstein, Thiemann, Lima, Baughman, Schulman, Gerstenblith, Wu, Rade, Bivalacqua, & Champion, 2002). The findings show that exaggerated sympathetic stimulation was most likely the main cause. This is an extreme example of what emotional stress can do to one's body. In the above example, the stress was sudden and excessive: surprise party, sudden death, bad news, etc., but daily stress can also have an effect on both physical and emotional health. A significant relationship has been found between daily stress and physical symptoms of health issues i.e.: flu, headache, backache... (DeLongis, Folkman & Lazarus, 1988). In addition, the relationship between daily stress and mood seems more complicated. People who lack a social network of support are more susceptible to illness and poor mood than are people with a strong support network, even if there is little or no stress in their lives.

Much research into emotion and stress has been done by Richard Lazarus (1991a). Early in his career, around 1966, Lazarus (1991b) made a distinction among three types of stress: (a) harm, (b) threat and (c) challenge. *Harm* refers to a psychological damage that has already occurred, such as a death; *threat* is the anticipation

of harm that has not happened yet but that could be imminent; and *challenge* comes from overcoming demands by using coping skills. Coping becomes a main portion of his theories in later years.

Lazarus went on to develop a theory of emotion called the Cognitive-Motivational-Relational Theory of Emotion (1991). Lazarus claims that there must be two key components present to create a strong emotion theory. These are: (a) a general knowledge of the process of emotions, including the key components and how these interact; and (b) a specific description and definition of each emotion.

Lazarus' (1991) theory combines (a) relational, (b) motivational and (c) cognitive aspects. *Relational* is defined as being about person-environment interactions that involve negative and positive emotions, shown as harms and benefits. These interactions change and evolve over time and are, therefore, specific to the individual and his/her environment. *Motivational* is defined as how one reacts to every day events through emotion and mood. *Cognitive* is defined as being aware of and processing what is happening in everyday life. The test of a true emotion involves finding "... whether there is a clear, personally significant, relational content; an appraisal of personal harm, threat, challenge, or benefit; the potential for action readiness, and physiological changes" (1991, p. 822). This definition serves to denote between a trait rather than a state, which is what an emotion is considered to be per Lazarus.

The Cognitive-Motivational-Relational Theory of Emotion (Lazarus, 1991) also speaks of a coping process where coping follows the emotion and serves to regulate distress caused by the emotion and to shape the emotions that follow and is highly contextual and adaptive. Two types of coping were identified: (a) Problem-Focused

Coping and (b) Emotion-Focused Coping (Lazarus, 1993). Using *problem-focused coping* serves to change the person's environment and, therefore, to change the conditions of any psychological stress for the positive. For example, if the office environment tends to be kept very cold, by changing the thermostat or adapting somehow, we can change the environmental issues that have caused the stress. Using *emotion-focused coping* allows us to reinterpret or react differently to the current stressor; generally this is done through denial or distancing. Regardless of which coping type is used, the key variable is appraisal of the stressor. Many later theories are based on this model by Lazarus.

Other theories upon which some current literature and research are based include the person-environment (P-E) fit model originated by French, Rogers and Cobb (1970) and later delineated by Van Harrison (1978). This model (P-E) proposes that when the match between an employee and his or her immediate environment is poor that the needs of the individual or the job go unmet, leading to stress. The response to reduce the stress would be to create a better fit for the employee and/or the job functions.

Another popular theory is that of Kahn and Quinn's (1970), Role-stress model based on Merton's (1957) role theory. The premise of this model is discrepancy. Stress is caused by a discrepancy between what an employee expects and that employee's capacity to meet the demands and the discrepancy between expectations and the employee's personality.

Beehr and Newman (1978) proposed a facet analysis model. This model was very extensive and complex, consisting of over 150 variables. These variables were placed into seven categories, which interact to cause stress, causing the person to create a stress

response and adaptation. This pattern becomes cyclical, and adaptation becomes more fluid. A model of stress by McGrath (1976) proposed a stress and task performance theory. This model is a little different than the others in that its focus is on the effects of stress on task performance. McGrath's theory is that task performance is a function of the difficulty of the task, ability to perform the task, and stress. The task ability component is influenced by prior experience, combining with task difficulty and perceived consequences to create stress. McGrath's (1976) model is a 4-stage process model. One other model commonly used is that of Ivancevich and Matteson (1980), which is an integration of previous models with features of biological and behavioral models. Among other things, the model posits that one component of work role stress is made up five individual level stressors: (a) role conflict, (b) role ambiguity, (c) work overload, (d) responsibility for people, and (e) career development stressors (see below). This will be the model used to base our stress variables on for this study.

Definition for this study

Ivancevich and Matteson (1980) defined two types of stress in their research: (a) stimulus (Figure 3) and (b) response (Figure 4). *Stimulus stress*: “. . . is the force or stimulus acting upon the individual that results in a response of strain.” p 6. *Response stress* “. . . is the physiological or psychological response an individual makes to an environmental stressor . . .” p 7; after encountering weaknesses in each of these definitions Ivancevich and Matteson combined these two definitions to create one definition that encompasses both types of stress. This was termed the *Stimulus-Response* definition of stress, which is: “. . . stress is the consequence of the interaction between an environmental stimulus and the idiosyncratic response of the individual” p 8. (Figure 5)

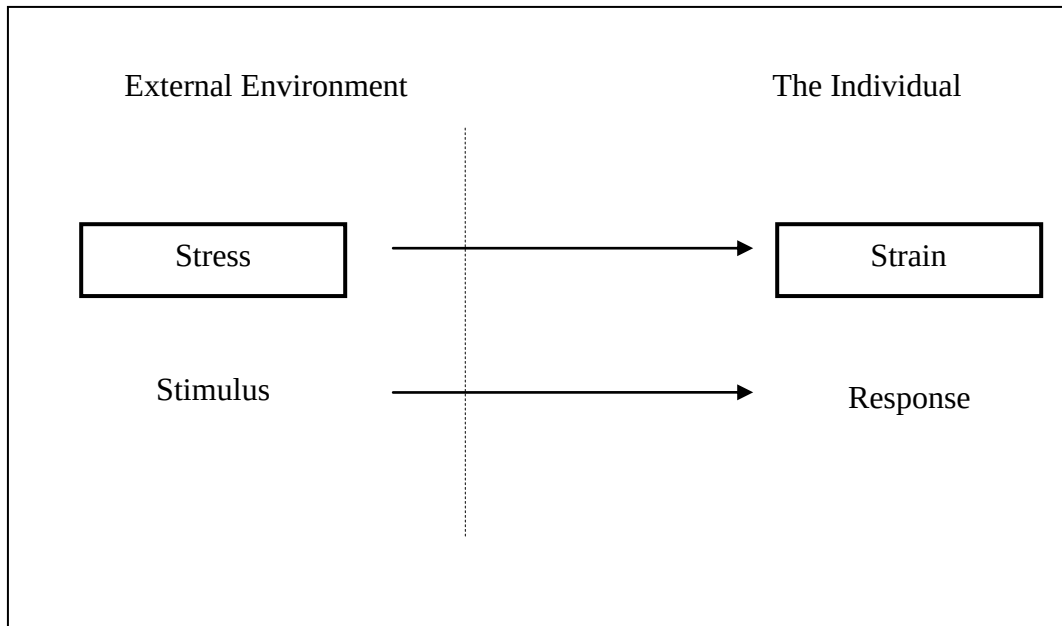


Figure 3-Stimulus Definition of Stress, Ivancevich and Matteson 1980

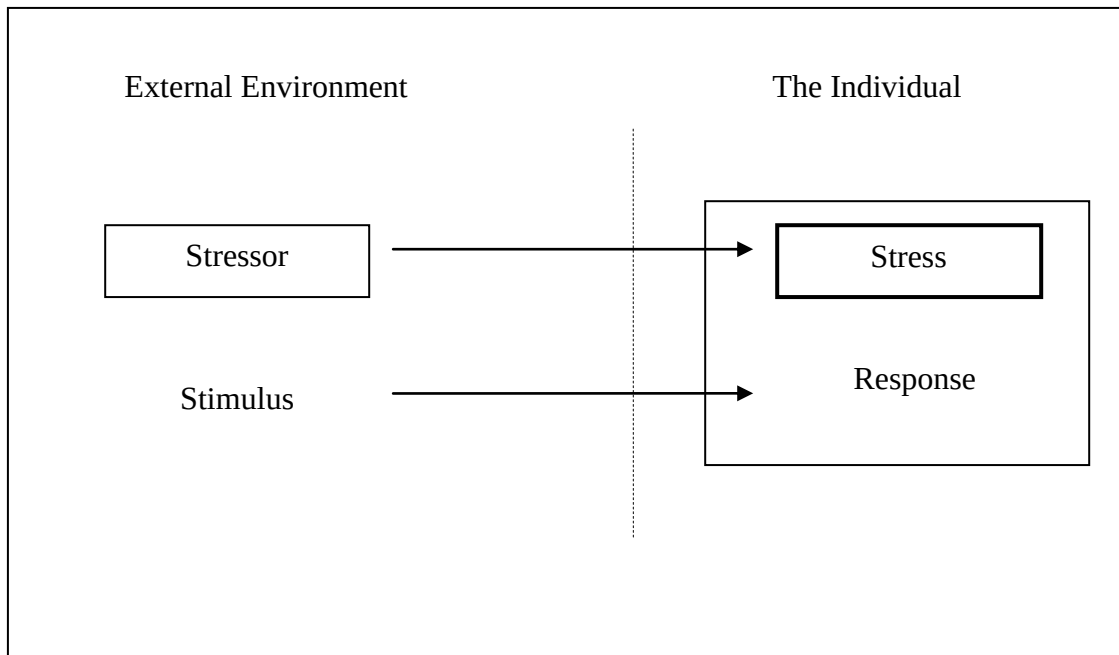


Figure 4-Response Definition of Stress, Ivancevich and Matteson 1980

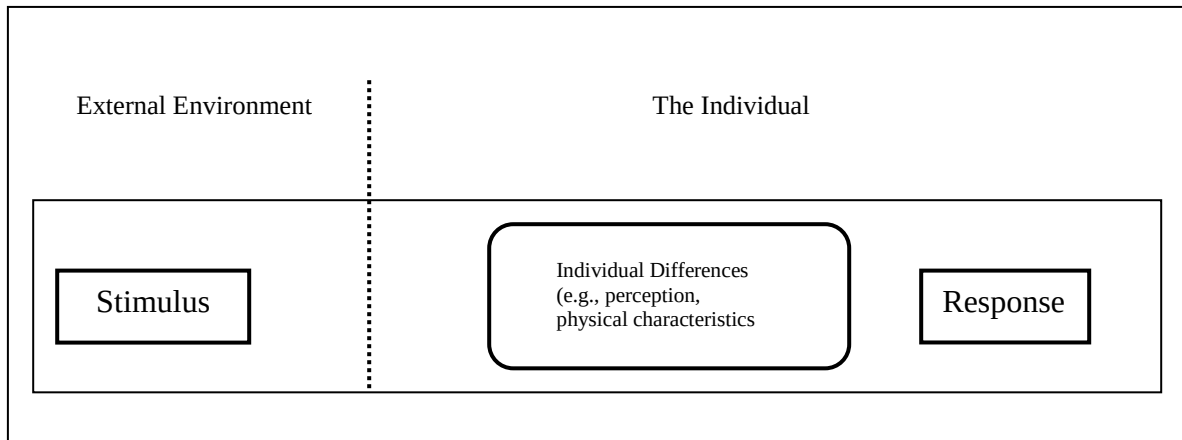


Figure 5-Stimulus-Response Definition of stress Ivancevich and Matteson 1980

From these models, a working definition of stress was created that defines stress as “. . . an adaptive response mediated by individual characteristics and/or psychological processes; that is, a consequence of any external action, situation, or event that places special physical and/or psychological demands upon a person” (Ivancevich & Matteson, 1980, p 8). This definition allows us to view stress as response of the individual and to identify the conditions as the stressors. This allows the focus to be on the specific environmental conditions that are potential stress producers. This definition takes into account the individual’s ability to cope with the stressor.

Ivancevich and Matteson (1980) go on to identify five major stressor types within two categories of extraorganizational stressors and intraorganizational stressors. The *extraorganizational stressors*, or external stressors beyond work, include any stressors outside the work life (marriage, finances, and health) that have an effect on work. There are four others stressor categories within the *intraorganizational stressors* component. These are: (a) individual, (b) group, (c) organizational, and (d) the physical environment. These are all considered to be a level or source of stress. Ivancevich and Matteson (1980)

created this model to incorporate the earlier research on stress that speaks to both biological and behavioral components of stress. (Figure 6)

One of the stressor components of the Organizational Stress Research Model of Ivancevich and Matteson (1980) includes the five individual level stressors which are the

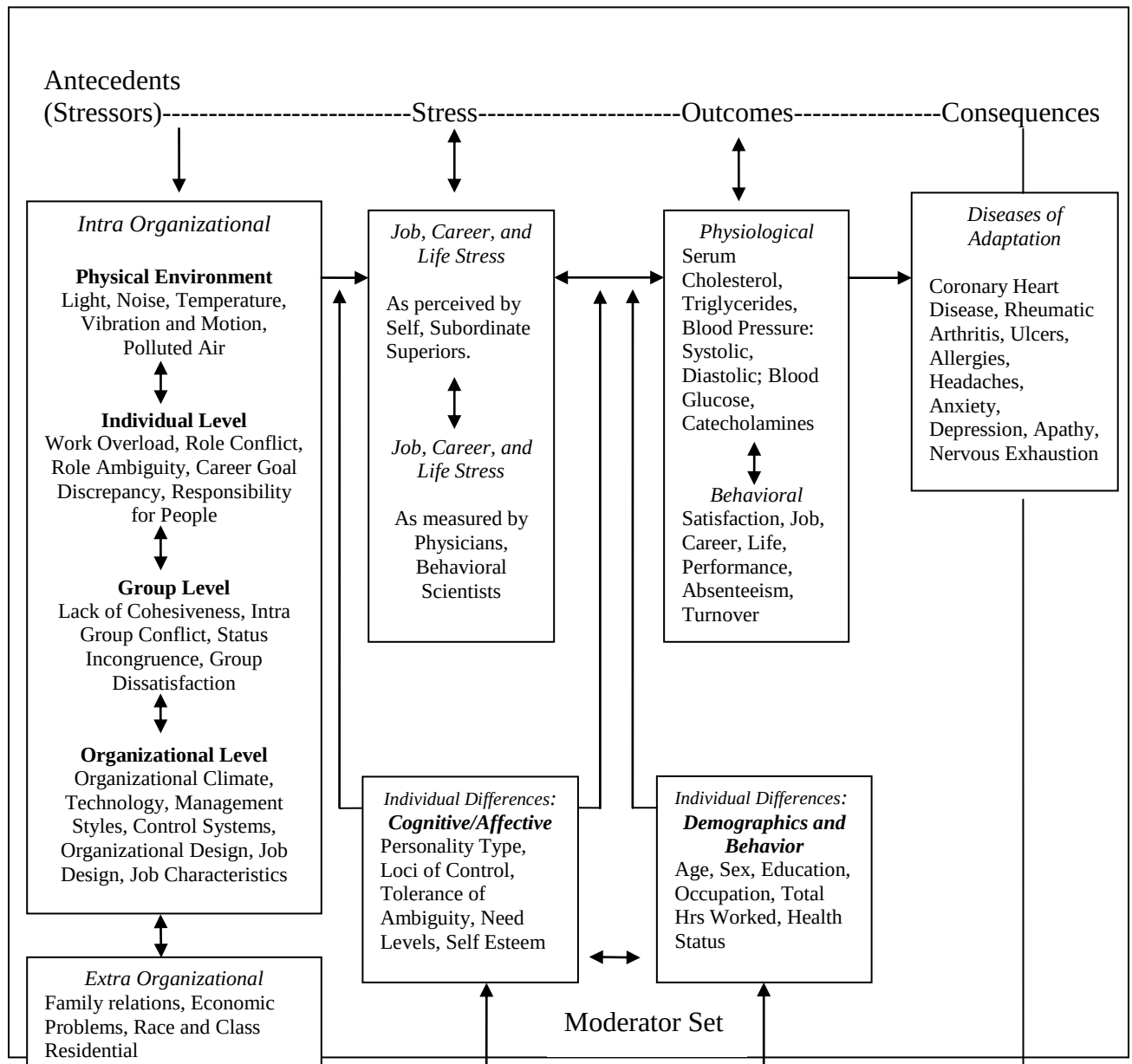


Figure 6-Model for Organizational Stress, Ivancevich and Matteson, 1980

manifest variables of stress. These include: (a) work overload, (b) role conflict, (c) role ambiguity, (d) career goal discrepancy, and (e) responsibility for people. Further research has focused heavily on work role overload, role conflict, and role ambiguity as core antecedents of stress. Therefore, this study will extrapolate these antecedents out of the stress model of Ivancevich and Matteson (1980). For this study we will only use the overload, conflict, and ambiguity variables due to the abundance of literature supporting these factors.

Role conflict.

The overall definition of role conflict is varied. Many consider the original definition to be from Kahn, Wolfe, Quinn, Snoek, and Rosenthal (1964), included in their Role Theory. This definition concludes that multiple participants will have different expectations for a central person; these participants exert pressure towards these expectations, to the extent that these pressures affect the individual the person will experience psychological conflict. The primary research on role conflict was also done by Kahn, et al, (1964), where five types of role conflict that can occur in an organization were introduced, and research was subsequently built on by others (Beehr, 1985; Van Sell, Brief & Schuler, 1981). These include: *intersender conflict*: where expectations from one person are not compatible with another person's expectations; *intrasender conflict*: where one's expectations are incompatible with the role; *inter-role conflict*: where pressures from one position are incompatible with pressures from another position; *person-role conflict*: where incompatibility between the person and the role exists; and

role overload: where roles may be compatible but sufficient time is not allotted for the roles.

Other definitions involve defining role conflict as when an individual's expectations are inconsistent, the person then experiences stress, is dissatisfied, and his or her performance will suffer due to the conflict (Rizzo, House & Lirtzman, 1970). As seen by Ivancevich and Matteson (1980), conflict occurs when more than one role pressure is exerted on an employee, and these two roles conflict with each other. Even with these multiple definitions, they all include a central concept of conflict within expectations or compatibility of the role and/or the individual.

Much research has been done into role conflict in the past 20 years. Most research indicates that excessive roles can cause an increase in stress. Increased role obligations have been shown to cause psychological conflict when multiple roles cannot be fulfilled (Bedeian, Burke, and Moffett, 1988; Singh, Goolsby, and Rhoads, 1994.) Other studies have found that excessive roles increase the likelihood of psychological stress (Bekker, DeJong, Zijestra, & Van Landeghem, 2000). Research has also shown implications of role conflict on organizations. Role conflict has been shown to have a negative influence on organizational commitment (Boshoff & Mels, 1995). Also, work place bullying has been linked to role conflict. A study by Matthiesen and Einarsen (2007) found that both bullies and victims report increased levels of role conflict.

Role ambiguity.

Often role ambiguity is strongly connected with role conflict, and the two topics are researched together. Role ambiguity is often seen as an exaggerating factor for role conflict. Often, as with role conflict, the origination of the definition of role ambiguity

can be traced back to Kahn, et al. (1964) which explains that, through their definition ambiguity is a component of role conflict which can be seen as the “. . . lack of agreement or coordination among role senders produces a pattern of sent expectations which contains logical incompatibilities or which takes inadequate account of the needs and abilities of the focal person” (p 21). Ambiguity is described as a different type of this inadequacy where clear information is not present and communication is lacking.

In addition, objective or environment centered and subjective or person centered ambiguity is defined. Although not as strongly theorized as conflict, the research and theories surrounding ambiguity are primarily similar, and most researchers concur that there is a potential relationship between conflict and ambiguity (Van Sell, et al., 1981; Rizzo, et al., 1970; Jackson & Schuler, 1985). The definition that we will formally use for this study is that of Ivancevich and Matteson (1980, p. 110) which defines work role ambiguity as “. . . a lack of clarity about one’s role, job objectives, and the scope of the responsibilities of one’s job”.

Research in recent years has expanded on these definitions of ambiguity and crossed over into the realm of work-life balance. An increase in work role ambiguity has been found to cause an increase in work-family conflict. In fact, one study found role ambiguity to be the strongest contributor to work-family conflict when work role conflict and work schedule were taken into consideration (Ryan, Ma, & Ku, 2009). In addition, a study by Matthiesen and Einarsen (2007) found that within an organization, both bullies and victims report increased levels of role ambiguity. Also, research has found that for people whose work requires some sort of judging behavior and who had increased role ambiguity they were more careless and less discriminating regarding the judging

(Dierdorff & Rubin, 2007). The implications to an organization of this research could predict work conflict, and even violence, in addition to costing the organization in outcome due to poor judgment.

Role overload.

The last component we will explore within work stress is that of role overload. Although quite a bit of overlap within research exists for role conflict, ambiguity and overload, it appears that overload can be seen as a result of role conflict. Kahn, et al (1964) found that overload can manifest as a conflict of priorities. The worker must choose which tasks to make a priority, and when this fails, overload is the result. However, overload is not just a current concept. In 1964 Kahn, et al found that 45% of male workers felt that they had too much work to do and could not complete all of the work within the work day. In addition, 43% of these workers worried that the amount of work would interfere with the quality of the work.

Overload is often split into quantitative and qualitative. According to Ivancevich and Matteson (1980, p. 113) quantitative overload occurs when an employee “. . . perceives that they have too much work to do, too many different things to do, or insufficient time to complete assigned work,” while qualitative overload “. . . occurs when employees feel they lack the ability to complete their jobs or that performance standards are too high, regardless of how much time they have”. Overload is often seen as a reasonable amount of work expected to be done in an unreasonable amount of time.

Recent research on role overload has focused on the effects on the organization. Jones, Chonko, Rangarajan, and Roberts (2007) found that role overload had a negative effect on job satisfaction, a negative effect on organizational commitment, and led to an

increase in turnover intent. Other research has shown a negative correlation with psychological health, job satisfaction, and leisure satisfaction (Pearson, 2008).

Burnout

Theories and research

Burnout has multiple theories attached to the concept. Reviewing the literature, we explore the origins of the burnout theories. The first burnout syndrome theory is widely thought to be that of Herbert Freudenberger (1980). Freudenberger was a psychiatrist working with drug addicts. He started noticing the high rate of exhaustion shown by the volunteers about a year after they started working. He used the term “burnout” as it was the same term referring to a state of chronic drug use. His paper struck a chord with many people who were feeling this exhaustion

Initially, the research from Freudenberger on burnout was based on an elaborate clinical description of behaviors, including exhaustion, physical symptoms (headaches, stomach aches, sleeplessness, shortness of breath . . .), irritation, frustration, suspicion, paranoia, feelings of omnipotence, risk-taking, drug use, rigidity, stubbornness, and depression (Freudenberger 1980). This model was excessively hard to measure; often information was gained through observation and individual case study. However, the publication of these studies leads the term ‘burnout’ to be the buzz word of the 1970-1980’s. The introduction of the burnout syndrome started a trend of research among clinical researchers and caused the public to identify and define burnout in less clinical ways (Schaufeli & Enzman, 1998).

Reportedly, around the same time that Freudenberger was reporting his findings, Christina Maslach (1981) started using the term ‘burnout’ to refer to the same syndrome primarily in health care workers. Once research began on burnout, the pioneers were Maslach and Ayala Pines, who initially worked together on burnout research. At some point these two researchers took a different view of burnout and the theories and definitions behind burnout. Maslach and Jackson (1981) defined burnout as “. . . a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who do ‘people work’ of some kind” (p. 99). This definition and subsequent theory allows for variables or constructs that define burnout and what Maslach calls the antithesis of burnout, engagement. Pines and Aronson (1988) define burnout similarly as “a state of physical, emotional, and mental exhaustion caused by long-term involvement in situations that are emotionally demanding” (p. 9), but with no mention of engagement. In addition, Pines and Aronson include only exhaustion as a measure, and their original population includes more than just employees in “people work”. However, Maslach and Pines do agree that the core component of burnout is exhaustion. Both of these researchers eventually developed burnout inventories, the Maslach Burnout Inventory by Maslach and Jackson (1981) and The Burnout Measure by Pines and Aronson (1988).

The bulk of early research had been based on the concepts of burnout as defined by Maslach (1982), who theorized that burnout is the opposite of engagement. Schaufeli, Salanova, Gonzalez-Roma, and Bakker (2001) took a different perspective by viewing burnout and engagement as opposite concepts that require different measurements. Schaufeli, et al. (2001) have identified two underlying factors of work related well-being:

(a) Activation and (b) Identification. If burnout and engagement are considered opposites, then the factors of exhaustion and vigor would load on a dimension labeled as *activation*. The factors of cynicism and dedication would load on a dimension labeled *identification*. For the main factors of burnout, exhaustion and cynicism can be shown with low activation and low identification.

For the main factors of engagement, vigor and absorption can be seen as high activation and high identification. Schaufeli, et al. (2001) also reported that burnout is characterized by reduced efficacy and that engagement is characterized by absorption, however efficacy and absorption are not direct opposites of each other; this would make the research of engagement and burnout as opposite poles troublesome since some of the variables are considered opposites and some are not.

However, as the theories progressed, research was performed to expand on the concepts introduced by Schaufeli, et al. (2001); and new theories were formulated. Based on two early burnout models by Karasek (1979) and Hobfoll (1989), the Job Demands Resources Model (JD-R) of burnout was developed by Demerouti, Bakker, Nachreiner, and Schaufeli (2001). Karasek's (1979) model was the Demands-Control model (DCM). This model showed that job stress was caused by high job demands and low job control. Hobfoll's (1989) model was the Conservation of Resources model (COR). This model claimed that stress and burnout occur when the individual perceives a threat to their resources. The initial response to this is stress and the continuation of this leads to burnout. This theory expands to state that job demands and resources can predict burnout and the related dimensions of burnout. This theory will be discussed in more detail later in this section.

Definition for this study

Based on the above models the JD-R model was created by Demerouti, et al. (2001) See Figure 7. This model proposes that burnout follows two processes (Demerouti, et al., 2001). The first process is that of job demands which, as the demands grow, lead to overtaxing which leads to exhaustion. The second process involves a lack of resources which complicates the ability to meet the job demands, which leads to withdrawal. This withdrawal behavior, long-term, ends in disengagement. Later versions of this model incorporate engagement, and this will be discussed in the next section.

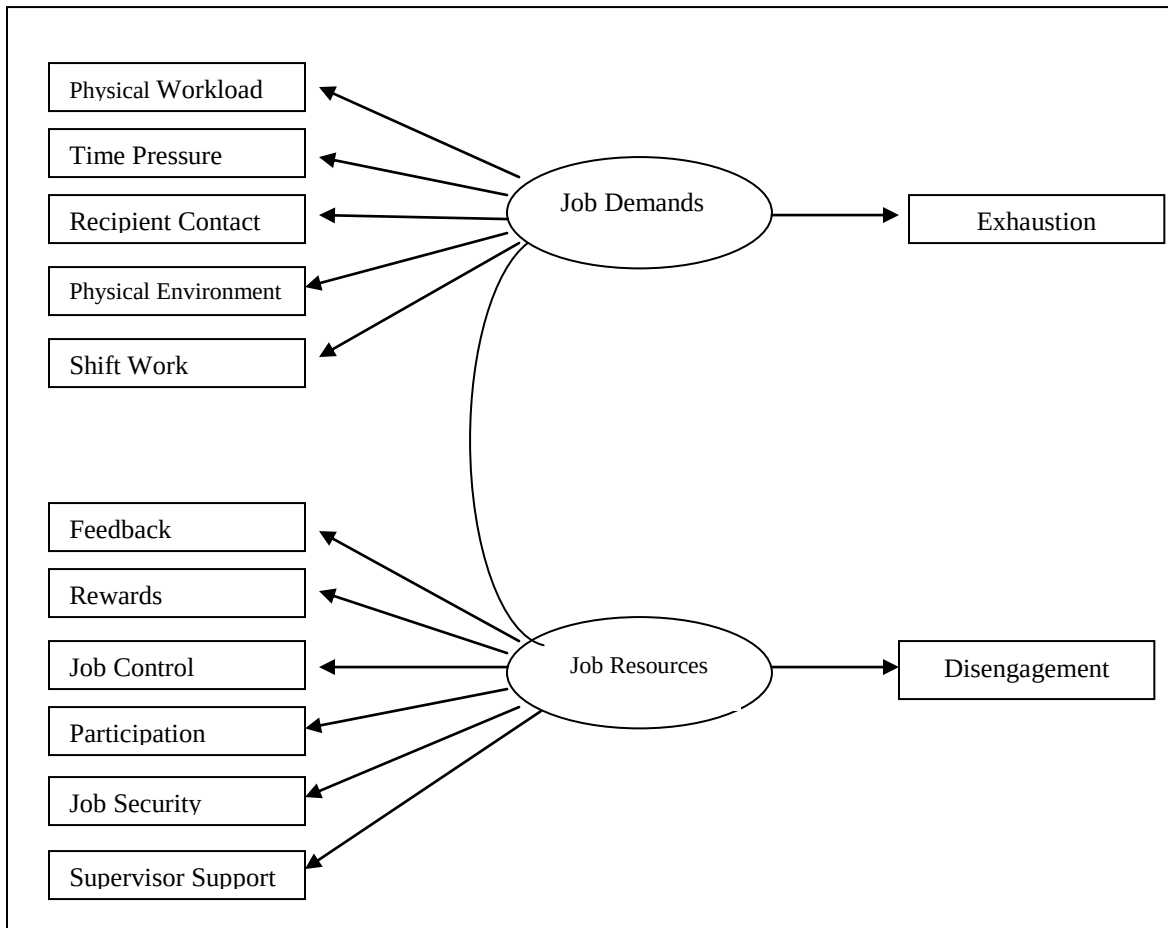


Figure 7-The Job Demands-Resources Model of Burnout; Demerouti, Bakker, Nachreiner, and Schaufeli, 2001

This definition regards two variables as the core of burnout: (a) exhaustion and (b) disengagement.

Exhaustion is defined as: “. . . a consequence of intense physical, affective, and cognitive strain, i.e. as a long term consequence of prolonged exposure to certain job demands.” p.

4.

Disengagement is defined as “. . . distancing oneself from one’s work in general, work object and work content” (p. 5).

Related to this model, relevant findings include that high job demands have been found to predict burnout which in turn can predict depression (Hakanen, et al., 2008). Burnout can be predicted primarily by job demands, but it also can be predicted by lack of job resources (Schaufeli & Bakker, 2004). Schaufeli and Bakker (2004) found a negative correlation between burnout and engagement and that burnout was primarily predicted by job demands where engagement was predicted by job resources. Finally, burnout can be predicted primarily by job demands, but it also can be predicted by lack of job resources (Schaufeli & Bakker, 2004).

Exhaustion and disengagement.

Originally burnout was characterized by exhaustion, cynicism (disengagement), and reduced professional efficacy (Maslach, et al., 2001), but further research has shown that only exhaustion and cynicism, also known as disengagement (Bakker, Demerouti, & Verbeke, 2004) are considered the core components of burnout (Langelaan, Bakker, Doornen & Schaufeli, 2006). This has been shown by the low correlation of professional efficacy with exhaustion and cynicism (Green, Walkey, & Taylor, 1991). Research has

found a strong positive relationship between cynicism and exhaustion (Demerouti, Bakker, Jonge, Janssen, & Schaufeli 2001; Bakker, et al., 2004).

Further research has found that exhaustion and disengagement can be observed in virtually any employee group (Bakker, Demerouti, & Schaufeli, 2002; Demerouti, et al., 2001; Leiter & Schaufeli, 1996). Devereux, et al. (2009) found a relationship between work demands and exhaustion that could be reduced by wishful thinking coping skills. In addition, job demands are related to the exhaustion component of burnout, which is what this current study is measuring (Demerouti, Bakker, Nachreiner & Schaufeli, 2001).

Contributing factors of burnout.

Burnout can cause many problems for an organization. An employee who is burned out tends to have increased stress which can lead to physical ailments and injuries including back pain, overall stress, and fatigue (Schaufeli & Enzman, 1998). Two theories on the origination of burnout include the idea that workers who are more idealistic experience more burnout; these workers tend to work harder toward their goals and are, therefore, easily exhausted and become cynical when their efforts do not pay off (Angerer, 2003). The other idea is that burnout comes from job stressors (Angerer, 2003). The concept of stress affecting burnout is a key component of this current study.

Seven factors have been identified that contribute to burnout through occupational stress (Schaufeli and Enzman, 1998). These include: (a) service sector, (b) labeling, (c) individualism, (d) increase in mental and emotional workloads, (e) weakening of professional authority, (f) professional mystique, and (g) changed psychological contract. The emergence of the *service sector* has been identified as the first contributing factor. This sector consists of employees who perform “people work” such as nurses, teachers,

and social workers. This group tends to have a high burnout rate anyway, so increasing the numbers of people in this profession in turn increases the number of employees who suffer from occupational stress and possibly burnout.

The second factor is *labeling*. With the emergence of psychology and the prevalence of therapy and psych speak, people tend to want to give any issue a label or name (Abbott, 1990). The third factor is that of *individualism* or the lack of defined roles in one's life (Farber, 1983). As we have progressed as a society, the roles that once defined a community and individuals within are no longer as rigid. People tend to define their own roles and appear to be withdrawing from their communities. Many people do not have the psychological skills to cope with this disengagement and become alienated and disconnected causing increased stress in their lives.

The fourth factor is an increase in both *mental* and *emotional* workloads. With the shift from employment in manufacturing to the service sector comes a greater strain on a person's mental health and emotions. One cannot just turn off emotions when working in a highly emotionally charged atmosphere such as a hospital or mental health facility. These employees tend to get more attached to their work and cannot just turn off these feelings at the end of the day (Cherniss, 1980a). In addition, with the increase in technology, the added burden of keeping up with the current technology for one's position takes a mental strain on the employee.

The fifth factor is that of the weakening of *professional authority* (Cherniss, 1995). Historically, professional employees were treated with prestige and respect, but at some point in the 1970's the trust was strained through the actions of corporate leaders and stockbrokers who took advantage of and caused the collapse of some industries. This

view was carried onto professionals in the human services field who were looked upon with suspicion as new programs were created to seemingly keep them in a job or spend more taxpayer money. At the same time, the rights of patients, students, and customers have increased, thus closing the distance between the professional and the consumer on an emotional level (Schaufeli and Enzmann, 1998).

The sixth factor leading to burnout is that of “*Professional Mystique*” (Cherniss, 1980a). Professional Mystique is defined as a set of beliefs, expectations, or opinions that the general public has in regard to professionals and the work they perform. These beliefs are taught in seminars and reinforced via media and are often unrealistic. These professionals try to meet an almost impossible standard, potentially leading to burnout. There are five elements of this mystique: (a) competence (or lack thereof), (b) autonomy (or lack thereof), (c) self-realization (realization of the monotony of one’s work), (d) collegiality (rivalry and competition), and (e) attitude of recipients (lack of gratitude from clients) (Cherniss, 1980b).

Finally, the seventh factor is that of changed *psychological contract* (Schaufeli & Enzmann, 1998). The unspoken agreement between an organization and an employee has shifted in recent years to favor the organization more than the employee. An employee feels that he/she must work harder to just maintain the status quo. More work is given to employees with no more pay, and the days of lifelong employment with an organization may be a thing of the past.

There are many variables from the individual standpoint that have been studied as potential causes or predictors of burnout. In addition to the above factors, Schaufeli and Enzman (1998) also detail a number of possible causes of burnout in the areas of

biographical characteristics, personality characteristics, work related attitude, and work or organizational characteristics. The biographical characteristics that could be causes or predictors of burnout include age, work experience, gender, marital status, and level of education. Of these, age seems to have a consistently strong correlation to burnout, where younger employees tend to be more burned out than their older counterparts (Brewer & Shapard, 2004; Garrosa, Moreno-Jimenez, Liang, & Gonzalez, 2008). Burnout seems to happen at the beginning of one's career, particularly in the service fields (nursing, social work, etc.). Work experience seems to be connected to age as a variable in regard to burnout as well. Studies have shown that less experience correlates with a higher rate of burnout (Ahola, Honkonen, Isometsä, Kalimo, Nykyri, Koskinen, Aromaa, & Lonnqvist , 2006; Bakker, Demerouti, & Schaufeli, 2002).

Gender, marital status, and educational level also seem to play a part in burnout. This concept relates to spillover which is briefly discussed in the next section. A low education level and low social status increase the risk of burnout for women; and being single, divorced, or widowed carries a higher risk of burnout for men (Ahola, et al., 2006). Bakker, Van Der Zee, Lewig, and Dollard (2006) found a higher rate of burnout among women than among men. Maslach and Jackson (1981) found a significant correlation between marital status and the emotional exhaustion component of burnout in that being single or divorced increased one's burnout rate. In this same study, using the Maslach Burnout Inventory, it was found that females had higher levels of burnout related to emotional exhaustion, where men had higher rates of burnout related to depersonalization. In addition, higher educational levels and increased work experience correlate with a decreased level of burnout (Demir, Ulusoy, and Ulusoy, 2003).

Personality characteristics that can be a cause or predictor of burnout include: (a) hardiness, (b) external control orientation, (c) confronting coping style, (d) self-esteem, (e) personality type, (f) type A behavior, and (g) personality traits (Schaufeli and Enzman, 1998). These characteristics do not guarantee burnout nor do they necessarily become a cause. Depending on the person and the situation, these characteristics can be a link. However, in some situations these traits can actually diminish burnout in some people.

Hardiness has been characterized by involvement in activities, feelings of control over the events in one's life, and one's openness to change. Boyle, Grap, Younger, and Thornby (1991) found a negative correlation between hardiness and burnout, in that hardiness as a personality characteristic seemed to minimize burnout. *External control orientation* or locus of control can be either internal or external. External is when someone attributes certain events or achievements to outside forces or to chance; whereas, individuals with internal control attribute events or achievements to their own abilities or willingness to take a risk. People with an external locus of control appear to have a higher level of burnout (Lee and Ashforth, 1996; Chen and Silverthorne, 2008). *Coping style* can be another predictor of burnout (this topic is discussed in more depth in the next section). Passive coping has been seen to correlate with an increase in burnout where active coping is correlated with less burnout (Carmona, Buunk, Peiro, Rodriguez, and Bravo, 2006). *Self-esteem* can also be a predictor of burnout. Dahlin, Joneborg, and Runeson (2007) found that medical students whose self-esteem was based on performance had higher rates of burnout.

Carl Jung established two *types of personality* which have been applied to burnout by Garden (1991): (a) feeling types and (b) thinking types. *Feeling types* tend to be more emotional and are characterized by concern and awareness for others, whereas *thinking types* are more center focused on achievement and are less oriented onto others. People tend to choose jobs that fit these personality types, which could explain why people who work in more service oriented fields (health care, social work, teaching, etc.) tend to experience more burnout. Chang (2009) found a correlation between teachers who tended to be more emotional (“feeling type”) and an increased rate of burnout. *Type-A Behavior* is characterized by competitiveness and tends to thrive off of a time pressured life and a need for control (Schaufeli & Enzman, 1998). This personality type has been associated with a high level of stress which has been correlated with burnout (Nowack, 1986).

Other causes or predictors of burnout fall under the “Big Five” *personality traits* which include: (a) neuroticism, (b) extraversion, (c) openness to experience, (d) agreeableness, and (e) conscientiousness (Hendriks, 1997). *Neuroticism* is characterized by anxiety, depression, and vulnerability. *Extraversion* is characterized by tendencies to be self-confident, dominant, and excitement seeking; these people tend to be optimistic. *Openness to experience* is characterized by adaptability, coping skills, and use of humor. *Agreeableness* is characterized by altruism, nurturance, and caring (Bakker, Van Der Zee, Lewig, & Dollard, 2006). *Conscientiousness* is characterized with problem-solving coping (Watson & Hubbard, 1996) and with self-discipline, striving for achievement, dutifulness, and competence (Costa, McCrae, & Dye, 1991). Bakker et al. (2006) found that extraversion was correlated with a lower level of burnout, and neuroticism was correlated with an increased level of burnout.

Work or organizational factors that can cause or predict burnout include: (a) high expectations, (b) work load (time pressure, role conflict/ambiguity, and hours worked), (c) direct client contact (number and severity of problems), and (d) social support and lack of feedback (participation in decision making and autonomy) (Schaufeli & Enzman, 1998).

High or unrealistic expectations have been found to have a causal link to burnout in about 50% of studies; however, it appears that high expectations, both from the individual and the organization, are more closely linked to reduced personal accomplishment (Schaufeli & Enzman, 1998). *Work load* (which is discussed in greater detail in the “stress” section of this paper) can be comprised of time pressure, role conflict/ambiguity, and hours worked. Nurmi, Salmela-Aro, Keskivaara, and Naatanen (2008) found a positive correlation between work load and burnout, particularly exhaustion. Lee and Ashforth (1996) found in a meta analysis that multiple studies showed a link between workload and exhaustion, a component of burnout. Other potential predictors are studied less often including number of hours worked, amount of *contact*, number of clients, and severity of their problems. However, results of these studies have shown that individuals experience higher levels of burnout when they work more hours, have more interaction with clients, have high caseloads, and have severe client problems (Gibson, McGrath, and Reid, 1989; Maslach & Jackson, 1984).

Social support and *lack of feedback* are areas where much more research has been done. Satisfaction with one’s supervisor and supervisor support were previously discussed. Social support in the work setting has consistently shown a decrease in burnout (Lee & Ashforth, 1996; Kim & Stoner, 2008). Feedback or lack of feedback also

correlates with burnout in that burnout increases with lack of feedback (Sweeney, Nicholls, & Kline, 1993; Gutierrez, Rodriguez, Puente, Costa, Recio, Cerro, & Cuadros, 2004).

Consequences of burnout.

There are a number of consequences of burnout, both to the individual and the organization (Schaufeli & Enzman, 1998). Consequences for the individual include: (a) depression, (b) psychosomatic complaints, (c) health problems, (d) substance use, and (e) spillover into one's private life. *Depression* is one of the most commonly studied consequences of burnout (Glass and McKnight, 1996; Glass, McKnight, & Valdimarsdottir 1993), and an obvious starting point for personal consequences of burnout. In addition, depression can be a cause of burnout as well as a consequence (Glass, et al., 1993). In addition, burnout and depression share similar symptoms such as lack of energy, poor motivation, and attitude (Glass & McKnight, 1996).

Other consequences include *psychosomatic complaints* and *health problems* (Schaufeli & Enzman, 1998). These are differentiated by the ability to measure or authenticate. Psychosomatic complaints are self-reported (headaches, stomach aches, etc.) without an official diagnosis whereas health problems have an actual diagnosis. However, both are considered stress reactions. *Substance use* has shown a mild relationship to burnout (Nowack & Hanson, 1983; Ogus, Greenglass, & Burke, 1990) in the past, but could also be seen as a coping skill. Finally, *spillover into one's private life* is the final individual consequence of burnout (Schaufeli & Enzman, 1998). Spillover has received a great deal of research in the past few years as work/life balance literature has increased (Maslach and Leiter, 2008; Peeters, Montgomery, Bakker, and Schaufeli,

2005.) There have been multiple significant findings related to burnout and spillover to one's personal life, particularly to marriage and family.

Consequences of burnout to the organization at the individual level can include: (a) job satisfaction, (b) organizational commitment, and (c) intention to quit (Schaufeli and Enzman, 1998). *Job satisfaction* has been found to have a high correlation with burnout in multiple studies showing that as burnout increases, job satisfaction decreases (Schaufeli, Taris, and Van Rhenen, 2008; Lee and Ashforth, 1996). *Organizational commitment* is also correlated with burnout; as burnout increases, commitment decreases (Bakker and Demerouti, 2007). Finally, we look at *intention to quit*, or turnover, which is also significantly correlated with burnout. As burnout increases, intention to quit increases (Ducharme, Knudsen, and Roman, 2008; Kim and Stoner, 2008).

Consequences to the overall organization include: (a) absenteeism and sick leave used, (b) job turnover, (c) poor performance, and (d) quality of service (Schaufeli and Enzman 1998). Schaufeli, Bakker, and Van Rhenen (2009) found that as burnout increased, *days of sick leave taken* also increased. As mentioned above for the organization, at the individual level *turnover* has also been correlated with burnout; as burnout increases, turnover increases (Rioli and Savicki 2006). Finally, performance issues and decreased *quality of service* can be consequences of burnout for the organization. Halbesleben and Buckley (2004) found that as burnout increases, performance decreases.

Employee Engagement

Theories and research

For many years burnout has been on the forefront of research until recently when scholars started to review the more positive end of the spectrum, defined as engagement. There have been at least three main directions of research into engagement. The first is Kahn's (1990) model of personal engagement, defined by being immersed personally and actively engaged physically/emotionally/cognitively in the work role. In this model a person has different dimensions of themselves that, depending on the role or the task, they can adopt for the preferred personae for each role. This model consists of three psychological conditions including: meaningfulness, safety, and availability. These conditions shape how a person inhabits each role.

The second research direction is that of engagement and burnout. Maslach, Schaufeli, and Leiter's theory (2001) shows burnout and engagement as opposites of each other at either ends of a spectrum, and the individual is somewhere on the spectrum from day to day. This Work Life Model is based on the idea that people float back and forth on this spectrum through time. However, further research by Schaufeli, et al., (2001) (see below) found that engagement and burnout are two distinct concepts and cannot be measured as one variable, but as independents.

The third direction of research is that of work engagement (Schaufeli, et al., 2001) characterized by vigor, dedication, and absorption. This is one-half of the job-demands resource model (JD-R) by Demerouti, Bakker, Nachreiner, and Schaufeli (2001). The JD-R posits that job resources are significant predictors of engagement. This theory will be discussed more extensively in the definition section below.

Engagement defined.

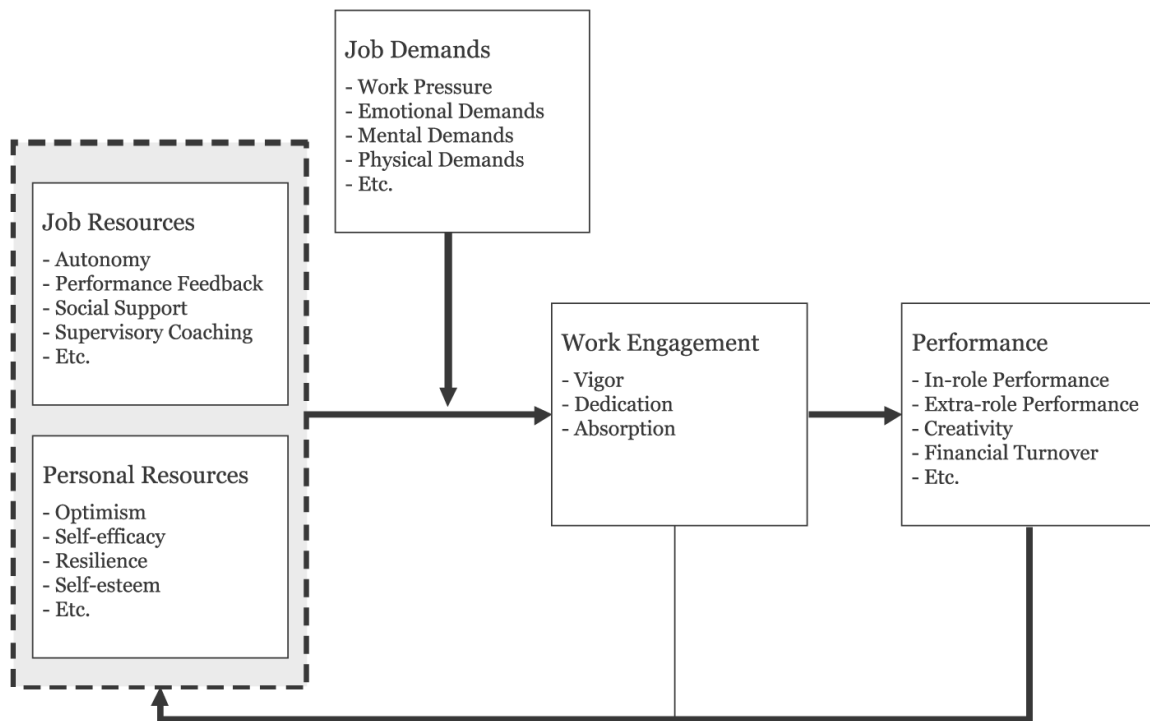
Kahn (1990) defined engagement as: “the harnessing of organization members selves’ to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performance”(p 694). Engagement is found in situations offering more psychological safety and psychological meaningfulness and availability (Kahn, 1990). This definition would appear to suggest that engagement is a total body experience, involving physical and psychological connections to ones employment. Engagement can also be defined as a psychological presence that involves two critical components: attention and absorption (Rothbard, 2001). This definition would seem to involve only a cognitive component into engagement such as an employee’s ability or willingness to give full attention and complete absorption to ones employment. Finally, engagement can be defined as the opposite of burnout characterized by energy, involvement, and efficacy (Maslach, 2001).

Many researchers are coming to see engagement and burnout as two distinct concepts rather than opposite poles of a single variable. In fact, Schaufeli and Bakker (2003) chose not to use burnout as a measure on their Utrecht work engagement scale due to the uncertainty of two measures being perfectly negatively correlated in that a person who is considered ‘burned out’ is not necessarily considered “engaged”. One trend is to view burnout as an erosion of engagement, rather than an opposite (Schaufeli, et al., 2001). Schaufeli, et al. (2001) found that burnout and engagement are not opposites of each other, nor are they to be treated as separate constructs, but should be seen as something in between.

Definition for this study.

For the purposes of this study the definition from Schaufeli, et al. (2001) will be used. This definition defines engagement as “a positive, fulfilling work-related state of mind that is characterized by vigor, dedication, and absorption. Engagement is a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behavior” (p 74). The three factor model from Schaufeli et al. (2001) is the model that will be used for this study because the corresponding scale developed, the Utrecht Engagement Scale, has significant external validity related to work environments. Indeed, Bakker and Demerouti (2008) ran qualitative and quantitative studies and found that engagement manifests through vigor, dedication and absorption, as Schaufeli, et al.’s model shows. In addition, they found that job and personal resources are the main predictors of engagement; and employees who are highly engaged are more creative, more productive, and more willing to go the extra mile. Bakker, Schaufeli, Leiter, and Taris (2008) went on to find that in addition to engaged employees having higher energy levels and a strong work identity, this engagement is predictive of job performance and client satisfaction.

Schaufeli, et al.’s model of engagement is based on the job demands-resources model (See Figure 8) (Bakker and Demerouti, 2007; Demerouti, Bakker, De Jonge, Janssen, and Schaufeli, 2001). The underlying concept of this model is that job demands are the primary predictors of negative job strain and that job resources are the strongest predictors of work engagement.



Source: Based on Bakker & Demerouti (2007)

Figure 8-The JD-R Model of Work Engagement

Using this model, two assumptions were drawn. The first, is that job resources, such as support, feedback, and autonomy, create a motivating process that leads to engagement and productivity. The second is that the job resources gain more potential for motivation when an employee is confronted with higher job demands. In addition, employees who are more engaged are able to create their own job resources, starting the loop over. Demerouti, et al. (2001) developed the Job Demands-Resources Model, which holds that the work environment is split into multiple components of demands and resources. According to Mauno, et al. (2006) “Job demands are physical, psychological, social, or organizational features of a job that require physical and/or psychological effort from an employee, and are consequently related to physiological and or psychological costs (i.e., strain)” (p 152). Mauno, et al. (2006) go on to describe job resources as “. . .

physical, psychological, social, or organizational features of the job that are functional in achieving work goals, reducing job demands and the physical and/or psychological costs associated with them, and stimulate personal growth and development” (p 152). Mauno, et al. (2006) found, in a longitudinal study, that job resources, specifically job control, were the best predictor of long term engagement. In addition, high job control during the first study seemed to foster engagement for the second study. Throughout the study, work engagement stayed stable over the two-year period. Another study by Hakanen, Schaufeli, and Ahola (2008) found, during a three-year longitudinal study, that job resources predicted future work engagement.

Vigor, Dedication, and Absorption.

Originally vigor, dedication, and absorption were considered the core of work engagement. However, research has shown that vigor and dedication appear to be the core of engagement (Schaufeli & Bakker, 2004) with absorption resembling “flow”, or state of optimal experience (Csikszentmihalyi, 1990) and appearing to be a consequence of work engagement (Langelaan, et al., 2006). Vigor and dedication are considered to be the opposite of the exhaustion and cynicism variables of burnout (Lloresn, Garcia, Salanova, & Cifre, 2003; Schaufeli & Bakker, 2004; Storm & Rothman, 2003). Vigor and exhaustion span an underlying bipolar dimension labeled “energy” and dedication and cynicism span an underlying bipolar dimension labeled “identification” (Green, Walkey, & Taylor, 1999; Schaufeli & Buunk, 2003; Hakanen, Bakker & Schaufeli, 2006).

Antecedents of engagement.

A central theme in engagement is determining what the antecedents are. What leads to engagement? Work life experience as defined by control, rewards, recognition, and value fit were found to predict engagement (Koyuncu, et al., 2006). Bakker (2007) found, within the JD-R model, that main drivers are job and personal resources. These resources reduce job demands, help to achieve work goals, encourage personal growth, and can be very motivating when faced with high demands. Also, workers who are engaged tend to have more personal resources such as optimism, self-efficacy, self-esteem, resilience, and active coping.

In addition, research has found that job resources predicted engagement better than job demands (Mauno, Kinnunen, & Ruokolainen, 2007). Engagement has been positively associated with job resources, defined as aspects of work that can reduce job demands, facilitate reaching work goals, and stimulate personal growth, learning, and development. Examples of job resources include: social support from co-workers/superiors, performance feedback, coaching, job control, task variety, and training facilities (Demerouti, Bakker, Nachreiner, & Schaufeli 2001; Schaufeli, et al. 2001). Leading to the idea that the more resources available, the more engaged the employees.

The driving force behind engagement and the essence of an engaged individual can be characterized in certain ways. There are several drivers of engagement (Bakker and Demerouti, 2008). The first is job resources as mentioned above. These resources include social support in the work setting, performance evaluation, job task variety, autonomy, and opportunities to learn. These resources are motivating both intrinsically and extrinsically. There is a strong positive relationship between performance evaluation,

social support, supervisory coaching and work engagement (Schaufeli & Bakker, 2004; Hakanen, Bakker & Schaufeli, 2006). Koyuncu, Burke and Fiksenbaum (2006) found that certain job resources including, control, rewards, and value fit were predictors of the three Utrecht Engagement measures (Vigor, Dedication, and Absorption).

The second concept is that of salience of job resources (Bakker & Demerouti, 2008). People tend to protect things they value. The same can be said of job resources. An employee who has access to multiple resources is going to go to great lengths to protect these resources, including providing their own resources to match those offered giving the employee increased potential because they have an increase in resources that can help meet goals. Having resources and options can act as a buffer to an employee who would otherwise be struggling to be engaged.

The last concept is that of personal resources (Bakker & Demerouti, 2008). These personal resources are resources that the employees bring with them often internally. These include control and impact. When these self-assessments are positive the control and impact can be a strong predictor of motivation, job performance, and job satisfaction, among others. This is thought to occur because as a person's resources increase, so does their positive self regard.

Benefits of engagement.

The benefits of engagement can be many for both the employee and the organization. Benefits of engagement for the employee include positive job related attitude and strong identification with one's work, good mental health, including positive emotions, and reduced burnout risk. In addition, individual health is improved, the employee is more satisfied with their job, more committed to the organization, and does

not intend to leave (Demerouti, et al., 2001; Schaufeli & Bakker, 2004). Also, engaged employees tend to have good performance, increased intrinsic motivation, and the acquisition of job resources and personal resources (self-efficacy) (Schaufeli & Salanova, 2007). Finally, engaged employees (Bakker, 2007) have more frequent positive emotions, better health, create their own resources, and can transfer engagement to coworkers and others.

Some organizational benefits of employee engagement include: retention of valued/talented employees, positive corporate image, and a healthy, competitive, and effective organization (Schaufeli & Salanova, 2007). Harter, Schmidt, and Hayes (2002) found a correlation between engagement and work outcomes. As engagement increased, business level outcomes, including profit, increased. Engaged employees perform better for a variety of reasons including positive emotions. People who are positive are more outgoing and helpful, confident and optimistic (Cropanzano & Wright, 2001). These positive emotions tend to make a person more outgoing, which leads them to seek new opportunities and be creative (Fredrickson, 2001). In addition, research has shown that engaged people tend to be healthier and report suffering from fewer headaches and other stress symptoms which cuts down on absenteeism (Schaufeli & Bakker, 2004).

Cartwright and Holmes (2006) discuss the importance of finding meaning in one's life; this includes employment. Employees crave this meaning and without it become cynical and disenfranchised with their employer and occupation. An employee must find meaning in his/her work to be an engaged employee, although in current times, many employees feel they are asked to give a great deal and are given little more than a job in return.

Turnover Intent

The final outcome variable for this study is turnover intention. Turnover intention is an important variable to this study because it can have some costly outcomes for an organization. Ulrich, Halbrook, Meder, Stuchlik, and Thorpe (1991) found that when turnover went down organizational performance increased. This leads to a reduction in costs associated with retraining and hiring. In addition, decreased turnover lead to lower organizational costs for new employee lower productivity, time needed to train and support the new employee and mentoring time by current employees (Cascio, 2010).

Theories and research

The original theories of turnover intention are generally thought to have stemmed from (Trevor, 2001; Egan, Yang, and Bartlett, 2004) work done by March and Simon (1958). This research stated that all employees are confronted with two pivotal decisions in their work life. The first decision is whether to produce work, in other words whether the employee will decide to work as hard or produce as much as the organization expects. The second decision is whether to participate, in other words whether the employee intends to remain with the organization or leave. Turnover intention theories were based on this second pivotal decision from March and Simon (1958).

There are multiple theories that have been expanded on or dissected and reassembled throughout the years. One of the first is the *Satisfaction of Commitment Mediation Model* (Tett and Meyer, 1993) which reflects Porter, Steels, Mowday and Boulians (1974) *Organizational Commitment Model* which claims that organizational

commitment is the strength of an individual's identification with and involvement in an organization (Bluedorn, 1982). This research suggests that job satisfaction has only an indirect influence on the intention and/or decision to quit and actually encourages the study of mechanisms through which satisfied workers become committed to their organizations (Tett and Meyer, 1993). Porter et al (1974) also concluded that both satisfaction and commitment contribute uniquely to the turnover process. However, they concluded that job satisfaction and organizational commitment are distinct concepts (Tett and Meyer, 1993).

Employee Turnover Process (Mobley, Griffeth, Hand, and Meglino, 1979) is another popular model that current literature is built upon. This model follows Porter and Steers (1973) literature that suggests a need to distinguish between satisfaction (present oriented) and attraction/expected utility (future oriented) for both the present role and alternative roles. There is a need to consider nonwork values and nonwork consequences of turnover behavior as well as work constraints. In addition, they proposed that there should be a potential mechanism for integrating individual variables into research findings at the individual level model of the turnover process. This is a model of individual-level turnover behavior. In addition, perception and evaluation of alternative jobs is given explicit treatment. Intention to quit is considered to be the immediate precursor of turnover with impulsive behavior and the time between measurement of intention and behavior attenuating this relationship. Finally, dissatisfaction leads to a job search which leads to an intent to quit or stay which leads to the individuals actual staying or quitting behavior (Mobley, 1977).

Another model is the *Commitment to satisfaction mediation model* (Bem, 1967; Salancik and Pfeffer, 1978). This model proposes that commitment to the company engenders a positive attitude toward the job, possibly through a rationalization process and people leave or stay based on how they feel about their jobs (Tett and Meyer, 1993). *The Price Model* (Price, 1977) was developed as a model of the turnover process which portrays this process as beginning with a series of structural and individual determinants of job satisfaction. The individuals' satisfaction level then determines the probability of an individual staying in or leaving the organization contingent upon the state of the economy (Tett and Meyer, 1993). Price (1977) proposed the interaction between job satisfaction and job opportunities is the immediate antecedent of an employee's leaving an organization.

Steers and Mowday (1981), after the Price study, proposed that in addition to this interaction that organizational characteristics and experiences influences job satisfaction as part of a larger interaction involving job expectations, values, and performance. Steers and Mowday (1981) also reported that there is a sequence that leads to an employee's staying with or leaving an organization:

- (1) Job expectations, conceptualized as met expectations and values influence an individuals affective response to a job.
- (2) Affective responses effect desire and intention to stay or leave with the choice depending on a variety of nonwork influences like spouses job and time left for family.
- (3) Intention to leave an organization leads to actual leaving.

Finally, there is the *Three Component Model of Organizational Commitment* of Meyer, Allen and Smith (1993), which shows that there are 3 components that contribute to an employee's intent to continue with the organization (1) *affective commitment*, which is a psychological attachment to the organization (they like it); (2) *continuance commitment*, which is personal costs associated with leaving the organization (aka bills to pay); (3) *normative commitment*, which is a perceived obligation to remain with the organization (they feel like they should).

Meyer and Allen also claim that turnover intention has been negatively correlated with all forms of commitment (Meyer and Allen, 1991) as well as across organizational and occupational domains (Meyer et al 1993). However, these links have been found to be much stronger between turnover intention and affective commitment (Hacket et al, 1994; Meyer et al, 1993).

The above theories are the basis for even current research, which has been more prone to studying new variables that are involved in the turnover process and the decision to turnover. Current research is also linking turnover intention to job resources through the JD-R model that was discussed earlier. De Cuyper, Mauno, Kinnunen, and Makikangas (2011) in a study examining perceived employability (PE) found that when job resources, specifically job control and social support, were low then PE was related positively to turnover intention. So a person's perceived employability does not affect turnover intention unless there are limited job resources. Also, Schreurs, Van Emmerik, De Cuyper, Notelaers, and De Witte (2010) studied intention to retire early in blue collar versus white collar workers using the JD-R model. The findings showed a strong

relationship between job resources and work enjoyment for blue collar workers, and that possibly due to these factors these employees were less likely to retire early.

In addition, current research is reviewing the connection of work role stress on turnover intention (Vandenberghe, Panaccio, Bentein, Mignonac, & Roussel, 2010). (See the section on TI and work role stress below.)

Definition for this study

For the purposes of this study the definition from Tett and Meyer (1993) will be used. This definition defines turnover intention as “a conscious and deliberate willingness to leave the organization” (p. 262).

Antecedents of turnover intent

Many antecedents for turnover intention have been studied. Price (1977) claims that the interaction between job satisfaction and job opportunities is the immediate antecedent of an employee’s leaving an organization; This would appear to be the grounds that the JD-R model is based on for researching turnover intention. Another theory by Mobley (1977) is that search processes precede an employee’s intention to leave. Some newer research shows that increasing levels of tension in the current job may lead to a decision to quit the stressful work environment and that stress is a predictor of turnover (Yu-Ping, 2005; Zhang and Lee, 2010). Additionally, another factor related to turnover is tension associated with the employees’ present work (Zhang and Lee, 2010). By and large though it appears that most research has concluded that turnover intention is

the strongest cognitive precursor of turnover (Lee & Mowday, 1987; Michaels & Spector, 1982; O'Reilly & Caldwell, 1981; Tett & Meyer, 1993).

Mediating Variable: Satisfaction with my Supervisor

One final area to be examined in this study is the concept of satisfaction with ones supervisor and the mediating effects shown. Research has shown that supervisor support can be an important concept for a work environment. Just how big a role it plays is up for debate. though. In addition, can supervisor support compensate for a stressful work role, or is there no difference for the employee.

Trying to match a supervisor and an employee's personal characteristics has been found to play a small role in supervisor satisfaction (Cheon, Blumer, Shih, Murphy, & Sato, 2009). In addition, although similarities were not necessary, working alliance between supervisors and employees was a strong predictor of an employee's satisfaction with his/her employer. For Cheon, et al., (2009), the idea of a working alliance is based on Bordin's (1983) theory that there are three components of the alliance, including task, goal, and bond. *Task* is comprised of the steps that form the substance in the process, *goal* is agreeing on a common goal for the supervisor and employee, and **bond** is the complex set of attachments between the supervisor and the employee. Bordin (1983) originally designated this theory to define the working alliance between a therapist and a patient and later adapted it to the supervisor/employee dynamic.

A supervisor's actions or a lack of interaction with an employee can play a big role in the level of satisfaction an employee has. Jernigan and Beggs (2005) found that

when looking at one's commitment to an organization that the supervisors' actions and behaviors can play a large role. This study supported two types of commitment: moral and alienative. Moral commitment was defined as “. . . a highly positive affective form characterized by acceptance of and identification with organizational goals” (Jernigan & Beggs, 2005, p. 2175). In other words, one who is morally committed has a positive view of the relationship with the organization, accepting the goals and objectives of the organization, and actively working to pursue those goals. A supervisor who, in action, is supportive of the employees drive to pursue these goals is seen as supportive of the employee's. Alternately, alienative commitment, defined as a “. . . highly negative affective form that is a consequence of a lack of control over the internal organizational environment and of a perceived absence of alternatives” (Jernigan & Beggs, 2005, p. 2175) is the opposite. For alienative commitment, a negative attitude towards the organizational goals can be seen along with a negative relationship with the organizations overall. Five supervisor behaviors held importance toward commitment: the supervisor's reaction to mistakes, the supervisor's behavior being consistent towards all employees, the supervisor's having and showing concern for the employees' career development, supervisor's technical abilities, and backing up employees with other supervisors and organizational leaders (Jernigan and Beggs, 2005).

Developing a positive relationship can be an asset for a supervisor and an organization when an employee resigns. Knouse, Beard, Pollard, and Giacalone (1996) researched attitudes towards exit interviews and the correlation with supervisor support. Exit interviews can be a great tool for an organization to use to assist in diagnosing any issues within the organization. An exit interview and the information gleaned from an

accurate interview can help the organization to identify any issues that could be causing turnover, identify training needs, and identify any potential goals for the organization. In addition, even an unhappy employee, when allowed to voice frustration, could leave the organization with more positive feelings just from the benefit of voicing one's opinion. Overall, Knouse, et al (1996) found an employee may be more likely to discuss issues or concerns that he/she might have with the organization when that employee has a positive relationship with his/her supervisor, even when the employee views the organization negatively. This is a good example of the importance of a positive relationship between the supervisor and the employee, which speaks along the same lines of the Jernigan and Beggs (2005) study. This relationship was also found by Ladany, Ellis, and Friedlander (1999). Ladany, et al., (1999) found, in a study with supervisors and trainees, that as time elapsed if the emotional bond between the two people grew, the overall satisfaction increased for the trainees. In addition, as the bond grew, the trainees viewed the supervisors' personal qualities in a more positive way and judged their own behavior as a supervisor more positively.

Trust and meaning are essential components of effective supervision. The organizational leadership has a responsibility to provide this to employees (Andersson, 1996). Trust and meaning have been shown to increase the closeness that an employee feels with her/his work (Boverie & Kroth, 2001). Poor leadership has been shown to result in stress and poor mental health (Kelloway, Sivanathan, Francis, & Barling, 2005) and has emphasized the need for leadership as role models, acting with commitment and using actions, not words (Konz and Ryan, 1999). Avolio and Gardner (2005) report that leadership should focus on restoring confidence, hope, and optimism at work; providing

this to employees allows them to bounce back more quickly and to find connection and meaning.

Finally, Vandenberg and Scarpello (1991) define supervisor satisfaction as “the degree of subordinate satisfaction with supervision as an organizational role whose effective enactment entails the ability to reconcile and coordinate the needs and goals of work groups’ members with organizational requirements” (p. 203). This definition originated from Mann in 1965. Mann (1965) went on to include three necessary skills including technical, human relations, and administration. All three of these skills are necessary for a supervisor to be effective. Vandenberg and Scarpello did not find a measure to operationalize that definition and thus created the Satisfaction with my Supervisor scale in 1987. Vandenberg and Scarpello had found that previous measures were designed to measure more than one construct; and, therefore, the validity of the single construct of satisfaction with my supervisor was questionable. Basing their measure on the definition from Mann, Vandenberg, and Scarpello, created the instrument to measure the single construct. This theory, definition, and instrument will be utilized in this study to measure one construct of satisfaction with my supervisor.

Stress Related to Burnout

Fogarty, et al., (2000) found in a study of burnout in accounting, where burnout was a mediator, that burnout does mediate the influence of role conflict, role ambiguity, and role overload on job outcomes, including satisfaction, performance, and intention to turnover. Further, it was found that small amounts of each role stressor either was not

Table 1 - Summary Table of Antecedent and Outcome Variables

	Contributing Factors	Outcomes/Consequences
Antecedent: Stress	Physical environment (light, noise, temp)	Physiological (high blood pressure, cholesterol, glucose, diseases)
	Individual stressors (overload, ambiguity, conflict)	Behavioral (satisfaction, job, career, life performance, turnover, absenteeism)
	Group stressors (group conflict, group dissatisfaction)	
	Organizational stressors (technology, management, organizational design)	
	Personal stressors (family, economic issues)	
Outcome Variable: Burnout	Increased stress	Physical ailments/injuries; High workers comp claims
	Emergence of the service sector	Mental health issues (depression, anxiety)
	Labeling	Substance abuse
	Individualism or lack of	Spillover into personal life
	Mental and/or emotional work loads	Job dissatisfaction
	Weakening of professional authority	Intention to quit/turnover
	Professional mystique	Absenteeism
	Changed psychological contract	Sick leave used
	Biographical characteristics (gender, age, marital status, education...)	Poor performance
	Personality characteristics (hardiness, external control, coping style...)	
	'Big Five' personality traits	
	Work factors (high expectations, workloads, support, lack of feedback)	
	Job demands	
Outcome Variable: Engagement	Job resources or lack of (social support, perf. evals., task variety, autonomy...)	Improved physical and mental health
	Personal resources (control and impact)	Good performance, increased motivation
		Retention of quality employees, positive corporate image, increased productivity
Outcome Variable: Turnover Intention	Turnover Intention	Turnover

affected by or was minimally affected by burnout. This means that stress, up to a point, can actually increase satisfaction and performance. A meta-analytic study by Lee and Ashforth (1996) based on Hobfoll's (1989) conservation of resources theory of stress found a correlation between Maslachs (1982) three dimensions of burnout (emotional exhaustion, depersonalization, and diminished personal accomplishment) and stress. The conservation of resources theory suggests that burnout occurs when resources are inadequate, lost, or do not yield the desired results to meet the work demands. The theory considers work demands to include role ambiguity, role conflict, stressful events, heavy workload, and pressure. Lee and Ashforth (1996) found that both diminished resources and increased demands correlated with the burnout factors of Maslach (1982), similar to the Job-Demand Resources Model.

Devereux, et al., (2009) found that a type of coping labeled "wishful thinking" partially mediated the relationship between perceived work demands and emotional exhaustion (a component of burnout per Pines and Aronson). However, the study showed that by adopting "wishful thinking", coping skills may actually increase the rate of burnout. Longitudinal data show that burnout might actually begin with a lack of personal accomplishment which leads to depersonalization which leads to exhaustion (Van Dierendonck, Schaufeli, & Buunk, 2001).

Anticipated Hypothesis 1: Higher work role stress will be positively correlated with increased burnout.

Stress Related to Engagement

The relationship of stress and engagement can best be viewed through the JD-R model. As discussed previously, this model shows that as job resources increase, engagement increases, and as demands increase, burnout increases. The lack of job resources has been seen as a source of stress for an employee. As these resources diminish, stress increases and engagement decreases; at the same time as demands increase, stress increases and burnout increases (Hakanen, Bakker, & Schaufeli, 2006). Work life experiences (including control, rewards, and recognition) were found to predict vigor, dedication, and absorption. Engagement predicted various work outcomes (satisfaction, intent to turnover) and engagement predicted psychological well being in a study by Koyuncu, et al., 2006.

Anticipated Hypothesis 2: Higher work role stress will be negatively correlated with increased engagement.

Stress Related to Turnover Intention

Some research has been performed exploring the role that stress plays on an individual's turnover intention. DeConinck and Stilwell (2004) found that role conflict was a significant predictor of organizational commitment both directly and indirectly through satisfaction with one's supervisor. In addition, they found that role ambiguity predicted satisfaction with ones supervisor, but did not predict organizational commitment.

It seems that the connection between stress and turnover intent is a direction for current and future research. Vandenberghe, et al (2010) found that turnover intention was related to a reduced increase in role overload over time. In addition, they found that an increase in role overload and role conflict were associated with a decline in job attitude and satisfaction and that this decline was associated with an increase in turnover intention. Research connecting stress and turnover intention has shown that lower levels of perceived politics will minimize turnover intention from work stress (Zhang and Lee, 2010).

Anticipated Hypothesis 3: Higher work role stress will be positively correlated with increased turnover intention.

Satisfaction with One's Supervisor Related to Work Role Stress

Research has shown that a management style considered participative is likely to minimize the negative influence of role conflict (Boshoff & Mels, 1995). Research has found that perceived organizational support can moderate the effects of role conflict and emotional exhaustion (Jawahar, Stone, & Kisamore, 2007). For employees experiencing role ambiguity, having a leader who represents the collective identity increased the effectiveness of the leadership in regards to effectiveness, job satisfaction, and turnover intentions (Cicero, Pieroo, & Knippenberg, 2010). Research has found that work demands and psychological strain could be moderated by role clarity, but this was only true when supervisor work support was categorized as high (Bliese & Castro, 2000). Perceived organizational support has shown strong effects on role ambiguity and role conflict, in that employees who report high levels of support were more likely to have

role ambiguity and conflict minimized by the organization (Stamper & Johlke, 2009). In addition, research has shown that work role conflict is negatively related to satisfaction with one's supervisor (Fisher & Gitelson, 1983).

Satisfaction with One's Supervisor Related to Burnout and Engagement

Kahn (1990) and May, Gilson, and Harter (2004) found that positive relationships with one's supervisor increased the employee's sense of psychological safety. An employee who has a positive relationship with his/her supervisor in turn has greater psychological safety and the perception that the employee can make a mistake without fear of retribution (Saks, 2006). This relationship promotes increased engagement. In addition, social support predicted engagement; this support can include supervisor support (Maslach, et al., 2001; Schaufeli & Bakker, 2004). A lack of social support is also related to burnout (Maslach, et al., 2001). Finally, first line supervisors are pivotal to building engagement and can be the basis of employment disengagement (Bates, 2004; Frank, Finnegan & Taylor, 2004). Perceived organizational support can decrease emotional exhaustion and depersonalization (Jawahar, et al., 2007)

Thus, there is some literature focusing on satisfaction with my supervisor or supervisor satisfaction or perceived supervisor support, but it is limited when using satisfaction with my supervisor as a mediator between work role stress and engagement/burnout.

Anticipated Hypothesis 4: Satisfaction with one's supervisor will partially mediate the relationship between work role stress and burnout.

Anticipated Hypothesis 5: Satisfaction with one's supervisor will partially mediate the relationship between work role stress and engagement.

Satisfaction with One's Supervisor Related to Turnover Intention

There is a small amount of research that has been explored specifically on satisfaction with one's supervisor and turnover intention. It appears that most studies look at peer support or social support over all. However, Cotton and Tuttle (1986) in a meta-analytic study found that 14 separate studies examined satisfaction with ones supervisor and the relationship with turnover intention. The relationship was found to be a negative relationship with a strong confidence level, meaning that a poor or negative relationship with ones supervisor can be a precursor to turnover. In addition, DeConinck and Stilwell (2004) found that satisfaction with ones supervisor had a direct effect on turnover intention.

Anticipated Hypothesis 6: Satisfaction with one's supervisor will partially mediate the relationship between work role stress and turnover intention.

The anticipated hypotheses for the current study are reiterated below:

Anticipated Hypothesis 1: Higher work role stress will be positively correlated with increased burnout.

Anticipated Hypothesis 2: Higher work role stress will be negatively correlated with increased engagement.

Anticipated Hypothesis 3: Higher work role stress will be positively correlated with increased turnover intention.

Anticipated Hypothesis 4: Satisfaction with one's supervisor will partially mediate the relationship between work role stress and burnout.

Anticipated Hypothesis 5: Satisfaction with one's supervisor will partially mediate the relationship between work role stress and engagement.

Anticipated Hypothesis 6: Satisfaction with one's supervisor will partially mediate the relationship between work role stress and turnover intention.

CHAPTER III - METHODOLOGY

This chapter describes the methods used to test the theoretical model used (see figure 1). The research setting, research design, sampling and data collection, construct measures and the statistical methods used to analyze the data are discussed.

Research Setting

A state land grant university was chosen as the setting for this research. This university has 10 agricultural research and education centers located across the state in addition to 7 departments located on the flagship campus. The participants in this study represent the research center non-exempt staff. There are approximately 95 eligible participants for this study. The work performed ranges from milking cows and tending plants to answering phones and collecting data.

Research Design

The purpose of this study was to determine the extent to which role related stress is a predictor of work engagement, work burnout and turnover intention among non-exempt level employees, and the role of the supervisor in mediating this relationship. This correlational research was assessed using the Stress Diagnostic Survey, Oldenburg Burnout Inventory, Utrecht Work Engagement Scale, Turnover Intention Measure and the Satisfaction with my Supervisor Scale. The proposed research model showed a negative correlation between work role stress and burnout, a negative correlation between work role stress and turnover intention and a positive correlation between work role

stress and engagement. In addition, the mediating variable of satisfaction with my supervisor was proposed to have a negative correlation with burnout and turnover intention and a positive correlation with engagement.

Sampling and Data Collection

The population for this study consists of non-exempt employees at a large land grant university. The population was pulled from one land grant university in the southeast with 10 research centers spread across the state in rural and urban locations. This is a unique population and has multiple interesting characteristics. This population is pulled from both rural and urban areas and consists of multiple small groups. In addition to being considered non-exempt or blue collar many of these workers perform agricultural labor. Finally, the majority of respondents, approximately 80%, actually live at the research centers with their families in center funded housing. The Dean of the Governing Unit was asked for permission to conduct this research and this was granted verbally. The Center Directors were contacted via e-mail and all agreed to participate. A letter was sent to each Center Director following this contact (see appendix). Each Center Director was asked to encourage his employees' participation. Demographic information on the participants will be provided by the governing Dean's office.

At each research center, one employee was asked to facilitate the survey. This person was given an instruction sheet that asked them to hand out the packets, collect the surveys back and seal them in the provided envelope. A packet was given directly to each respondent in the unit from the organizational contact person. These packets contained an introductory letter explaining the study and what was being asked of the respondent

(see appendix), the survey (see appendix), and a ticket to be used in a drawing for a gift card following the completion of the survey. Each participant was assured that responses were confidential and that he/she should only respond to the questions he/she was comfortable answering. The return envelope from each center was mailed back to the researcher for analyzing.

Measures

Work role stress.

Work Stress was measured using the Stress Diagnostic Survey by Ivancevich and Matteson (1980). This instrument describes employee tension due to role ambiguity, role overload (quantitative and qualitative), concerns about career development, and responsibility for people. This tool uses 6 sub-scales to measure employee tension: Role Ambiguity, Role Conflict, Quantitative Role Overload, Qualitative Role Overload, Concerns about Career Development and Responsibility for People. There are 30 total items, with each sub-scale having 5 items. The tool uses a 7 point Likert Type scale where 1=the condition described is never a source of stress and 7=the condition described is always a source of stress. Only 4 of the subscales were of interest in this study: role ambiguity, role conflict, and role overload, both quantitative and qualitative.

In regards to reliability this measure showed coefficient alpha value for the composite survey at .93 (Nelson and Sutton, 1990). In addition the measure shows good validity. The measure has been found to be useful to recognize the presence of job stressors (Nelson and Sutton, 1990; Rush, Schoel, and Barnard, 1985). Using Cronbach's alpha in this study the internal consistency for this overall scale was .924 (excellent), with

ambiguity showing .806 (good), conflict showing .788 (acceptable), qualitative overload showing .745 (acceptable), and quantitative overload showing .809 (good).

Work burnout.

Burnout was measured using the Oldenburg Burnout Inventory (OLBI) (Demerouti, 1999). This tool measures two variables: exhaustion and disengagement. There are 16 total items and uses a 4-point Likert type scale where 1=Strongly agree and 4=Strongly disagree. This measure is seen as a good alternative to the Maslach Burnout Inventory (MBI) (Maslach and Jackson, 1981), which is the most widely used burnout measure (Demerouti and Bakker, 2007). For this study we chose to use the OLBI measure because the MBI originally viewed the concept of burnout to occur only in individuals who do “people work”, such as psychologists and nurses (Schaufeli, et al 1993). The OLBI is not geared towards any particular professional group. In addition, the OLBI measure defines exhaustion to include physical and cognitive aspects, which facilitates this measure to the researched population who perform physical and possibly administrative type jobs.

In regards to reliability this measure showed coefficient alpha value for both exhaustion and disengagement at .85 (Demerouti and Bakker, 2007). In addition studies have reported strong convergent and discriminate validity (Demerouti, Bakker, Vardakou, and Kantas, 2003). Using Cronbach’s alpha in this study the internal consistency for this overall scale was .855 (good), with disengagement showing a .745 (acceptable) and exhaustion showing .761 (acceptable).

Work Engagement.

Work engagement was measured using the Utrecht Work Engagement Scales by Schaufeli, Salanova, Gonzalez-Roma, and Bakker (2001) which included 3 sub-scales measuring: vigor, dedication and absorption. The original scale had 24 items, but after further evaluation nine items were eliminated to make a 15 item scale (Schaufeli and Bakker, 2003). Further research has developed a 9 item version of the scale. This 9 item version has also shown to be consistent over time and across samples (Seppala, Mauno, Feldt, Hakanen, Kinnunen, Tolvanen, and Schaufeli, 2009). The nine item measure breaks down with vigor, dedication and absorption each having 3 items. The tool uses a 7 point Likert Type scale where 0= Never and 6=Always.

In a study by Schaufeli and Bakker (2004) it was found that engagement was predicted by available job resources and that engagement served as a mediator between job resources and turnover intention. Another study by Gonzalez-Roma, Schaufeli , Bakker, and Lloret 2006 found basic burnout and engagement dimensions load as opposites of each other along two distinct bipolar dimensions labeled energy and identification.

In regards to reliability this measure showed coefficient alpha value for the composite survey at .93 (Nelson and Sutton, 1990). In addition the measure shows good construct validity on the 9 item measure. The measure has been found to be useful to recognize the presence of job stressors (Nelson and Sutton, 1990; Rush, Schoel, and Barnard, 1985). Using Cronbach's alpha in this study the internal consistency for this scale was .907 (excellent), with vigor showing a .789 (acceptable), dedication showing

.817 (good), and absorption showing .783 (acceptable).

Satisfaction with my Supervisor.

Supervisor satisfaction was measured using the Satisfaction with my Supervisor measure by Scarpello and Vandenberg (1987). This tool uses one scale to measure overall satisfaction with an employee's immediate supervisor. There are 18 items total. The tool uses a 5 point Likert Type scale where 1=Very Dissatisfied and 5=Very Satisfied.

In regards to reliability this measure showed coefficient alpha values ranging from .95 to .96 (Jones, Scarpello, and Bergmann, 1999; Scarpello and Vandenberg, 1987). In addition the measure shows good validity. Although factor analysis showed the 18 items loaded on 2 factors, both factors are highly correlated and cross loaded on both actors suggesting a single underlying construct rather than separate variables (Jones et al, 1999, and Scarpello and Vandenberg, 1987). Using Cronbach's alpha in this study the internal consistency for this scale was .960 (excellent).

Turnover Intention.

Turnover intention was measured using a turnover intention measure created by Irving, Coleman and Cooper (1997). This tool uses one scale to measure an individual's overall intent to turnover from his/her current employer. There are three items total. The tool uses a 5 point Likert Type scale where 1=Strongly Disagree and 5=Strongly Agree.

In regards to reliability this measure showed a coefficient alpha value of .73 (Irving, Coleman and Cooper, 1997). In addition the measure shows some validity. Using Cronbach's alpha in this study the internal consistency for this scale was .603

(questionable), after reverse scoring.

Common Method Bias

Certain concerns have been present in research literatures for decades surrounding common method bias or common method variance. Common method variance happens when variance occurs due to the measurement method rather than the measures themselves. This can be a cause for concern in behavioral research (Podsakoff, McKenzie, Lee and Podsakoff, 2003). Common method bias can be a main source of measurement error which can lead to incorrect analysis of data and reporting of incorrect relationships from the study (Podsakoff, et al, 2003). The current research is considered behavioral research, and therefore, we will address the concerns of common method bias.

Multiple complications can arise from common method bias (Podsakoff et al, 2003) and only a few that are the most applicable to this study will be discussed. Common rater effects can include: (a) consistency motif, (b) social desirability, and (c) acquiescence biases. *Consistency motif* refers to the participants desire to maintain a consistency across their responses (Johns, 1994). *Social desirability* refers to a participants desire to answer in a way that he/she feels is more socially acceptable. *Acquiescence bias* refers to a participant's tendency to answer all questions in one direction independent of the content of the question. As each of these can be of concern in this study we have addressed these concerns with the following measures.

First each participant was assured that responses and surveys are anonymous and that only collected and analyzed data from all surveys would be shared. In addition, the

participants were informed that there is no right or wrong answer and that each participant should answer each question as honestly as possible. Also, the information was gathered for developmental purposes and could be a benefit to the participant so there is little incentive for deception. Although further research involving literature reviews has shown that some biasing effects, including acquiescence, do not have strong, consistent effects (Spector, 2006 and Williams and Anderson, 1994).

In addition to respondent characteristics certain characteristics of the measures can cause common method bias. These include: (a) common scale format, (b) positive and negative item wording, (c) context induced mood, and (d) scale length. *Common scale format* could be a problem for this study because all measures use a Likert type scale. Further research has shown though that using same method measures to obtain correlations are as accurate as true score methods (Conway and Lance, 2010). *Positive and negative item wording* can cause a problem if the participants fall into a pattern of automatically responding as if the wording were positive or negative. In addition, *context induced mood* or the mood of the participant at the time of the study can cause bias. Finally, the *scale length* could cause an issue. Although this scale should only take approximately 25-30 minutes to complete, this might be too time consuming for some participants. According to Podsakoff, et al (2003) these are all common occurrence in behavioral research and hopefully with other accommodations this will create minimal issues.

Podsakoff et al (2003) report multiple statistical remedies for common method bias. Harman's single factor test involves loading all measured factors onto an unmeasured factor and then exploring the relationships. Podsakoff et al (2003) reports

multiple problems with this assessment in that it does not statistically control for method effects. In addition, further research has found that this method produced less accurate correlation estimates than not correcting at all during typical research conditions (Richardson, Simmering, and Sturman, 2009). Podsakoff et al (2003) also identified a partial correlation procedure to compensate for possible bias. This involves subtracting minimum correlations between a marker variable and the focus variable of the study from the focus variable to adjust for bias. When used post-hoc this is ineffective though because it only identifies when method bias was not an issue (Conway and Lance, 2010). In addition, Podsakoff et al (2003) reported that this method cannot distinguish between the construct and the measure of the construct. Finally, one last approach to address method bias statistically is through a latent variables model where all latent variables manifest indicators are loaded onto one or more method latent variables in which the method factors manifest indicators are also loaded. However, this method has serious limitations because the researcher must know the source of the method variance, which is rare (Podsakoff et al, 2003; Conway and Lance, 2010). Overall, research has found that no statistical analysis does a good job at finding or dealing with common method bias (Conway and Lance, 2003; Richardson et al, 2009). Therefore, we will address the concerns through the above research design and by using measures that have been thoroughly and repeatedly validated.

Data Analysis

Individual scores on each measure were gathered per the measures instructions,

summing together items and reverse scoring when needed. Using SPSS to analyze data the first statistical analysis completed was performed to measure the internal consistency of the measures for the current population. This was done using Cronbach's Alpha scores, where greater than .9= Excellent; .8 to .9= Good; .7 to .8 =Acceptable; .6 to .7 = Questionable; .5 to .6 = Poor and anything under .5 = Unacceptable. In addition means and standard deviations of each measure were computed. Once internal consistency was found the researcher proceeded to review the compiled data from the surveys.

The raw data gathered from the surveys were uploaded to SPSS for each participant. These data were used to create composite scores for each measure and each latent variable within each measure. Descriptive statistics were used to show central tendency (mean, median) and dispersion (range, standard deviation, and variance) of the data.

These scores were used to create a correlation matrix to examine the relationship between the manifest variables. To determine mediating relationships correlations were confirmed on all variables, if correlations were established hierarchical multiple using the stepwise inclusion method were performed. The regressions gave information regarding change in variance, R-Squared values and p values. To further establish mediating relationships bootstrapping was used to determine partial, full, or no mediation.

Testing for mediating effects has recently come into the spotlight of research. To show full mediation the IV (independent variable) must no longer affect the DV (dependent variable) when controlling for the M (mediator), in other words it is no longer significantly different from zero. To show partial mediation the effect of the IV on the

DV is reduced but is still different from zero. Historically, Baron and Kenny's (1986) causal steps model has been used to determine mediation. Baron and Kenny have four steps to determine mediation: (a) IV predicts DV, (b) IV predicts mediator, (c) Mediator predicts DV, and (d) IV does not predict DV while controlling for the mediator. These relationships can be determined through correlations or regression analysis. However, this method has been criticized often for low power, Type I errors, not being able to address suppression effects and not addressing the central question of whether the indirect effect is significantly different from zero (Mackinnon, Lockwood, Hoffman & West, 2002; Preacher and Hayes, 2004; Shrout and Bolger, 2002).

Testing for the total effect, which is the expected amount by which two cases that differ by one unit on X are expected to differ on Y , can be done through indirect and direct effects (see Figure 9). The indirect effect is interpreted as the amount by which two cases which differ by one unit on X are expected to differ on Y through X 's effect on M , which in turn effects Y . The direct effect is interpreted as the part of the effect of X on Y that is independent of the pathway through M . (Hayes, 2009). Looking at the total effect and the direct effect results, along with confidence intervals of the indirect effect, can show whether mediation is present and whether it is full or partial. This will be discussed in more detail below with Bootstrapping.

For this study a simple mediation model will be used to determine the effect (see Figure 10). In this model a is the coefficient for X in a model predicting M from X , and b and c' are the coefficients in a model predicting Y from both M and X . The c' path quantifies the *direct effect* of X and the product of a and b quantifies the *indirect effect* of X on Y through M . (Hayes, 2009).

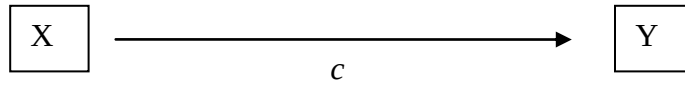


Figure 9-The total effect of X on Y

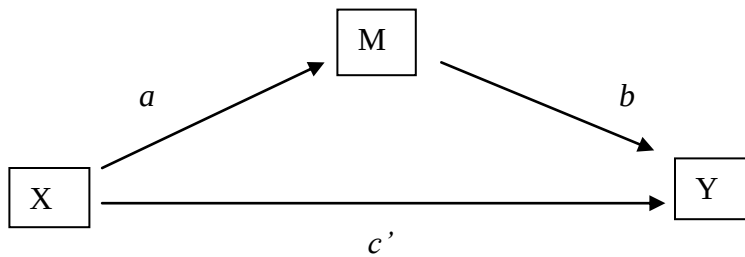


Figure 10-A simple mediation model

Testing for the indirect effect cannot be done using the Baron and Kenny (1986) method so other options are available. The most common options are the Sobel test and Bootstrapping. The Sobel test (Sobel, 1982) is used to determine the significance of the indirect effect of the mediator by testing the hypothesis of no difference between total effect (path c) and the direct effect (path c'). The indirect effect of the mediator is the product of path ab . The Sobel test addresses all of the above concerns from the Baron and Kenny method, but has limitations of its own. The major concern of the Sobel test is that it requires an assumption that the sampling distribution of the indirect effect is normal. However, the distribution of ab tends to be asymmetric (Bollen & Stine, 1990), this can

lead to reduced ability to detect true relationships among variables, particularly in small samples (Wilcox, 2010).

Bootstrapping is seen as a way to overcome these limitations (Hayes, Preacher and Myers, 2011). Historically, bootstrapping has been a complicated task to complete due to the large amount of statistical data that needed to be processed. However, software in the form of macros can be added to statistical programs to run bootstrapping, making the process much simpler and quicker (Preacher and Hayes, 2004). Bootstrapping involves repeatedly randomly sampling observations with replacement from the data set and computing the statistic of interest in each resample. Over many resamples, usually 1000-5000, an empirical approximation of the sampling distribution of the indirect effect can be generated. An inference is made about the size of the indirect effect to create confidence intervals. If zero is not between the lower and upper bound of the confidence intervals then a claim can be made that the indirect effect is not zero at the given percent confidence interval. This is conceptually the same as rejecting the null hypothesis that the true indirect effect is zero at the established level of significance (Hayes, 2009). In addition, by comparing the total effect and the direct effect mediation can be determined. If both are significant then partial mediation is indicated. If only one is significant full mediation is indicated.

To determine if mediation was present for this study Baron and Kenny's steps were followed to determine correlations. Next hierarchical multiple regression using stepwise inclusion method was performed to determine b-values, variance and p-values between the models. Finally, bootstrapping was performed to test for the indirect effect

and the significance of the models. The significant relationships to be reviewed for were reflective of the research questions and hypotheses for this study:

The research questions posed in this study were:

- 1.) What is the relationship between role related stress, as measured by conflict, ambiguity and overload, in predicting work engagement, work burnout and turnover intention among non-exempt level employees?
- 2.) What is the relationship between role related stress as measured by conflict, ambiguity and overload in predicting work engagement, work burnout and turnover intention when mediated by satisfaction with one's supervisor among non-exempt level employees?

The anticipated hypotheses for this study were:

- 1.) Anticipated Hypothesis 1: Higher work role stress will be positively correlated with increased burnout.
- 2.) Anticipated Hypothesis 2: Higher work role stress will be negatively correlated with increased engagement.
- 3.) Anticipated Hypothesis 3: Higher work role stress will be positively correlated with increased turnover intention.
- 4.) Anticipated Hypothesis 4: Satisfaction with one's supervisor will partially mediate the relationship between work role stress and burnout.

- 5.) Anticipated Hypothesis 5: Satisfaction with one's supervisor will partially mediate the relationship between work role stress and engagement.
- 6.) Anticipated Hypothesis 6: Satisfaction with one's supervisor will partially mediate the relationship between work role stress and turnover intention.

CHAPTER IV: RESULTS

Chapter IV presents the empirical results of the current study. First, sample characteristics are discussed, including response rate, descriptive statistics and demographic data. The final portion discusses statistical analysis of the hypothesis, including the mediator. Cronbach's alpha was used; additionally correlations, hierarchical regression and bootstrapping were used to examine the hypotheses. Statistics were examined using the Statistical Package for Social Sciences (SPSS), version 19.

Response Rate and Nonresponse Bias

Surveys were completed by 88 non-exempt level employees working at Research and Education Centers (REC) of a large Land Grant University. There were 10 RECs where the surveys were administered over a 4-week period of June-July 2011. During this time period, the approximate total population of non-exempt workers at these RECs was 95. This gave a response rate of 93%. With only 7 eligible employees not completing the surveys, non response bias was a non issue since we know what the total population was. However, since the surveys were anonymous within the population, there is no way to know who did not complete the surveys in order to follow up with the individuals. The researcher chose to leave demographic information off of the surveys so the participants would have full confidence to respond honestly. For the participants, giving too much demographic information would have allowed the researcher to link back to the specific individual. In addition, at the time there was a negative budget impact at the REC's that had led to some layoffs occurring and the researcher did not want any employee to feel that they might be singled out based on responses.

The high response rate is in part thanks to the REC Directors who allotted work time for the employees to complete the surveys and provided them with a place to complete the surveys and a mechanism to submit them anonymously. In addition, Dillman's (2000) suggestions for mail and internet surveys were implemented to increase response rate. Dillman's (2000) suggestions included: (a) endorsement of project; (b) positive regard; (c) tangible reward; and (d) convenience. The project was endorsed by the AgResearch Dean who oversees the RECs. The Dean sent an e-mail out to the REC Directors asking for their participation and support in this project, this in turn was passed from the REC Directors to the population. In addition, the research had a positive regard from the administrative (Dean's) level down to the non-exempt population who were told that the information garnered would be used to understand the populations' motivations better and possibly make positive changes to the work environment. One participant from each REC would receive a tangible reward in the form of a gift card that was randomly drawn. Finally, the surveys were convenient to the non-exempt population in that they were given during work time and onsite. The participants were given time to complete these surveys and submit them during regular working hours with no penalty for completion. Given the high response rate and the preceding factors, nonresponse rate was minimized.

Missing Data Analysis

For this study there was an overall response rate of 93%. A second person was used to review the surveys and data set. The data were analyzed to assess missing data and to determine if there was a pattern. After examining the surveys individually, it was found that 11 surveys (12.5 %) had some missing data that accounted for .018% of the

total items; total items equaled 6,688 items across respondents. Using Little's MCAR test, the missing data were shown to be random. Four cases were found to be missing between 10 and 46 items; which represented 87% of the missing data. Those four cases were removed, leaving 84 valid surveys and an effective response rate of 88%.

Descriptive Statistics

The survey included a total of 76 questions divided into five sections: (a) stress, measured by the Stress Diagnostic Survey of Ivencevich and Matteson, (1980); (b) burnout, measured by the Oldenburg Burnout Inventory of Demerouti, (1999); (c) turnover intention, measured by the Turnover Intention Measure of Irving, Coleman and Cooper (1997); (d) engagement, measured by the Utrecht Work Engagement Scales of Schaufeli, et al, (2001); and (e) satisfaction with my supervisor, measured by the Satisfaction with my Supervisor measure of Scarpello and Vandenburg, (1987).

Regarding stress, a few questions that received a high percentage of the mean included several on the stress survey (section 1): "I have to take work home in the evenings or weekends to stay caught up" where 73% of respondents chose "1" on a 7 point scale where 1 = *never a source of stress*. These responses could be interpreted to mean that the employees felt that the workload was doable at work, or it could be a reflection of the type of work done, i.e., work that cannot be taken home, milking for example. In addition, 77.5% of respondents and 60.7% of respondents respectively chose "1" (*never a source of stress*) on the same survey stating that: "I am unclear about whom I report to and/or who reports to me" and "I do not understand the part my job plays in meeting overall organizational objectives".

Concerning burnout (section 2 on the survey), 61.8% of respondents chose “2” on a 4-point scale, where 2 = *Agree* when asked if “I always find new and interesting aspects of my work”. In addition, 65.2%, 64%, and 66.3% respectively chose “2” (*Agree*) when asked “I can tolerate the pressure of my work very well”, “Usually, I can manage the amount of my work well”, and “I feel more and more engaged in my work”.

For section 3 (Turnover Intention), no one question had answers that were statistically higher than any other. For section 4 (Engagement), the highest mean score was 44.9% of respondents responded with a “6” on a 6-point scale where 6=*Always/Every Day*, to the statement “I am proud of the work I do”.

Finally, for section 5 (Satisfaction with My Supervisor), 55.1% of respondents chose “4” on a 5-point scale, where 4= *Satisfied* to the statement “The way my supervisor sets clear work goals”. In addition, on section 5, respondents responded at 50.6%, 52.8%, and 50.6%, respectively, with a 4=*Satisfied* to the statements “The way my supervisor understands the problems I might run into doing the job”, “The technical competence of my supervisor”, and “The time I have to do the job right”.

Overall, by looking at the means of the responses, it appears that the population of this study has low levels of stress, moderate levels of burnout, engagement, and turnover intention and seem to overall be satisfied with his/her supervisor. More specifically, these responses could be interpreted to say that lines of command are clear and that the overall role of the employee is not a cause of stress for the majority of employees. In addition it appears that at least half of the non-exempt employees are satisfied with the way his/her supervisor sets work goals, has knowledge of the work, and that the employee has adequate time to complete the tasks. This will be further explored in Chapter V.

Demographic Data

In addition, descriptive statistics on the demographic information of the non-exempt employees were pulled by the Dean's office for use with this project. Because of anonymity, there is no way to attach the specific demographic information to an individual respondent or REC because the demographic information was not asked on the survey. As mentioned earlier, this information was not requested because it was felt that this would compromise the anonymity of the surveys. Overall demographic information for all approximate 95 non-exempt employees of the RECs during the survey period was pulled. These data showed that 81.1% of the employees were male and 18.9% were female. Also, the data showed that 67.4% were married and 32.6% were single. Finally, the mean age of the employees was 47.93 years old and the mean years of service was 11.44 (see Table 2). This mean years of service might appear low, but it should be known that due to budget cuts over the past two fiscal years (2009-2010 and 2010-2011) two incentivized retirement programs were implemented and approximately 25 individuals from across the RECs participated prior to the survey window. In addition, the distribution of age and years of service is shown in tables 3 and 4. Finally, descriptive statistics of each measure and participants' responses were compiled. These data included: mean, median, range, standard deviation, and variance, see table 5.

Table 2 - Mean Participant Demographics

Demographic		
Gender	81.1% Male	18.9% Female
Marital Status	67.4% Married	32.6% Single
Age	Mean=47.93	
Tenure	Mean YOS=11.44	

Table 3 - Age Distribution

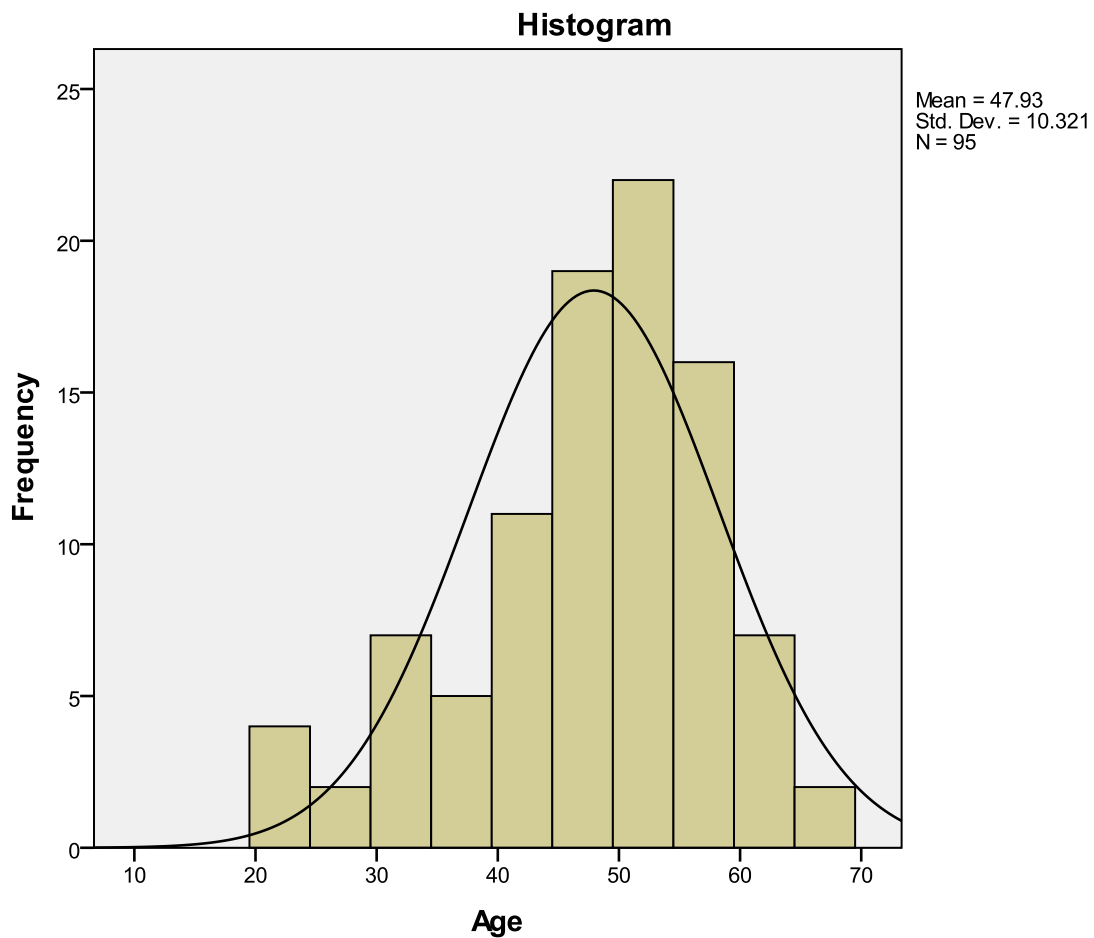
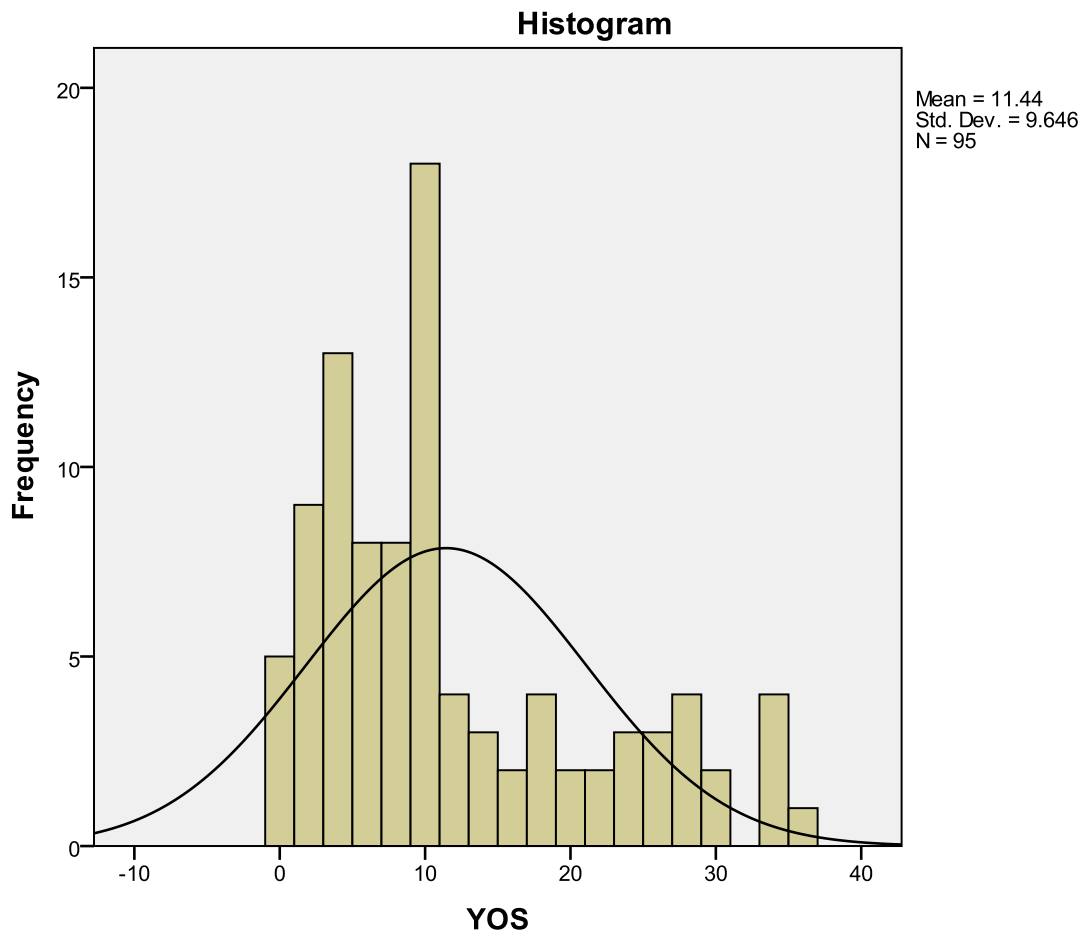


Table 4 - Years of Service Distribution



Reliability and Validity of Instruments

It should be noted that all survey instruments used in this study have been previously shown to be reliable and valid. Please see Chapter III regarding each individual survey measure. However, for this research Cronbach's alpha was found for each survey as an overall score and for each sub-scale within the surveys. All were found to be reliable at the .6 and higher levels (alpha range = .603 to .960). (See Table 5).

Table 5 - Descriptive Statistics

Measure	N	Mean	Median	# of Items	Range	Anchor Points	St. Deviation	Variance	Cronbach's Alpha
Stress Overall	84	38.8	36.5	20	71	1-7	15.7	248.9	.924
Stress Ambiguity	84	8.7	8	5	21	1-7	4.2	18.2	.806
Stress Conflict	84	10.8	9	5	28	1-7	5.5	30.4	.788
Stress Qual Overload	83	9.3	8	5	21	1-7	4.3	18.9	.745
Stress Quan Overload	84	10.1	9	5	22	1-7	4.8	23.3	.809
Burnout Overall	84	36.3	36	16	22	1-4	6.6	43.8	.855
Burnout Disengagement	84	17.6	18	8	24	1-4	3.7	13.7	.745
Burnout Exhaustion	84	18.6	18	8	22	1-4	3.4	11.8	.761
Engagement Overall	84	35.8	36.5	9	42	0-6	9.5	90.3	.907
Engagement Vigor	84	11.4	12	3	17	0-6	3.6	13.1	.789
Engagement Dedication	84	12.8	13	3	15	0-6	3.5	12.3	.817
Engagement Absorption	83	3.8	4	3	5	0-6	1.1	1.3	.783
Turnover Intent	84	10.8	11	3	12	1-5	2.7	7.7	.603
Sat. with Supervisor	84	69.1	71	18	61	1-5	12.4	155.8	.960

Manifest variables are in bold

Common Methods Bias

As mentioned in Chapter III, common method bias is a known issue in research, especially with self-reported data (Conway & Lance, 2010). Therefore, we took several measures to minimize the impact within this study. To prevent or reduce constituency motif, social desirability and acquiescence biases concerns (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), we assured each respondent of confidentiality and created no linkage back to any individual respondent or REC center through the surveys. In addition, each respondent was assured that there was no right or wrong answer and informed the respondent that the information gathered would be used to create programs that could be of benefit to each of them.

Other causes of concern for this study included: (a) common scale format, (b) positive and negative item wording, (c) context induced mood, and (d) scale length. According to Podsakoff, et al (2003) these are all common occurrences in behavioral research and were buffered with other accommodations within this study. Overall, research has found that no statistical analysis does a good job at finding or dealing with common method bias (Conway & Lance, 2003; Richardson et al, 2009). However, it has been found that a high amount of conceptual overlap between variables can bias relationships (Conway and Lance, 2010), so correlations were examined to check for any high correlations (see table 6). Not all correlations were found to be significant between the manifest variables, and therefore, common method bias concerns are minimized. In addition, following Podsakoff, et al's (2003) recommendations, we addressed common

method bias concerns using measures that have been thoroughly and repeatedly validated. Overall, there is limited reason for common method bias to be a concern in this study.

Statistical Analysis of Hypothesis Testing

Using the SPSS program simple correlations, hierarchical regression and bootstrapping were used to test the hypotheses. The following were results for the anticipated hypotheses for this study.

Before examining the individual hypotheses, Pearson's correlations (one-tailed) were performed on the total sum of all variables. The effect size of each estimate was evaluated according to Salkind's (2009) criteria: (a) very weak (.00-.19), (b) weak (.20-.39), (c) moderate (.40-.59), (d) strong (.60-.79), and very strong (.80-1.0). Pearson's correlations indicated that stress all and burnout all were moderately correlated (.562); stress all and engagement all were weakly correlated at (-.300); stress all and turnover intention were very weakly correlated (-.089); and stress all and satisfaction with my supervisor were mildly correlated at (-.445). Burnout all and engagement all were strongly correlated at (-.674); burnout all and turnover intention were very weakly correlated (-.092); and burnout all and satisfaction with my supervisor were moderately correlated at (-.594). Engagement all and turnover intention were very weakly correlated (.184); engagement all and satisfaction with my supervisor were moderately correlated at (.512). Finally, turnover intention was very weakly correlated with satisfaction with my supervisor (.140) (see Table 6).

Hypothesis 1-3: Correlations

Hypotheses 1-3 all predicted correlation of the independent variable of work stress and the dependent variables of burnout, engagement and turnover intention. Using Pearson's correlations a significant relationship was found between work stress and burnout with a moderate correlation of .562 ($p < .01$). This was the direction that the researcher had anticipated. Using Pearson's correlations a significant relationship was also found between work stress and engagement with a weak correlation of -.300 ($p < .01$). This was also the direction that the researcher had anticipated. Finally, using Pearson's correlations a non significant relationship was found between work stress and turnover intention with a very weak correlation of -.089 ($p > .05$). Therefore hypotheses 1 and 2 were supported, but hypothesis 3 was not supported. As mentioned in Chapter III in order to meet the requirements of Baron and Kenny's (1986) causal steps to determine mediation there must be a correlation between the independent variable and the dependent variable, which was not present between stress and turnover intention, as a result, no further analysis was performed on this relationship. (See table 6).

Hypothesis 4-6: Mediation Testing

In order to test for mediation in Hypotheses 4, 5, and 6 a multi-step approach was used. The first step involved following Baron and Kenny's (1986), as discussed in Chapter III, requirements for mediation. Baron and Kenny (1986) require that

Table 6 - Pearson's Correlations among study variables

Variable	N	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Ambiguity	84														
2. Conflict	84	.761**													
3. Overload Qual	83	.594**	.627**												
4. Overload Quan.	84	.485**	.578**	.500**											
5. Stress All	84	.834**	.894**	.804**	.782**										
6. Disengagement	84	.317**	.506**	.379**	.289**	.455**									
7. Exhaustion	84	.424**	.585**	.426**	.516**	.590**	.713**								
8. Burnout All	84	.398**	.587**	.434**	.431**	.562**	.931**	.920**							
9. Absorption	83	-.049	-.136	-.155	-.039	-.118	-.544	-.422	-.534						
10. Vigor	84	-.375**	-.442**	-.287**	-.333**	-.434**	-.535**	-.621**	-.623**	.647**					
11. Dedication	84	-.149	-.268**	-.244*	-.247*	-.284**	-.670**	-.547**	-.660**	.711**	.741**				
12. Engagement All	84	-.205*	-.305**	-.244*	-.222*	-.300**	-.649**	-.597**	-.674**	.873**	.881**	.914**			
13. Turnover Intention	84	-.005	-.152	-.090	-.009	-.089	-.114	-.055	-.092	.154	.194*	.181*	.184*		
14. Sat with My Sup	84	-.314**	-.448**	-.366**	-.318**	-.445**	-.566**	-.533**	-.594**	.430**	.486**	.483**	.512**	.140	

Significant at * $p < .05$ (one-tailed); ** $p < .01$ (one-tailed); Manifest variables are in bold

correlations be tested for significance before mediation can be established. This step was completed through hypotheses 1-3 above.

The second step, after correlation results were established, involved performing a hierarchical regression using the stepwise inclusion method to determine the variance, R^2 change, and significance levels among the variables. Hierarchical regression was used due to the ability to restrict variables to each block studied (Huck, 2000). The stepwise method was selected because it is the only method that allows variables to move in and out of the model freely, the significance level was $p < .05$, with the exclude cases listwise method selected for variable inclusion because this method includes only cases with valid values for all variables (SPSS version 19 Tutorial, 2011). The third, and final, step involved performing a bootstrap analysis to determine the significance of the mediation model.

Hypothesis 4.

Hypothesis 4 stated that:

Satisfaction with one's supervisor will partially mediate the relationship between work role stress and burnout.

Hierarchical regression was conducted to examine the impact of the mediating variable of satisfaction with one's supervisor on the relationship between stress and burnout. Based on these results, model 1 with work stress as the independent variable, explains 32% of the variance in burnout ($R^2 = .316$). In model 2 by adding the mediating variable of satisfaction with my supervisor, 46% of the variance is explained ($R^2 = .463$)

an increase of 14% variance that is accounted for (see table 7). The overall model R^2 change = .148; this .148 change in R^2 is statistically significant ($p < .01$, $F = 22.283$). In addition, the overall model is also significant ($p < .01$, $F = 34.945$).

As suggested by Preacher and Hayes (2004) and Preacher, Rucker and Hayes (2007), bootstrapping analysis was performed to test the mediational model of satisfaction with one's supervisor as a mediator of the relationship between work role stress and burnout. Results based on $k = 1000$ bootstrapped samples showed that the total effect of stress on burnout was significant ($TE = .236$, $SE = .038$, $p < .01$) and the direct effect was also significant ($DE = .156$, $SE = .038$, $p < .01$). Given these results, it was determined that satisfaction with one's supervisor partially mediated the relationship between stress and burnout. In addition, because zero is not in the 95% confidence

Table 7 - Hierarchical Regression Analysis of Variance between Models

Hierarchical Regression Analysis of Variance between Models.

Variable	b	SE_b	β	p
----------	-----	--------	---------	-----

DV=Burnout

Model 1

Work Role Stress	.236	.038	.562	.000
------------------	------	------	------	------

Model 2

Work Role Stress	.156	.038	.371	.000
------------------	------	------	------	------

Satis. W/My Sup.	-.228	.048	-.429	.000
------------------	-------	------	-------	------

$R^2 = .316$ for model 1, model sig=.000;

$R^2 = .463$ for model 2, model sig=.000

interval (IE lower 95% CI=.0346, upper 95% CI=.1612), the indirect effect is significantly different from zero at $p < .05$ (two tailed). (See Table 8). This is important because if the confidence intervals include zero then there is a possibility that the mediator is insignificant because zero indicates that the mediator has no effect. Therefore, hypothesis 4 was supported. From these results it can be determined that when including satisfaction with one's supervisor in the regression model as a mediator, the effect of stress on burnout is reduced. In essence, an employee's satisfaction with his/her supervisor buffers the impact of stress on burnout.

Hypothesis 5.

Hypothesis 5 stated that:

Satisfaction with one's supervisor will partially mediate the relationship between work role stress and engagement.

Hierarchical regression was conducted to examine the impact of the mediating variable of satisfaction with one's supervisor on the relationship between stress and engagement. Based on these results, model 1 with work stress as the independent variable, explains 9% of the variance in burnout ($R^2 = .09$). In model 2 by adding the mediating variable of satisfaction with my supervisor, 27% of the variance is explained ($R^2 = .269$) an increase of 18% variance that is accounted for (see table 9). The overall model R^2 change = .179; this .179 change in R^2 is statistically significant ($p < .01$, $F = 19.811$). In addition, the overall model is also significant ($p < .01$, $F = 14.889$).

Table 8 - Bootstrapping Effects

	Coefficient	se	p
TE IV-DV	.2358	.0383	.0000
DE IV-DV	.1556	.1556	.0001

95% Confidence Intervals

	L	U
Total	.0346	.1612

K=1000

Table 9 - Hierarchical Regression Analysis of Variance between Models

Variable	<i>b</i>	<i>SE_b</i>	β	<i>p</i>
DV=Engagement				
Block 1				
Work Role Stress	-.181	.063	-.300	.006
Block 2				
Work Role Stress	-.054	.064	-.090	.400
Satis. W/My Sup.	.360	.081	.472	.000

*R² = .09 for block 1; model sig = .006**R² = .269 for block 2; model sig = .000*

As suggested by Preacher and Hayes (2004) and Preacher, Rucker and Hayes (2007) bootstrapping analysis was performed to test the mediational model of satisfaction with one's supervisor as a mediator of the relationship between work role stress and engagement. Results based on $k=1000$ bootstrapped samples showed that the total effect of stress on engagement was significant ($TE=-.181$, $SE=.064$, $p<.05$) and the direct effect was not significant ($DE= -.054$, $SE= .064$, $p>.05$). Given these results it was determined that satisfaction with one's supervisor fully mediated the relationship between stress and engagement because the model with the mediating variable was significant when the direct model was not. In addition, because zero is not in the 95% confidence interval (IE lower 95% CI= $-.2252$, upper 95% CI= $-.0640$), the indirect effect is significantly different from zero at $p<.05$ (two tailed). (See table 10). This is important because if the confidence intervals include zero then there is a possibility that the mediator is insignificant because zero indicates that the mediator could have no effect. Therefore, hypothesis 5 was partially supported. The hypothesis is partially supported because the hypothesis predicted full mediation rather than partial mediation. From these results it can be determined that the direct impact of stress is completely mediated by the presence of satisfaction with one's supervisor.

Hypothesis 6.

Hypothesis 6 stated that:

Satisfaction with one's supervisor will partially mediate the relationship between work role stress and turnover intention. Due to the requirements of Baron and Kenny (1986) to show causal steps for mediation no further testing was performed on stress and

turnover intention as no correlations between the variables were found in Hypothesis 3. Therefore, hypothesis 6 was not tested and was not supported.

Summary

Overall through statistical analysis it was found that hypotheses 1 and 2 were supported in that work stress was found to be correlated with burnout and engagement in the proposed direction. Hypothesis 3 was not supported in that turnover intention was not correlated with stress. Hypothesis 4 was supported in that satisfaction with one's supervisor partially mediated the effect of stress on burnout. Hypothesis 5 was partially supported in that satisfaction with one's supervisor fully mediated the effect of stress on engagement. Finally, hypothesis 6 was not supported in that stress was not correlated with turnover intention and therefore mediation could not be tested. These results will be discussed in detail in Chapter V.

Table 10 - Bootstrapping Effects

	Coefficient	se	p
TE IV-DV	-.1807	.0635	.0056
DE IV-DV	-.0541	.0639	.3999

	95% Confidence Intervals	
	L	U
Total	-.2252	-.0640

K=1000

CHAPTER V: CONCLUSION

Discussion

Decreasing the effects of stress on employees should be a primary concern for employers. With stress levels, burnout and turnover intention high and engagement low among employees, productivity could suffer for organizations (Bryner, 2006; Weaver, 2003). With unemployment having been at record numbers in the past few years and the economy struggling to stabilize, it behooves any organization to use the skills and abilities of its work force to be more productive with fewer resources. The non-exempt population, in particular, has been hit hard by this lack of resources and high unemployment (Sum, Khatiwada, McLaughlin, & Palma, 2009). With few options for new direction and the added stress of doing more with less, this is a population that has struggled. In addition, the non-exempt population has been overlooked in the realm of HRD research and the effects that overly stressed, burned out and unengaged employees have on organizations.

Although the constructs of work stress, burnout, engagement and turnover intention have been studied, few concrete solutions have been identified; and the population that has been studied has remained consistently in the exempt or professional realm of employees. This current study has focused on these constructs and a mediating variable of satisfaction with one's supervisor on the non-exempt population. These non-exempt employees work at, and many live on (approximately 8 out of 10 employees), the Research and Education Centers (REC's) across the state. These RECs are part of a unit of agricultural research within a large land grant university. By supporting this back-bone of the overall work force, many organizations could be strengthened.

Through this study the goal has been to identify how work role stress affects burnout, engagement and turnover intention, and what mediating effect satisfaction with one's supervisor has on a population of non-exempt employees at a large land grant university. There is a gap in current research involving these variables and this population. By identifying the levels of stress, burnout, engagement and turnover intention among these employees, it is hoped that programs can be implemented to reduce the negative effects of stress, burnout and turnover intention and increase the positive effects of engagement. In addition, by identifying if satisfaction with one's supervisor is a mediating variable, programs can be implemented to strengthen the skills of the supervisors at the REC's.

After running an analysis of the data, three of the proposed hypotheses from this study were supported, two were not supported and one was partially supported. Additionally, several interesting findings were uncovered that could lead to further research. All findings of this study contribute to the existing HRD literature on work stress, burnout, engagement, turnover intention and satisfaction with one's supervisor and raise some new questions. This contribution lies in that this study provides a unique population that has had few, if any, prior research project involvement.

The three supported hypotheses were (1) the correlation of stress and burnout in a positive direction, (2) the correlation of stress and engagement in a negative direction, and (3) the partial mediation of stress effects on burnout by satisfaction with one's supervisor. Stress, surprisingly, did not correlate with turnover intention; and, therefore, stress effects on turnover intention could not be tested for mediation by satisfaction with one's supervisor. Finally, it was found that stress effects on engagement were fully

mediated by satisfaction with one's supervisor, although the researcher had predicted only partial mediation. The findings regarding burnout are exciting, but expected. The real interest comes in the non support of the turnover hypotheses and the full mediation effect of satisfaction with one's supervisor on engagement.

In this current chapter each research question will be addressed, and results of each variable will be discussed in detail in the following order: research question 1; research question 2; burnout and hypotheses 1 and 4; engagement and hypotheses 2 and 5; and turnover intention and hypotheses 3 and 6. This is followed by limitations, implications and recommendations for practice, implications and recommendations for theory and research, and concluding remarks.

Research Question 1: What is the relationship between role related stress, as measured by conflict, ambiguity and overload, in predicting work engagement, work burnout and turnover intent among non-exempt level employees?

This question was addressed via hypotheses 1-3 by examining the correlations between the independent variable of work role stress and the dependent variables of engagement, burnout and turnover intention. In alignment with previous research this study found correlations between stress and burnout (Bryner, 2006; Weaver, 2003) and stress and engagement (Hakanen, et. al., 2006; Bakker & Demerouti, 2007). However, no correlation was found between stress and turnover intention.

Burnout (Hypothesis 1)

Using work role stress, with the manifest variables of role conflict, role ambiguity and role overload (quantitative and qualitative), a moderate correlation (Salkind, 2009) was found with burnout at $r = .562$ ($p < .01$). Although not considered a “strong” correlation, with this correlation hypothesis 1 was fully supported.

Engagement (Hypothesis 2)

In addition, running work role stress with the manifest variables of role conflict, role ambiguity and role overload (quantitative and qualitative), a weak correlation (Salkind, 2009) was found with engagement at $r = -.300$ ($p < .01$). Although this was a weak correlation, with this finding hypothesis 2 was fully supported.

Turnover Intention (Hypothesis 3)

The current study found a very weak correlation (Salkind, 2009) and a nonsignificant relationship between work stress and turnover intention at $r = -.089$ ($p > .05$). With this finding the hypothesis was not supported. This finding goes against current research that has found a correlation between these two variables (Vandenberghe, et al, 2010; Zhang & Lee, 2010).

Examining the correlations between the independent and dependent variables is the first step in determining a mediating relationship that is explored in research question

2 and hypotheses 4-6. Since no correlation could be established, no testing could be performed for mediation.

Research Question 2: What is the relationship between role related stress, as measured by conflict, ambiguity and overload, in predicting work engagement, work burnout and turnover intent when mediated by satisfaction with one's supervisor among non-exempt level employees?

This question was addressed via hypotheses 4-6 by examining the mediating relationship of satisfaction with one's supervisor on the correlations between the independent variable of role stress and the dependent variables of engagement, burnout and turnover intention. Previous research has shown a connection between stress and satisfaction with one's supervisor, in that having a positive relationship with one's supervisor can decrease the amount or effects of stress on an employee (Boshoff & Mels, 1995; Jawahar et al, 2007; Cicero, et al, 2010; Bliese & Castro, 2000; Stamper & Johlke, 2009; and Fisher & Gittelsohn, 1983). Therefore, a relationship between stress and satisfaction with one's supervisor has been established through previous research. In addition, in this study a correlation between work stress and satisfaction with one's supervisor was moderate at $r = -.445$ ($p < .01$). Therefore, a relationship between work stress and satisfaction with one's supervisor was established. In addition, per Baron and Kenny's (1986) recommendations, correlations were established between the mediating variable of satisfaction with one's supervisor and the dependent variables of burnout ($r = -.594$, $p < .01$) and engagement ($r = .512$, $p < .01$). However, no significant correlation was found between satisfaction with one's supervisor and turnover intention ($r = .140$). Once correlations were found, hierarchical regression and bootstrapping were performed to

determine the significance of the relationship between the independent variable of stress and the dependent variables of burnout and engagement when mediated by satisfaction with one's supervisor.

As predicted by this study, satisfaction with one's supervisor partially mediated the relationship between work stress and burnout. This study also predicted that the effects of work role stress on engagement would be partially mediated by satisfaction with one's supervisor. However, this relationship turned out to be fully mediated by satisfaction with one's supervisor. Overall, hypothesis 4 was supported, hypothesis 5 was partially supported and hypothesis 6 was not supported. All of these findings and the implications will be discussed in the forthcoming sections.

Burnout

The first and fourth hypotheses of this study focused on the independent variable of stress and the dependent variable of burnout. Hypothesis 1 stated that higher work role stress will be positively correlated with increased burnout. This relationship was found to be significant when using correlation analysis (.562; $p < .01$). This finding replicates the finding of previous research referred to in Chapter II, the literature review chapter. Research has shown that a link has been found between work stress and an increased level of burnout (Bryner, 2006; Weaver, 2003). In addition, other research (Devereux, et al, 2009; Fogarty, et al, 2000; Lee & Ashforth, 1996) has found positive correlations between work stress and burnout in that as stress increased, burnout also increased. In addition, these findings support previous research that supports the Job Demands-

Resources Model (Bakker and Demerouti, 2007) that was discussed previously, indicating that stress, labeled as job demands, is related to the latent variables of burnout (Demerouti et al, 2001). Further, Angerer (2003) found that burnout is a result of job stressors. This finding, within the current study, of burnout increasing as stress increases is not surprising as the above research has repeatedly found connections between stress and burnout. However, given the unique population of this current study, we can add to the body of research literature. These implications will be discussed in more depth further in this chapter.

Hypothesis 4 stated that satisfaction with one's supervisor will partially mediate the relationship between work role stress and burnout. Using correlations, stepwise regression and bootstrapping to test for mediation the results showed that a partial mediating relationship was present. As mentioned in Chapter IV, using regression to examine the relationship between stress and burnout, the overall model R^2 change = .148; this .148 change in R^2 was statistically significant ($p < .01$, $F = 22.283$). In addition, the overall model was also significant ($p < .01$, $F = 34.945$). Further, when performing the bootstrapping technique, the total effect of stress on burnout was significant ($TE = .236$, $SE = .038$, $p < .01$); and the direct effect was also significant ($DE = .156$, $SE = .038$, $p < .01$). This indicates a partially mediating relationship because both paths (with and without the mediator) were significant paths. In addition, because zero was not in the 95% confidence interval (IE lower 95% CI = .0346, upper 95% CI = .1612), the indirect effect is significantly different from zero at $p < .05$ (two tailed). This is important because if the confidence intervals include zero then there is a possibility that the mediator is insignificant because zero can indicate that the mediator has no effect.

These results indicate that there is a relationship between stress and burnout and that satisfaction with one's supervisor reduces the negative effects of stress on burnout but does not completely reduce these effects. These findings agree with research reported in Chapter II, the literature review chapter, that has shown that social support in the work setting has consistently shown a decrease in burnout, this support includes supervisory support (Lee & Ashforth, 1996; Kim & Stoner, 2008). These implications will be discussed in more depth further in this chapter.

Engagement

The second and fifth hypotheses focused on the independent variable of stress and the dependent variable of engagement. Hypothesis 2 stated that higher work role stress will be negatively correlated with increased engagement. This relationship was found to be significant when performed using linear regression. These results are reflective of research reported in Chapter II, the literature review chapter. Research has shown that an employee's engagement level will decrease when presented with increased stress (Hakanen et al, 2006; Koyuncu et al, 2006). In addition, the J D-R model found that as job demands (stress) goes up engagement goes down (Bakker and Demerouti, 2007).

Hypothesis 5 stated that satisfaction with one's supervisor will mediate the relationship between work role stress and engagement. Using correlations, stepwise regression and bootstrapping, a fully mediating relationship was found. As mentioned in Chapter IV, using regression to examine the relationship between stress and engagement, the overall model R^2 change = .179; this .179 change in R^2 was statistically significant

($p < .01$, $F = 19.811$). In addition, the overall model was also significant ($p < .01$, $F = 14.889$). Further, when performing the bootstrapping technique, the total effect of stress on engagement was significant ($TE = -.181$, $SE = .064$, $p < .05$); and the direct effect was not significant ($DE = -.054$, $SE = .064$, $p > .05$). This indicates a fully mediating relationship because the path with the mediator was significant when the path without the mediator was not. In addition, because zero was not in the 95% confidence interval (IE lower 95% $CI = -.2252$, upper 95% $CI = -.0640$), the indirect effect is significantly different from zero at $p < .05$ (two tailed). This is important because if the confidence intervals include zero, then there is a possibility that the mediator is insignificant because zero can indicate that the mediator has no effect.

As mentioned within the literature review section of this dissertation, the use of satisfaction with one's supervisor as a sole mediating variable between stress and engagement has not been found within previous literature. More often satisfaction with one's supervisor is one of several mediating factors included. Because of this, we anticipated that satisfaction with one's supervisor would partially mediate the relationship between stress and engagement. The literature does support that satisfaction with one's supervisor has a buffering effect between stress and engagement. Bakker and Demerouti (2007) reported that increased job resources, including satisfaction with one's supervisor, can buffer the stressors and increase engagement. However, the full mediation of the relationship between stress and engagement by satisfaction with one's supervisor was a surprising result within this study. As mentioned in the *satisfaction with my supervisor* section of Chapter II, there is much debate as to how large a role this variable plays in a mediating relationship.

Research on satisfaction with my supervisor has found that the amount of interaction that a supervisor has with an employee can affect the satisfaction level of the employee (Jernigan & Beggs, 2005). In addition, having a strong bond between the supervisor and the employee has been shown to increase the satisfaction level of the employee (Ladany et al, 1999). The type of work that the population of this study undertakes is very physical and hands-on, perhaps providing more opportunity for positive interaction between the supervisor and the employee.

Finally, Vandenberg and Scarpello (1991) define satisfaction with one's supervisor as “. . . the degree of subordinate satisfaction with supervision as an organizational role whose effective enactment entails the ability to reconcile and coordinate the needs and goals of work groups' members with organizational requirements” (p. 203). This was the definition used for this study. Coupling this definition with the fact that, for this study, stress levels were not exceptionally high and engagement levels were not exceptionally low, perhaps the relationships between supervisor and subordinate are already positive and therefore, already providing a buffer for the level of stress that does exist within this population. There could be multiple other explanations for this finding, and these implications will be discussed in more depth further in this chapter.

Turnover Intention

The third and sixth hypotheses focused on the independent variable of stress and the dependent variable of turnover intention. Hypothesis 3 stated that higher work role stress will be positively correlated with increased turnover intention. The correlation

between work stress and turnover intention was found to be very weak at $-.089$ and was not significant ($p > .05$). This was a surprising finding for this study due to some previous research, as reported in Chapter II, the literature review chapter, reporting some linkage between stress and turnover intention. Vandenberghe, et al (2010) found a relationship between the overload and conflict variables of stress and turnover intention, in that these stress variables were associated with a decline in job attitude and satisfaction and an increase in turnover intention. However, it appears that much of the current research into turnover intention involves identifying new variables that are connected to turnover intention rather than providing further research on established variables, such as stress. However, most prior research agrees that the primary indicator of turnover intention is intent to turnover (Price, 1977; Mobley, 1977, Lee & Mowday, 1987; Michaels & Spector, 1982; O'Reilly & Caldwell, 1981; Tett & Meyer, 1993).

Although no significant relationship was found when turnover intention was added as a dependent variable, it should not be assumed that turnover intention is not present in this population. Examining the responses by the participants, it appears that the participants feel some conflict between staying in the job and looking for a new job in the near future. For question 1: "I intend to stay in this job for the foreseeable future" 71% of participants answered "agree" or "strongly agree". For question 2: "I will probably look for a new job in the next year" 57% of participants answered "agree" or "strongly agree". There is substantial overlap here between these two questions. This might lead one to believe that these employees will remain working in the current position, but at the same time they will be pursuing other employment. In other words, maybe these employees want to leave but cannot leave without another job.

There are also a few possible reasons that a relationship could not be established between stress and turnover intention. One of the most plausible reasons would be the fact that many of the employees actually live on the REC within station-owned housing. In order for an employee to leave the job at the REC, the employee must also leave his home, possibly uprooting one's family in the process. The roots established through this housing arrangement can run deep, creating a sense of community for these employees, which would be an additional loss when finding a new job. We must consider that turnover at the REC's has been historically low; and there could be several reasons for this low turnover, including access to housing. De Cuyper et al (2011) found that perceived employability and turnover intention are linked when the employee believes that they can quit the job without suffering substantial losses. Further, they speculate that people who are less employable may be less likely to quit the job due to the risk of being unemployed or underemployed. This theory could explain why the employees at the research centers tend to stay for extended periods. The work done by these employees: milking, tending a herd, fixing fences, etc, could be a limited field in their area so they are hesitant to leave the job that they have. Also, the employees in this population have minimal education, generally only a high school diploma or GED. Therefore, the prospects for finding a better job could be limited.

In addition, as shown in Table 11, unemployment rates were fairly high in most of the counties where the RECs are located at the time of the survey. This high rate of unemployment, coupled with provided housing, under employability and minimal education could explain why some employees could potentially want a better job but cannot obtain one. This would be an interesting avenue for further research.

Table 11 - Unemployment Rates of Counties Where Research Centers are Located as of July 2011

Location	County Unemployment Rate (7/11)
Location 1	12.8%
Location 2	14.2%
Location 3	7.5%
Location 4	8.8%
Location 5	12.7%
Location 6	9.1%
Location 7	12.9%
Location 8	13.7%
Location 9	10.5%
Location 10	10.2%
Overall State Unemployment Rate	9.6%
National Unemployment Rate	9.1%

The above thinking, regarding the lack of interaction between stress and turnover intention, is backed up by the research of Meyer, Allen, and Smith (1993). Meyer et al created the *Three Component Model of Organizational Commitment* which states that there are three components that contribute to an employee's intent to continue working with the organization: affective commitment, continuance commitment and normative commitment. The three components are simple in that they assume that (a) the employee likes the organization, (b) the employee needs to make money, and (c) the employee feels obligated to the organization. The links between turnover intention and affective commitment have been the strongest (Hacket et al, 1994; Meyer et al, 1993); based on this theory, perhaps the sense of community that is established at the RECs plays a role in turnover intention or lack thereof. Most of the RECs provide housing for the employees, and the work schedules are non-traditional, including nights and weekends. Living and working so closely together possibly creates a tighter sense of community for these employees and makes them hesitant to leave, even if they want to.

Another possible reason for the lack of correlation is that there is a problem with the turnover intention measure for this study. Previous research has shown that this measure has a coefficient alpha of .73 (Irving, Coleman, and Cooper, 1997), which is considered acceptable by George and Mallery (2003). For this study the Cronbach's alpha was found to be .603 which is considered questionable in regards to reliability; therefore, there is a possibility that it has questionable validity for this study or with this population.

Another possible issue could be the readers' interpretations of the measure. The concern would be if the questions were written in such a way that was confusing to the participants. The first and the third question within this survey ask about the 'foreseeable future', and the second question asks about actions 'within the next year'; one person's idea of foreseeable future might or might not be longer than "the next year", therefore the answers could be dependent on this perception. Without following up with the participants, it would be hard to know the true impact of this issue. Finally, a problem could have occurred by using a global measure for a very granular population. Perhaps a measure that was created for this type of population would give a better result. This could provide a clearer interpretation as to the connection of stress and turnover intention and of the impact of turnover intention as a singular variable within this type of population. Regarding hypothesis 6, since the causal steps of Barron and Kenny (1986) to show mediation require that the independent variable and the dependent variable be correlated to establish a relationship that could be mediated and this relationship was not found, we could not pursue hypothesis 6. Hypothesis 6 stated that satisfaction with one's supervisor would mediate the relationship between work role stress and turnover intention. Without

this correlation, further assessment for mediation was not completed. Without actual implementation, there is no way to know if by considering some of the above options, different measures, clarification of measure to participants, or possibly adding other variables, the mediating relationship would actually be significant between stress and turnover intention.

Limitations

Several limitations have been identified for this study. These include: (a) the survey style of data collection, (b) the population, (c) lack of a pilot study and (d) survey measures. The data collected by the surveys was all self-reported. Because of this, there was no way to follow up on the data collected or to link specific results back to individual participants or RECs due to anonymity. Another limitation was the population of this study. The study participants comprised the entire population of the REC staff, so the study had to work with what was available. The population was heavily male (81.1%); and since the entire population was used, there was no way to compensate for the gender unevenness. Also, the data collected represented a singular moment for these participants; unknown, individual factors could skew the responses in a way that cannot be accounted for. Unless participants are added from other RECs in other states, the population that was used cannot be expanded. In addition, with a recent incentivized retirement plan being administered one year prior to this study, the mean number of years of service and age of the population dropped considerably. It is possible that the former, older, employees could have had a different opinion of the variables studied here.

Another limitation is that there was no pilot study conducted to refine the instruments or methods. Due to the fact that the entire population was used for this study,

there was no way to pilot the study with a subset of the population. The transferability of the study findings could be limited due to the specific nature of the population studied. There are some options for working around the limited population. For example, different measures could be used with the same population to see if results are consistent. Also, the study could be branched out to other types of non-exempt employees and possibly even compared between populations. Finally, the measures themselves, as mentioned previously regarding turnover intention, could be a limitation. By running the study using different or even multiple measures or measuring at different points in time, information regarding the variables could be more precisely gathered.

Implications and Recommendations for Practice

Burnout.

After reaching the finding that stress and burnout are related but partially mediated by satisfaction with ones' supervisor, the results can be used to create practical applications. Finding a significant relationship between stress and burnout could be interpreted to show that as overall stress increases, then overall burnout increases in the REC non-exempt population. Several burnout questions had a high number of positive responses indicating that burnout is not a big issue, at least to some participants (i.e.: "I always find new and interesting aspects of my work", where 61.8% answered "agree"; "I can tolerate the pressure of my work well", where 65.2% answered "agree"; "Usually I can manage the amount of my work well", where 64% answered "agree"; and "I feel more and more engaged in my work", where 66.3% answered "agree"). However, since

the overall relationship was found to be significant, there is still some cause for concern regarding stress and burnout among this population.

One possible answer could come from the current research into burnout and the antecedents. Research has shown that age (Brewer & Shapard, 2004; Garrosa et al, 2008), career stage (Ahola, et al, 2006; Bakker et al, 2002), marital status (Ahola et al, 2006; Bakker et al, 2006), and work experience (Demir, et al, 2003) are all correlated with burnout levels. This research has shown that young employees at the beginning of their careers are more likely to be burned out. This is an interesting finding because many of the employees at some of the RECs are young and newly hired due to the aforementioned recent incentivized retirement. This could explain why so many respondents reported low levels of burnout. Additionally, with marital status and work experience also being connected to burnout, this could be a consideration at the RECs. With 32.6% being single, which has a higher rate of burnout, and with the years of service at a mean of 11.44, this could account for some of the level of burnout at the RECs. However, coping with these personal differences would be difficult aside from just being aware.

We also must consider the idea that there are other causes of burnout in this population, given that stress accounted for only 27.4% of the variance in burnout. By identifying some of the other variables, particularly those already researched and linked to stress, it is possible that a stronger antecedent for burnout within this population could be identified. By identifying any additional causes or links to burnout, measures could be established to buffer these variables.

Regardless, preventing burnout is still an area that should be further explored in this population. Building on the positives that show up in the survey questions would be a

good place to start. It appears that over half of the staff enjoys the work, are comfortable with the work and the amount of work is within acceptable levels. If the REC directors can build from these strengths, then perhaps burnout and the effects of stress on burnout could be minimized.

There are multiple approaches to preventing burnout, but two main approaches are *person centered* and *situation centered* (Maslach and Goldberg, 1998). First is the *person-centered approach*. This approach holds that the individual plays the central role in burnout prevention. There are two presumptions involved with this theory. The first assumption is that the source of burnout lies within the individual rather than within the organization. The second presumption being that regardless of the source of burnout, it is the individual's responsibility to prevent or end it. This *person centered* approach lists several different ways to help prevent burnout including: (a) changing work patterns, (b) developing of coping skills, (c) utilizing social resources, (d) relaxed lifestyle, (e) improving health, and (f) self-analysis. Changing work patterns involves working less or working fewer hours, decreasing the pace at work, taking regular breaks, and finding work-life balance. Coping skills are designed to reduce the impact of the stressor by restructuring how a person responds to the stressor, called cognitive restructuring. Cognitive restructuring can involve strategies such as reducing expectations, reinterpreting people's behavior's, clarifying values, and imagining new goals (Maslach and Goldberg, 1998).

Other person centered coping skills include sharing feelings or venting, time management and conflict resolution. Social resources are another way to prevent burnout. Social support can be from families, friends, co-workers or supervisors (see

satisfaction with my supervisor section). This support can come in the form of direct help, emotional support, insight, and rewards or recognition. Relaxed lifestyle is another way to reduce burnout that involves ways for the person to relax; for example, biofeedback and massage or hobbies are all good options. Another piece of the person centered approach is improving one's health through nutrition and exercise. The final piece is self-analysis which involves developing a better understanding of one's self, including personality, needs, and motivations. By assessing ones self it gives the individual the ability to change any behavior that could lead to burnout.

For the RECs helping the individual employee to address burnout could be a worthwhile endeavor. Using the above suggestions it is possible that the employees' work schedules could be adapted to better allow the individual to balance the work/life aspects. In addition, by providing training in coping skills, providing feedback sessions with the opportunity to vent, and being supportive of peers, superiors and subordinates, the RECs could help the employees reduce the burnout levels. By providing opportunities to improve health and to improve one's mental health, the RECs could also provide some avenues for the employees to reduce the burnout levels.

The second approach to preventing burnout is that of *situation centered* approaches. Very little research has been done towards this approach, but what has been done shows that at the situational levels the focus tends to be on enhancing one's job experience. For example, giving employees more input into work policies or providing training in interpersonal skills. Throughout the situation centered approach it appears that the idea of reducing or eliminating work stressors is not considered an option. Rather,

that work stressors are going to be present and an organization must learn how to offset or manage these stressors (Maslach and Goldberg, 1998).

Another consideration is the community environment that is present at most of the RECs. Living together, within a community, with one's co-workers and supervisors can increase stressors and burnout or provide an outlet for decreasing burnout. Some of the above concepts are already present at some of the RECs for decreasing burnout. For example, social support is present within many of these communities with access to peer support and assistance from supervisors as needed. In addition, work schedules are more flexible due to proximity and some of the RECs even provide gym facilities on the REC site.

In addition, given the finding that burnout is partially mediated by satisfaction with one's supervisor, it is important to make some strides to improve this relationship. Research has shown that lack of a manager's support is the third most common reason for leaving a job (Blessing White, 2008). Some might argue that it probably ranks higher than that. Research has shown that improving one's sense of psychological safety, or the ability to make small mistakes without fear of retribution, contributes to a positive supervisor/employee relationship (Kahn, 1990; May et al, 2004). In addition, strong working alliances between supervisors and employees have been shown to be a strong predictor of employee satisfaction with his/her supervisor (Cheon, et al, 2009). Also, the supervisors' actions or lack of interaction with employees can also play a large role in commitment to the organization. A supervisor needs to be consistent with employees and not show favoritism. Also, a supervisor needs to provide the opportunity for regular

interaction with an employee (Jernigan & Beggs, 2005). Finally, trust and meaning are essential components of effective supervision (Andersson, 1996).

By implementing some strategies at the RECs, the satisfaction with one's supervisor could be increased. For example, providing training for supervisors on providing positive critical feedback to an employee and the appropriate way to train new employees could contribute to creating a strong relationship. In addition, creating the opportunities for employees and supervisors to build a working alliance would be a worthwhile endeavor. This could be accomplished through social interactions, joint projects or providing common goals for the supervisor and employee. By providing these opportunities, this would also provide more opportunities for interaction between the supervisor and employee. Through some of these tasks, trust and meaning for both the supervisor and employee could be established over time.

Engagement

Although the relationship between engagement and stress was found to be significant, it also appears, by the responses, that there is a level of employee engagement that is present that could be built on. For example, almost half of respondents (44.9%) answered "6-always/every day" when responding to the statement: "I am proud of the work that I do". This would appear to indicate that although stress and engagement had a significant relationship that there is much room to reduce this stress or to increase engagement.

By building off of this already existing engagement, programs could be put into place to further increase the engagement of this population. Bakker and Demerouti (2008), found several drivers of engagement that are linked to the Job Demands-

Resources Model that was the base of the theoretical model for this study. The availability of certain job resources, including social support, performance evaluations, and supervisory coaching have been linked to an increased level of engagement (Schaufeli & Bakker, 2004; Hakanen et al, 2006). As mentioned previously, many of the employees at most of the RECs (8 out of 10) live on site. This creates an atmosphere of a community and can provide social support from co-workers and access to one's supervisor. In addition, each employee at each REC gets at least a yearly, thorough, performance evaluation with goal setting and feedback provided. These job resources could be one reason that engagement is already present at the RECs.

Additionally, research has shown that increased engagement equals increased productivity (Towers Perrin, 2010). Further, the benefits to an organization for maintaining or increasing engagement are many, including retention of valued staff, positive organizational image and a healthy, competitive and effective organization (Schaufeli & Salanova, 2007). In addition, engaged employees tend to be more positive; and more positive employees are more outgoing, helpful, optimistic and confident (Cropanzano & Wright, 2007).

Current engagement research has identified some building blocks to work from to create a more engaged workforce. Nancy Lockwood (2007) with SHRM has suggested that there are several strategies that can be used to build engagement including: (a) providing clear and consistent communication to employees, including goals; (b) creating a culture in the workplace that stimulates engagement; (c) aligning the daily work of employees to the goals of the organization; (d) creating and maintain an open line of communication through all levels of employee; (e) providing rewards for managers

whose employees show signs of engagement; (f) listening to employees needs/wants; (g) building on the talents of the individual employees; (h) periodically checking on employee engagement levels, knowing where the organization stands; (i) holding managers accountable for building up their teams to increase engagement; (j) reminding employees of how their actions can contribute to the organization; and (k) thanking employees for the work they do.

These ideas are certainly applicable to most organizations; and, even further, they could be easily implemented to the specific population of this study. By testing the current engagement level of the population, some of these suggestions could be implemented; and then the employees' level of engagement could be retested at another point in time (Gruman & Saks, 2011). This would give us a better idea of what does/does not work for this population.

Some suggestions for implementation could include: having regularly scheduled staff meetings to provide updates and communication on current events, which would create an open line of communication through all staff levels. Additionally, listening to employees' concerns and valuing the input would contribute to building engagement. As for the employees themselves, recognizing and building on the talents of the employees, allowing the employees to align the daily tasks to the organizational goals, reminding the employees of how they contribute to the overall goal, and providing rewards/thanks for good work, would all go towards increasing engagement. Finally, by rewarding the managers of more engaged/productive workers, holding the managers accountable for teambuilding, and providing thanks to managers who do a good job would all go towards increasing engagement within this population.

Further, the results of this study would indicate that as stress increases and engagement decreases, having a positive relationship with one's supervisor fully mediates this response. In other words, having a positive relationship with one's supervisor can eliminate the effects that stress has on the employee's level of engagement. This gives a good argument for creating and maintaining this positive relationship between supervisors and subordinates. One avenue to explore is that of the work alliance theory (Cheon et al, 2009). The work alliance theory posits that the work alliance between an employee and supervisor is a strong predictor of an employee's satisfaction with his/her supervisor. This alliance is comprised of three components: task, goal and bond; In short, creating a strong relationship that is based on common goals and a strong attachment between the employee and supervisor can strengthen this relationship. Strengthening this alliance could provide an avenue to increase the satisfaction with one's supervisor and in turn decrease stress and increase engagement. Further research has shown that five supervisor behaviors have held importance toward an employee's commitment: (a) the supervisors' reactions to mistakes, (b) the supervisors' behaviors being consistent, (c) the supervisor showing concerns towards the employees' career development, (d) the supervisors' technical abilities and (e) backing up employees with other supervisors and organizational leaders (Jernigan & Beggs, 2005). These strategies could be implemented at the RECs. For example, teaching supervisors how to have a more positive reaction to mistakes and using them to teach the employee; helping the supervisor to stay consistent with reactions to a situation and between employees; providing the employees with opportunities to learn new skills to advance careers; adequately training the supervisor in all aspects of the tasks/jobs; and allowing

the supervisor to be an advocate for the employee. Implementing some or all of these strategies could strengthen the relationship between supervisor and employee and thereby increasing one's satisfaction with his/her supervisor.

Turnover Intention

Given that turnover intention was not correlated with stress in this study, it would be hard to make recommendations regarding turnover intention and the prevention of it. One would think that at any given time a certain amount of employees are considering leaving, and some measures could be established to retain these employees. The *Three Component Model of Organizational Commitment* (Meyer et al, 1993) mentioned above in the *turnover intention* section of this chapter could be a good place to start. As mentioned previously through this model, levels of attachment to the organization, the need for the income and the feeling of having an obligation to an organization are all components that contribute to an employee's intention to leave.

The sense of community created by the REC housing, the high unemployment rates, the employees' lack of skills outside the RECs and the sense of obligation that the REC employees feel could all be contributing to the employees' decision to remain with the REC. If this is indeed the case, then offering housing to all of the employees and creating a tighter sense of community could be one way to reduce turnover intention. This also connects to the need for income and the sense of obligation. As many of these employees are paid low wages (average \$10.00 per hour). By providing housing to these employees, at no cost to them, the employee is able to stretch his/her income farther. This housing could also be responsible for feelings of obligation to the REC. By being more connected through one's work and personal life leaving would be made more difficult.

Implications and Recommendations for Theory and Research

This study has provided some answers to the research questions posed within this study. Additionally, this study has provided some additional implications regarding the previous research on these variables. Much research has been performed on the variables of engagement and burnout; although these two were not directly examined within this study, some interesting interactions were uncovered. Previous research on engagement and burnout has questioned whether these two variables are polar opposites of each other or if there is a different relationship present. We will explore this question further.

Christina Maslach was an early pioneer of burnout research and theory. She is a social psychologist who began studying emotions in the workplace (Maslach, et al, 2001). Through her interviews of human service workers about job stress, she found that the way the employee coped had important implications for the person's professional identity and job behavior. This early burnout research focused more on the person's relational transactions in the workplace rather than on the individual's stress response. This initial research was more descriptive and qualitative in nature. From these early interviews, certain patterns emerged that suggested that burnout had some definable components. These components, as described by Maslach (1982), were emotional exhaustion and depersonalization (cynicism). Later, a third component, inefficacy was added (Maslach, et al, 2001). Observing these components consistently through the qualitative methods, a quantitative measure was created, called the Maslach Burnout Inventory (Maslach & Jackson, 1981). Maslach and Leiter (1997) later redefined burnout as an erosion of engagement. The theory was that work that started out as meaningful and

fulfilling, over time, became meaningless and unfulfilling. Energy becomes exhaustion, involvement becomes cynicism and efficacy becomes ineffectiveness (Maslach & Leiter; 1997). It was proposed that the three components of engagement: energy, involvement and efficacy, were the opposite of the three burnout components of: exhaustion, cynicism, and inefficacy. Therefore, by this model, Maslach (1982) reported that burnout and engagement were opposite poles of each other and measurable by the same instrument (the MBI). By this theory a high burnout score would equal an opposite low engagement score and vice versa.

Later research by Schaufeli et al (2001) reported that burnout and engagement are independent and negatively correlated variables that must be measured by different instruments. Additionally, Schaufeli et al (2001) reported that these two variables are not opposite, nor separate constructs, but something in between. Schaufeli based this theory on research on the polarity of positive and negative affects (Diener, 1999). For example, Russell and Carroll (1999) showed that positive and negative affect are independent states rather than opposite poles. Using this theory, Schaufeli argued that engagement cannot adequately be measured as the opposite of burnout (Schaufeli & Bakker, 2004), as Maslach (1982) claimed. Schaufeli, therefore, proposed that burnout and engagement are negatively related, yet independent states. Schaufeli went on to create the Utrecht Engagement Scale (Schaufeli & Bakker, 2004) which does not use burnout as a measure due to the uncertainty of two measures being perfectly, negatively correlated because someone who is burned out is not necessarily engaged. Schaufeli et al (2001) went on to theorize that burnout could be an erosion of engagement. The research in this study tends to lend support to the concept of engagement and burnout being related, yet not

opposites. The correlation between burnout and engagement for this study was $-.674$ ($p < .01$). Therefore, this study found a strong, negative correlation, but not a polar opposite correlation. This would seem to support Schaufeli et al's (2001) theory.

As mentioned above, research from Maslach (1982) defined the cores of burnout as emotional exhaustion, depersonalization and reduced personal accomplishment (exhaustion, cynicism and inefficacy). Pines and Aronson (1988) amended this to state that the core of burnout is physical, emotional and mental exhaustion only. Later research (Demerouti & Bakker, 2007) holds that the core of burnout is exhaustion and disengagement (cynicism), whereas the core of engagement (Schaufeli et al, 2001) is comprised of vigor, dedication and absorption. These are the core components used for the current study. Previous research reports that exhaustion and vigor are opposites, and disengagement (cynicism) and dedication are opposites (Demerouti & Bakker, 2007; Schaufeli et al, 2001). Absorption is seen more as a consequence of engagement and a type of flow. By *flow*, Schaufeli uses the theory of Csikszentmihalyi (1990) which describes flow as “a state of optimal experience that is characterized by focused attention, clear mind, mind and body union, effortless concentration, complete control, loss of self-consciousness, distortion of time and intrinsic enjoyment” (Schaufeli & Bakker, 2004, p. 295).

This research went on to report that exhaustion and vigor span a dimension known as *Energy* and that cynicism and dedication span a dimension known as *Identification* (Green et al, 1999; Schaufeli & Buunk, 2003; Hakanen et al, 2006). For this study exhaustion and vigor were found to have a strong, negative correlation of $-.621$ ($p < .01$), and disengagement (cynicism) and dedication were found to also have a strong,

negative correlation of $-.670$ ($P < .01$). Although not completely opposites, these strong negative correlations tend to confirm the theory that these core components of burnout and engagement could be on the same continuum; however, they would not be exact opposites, but related.

Additionally, the theoretical model for this study was based off of the Job Demands-Resources Model (Bakker and Demerouti, 2007; Demerouti et al, 2001). This model posits that job demands are the aspects of the job that require intense physical or mental effort which can lead to physiological and psychological effects such as stress. Job resources are the aspects of the job that are helpful in completing the work, can lessen demands and the effects of the demands (stress). These demands and resources can lead to two processes: health impairment and motivation (Bakker & Demerouti, 2007). Health impairment is caused when persistent job demands lead to health impairment which leads to a decrease in employee energy which leads to a decrease in health and an increase in burnout. In turn, motivation is created when an increase in job resources leads to an increase in engagement. This theory further posits that, put simply, a decrease in resources leads to burnout and an increase in resources buffers stress which leads to an increase in engagement (Bakker & Demerouti, 2007). This theory links back to the core components of burnout and engagement as well. In the JD-R model an increase in demands leads to exhaustion and a decrease in resources leads to a decreased ability to meet demands which leads to withdrawal and disengagement. The exhaustion and disengagement variables are considered the core of burnout. In addition, in the JD-R model an increase in resources leads to motivation; this leads to engagement and

productivity through this increase in motivation. Exhaustion and disengagement were found to be significant in the current model which lends credence to the JD-R theory.

Another consideration is the link between burnout, engagement and turnover intention. Although these variables were not studied in this research, previous research has found that turnover is correlated with burnout (Ducharme, et al, 2008; Kim & Stoner 2008), and that as burnout increases, turnover increases (Riulli & Savicki, 2006). Within this study, though, no significant correlation was found between burnout and turnover intention (-.092). However, the correlation between engagement and turnover intention was significant (.184, $p < .05$). This is a confounding result, and more research would have to be done to decide if this is a true correlation or if one of the potential issues raised regarding the turnover intention measure could be the cause of this correlation.

Overall, this research provides a solid base from which to expand the study. Future research ideas for this study include branching out to other types of non-exempt employees, branching the study out to other universities and other RECs or to other employees who perform similar tasks. Another option is to perform this research as a longitudinal study over time. By studying the results of the surveys, implementing practical solutions and then collecting the surveys again after a certain amount of time, it might be possible to determine what methods of reducing burnout and stress and of increasing engagement are effective. In addition, future research could include other variables and/or multiple measures of the same variables to determine validity of the results. Also, adding control variables and more demographic information could provide more specific information from which to build this research from. Implementing some of the suggestions from the burnout and engagement sections, waiting a pre-determined

amount of time and then re-testing for stress, burnout and engagement levels could provide additional information as well.

Future research could also be built around other research models provided for stress, engagement, burnout, turnover intention and satisfaction with my supervisor. In turn, these variables could be studied independently to determine how prevalent these individual variables are. Also, many other social factors could be taken into consideration with this population (for example: job satisfaction, responsibility for peers, and loyalty) and studied to determine the effects on stress.

Finally, future research could dig more into the latent variables used to define the independent and dependent manifest variables of stress, burnout and engagement. Regressions and correlations have been run on these variables, so expanding on this would be relatively simple. It appears that some of the latent variables have a high level of significance and correlate well with each other. Post hoc testing regarding the mediating/moderating relationship of satisfaction with one's supervisor weighing the level of satisfaction could also be performed.

Concluding Remarks

The current study did not find support for all of the proposed hypotheses; however, some interesting findings were uncovered, and this study made a contribution to HRD in an area of employee population that is lacking. This study is the first such research project on the population of non-exempt REC employees and stress. This population is paramount to completing daily work but is often overlooked where research

is concerned. Because of this lack of attention to this population, this study could provide a benchmark to further research of this type of population. With such a high response rate, the methods used in this study seem to be effective at eliciting responses from this population. In addition, the findings of this study can be used to make practical changes to this group of employees to decrease burnout and stress and to increase engagement. This study could be further assessed at a later date to see if changes that are made have any impact on the researched variables.

This study was based on multiple established theories, including the JD-R model of Demerouti and Bakker (2001) that have already been shown to be applicable to many employment groups. Using a different population, we were able to expand this theory to other employment populations. Given the results, it seems that the job resources-demands model is applicable to the non-exempt population, specifically in this case, to farm labor. In addition, this study opens the door to explore this relationship further. This study has further linked the concepts of burnout and engagement to a population that historically has not been studied with regard to these variables. This population could be seen as the backbone of working class employees, and the need to keep this group engaged is paramount to continuing work and productivity.

Given the significance that was found with regard to the full mediation of satisfaction with one's supervisor between stress and engagement, it would be of value to focus on the training of management to improve these relationships. By providing training in building relationships, the focus could be shifted from solely trying to reduce stress to building positive connections that could potentially create a more engaged work force.

The findings for this study provide multiple implications for practical use by the RECs to increase employee engagement and decrease burnout and stress. Using some of the suggestions in the burnout and engagement section of this chapter, it would be possible to create plans with each REC director to increase engagement and decrease burnout and stress at the research center. Even though it is impossible to identify which center(s) had higher rates of stress and burnout, due to anonymity, it would be possible to establish some new protocols, retest and then make changes accordingly. One advantage of this study is that the researchers can continue to work with the population to implement some of the changes and follow the progress or lack of progress that is made. Over time, individual plans can be created for each REC that can be built upon not only to retain employees, but also to increase the employees' engagement with the organization and possibly, in turn, to increase production.

Overall, this study sets a benchmark for practical research within a woefully understudied population. The findings that have been presented can be a doorway to make changes to real world situations. These changes can help facilitate not only more engaged employees, but also more productive ones. There are many worthwhile benefits from this study that should be expanded on through time.

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Appendix A

Letter to Center Director

Center Director

I appreciate your willingness to assist me collecting data for my doctoral research. The purpose of this research is to determine how an employee's work stress affects that person's level of job burnout and job engagement. In addition, this research is examining what role satisfaction with one's supervisor plays in the overall picture. We believe that higher levels of stress at work can lead to burnout and lower levels of stress at work can lead to engagement. We also believe that having a good supervisor can reduce the effects of stress on the employee. Information collected in this study will be used to gain information about stress levels and levels of burnout and engagement for research center employees. This research focuses only on the non-exempt staff from the research centers, because so little research has been done on non-exempt level employees and even less has been done on research center staff.

What we are asking from you is this: We would like the opportunity to give your non-exempt employees a questionnaire packet. This packet includes a survey that includes questions about your level of work stress, work burnout, work engagement and your level of satisfaction with your supervisor. The survey should take about 25 minutes to complete. We ask that the employees who participate be regular, non-exempt level employees.

We also ask that you request that one of your non-exempt staff administer this survey packet. Enclosed you will find an instruction sheet for that person to use. In addition, anyone who completes the survey will be eligible for a drawing to win a gift card once the surveys are completed.

The information we gather from employees will be kept **completely confidential**. We will not ask for their names; they will return the surveys directly to us, and the data will not be shown to anyone except us. In addition, the responses from your employees will be aggregated to the team level; meaning their responses will not be identified individually.

All participants are welcome to receive a copy of the summarized report of results. These results will be aggregated over all of the centers surveyed and will not include specific information about any center. It is our hope that we can use this information to decrease stress and burnout and increase engagement of your employees.

Finally, it is important the employees completing the survey not know that it came from me. As I have worked with many of the employees I do not want to bias their responses.

Thank you for your time and consideration, and I look forward to talking with you about this study.

Sincerely,

Amy Caponetti
HR AgResearch
103 Morgan Hall
2621 Morgan Circle
Knoxville, TN 37996
865-974-4506
acap@utk.edu

Instructions to Survey Administrator

Thank you for your assistance with collecting data for this research.

Please give each participant a survey and a pen to complete.

Please read the following statement to those who will be completing the survey.

Thank you to everyone who has agreed to complete the surveys. You should have in front of you a participant letter, surveys, pen and a ticket. Please take the next 20-25 minutes to complete the surveys. Once you have completed the survey please return your survey to me to be placed in this envelope (hold up envelope) to return to the researcher. If you would like to participate in the gift card drawing please place one ticket in this bag (hold up bag). Once everyone has returned the survey we will draw for the gift card.

Thank you again.

Once everyone has completed the survey please seal the envelope/package for return and ask that it be placed into the mail pick up. At this point please draw a ticket out for the enclosed gift card and award it to the winning ticket holder.

Thank you for your assistance.

Letter to Participant

May 10, 2011

Dear Participant:

The purpose of this research is to determine how an employee's work stress affects that person's level of job burnout and job engagement. In addition, this research is examining what role satisfaction with one's supervisor plays in the overall picture. Information collected in this study will be used to gain information about stress levels and levels of burnout and engagement for research center employees. This research focuses only on the non-exempt staff from the research centers, because so little research has been done on non-exempt level employees and even less has been done on research center staff.

What we are asking from you is this: You will be given a survey packet. Included in this packet of information is a survey that includes questions about your level of work stress, work burnout, work engagement and your level of satisfaction with your supervisor. The survey should take you about 25 minutes to complete. When you are done please place your survey back in the envelope to be returned to the researchers. In addition, if you would like to participate in the drawing place one of your tickets into the bag. The drawing will take place once everyone has completed their survey.

The information we gather from you will be kept **completely confidential**. No one at your research center will see this information and we are not asking you to provide your name on the survey. In addition, the responses from your survey will be combined with all other responses from all research centers. The completed research results will be shared with the research center directors in hopes of offering some insight into ways to minimize stress, decrease burnout and increase engagement of center staff. The only people with access to the raw data will be the research team and the statistics consultant.

We do not anticipate this survey process to cause any distress or risk, however if you feel uncomfortable please do not feel obligated to complete the survey. This survey is completely voluntary; refusal to participate will involve no penalty or loss of benefits to which you would otherwise be entitled to. For further info regarding this study or regarding your rights as a participant please contact Dr. Lane Morris at mmorris1@utk.edu.

Thank you for your time and consideration.

Appendix B

Thank you for taking the time to complete this survey. Your answers will be kept completely confidential. No person at your center will see your results, and your responses to these items will be combined with those of all other surveys from all of the centers.

Please continue to the next page to complete the survey.

Section 1

The following questionnaire is designed to provide you with an indication of the extent to which various individual-level stressors are sources of stress to you. For each item you should indicate the frequency with which the condition described is a source of stress. For each section, refer to the table at the top of the section for response options, as different sections have different response options. Please place your response on the blank beside each item.

The condition described is:

1	2	3	4	5	6	7
Never a source of stress	Rarely a source of stress	Occasionally a source of stress	Sometimes a source of stress	Often a source of stress	Usually a source of stress	Always a source of stress

- | | | |
|-------|-----|--|
| _____ | 1. | My job duties and work objectives are unclear to me. |
| _____ | 2. | I work on unnecessary tasks or projects. |
| _____ | 3. | I have to take work home in the evenings or weekends to stay caught up. |
| _____ | 4. | The demands for work quality made upon me are unreasonable. |
| _____ | 5. | I lack the proper opportunities to advance at this organization. |
| _____ | 6. | I am held accountable for the development of other employees. |
| _____ | 7. | I am unclear about whom I report to and/or who reports to me. |
| _____ | 8. | I get caught in the middle between my supervisors and my subordinates. |
| _____ | 9. | I spend too much time in unimportant meetings that take me away from my work. |
| _____ | 10. | My assigned tasks are sometimes too difficult and/or complex. |
| _____ | 11. | If I want to get promoted, I have to look for a job with another organization. |
| _____ | 12. | I am responsible for counseling with my subordinates and/or helping them resolve their problems. |
| _____ | 13. | I lack the authority to carry out my job responsibilities. |
| _____ | 14. | The formal chain of command is not adhered to. |
| _____ | 15. | I am responsible for an almost unimaginable number of projects or assignments at the same time. |
| _____ | 16. | Tasks seem to be getting more and more complex |
| _____ | 17. | I am hurting my career progress by staying with this organization |
| _____ | 18. | I take action or make decisions that affect the safety or well-being of others. |
| _____ | 19. | I do not fully understand what is expected of me. |
| _____ | 20. | I do things on the job that are accepted by one person and not by others. |

Please continue to the next page.

The condition described is:

1	2	3	4	5	6	7
Never a source of stress	Rarely a source of stress	Occasionally a source of stress	Sometimes a source of stress	Often a source of stress	Usually a source of stress	Always a source of stress

- _____ 21. I simply have more work to do than can be done in an ordinary day.
- _____ 22. The organization expects more of me than my skills and/or abilities provide.
- _____ 23. I have few opportunities to grow and learn new knowledge and skills in my job.
- _____ 24. My responsibilities in this organization are more for people than for things.
- _____ 25. I do not understand the part my job plays in meeting overall organizational objectives.
- _____ 26. I receive conflicting requests from two or more people.
- _____ 27. I feel that I just don't have time to take an occasional break.
- _____ 28. I have insufficient training and/or experience to discharge my duties properly.
- _____ 29. I feel that I am at a standstill in my career.
- _____ 30. I have responsibility for the future (careers) of others.

Please continue to the next page.

Section 2

The following statements refer to your feelings and attitudes during work. Please indicate to what extent you agree or disagree with each of the following statements by selecting the number that corresponds with the statement. For each section, refer to the table at the top of the section for response options, as different sections have different response options. Please place your response on the blank beside each item.

1	2	3	4
Strongly Agree	Agree	Disagree	Strongly Disagree

- | | | |
|-------|-----|--|
| _____ | 1. | I always find new and interesting aspects of my work. |
| _____ | 2. | There are days when I feel tired before I arrive at work. |
| _____ | 3. | It happens more and more often that I talk about work in a negative way. |
| _____ | 4. | After work, I tend to need more time than in the past in order to relax and feel better. |
| _____ | 5. | I can tolerate the pressure of my work very well. |
| _____ | 6. | Lately, I tend to think less at work and do my job almost mechanically. |
| _____ | 7. | I find my work to be a positive challenge. |
| _____ | 8. | During my work, I often feel emotionally drained. |
| _____ | 9. | Over time, one can become disconnected from this type of work. |
| _____ | 10. | After working, I have enough energy for my leisure activities. |
| _____ | 11. | Sometimes I feel sickened by my work tasks. |
| _____ | 12. | After my work, I usually feel worn out and weary. |
| _____ | 13. | This is the only type of work that I can imagine myself doing. |
| _____ | 14. | Usually, I can manage the amount of my work well. |
| _____ | 15. | I feel more and more engaged in my work. |
| _____ | 16. | When I work, I usually feel energized. |

Please continue to the next page.

Section 3

The following statements refer to your feelings and attitudes towards your intention to turnover or leave your job. Please indicate to what extent you agree or disagree with each of the following statements by selecting the number that corresponds with the statement. For each section, refer to the table at the top of the section for response options, as different sections have different response options. Please place your response on the blank beside each item.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

- _____ 1. I intend to stay in this job for the foreseeable future.
- _____ 2. I will probably look for a new job within the next year.
- _____ 3. I do not intend to pursue alternate employment in the foreseeable future.

Please continue to the next page.

Section 4

The following statements refer to how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, Mark a “0” (zero) in the space by the statement. If you have had this feeling, indicate how often you felt it by writing the number (from 1 to 6) that best describes how frequently you feel that way. For each section, refer to the table at the top of the section for response options, as different sections have different response options. Please place your response on the blank beside each item.

0	1	2	3	4	5	6
Never	Almost Never	Rarely	Sometimes	Often	Very Often	Always
	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every Day

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

Please continue to the next page.

Section 5

The following statements refer to your feelings and attitudes regarding satisfaction with your immediate supervisor. Please indicate to what extent you feel satisfied or dissatisfied with your immediate supervisor by selecting the number that corresponds with the statement. For each section, refer to the table at the top of the section for response options, as different sections have different response options. Please place your response on the blank beside each item.

1	2	3	4	5
Very Dissatisfied	Dissatisfied	Neither Agree nor Disagree	Satisfied	Very Satisfied

- | | | |
|-------|-----|--|
| _____ | 1. | The way my supervisor listens when I have something important to say. |
| _____ | 2. | The way my supervisor sets clear work goals. |
| _____ | 3. | The way my supervisor treats me when I make a mistake. |
| _____ | 4. | My supervisor's fairness in appraising my job performance. |
| _____ | 5. | The way my supervisor is consistent in his/her behavior toward subordinates. |
| _____ | 6. | The way my supervisor helps me get the job done. |
| _____ | 7. | The way my supervisor gives me credit for my ideas. |
| _____ | 8. | The way my supervisor gives me clear instructions. |
| _____ | 9. | The way my supervisor informs me about work changes ahead of time. |
| _____ | 10. | The way my supervisor follows through to get problems resolved. |
| _____ | 11. | The way my supervisor understands the problems I might run into doing the job. |
| _____ | 12. | The way my supervisor shows concern for my career progress. |
| _____ | 13. | My supervisor's backing me up with other management. |
| _____ | 14. | The frequency with which I get a pat on the back for doing a good job. |
| _____ | 15. | The technical competence of my supervisor. |
| _____ | 16. | The amount of time I get to learn a task before I'm moved to another task. |
| _____ | 17. | The time I have to do the job right. |
| _____ | 18. | The way my job responsibilities are clearly defined |

Thank you for taking the time to complete this survey. Please place this survey into the postage-paid envelope with the facilitator to be returned to the researcher. If you are interested in participating in the drawing please place one ticket in the bag and keep one ticket.

Appendix C

This appendix includes additional statistical analysis that was run to check for correlations and significant relationships between the latent variables of each manifest variable. Accompanying tables follow the dialogue.

Hypothesis 1: Latent Variable analysis

Hypothesis 1 stated that higher work role stress will be positively correlated with increased burnout. Using simple linear regression each stress variable was run individually with each burnout variable to test for relationships. Examining disengagement (burnout), it was found that stress ambiguity was significant at the $p < .01$ level ($p = .003$), stress conflict was significant at the $p < .001$ level ($p = .000$), stress qualitative overload was significant at the $p < .001$ level ($p = .000$), stress quantitative overload was significant at the $p < .01$ level ($p = .008$), stress concerns about career development was significant at the $p < .01$ ($p = .005$), and finally stress responsibility for people was not significant. Examining exhaustion (burnout) it was found that stress ambiguity was significant at the $p < .001$ level ($p = .000$), stress conflict was significant at the $p < .001$ level ($p = .000$), stress qualitative overload was significant at the $p < .001$ level ($p = .000$), stress quantitative overload was significant at the $p < .001$ level ($p = .000$); stress concerns about career development were significant at the $p < .001$ ($p = .000$), and finally stress responsibility for people was not significant ([See Table 1](#)).

Using multiple linear regression, stress was further reviewed for more detailed information. Running all six of the stress variables, it was found, using simple correlations, that conflict measures the same thing as ambiguity (.761) and qualitative overload (.627), since the correlations were so high. For further multiple regressions, the variable of conflict was removed from the total sum of the stress variable ([see Table 2](#)). In addition, simple correlations on the

burnout variables of disengagement and exhaustion were also highly correlated (.713), and, therefore, will be examined separately ([see Table 3](#)). For the multiple regression run using the total sum of the five sub variables (the original six with conflict removed) of stress and the burnout variable of disengagement, the coefficient was found to be significant at the $p < .01$ significance level ($p = .001$), with $F = 12.865$, $B = .075$. The R Square for this regression showed that the current stress variable explained 13.6% of the variance in disengagement (burnout), ([See Table 4](#)). Run in a multiple regression the significance of each variable was reviewed. Stress qualitative overload increases by .264 and was significant at the $p < .05$ level ($p = .041$); ambiguity, stress quantitative overload, stress concerns about career development, and responsibility for people were not significant ([See Table 5](#)). For the multiple regression run using the total sum of the three sub variables (the four studied stress variables with conflict removed) of stress and the burnout variable of disengagement, the coefficient was found to be significant at the $p < .001$ level ($p = .000$), with $F = 15.288$, $B = .133$. The R Square for this regression showed that the current stress variable explained 15.7% of the variance in disengagement (burnout), ([see Table 6](#)). Run in a multiple regression, the significance of each variable was reviewed. None of the individual stress variables (ambiguity, overload qualitative, and overload quantitative) were significant with the burnout variable of disengagement.

For the multiple regression run using the total sum of the five sub variables (the original six with conflict removed) of stress and the burnout variable of exhaustion, the coefficient was found to be significant at the $p < .001$ significance level ($p = .000$), with $F = 28.384$, $B = .095$. The R Square for this regression showed that the current stress variable explained 25.7% of the variance in exhaustion (burnout), ([see Table 7](#)). Run in a multiple regression, the significance of each variable was reviewed. Broken down by variables the coefficient showed that stress quantitative

overload increases by .316 and was significant at the $p < .001$ level ($p = .000$); stress concerns about career development increases by .117 and was significant at the $p < .05$ ($p = .047$), stress responsibility for people decreases by .259 and was significant at the $p < .01$ level ($p = .002$), and finally ambiguity and stress quantitative overload were not significant, ([see Table 8](#)). For the multiple regression run using the total sum of the three sub variables (the four studied stress variables with conflict removed) of stress and the burnout variable of exhaustion, the coefficient was found to be significant at the $p < .001$ level ($p = .000$), with $F = 35.940$, $B = .172$. The R Square for this regression showed that the stress variable explained 30.5% of the variance in exhaustion (burnout), ([see Table 9](#)). Run in a multiple regression, the significance of each variable was reviewed. Only one of the individual stress variables (ambiguity, overload qualitative, and overload quantitative) was significant with the burnout variable of disengagement: overload quantitative was significant at the $p < .01$ level ($p = .002$), ([see Table 10](#)).

Hypothesis 2: Sub Variable Analysis

Hypothesis 2 stated that higher work role stress will be negatively correlated with increased engagement. Using simple linear regression, each stress variable was run individually with each engagement variable to test for relationships. Examining vigor (engagement), it was found that stress ambiguity was significant at the $p < .001$ level ($p = .000$), stress conflict was significant at the $p < .001$ level ($p = .000$), stress qualitative overload was significant at the $p < .01$ level ($p = .008$), stress quantitative overload was significant at the $p < .01$ level ($p = .002$), stress concerns about career development were significant at the $p < .05$ ($p = .014$), and finally stress responsibility for people was not significant. Examining dedication (engagement), it was found that stress ambiguity was not significant, stress conflict was significant at the $p < .05$ level ($p = .014$), stress qualitative overload was significant at the $p < .05$ level ($p = .026$), stress

quantitative overload was significant at the $p < .05$ level ($p = .023$), stress concerns about career development was not significant, and finally stress responsibility for people was not significant. Examining absorption (engagement), it was found that none of the stress variables (ambiguity, conflict, qualitative overload, quantitative overload, stress concerns about career development, and stress responsibility for people) were significant ([see Table 11](#)).

Using multiple linear regression, stress was further reviewed for more detailed information. Running all six of the stress variables, it was found, using simple correlations, that conflict measures the same thing as ambiguity (.761) and qualitative overload (.627), since the correlations were so high ([see Table 1](#)). For further multiple regressions, the variable of conflict was removed from the stress variable. In addition, the engagement variables were run to test for correlations; all three variables showed to be very highly correlated: vigor and absorption = .647, vigor and dedication = .741, and dedication and absorption = .711 ([see Table 12](#)). Because of this, each multiple regression was run individually with each engagement variable to see if any one of these variables were significant with any of the remaining stress variables.

For the multiple regression run using the total sum of the five sub-variables (the original six with conflict removed) of stress and the engagement variable of vigor, the coefficient was found to be significant at the $p < .001$ level ($p = .000$) with $F = 13.889$, $B = -.075$. The R Square for this regression showed that the stress variable explained 14.5% of the variance in vigor (engagement) ([see Table 13](#)). Run in a multiple regression, the significance of each variable was reviewed. Only one of the individual stress variables (ambiguity, overload qualitative, overload quantitative, concerns about career, and responsibility for people) was significant with the vigor variable of engagement. Stress ambiguity was significant at the $p < .05$ level ($p = .046$) ([see Table 14](#)). For the multiple regression run using the total sum of the three sub-variables (the four

studied stress variables with conflict removed) of stress and the engagement variable of vigor, the coefficient was found to be significant at the $p < .001$ level ($p = .000$), with $F = 16.272$, $B = -.133$. The R Square for this regression showed that the stress variable explained 16.6% of the variance in vigor (engagement) ([see Table 15](#)). Run in a multiple regression, the significance of each variable was reviewed. Only one of the individual stress variables (ambiguity, overload qualitative, and overload quantitative) was significant with the engagement variable of vigor, with stress ambiguity being significant at the $p < .05$ level ($p = .032$) ([see Table 16](#)).

For the multiple regression run using the total sum of the five sub-variables (the original six with conflict removed) of stress and the engagement variable of dedication, the coefficient was found to be significant at the $p < .05$ level, ($p = .021$), with $F = 5.502$, $B = -.048$. The R Square for this regression showed that the stress variable explained 6.3% of the variance in dedication (engagement) ([see Table 17](#)). Run in a multiple regression, the significance of each variable was reviewed. However, none of the individual stress variables (ambiguity, overload qualitative, overload quantitative, concerns about career, and responsibility for people) was significant with the dedication variable of engagement. For the multiple regression run using the total sum of the three sub-variables (the four studied stress variables with conflict removed) of stress and the engagement variable of dedication, the coefficient was found to be significant at the $p < .05$, ($p = .012$), with $F = 6.563$, $B = -.086$. The R Square for this regression showed that the stress variable explained 7.4% of the variance in dedication (engagement) ([see Table 18](#)). Run in a multiple regression, the significance of each variable was reviewed. However, none of the individual stress variables (ambiguity, overload qualitative, and overload quantitative) was significant with the engagement variable of dedication.

For the multiple regression run using the total sum of the five sub-variables (the original six with conflict removed) of stress and the engagement variable of absorption, the coefficient was found not to be significant. Run in a multiple regression, the significance of each variable was reviewed. None of the individual stress variables (ambiguity, overload qualitative, overload quantitative, concerns about career, and responsibility for people) were significant with the absorption variable of engagement. For the multiple regression run using the total sum of the three sub variables (the four studied stress variables with conflict removed) of stress and the engagement variable of absorption, the coefficient was found not to be significant. Run in a multiple regression, the significance of each variable was reviewed. None of the individual stress variables (ambiguity, overload qualitative, and overload quantitative) were significant with the absorption variable of engagement.

Hypothesis 3 Sub Variable Analysis

Hypothesis 3 stated that higher work role stress will be positively correlated with increased turnover intention. Using simple linear regression each stress variable was run individually with each engagement variable to test for relationships. Examining turnover intention, it was found that none of the stress variables (ambiguity, conflict, qualitative overload, quantitative overload, stress concerns about career development, and stress responsibility for people) were significant.

Using multiple linear regression, stress was further reviewed for more detailed information. Running all six of the stress variables, it was found, using simple correlations, that conflict measures the same thing as ambiguity (.761) and qualitative overload (.627), since the correlations were so high ([see Table 1](#)). For further multiple regressions, the variable of conflict

was removed from the stress variable. For the multiple regression run using the total sum of the five sub-variables (the original six with conflict removed) of stress and the turnover intention variable, the coefficient was not found to be significant.

Hypothesis 4: Sub-Variable Analysis

Hypothesis 4 stated that satisfaction with one's supervisor will mediate the relationship between work role stress and burnout. Correlations were run between each stress variable and each burnout variable (disengagement and exhaustion) to determine individual correlation significance for assessment. Where correlations were found to be significant, regressions were run to determine if the relationship was mediated by satisfaction with one's supervisor.

Mediation was indicated when a non-significant relationship was found after adding the mediator to what had been a significant relationship between dependent and independent variables previously.

When breaking down the variables within burnout, it was found that stress ambiguity was correlated with disengagement (.317), stress conflict was correlated with disengagement (.506), stress qualitative overload was correlated with disengagement (.379), stress quantitative overload was correlated with disengagement (.289), and stress concerns about career development was correlated with disengagement (.303). However, stress responsibility for people and disengagement were not correlated.

In addition, it was found that stress ambiguity was correlated with satisfaction with my supervisor (-.314), stress conflict was correlated with satisfaction with my supervisor (-.448), stress qualitative overload was correlated with satisfaction with my supervisor (-.366), stress quantitative overload was correlated with satisfaction with my supervisor (-.318), and stress

concerns about career development was correlated with satisfaction with my supervisor (-.261). However, stress responsibility for people and satisfaction with my supervisor were not correlated. Disengagement (burnout) was correlated with satisfaction with my supervisor (-.566) ([see Table 19](#)).

When running correlations for the individual stress variables and burnout exhaustion, it was found that stress ambiguity was correlated with exhaustion (.424), stress conflict was correlated with exhaustion (.585), stress qualitative overload was correlated with exhaustion (.426), stress quantitative overload was correlated with exhaustion (.516), and stress concerns about career development was correlated with exhaustion (.409). However, stress responsibility for people and exhaustion were not correlated. In addition, it was found that stress ambiguity was correlated with satisfaction with my supervisor (-.314), stress conflict was correlated with satisfaction with my supervisor (-.448), stress qualitative overload was correlated with satisfaction with my supervisor (-.366), stress quantitative overload was correlated with satisfaction with my supervisor (-.318), and stress concerns about career development was correlated with satisfaction with my supervisor (-.261). However, stress responsibility for people and satisfaction with my supervisor were not correlated. Exhaustion (burnout) was correlated with satisfaction with my supervisor (-.533) ([see Table 20](#)).

Once correlational relationships were established, regression analysis was run on the variables that were correlated. For further analysis, each stress variable and burnout variable that showed a correlation was run through regression analysis to determine if there were individual mediating relationships. When disengagement (burnout) and stress ambiguity were run the relationship was significant at the $p < .01$ level ($p = .003$). When the mediating variable of satisfaction with my supervisor was added, the relationship was not significant ($p = .107$) Thus,

there was a mediating relationship present ([see Table 21](#)). When disengagement (burnout) and stress conflict were run, the relationship was significant at the $p < .001$ level ($p = .000$). When the mediating variable of satisfaction with my supervisor was added, the relationship was still significant at the $p < .01$ level ($p = .002$). Thus, there was no mediating relationship present ([see Table 22](#)). When disengagement (burnout) and stress qualitative overload were run, the relationship was significant at the $p < .001$ level ($p = .000$). When the mediating variable of satisfaction with my supervisor was added, the relationship was significant at the $p < .05$ level ($p = .044$). Thus, there was no mediating relationship present ([see Table 23](#)). When disengagement (burnout) and stress quantitative overload were run, the relationship was significant at the $p < .01$ level ($p = .008$). When the mediating variable of satisfaction with my supervisor was added, the relationship was not significant ($p = .208$). Thus, there was a mediating relationship present ([see Table 24](#)). When disengagement (burnout) and stress concerns about career development were run, the relationship was significant at the $p < .01$ level ($p = .005$). When the mediating variable of satisfaction with my supervisor was added, the relationship was not significant ($p = .077$). Thus there was a mediating relationship present ([see Table 25](#)).

When exhaustion (burnout) and stress ambiguity were run, the relationship was significant at the $p < .001$ level ($p = .000$). When the mediating variable of satisfaction with my supervisor was added, the relationship was significant at the $p < .01$ level ($p = .003$). Thus, there was no mediating relationship present ([see Table 26](#)). When exhaustion (burnout) and stress conflict were run, the relationship was significant at the $p < .001$ level ($p = .000$). When the mediating variable of satisfaction with my supervisor was added the relationship was still significant at the $p < .001$ level ($p = .000$). Thus, there was no mediating relationship present ([see Table 27](#)). When exhaustion (burnout) and stress qualitative overload were run, the relationship

was significant at the $p < .001$ level ($p = .000$). When the mediating variable of satisfaction with my supervisor was added, the relationship was significant at the $p < .01$ level ($p = .008$). Thus, there was no mediating relationship present ([see Table 28](#)). When exhaustion (burnout) and stress quantitative overload were run, the relationship was significant at the $p < .001$ level ($p = .000$). When the mediating variable of satisfaction with my supervisor was added, the relationship was still significant at the $p < .001$ level ($p = .000$). Thus, there was no mediating relationship present ([see Table 29](#)). When exhaustion (burnout) and stress concerns about career development were run, the relationship was significant at the $p < .001$ level ($p = .000$). When the mediating variable of satisfaction with my supervisor was added, the relationship was still significant at the $p < .01$ level ($p = .002$). Thus, there was no mediating relationship present ([see Table 30](#)).

Hypothesis 5 Sub Variable Analysis

Hypothesis 5 stated that satisfaction with one's supervisor will mediate the relationship between work role stress and engagement. Correlations were run between each stress variable and each engagement variable (vigor, dedication, and absorption) to determine individual correlation significance for assessment. Where correlations were found to be significant, regressions were run to determine if the relationship was mediated by satisfaction with one's supervisor. Mediation was indicated when a non-significant relationship was found after adding the mediator to what had been a significant relationship between dependent and independent variables previously.

When breaking down the variables within engagement, it was found that stress ambiguity was correlated with vigor ($-.375$), stress conflict was correlated with vigor ($-.442$), stress qualitative overload was correlated with vigor ($-.287$), stress quantitative overload was correlated

with vigor (-.333), and stress concerns about career development was correlated with vigor (-.266). However, stress responsibility for people and vigor were not correlated. In addition, it was found that stress ambiguity was correlated with satisfaction with my supervisor (-.314), stress conflict was correlated with satisfaction with my supervisor (-.448), stress qualitative overload was correlated with satisfaction with my supervisor (-.366), stress quantitative overload was correlated with satisfaction with my supervisor (-.318), and stress concerns about career development was correlated with satisfaction with my supervisor (-.261). However, stress responsibility for people and satisfaction with my supervisor were not correlated. Vigor (engagement) was correlated with satisfaction with my supervisor (.486) ([see Table 31](#)).

When running correlations for the individual stress variables and engagement dedication, it was found that stress conflict was correlated with dedication (-.268), stress qualitative overload was correlated with dedication (-.244), and stress quantitative overload was correlated with dedication (-.247). However, stress ambiguity, stress concerns about career development, and stress responsibility for people and dedication were not correlated. In addition, it was found that stress ambiguity was correlated with satisfaction with my supervisor (-.314), stress conflict was correlated with satisfaction with my supervisor (-.448), stress qualitative overload was correlated with satisfaction with my supervisor (-.366), stress quantitative overload was correlated with satisfaction with my supervisor (-.318), and stress concerns about career development was correlated with satisfaction with my supervisor (-.261). However, stress responsibility for people and satisfaction with my supervisor were not correlated. Dedication (engagement) was correlated with satisfaction with my supervisor (.483) ([see Table 32](#)).

When running correlations for the individual stress variables and engagement absorption, it was found that there were no significant correlations between absorption and any of the stress

variables (ambiguity, conflict, quantitative overload, qualitative overload, concerns about career development, and responsibility for people).

Once correlational relationships were established, regression analysis was run on the variables that were correlated. For further analysis, each stress variable and engagement variable that showed a correlation was run through regression analysis to determine if there were individual mediating relationships. When vigor (engagement) and stress ambiguity were run, the relationship was significant at the $p < .001$ level ($p = .000$). When the mediating variable of satisfaction with my supervisor was added, the relationship was still significant at the $p < .05$ level ($p = .014$). Thus, there was no mediating relationship present ([see Table 33](#)). When vigor (engagement) and stress conflict were run, the relationship was significant at the $p < .001$ level ($p = .000$). When the mediating variable of satisfaction with my supervisor was added, the relationship was still significant at the $p < .01$ level ($p = .008$). Thus, there was no mediating relationship present ([see Table 34](#)). When vigor (engagement) and stress qualitative overload were run, the relationship was significant at the $p < .01$ level ($p = .008$). When the mediating variable of satisfaction with my supervisor was added the relationship was not significant ($p = .225$), so there was a mediating relationship present ([see Table 35](#)). When vigor (engagement) and stress quantitative overload were run, the relationship was significant at the $p < .01$ level ($p = .002$). When the mediating variable of satisfaction with my supervisor was added, the relationship was not significant ($p = .051$). Thus, there was a mediating relationship present ([see Table 36](#)). When vigor (engagement) and stress concerns about career development were run, the relationship was significant at the $p < .05$ level ($p = .014$). When the mediating variable of satisfaction with my supervisor was added, the relationship was not significant ($p = .135$). Thus, there was a mediating relationship present ([see Table 37](#)).

When dedication (engagement) and stress conflict were run, the relationship was significant at the $p < .05$ level ($p = .014$). When the mediating variable of satisfaction with my supervisor was added the relationship was not significant ($p = .551$). Thus, there was a mediating relationship present ([see Table 38](#)). When dedication (engagement) and stress qualitative overload were run, the relationship was significant at the $p < .05$ level ($p = .026$). When the mediating variable of satisfaction with my supervisor was added, the relationship was not significant ($p = .443$). Thus, there was a mediating relationship present ([see Table 39](#)). When dedication (engagement) and stress quantitative overload were run, the relationship was significant at the $p < .05$ level ($p = .023$). When the mediating variable of satisfaction with my supervisor was added, the relationship was not significant ($p = .310$). Thus, there was a mediating relationship present ([see Table 40](#)). Since there were no correlations between the absorption (engagement) variable and any of the stress variables, no regressions were run to test for mediation.

Hypothesis 6 Sub Variable Analysis

Hypothesis 6 stated that satisfaction with one's supervisor will mediate the relationship between work role stress and turnover intention. To determine if mediation was present, first correlations were run to determine if there was a significant relationship between overall stress and turnover intention. Where correlations were found to be significant, regressions were run to determine if the relationship was mediated by satisfaction with one's supervisor. Mediation was indicated when a non-significant relationship was found after adding the mediator to what previously had been a significant relationship between dependent and independent variables.

No individual stress variable (ambiguity, conflict, quantitative overload, qualitative overload, concerns about career development, and responsibility for people) was found to correlate with turnover intention. Therefore, no regressions were run to test for mediation.

Table 1 Simple Linear regression stress and burnout variables

Variable	Significance
Stress Ambiguity	p=.003
Stress Conflict	p=.000
Stress Qual Overload	p=.000
Stress Quan Overload	p=.008
Stress Career	p=.005
Stress Responsibility	Not Significant

Dependent variable: Burnout disengagement

Variable	Significance
Stress Ambiguity	p=.000
Stress Conflict	p=.000
Stress Qual Overload	p=.000
Stress Quan Overload	p=.000
Stress Career	p=.001
Stress Responsibility	Not Significant

Dependent variable: Burnout exhaustion

Table 2 Stress Correlations

		Correlations					
		stressamb	stresscon	stressovqual	stressovquan	stresscareer	stressrespect
stressamb	Pearson Correlation	1	.761**	.594**	.485**	.464**	.538**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	84	84	83	84	84	84
stresscon	Pearson Correlation	.761**	1	.627**	.578**	.396**	.464**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	84	84	83	84	84	84
stressovqual	Pearson Correlation	.594**	.627**	1	.500**	.523**	.581**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	83	83	83	83	83	83
stressovquan	Pearson Correlation	.485**	.578**	.500**	1	.279*	.441**
	Sig. (2-tailed)	.000	.000	.000		.010	.000
	N	84	84	83	84	84	84
stresscareer	Pearson Correlation	.464**	.396**	.523**	.279*	1	.331**
	Sig. (2-tailed)	.000	.000	.000	.010		.002
	N	84	84	83	84	84	84
stressresp	Pearson Correlation	.538**	.464**	.581**	.441**	.331**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.002	
	N	84	84	83	84	84	84

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

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

Table 3 Burnout Correlations

		Correlations	
		bodis	boex
bodis	Pearson Correlation	1	.713**
	Sig. (2-tailed)		.000
	N	84	84
boex	Pearson Correlation	.713**	1
	Sig. (2-tailed)	.000	
	N	84	84

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

Table 4 Regression Disengagement/Stress no conflict

	R-Square	B	F	Sig
Stress 5 variables	.136	.075	12.865	.001

Dependent variable: Burnout disengagement

Table 5 Multiple Regression of five stress variables, no conflict

Variable	Significance
Stress Ambiguity	Not Significant
Stress Qual Overload	p=.041
Stress Quan Overload	Not Significant
Stress Career	Not Significant
Stress Responsibility	Not Significant

Dependent variable: Burnout disengagement

Table 6 Regression Disengagement/Stress-only ambiguity and overload

	R-Square	B	F	Sig
Stress 3 variables	.157	.133	15.288	.000

Dependent variable: Burnout disengagement

Table 7 Regression Exhaustion/Stress no conflict

	R-Square	B	F	Sig
Stress 5 variables	.257	.095	28.384	.000

Dependent variable: Burnout exhaustion

Table 8 Multiple Regression of five stress variables, no conflict

Variable	Significance
Stress Ambiguity	Not Significant
Stress Qual Overload	p=.041
Stress Quan Overload	Not Significant
Stress Career	p=.047
Stress Responsibility	p=.002

Dependent variable: Burnout exhaustion

Table 9 Regression Disengagement/Stress-only ambiguity and overload

	R-Square	B	F	Sig
Stress 3 variables	.305	.172	35.940	.000

Dependent variable: Burnout exhaustion

Table 10 Regression Stress-only ambiguity and overload

Variable	Significance
Stress Ambiguity	Not Significant
Stress Qual Overload	Not Significant
Stress Quan Overload	p=.002

Dependent variable: Burnout exhaustion

Table 11 Simple Linear regression stress and Engagement variables

Variable	Significance
Stress Ambiguity	p=.000
Stress Conflict	p=.000
Stress Qual Overload	p=.008
Stress Quan Overload	p=.002
Stress Career	p=.014
Stress Responsibility	Not Significant

Dependent variable: Engagement vigor

Variable	Significance
Stress Ambiguity	Not Significant
Stress Conflict	p=.014
Stress Qual Overload	p=.026
Stress Quan Overload	p=.023
Stress Career	Not Significant
Stress Responsibility	Not Significant

Dependent variable: Engagement dedication

Table 12 Engagement Correlations

Correlations		engabsorp	engvigor	engdedi
engabsorp	Pearson Correlation	1	.647**	.711**
	Sig. (2-tailed)		.000	.000
	N	83	83	83
engvigor	Pearson Correlation	.647**	1	.741**
	Sig. (2-tailed)	.000		.000
	N	83	84	84
engdedi	Pearson Correlation	.711**	.741**	1
	Sig. (2-tailed)	.000	.000	
	N	83	84	84

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

Table 13 Regression Vigor/Stress no conflict

	R-Square	B	F	Sig
Stress 5 variables	.145	-.075	13.889	.000

Dependent variable: Engagement vigor

Table 14 Multiple Regression of five stress variables, no conflict

Variable	Significance
Stress Ambiguity	p=.046
Stress Qual Overload	Not Significant
Stress Quan Overload	Not Significant
Stress Career	Not Significant
Stress Responsibility	Not Significant

Dependent variable: Engagement vigor

Table 15 Regression Vigor/Stress-only ambiguity and overload total

	R-Square	B	F	Sig
Stress 3 variables	.166	-.133	16.272	.000

Dependent variable: Engagement vigor

Table 16 Regression Vigor/Stress-only ambiguity and overload

Variable	Significance
Stress Ambiguity	p=.032
Stress Qual Overload	Not Significant
Stress Quan Overload	Not Significant

Dependent variable: Engagement vigor

Table 17 Regression Dedication/Stress no conflict

	R-Square	B	F	Sig
Stress 5 variables	.063	-.048	5.502	.021

Dependent variable: Engagement dedication

Table 18 Multiple Regression of five stress variables, no conflict

	R-Square	B	F	Sig
Stress 3 variables	.074	-.086	6.563	.012

Dependent variable: Engagement dedication

Table 19 Correlations for Mediation-Burnout Disengagement, Stress Variables, and Satisfaction with My Supervisor

		Correlations							
		stressamb	stresscon	stressovqual	stressovquan	stresscareer	stressrespect	bodis	satwspallsum
stressamb	Pearson	1	.761**	.594**	.485**	.464**	.538**	.317**	-.314**
	Correlation								
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.003	.004
	N	84	84	83	84	84	84	84	84
stresscon	Pearson	.761**	1	.627**	.578**	.396**	.464**	.506**	-.448**
	Correlation								
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000
	N	84	84	83	84	84	84	84	84
stressovqual	Pearson	.594**	.627**	1	.500**	.523**	.581**	.379**	-.366**
	Correlation								
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.001
	N	83	83	83	83	83	83	83	83
stressovquan	Pearson	.485**	.578**	.500**	1	.279*	.441**	.289**	-.318**
	Correlation								
	Sig. (2-tailed)	.000	.000	.000		.010	.000	.008	.003
	N	84	84	83	84	84	84	84	84
stresscareer	Pearson	.464**	.396**	.523**	.279*	1	.331**	.303**	-.261*
	Correlation								
	Sig. (2-tailed)	.000	.000	.000	.010		.002	.005	.017
	N	84	84	83	84	84	84	84	84
stressrespect	Pearson	.538**	.464**	.581**	.441**	.331**	1	.100	-.177
	Correlation								
	Sig. (2-tailed)	.000	.000	.000	.000	.002		.365	.108
	N	84	84	83	84	84	84	84	84
bodis	Pearson	.317**	.506**	.379**	.289**	.303**	.100	1	-.566**
	Correlation								
	Sig. (2-tailed)	.003	.000	.000	.008	.005	.365		.000
	N	84	84	83	84	84	84	84	84
satwspallsum	Pearson	-.314**	-.448**	-.366**	-.318**	-.261*	-.177	-.566**	1
	Correlation								
	Sig. (2-tailed)	.004	.000	.001	.003	.017	.108	.000	
	N	84	84	83	84	84	84	84	84

** . Correlation is significant at the 0.01 level (2-tailed). * . Correlation is significant at the 0.05 level (2-tailed).

Table 20 Correlations for Mediation-Burnout Disengagement, Stress Variables, and Satisfaction with My Supervisor.**

		Correlations							
		stressamb	stresscon	stressovqual	stressovquan	stresscareer	stressrespect	boex	satwspallsum
stressamb	Pearson	1	.761**	.594**	.485**	.464**	.538**	.424**	-.314**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.004
	N	84	84	83	84	84	84	84	84
stresscon	Pearson	.761**	1	.627**	.578**	.396**	.464**	.585**	-.448**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000
	N	84	84	83	84	84	84	84	84
stressovqual	Pearson	.594**	.627**	1	.500**	.523**	.581**	.426**	-.366**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.001
	N	83	83	83	83	83	83	83	83
stressovquan	Pearson	.485**	.578**	.500**	1	.279*	.441**	.516**	-.318**
	Sig. (2-tailed)	.000	.000	.000		.010	.000	.000	.003
	N	84	84	83	84	84	84	84	84
stresscareer	Pearson	.464**	.396**	.523**	.279*	1	.331**	.409**	-.261*
	Sig. (2-tailed)	.000	.000	.000	.010		.002	.000	.017
	N	84	84	83	84	84	84	84	84
stressrespect	Pearson	.538**	.464**	.581**	.441**	.331**	1	.134	-.177
	Sig. (2-tailed)	.000	.000	.000	.000	.002		.223	.108
	N	84	84	83	84	84	84	84	84
boex	Pearson	.424**	.585**	.426**	.516**	.409**	.134	1	-.533**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.223		.000
	N	84	84	83	84	84	84	84	84
satwspallsum	Pearson	-.314**	-.448**	-.366**	-.318**	-.261*	-.177	-.533**	1
	Sig. (2-tailed)	.004	.000	.001	.003	.017	.108	.000	
	N	84	84	83	84	84	84	84	84

Correlation is significant at the 0.01 level (2-tailed).*. Correlation is significant at the 0.05 level (2-tailed).

Table 21 Regressions for Mediation Burnout Disengagement, Stress Ambiguity, and Satisfaction with My Supervisor

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	15.274	.886		.000
	stressamb	.275	.091	.317	.003

a. Dependent Variable: bodis

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	27.147	2.309		.000
	stressamb	.134	.082	.155	.107
	satwspallsum	-.154	.028	-.517	.000

a. Dependent Variable: bodis

Table 22 Regressions for Mediation Burnout Disengagement, Stress Conflict, and Satisfaction with My Supervisor

Coefficients ^a					
		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	
1	(Constant)	14.005	.778		18.007
	stresscon	.340	.064	.506	5.310
					.000

a. Dependent Variable: bodis

Coefficients ^a					
		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	
1	(Constant)	24.116	2.399		10.052
	stresscon	.212	.065	.316	3.278
	satwspallsum	-.126	.029	-.424	-4.408
					.000

a. Dependent Variable: bodis

Table 23 Regressions for Mediation Burnout Disengagement, Stress Qualitative Overload, and Satisfaction with My Supervisor

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	14.666	.903		16.238	.000
stressovqual	.325	.088	.379	3.689	.000

a. Dependent Variable: bodis

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	26.386	2.398		11.005	.000
stressovqual	.169	.082	.197	2.049	.044
satwspallsum	-.149	.029	-.498	-5.175	.000

a. Dependent Variable: bodis

Table 24 Regressions for Mediation Burnout Disengagement, Stress Quantitative Overload, and Satisfaction with My Supervisor

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	15.442	.910		16.979	.000
stressovquan	.222	.081	.289	2.736	.008

a. Dependent Variable: bodis

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	27.585	2.338		11.799	.000
stressovquan	.093	.073	.121	1.269	.208
satwspallsum	-.157	.028	-.527	-5.510	.000

a. Dependent Variable: bodis

Table 25 Regressions for Mediation Burnout Disengagement, Stress Concerns About Career, and Satisfaction with My Supervisor

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	15.467	.865		17.888	.000
stresscareer	.182	.063	.303	2.877	.005

a. Dependent Variable: bodis

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	27.207	2.218		12.268	.000
stresscareer	.100	.056	.167	1.790	.077
satwspallsum	-.155	.028	-.522	-5.614	.000

a. Dependent Variable: bodis

Table 26 Regressions for Mediation Burnout Exhaustion, Stress Ambiguity, and Satisfaction with My Supervisor

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	15.641	.786		19.895	.000
stressamb	.342	.081	.424	4.242	.000

a. Dependent Variable: boex

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	25.091	2.120		11.836	.000
stressamb	.230	.076	.285	3.035	.003
satwspallsum	-.122	.026	-.443	-4.723	.000

a. Dependent Variable: boex

Table 27 Regressions for Mediation Burnout Exhaustion, Stress Conflict, and Satisfaction with My Supervisor

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	14.686	.679		21.616	.000
stresscon	.365	.056	.585	6.527	.000

a. Dependent Variable: boex

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	22.183	2.165		10.248	.000
stresscon	.270	.058	.433	4.628	.000
satwspallsum	-.094	.026	-.339	-3.622	.001

a. Dependent Variable: boex

Table 28 Regressions for Mediation Burnout Exhaustion, Stress Qualitative Overload, and Satisfaction with My Supervisor

Coefficients ^a					
		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	
1	(Constant)	15.477	.820		18.885
	stressovqual	.339	.080	.426	4.239
					.000

a. Dependent Variable: boex

Coefficients ^a					
		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	
1	(Constant)	25.186	2.235		11.267
	stressovqual	.209	.077	.264	2.726
	satwspallsum	-.123	.027	-.444	-4.598
					.000

a. Dependent Variable: boex

Table 29 Regressions for Mediation Burnout Exhaustion, Stress Quantitative Overload, and Satisfaction with My Supervisor

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	14.914	.756		.000
	stressovquan	.368	.067	.516	.000

a. Dependent Variable: boex

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	23.684	2.030		.000
	stressovquan	.275	.064	.386	.000
	satwspallsum	-.113	.025	-.410	.000

a. Dependent Variable: boex

Table 30 Regressions for Mediation Burnout Exhaustion, Stress Quantitative Overload, and Satisfaction with My Supervisor

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	15.856	.769		20.614	.000
stresscareer	.228	.056	.409	4.054	.000

a. Dependent Variable: boex

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	25.403	2.035		12.484	.000
stresscareer	.161	.051	.289	3.148	.002
satwspallsum	-.126	.025	-.457	-4.975	.000

a. Dependent Variable: boex

Table 31 Correlations for Mediation-Engagement Vigor, Stress Variables, and Satisfaction with My Supervisor

Correlations									
		stressamb	stresscon	stressovqual	stressovquan	stresscareer	stressrespect	engvigor	satwspallsum
stressamb	Pearson Correlation	1	.761**	.594**	.485**	.464**	.538**	-.375**	-.314**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.004
	N	84	84	83	84	84	84	84	84
stresscon	Pearson Correlation	.761**	1	.627**	.578**	.396**	.464**	-.442**	-.448**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000
	N	84	84	83	84	84	84	84	84
stressovqual	Pearson Correlation	.594**	.627**	1	.500**	.523**	.581**	-.287**	-.366**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.008	.001
	N	83	83	83	83	83	83	83	83
stressovquan	Pearson Correlation	.485**	.578**	.500**	1	.279*	.441**	-.333**	-.318**
	Sig. (2-tailed)	.000	.000	.000		.010	.000	.002	.003
	N	84	84	83	84	84	84	84	84
stresscareer	Pearson Correlation	.464**	.396**	.523**	.279*	1	.331**	-.266*	-.261*
	Sig. (2-tailed)	.000	.000	.000	.010		.002	.014	.017
	N	84	84	83	84	84	84	84	84
stressrespect	Pearson Correlation	.538**	.464**	.581**	.441**	.331**	1	-.169	-.177
	Sig. (2-tailed)	.000	.000	.000	.000	.002		.124	.108
	N	84	84	83	84	84	84	84	84
engvigor	Pearson Correlation	-.375**	-.442**	-.287**	-.333**	-.266*	-.169	1	.486**
	Sig. (2-tailed)	.000	.000	.008	.002	.014	.124		.000
	N	84	84	83	84	84	84	84	84
satwspallsum	Pearson Correlation	-.314**	-.448**	-.366**	-.318**	-.261*	-.177	.486**	1
	Sig. (2-tailed)	.004	.000	.001	.003	.017	.108	.000	
	N	84	84	83	84	84	84	84	84

**. Correlation is significant at the 0.01 level (2-tailed).*. Correlation is significant at the 0.05 level (2-tailed).

Table 32 Correlations for Mediation-Engagement Dedication, Stress Variables, and Satisfaction with My Supervisor

Correlations									
		stressamb	stresscon	stressovqual	stressovquan	stresscareer	stressrespect	engdedi	satwspallsum
stressamb	Pearson	1	.761**	.594**	.485**	.464**	.538**	-.149	-.314**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.177	.004
	N	84	84	83	84	84	84	84	84
stresscon	Pearson	.761**	1	.627**	.578**	.396**	.464**	-.268*	-.448**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.014	.000
	N	84	84	83	84	84	84	84	84
stressovqual	Pearson	.594**	.627**	1	.500**	.523**	.581**	-.244*	-.366**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.026	.001
	N	83	83	83	83	83	83	83	83
stressovquan	Pearson Correlation	.485**	.578**	.500**	1	.279*	.441**	-.247*	-.318**
	Sig. (2-tailed)	.000	.000	.000		.010	.000	.023	.003
	N	84	84	83	84	84	84	84	84
stresscareer	Pearson	.464**	.396**	.523**	.279*	1	.331**	-.190	-.261*
	Sig. (2-tailed)	.000	.000	.000	.010		.002	.083	.017
	N	84	84	83	84	84	84	84	84
stressrespect	Pearson	.538**	.464**	.581**	.441**	.331**	1	-.083	-.177
	Sig. (2-tailed)	.000	.000	.000	.000	.002		.451	.108
	N	84	84	83	84	84	84	84	84
engdedi	Pearson	-.149	-.268*	-.244*	-.247*	-.190	-.083	1	.483**
	Sig. (2-tailed)	.177	.014	.026	.023	.083	.451		.000
	N	84	84	83	84	84	84	84	84
satwspallsum	Pearson	-.314**	-.448**	-.366**	-.318**	-.261*	-.177	.483**	1
	Sig. (2-tailed)	.004	.000	.001	.003	.017	.108	.000	
	N	84	84	83	84	84	84	84	84

** . Correlation is significant at the 0.01 level (2-tailed).* . Correlation is significant at the 0.05 level (2-tailed).

Table 33 Regressions for Mediation Engagement Vigor, Stress Ambiguity, and Satisfaction with My Supervisor

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	14.241	.846		16.832	.000
stressamb	-.318	.087	-.375	-3.662	.000

a. Dependent Variable: engvigor

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	5.087	2.340		2.174	.033
stressamb	-.209	.084	-.246	-2.501	.014
satwspallsum	.118	.029	.408	4.144	.000

a. Dependent Variable: engvigor

Table 34 Regressions for Mediation Engagement Vigor, Stress Conflict, and Satisfaction with My Supervisor

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	14.598	.790		18.487
	stresscon	-.290	.065	-.442	-4.465

a. Dependent Variable: engvigor

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	6.223	2.531		2.458
	stresscon	-.184	.068	-.281	-2.699
	satwspallsum	.104	.030	.360	3.460

a. Dependent Variable: engvigor

Table 35 Regressions for Mediation Engagement Vigor, Stress Qualitative Overload, and Satisfaction with My Supervisor

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	13.666	.912		14.985	.000
stressovqual	-.240	.089	-.287	-2.701	.008

a. Dependent Variable: engvigor

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.618	2.531		1.429	.157
stressovqual	-.106	.087	-.127	-1.222	.225
satwspallsum	.128	.030	.438	4.202	.000

a. Dependent Variable: engvigor

Table 36 Regressions for Mediation Engagement Vigor, Stress Quantitative Overload, and Satisfaction with My Supervisor

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	13.980	.875		15.981	.000
stressovquan	-.250	.078	-.333	-3.198	.002

a. Dependent Variable: engvigor

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	4.473	2.386		1.874	.064
stressovquan	-.149	.075	-.199	-1.984	.051
satwspallsum	.123	.029	.423	4.226	.000

a. Dependent Variable: engvigor

Table 37 Regressions for Mediation Exhaustion Vigor, Stress Concerns About Career, and Satisfaction with My Supervisor

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	13.362	.854		15.648	.000
stresscareer	-.156	.062	-.266	-2.502	.014

a. Dependent Variable: engvigor

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.557	2.308		1.541	.127
stresscareer	-.088	.058	-.150	-1.511	.135
satwspallsum	.130	.029	.447	4.505	.000

a. Dependent Variable: engvigor

Table 38 Regressions for Mediation Engagement Dedication, Stress Conflict, and Satisfaction with My Supervisor

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	14.696	.822		17.878	.000
stresscon	-.171	.068	-.268	-2.524	.014

a. Dependent Variable: engdedi

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	4.461	2.561		1.742	.085
stresscon	-.041	.069	-.065	-.599	.551
satwspallsum	.128	.031	.454	4.181	.000

a. Dependent Variable: engdedi

Table 39 Regressions for Mediation Engagement Dedication, Stress Qualitative Overload, and Satisfaction with My Supervisor

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	14.622	.888		16.462	.000
stressovqual	-.196	.087	-.244	-2.269	.026

a. Dependent Variable: engdedi

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	4.760	2.461		1.934	.057
stressovqual	-.065	.085	-.081	-.770	.443
satwspallsum	.125	.030	.446	4.242	.000

a. Dependent Variable: engdedi

Table 40 Regressions for Mediation Engagement Dedication, Stress Quantitative Overload, and Satisfaction with My Supervisor

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	14.665	.871		16.830
	stressovquan	-.180	.078	-.247	.023

a. Dependent Variable: engdedi

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	4.856	2.358		2.059
	stressovquan	-.076	.074	-.104	.310
	satwspallsum	.127	.029	.450	.000

a. Dependent Variable: engdedi

VITA

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Amy's research interests include non-exempt employees and engagement. She has created programs and trainings to advance this level of employee and enhance the work experience for these employees. In addition, her strengths lie in problem solving and abstract thinking within the organization. She truly believes that the employee is the biggest asset to any organization and wishes to further the positive experience of all employees.