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Roles of Internal Locus of Control and Self-Efficacy on Managing Job Stressors and Ryff's Six Scales of Psychological Well-Being

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2012

Abstract

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

The purpose of this study was to investigate the roles internal locus of control and self-efficacy play in moderating how employees manage their perceived work stress and positively engage in the behaviors that facilitate autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life. Investigators have documented the relationship between perceived workplace stress and strain and showed that how employees cope with perceived stress influences their psychological and physical health. However, there is less information available about the relationship between how employees cope with perceived workplace stress and engage in behaviors that facilitate their psychological well-being. A quasi-experimental methodology was used; male and female tire manufacturing production workers working in a shift work manufacturing environment were surveyed using a secure online server. Data collection tools included the Perceived Stress Scale, the Multidimensional Health Locus of Control Form C 4 subscales, the Perceived Self-Efficacy Scale, and Ryff's 6 Scales of Psychological Well-Being. Hypotheses were analyzed using moderated multiple regression analyses. Employees who operate from an internal locus of control and who demonstrate high levels of self-efficacy reported lower levels of perceived stress and higher levels of self-acceptance. The implications for social change provide organizational leaders with insight into the potential benefits and saving of both financial and human capital by screening and training employees to better understand how to evaluate and develop their abilities to operate from an internal locus of control, as well as how to improve their self-efficacy skills.

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Chapter 1: Introduction to Study

Background

The purpose of this study was to investigate the roles of internal locus of control (ILOC) and self-efficacy as moderators in the relationship between perceived workplace stressors and psychological well-being as defined by Ryff (1989). Based on Lazarus's (1991) appraisal theory, how employees perceive workplace stressors will influence their choice of behaviors that result in strain or health. A workplace event may be evaluated as being stressful when employees self-evaluate that their current skills are not sufficient to cope with and manage the perceived stressors (Edwards, Caplan, & Harrison, 1998).

Glasser (2004) suggested employees who lack the skills to take responsibility for their behavior in stressful situations are at more risk for experiencing strain and less likely to engage in behaviors that promote psychological health. Springer and Hauser (2003) reported a large percentage of research focuses on the negative outcomes of health, and there also are benefits for examining the positive outcomes that promote well-being.

I looked at the influence of ILOC and self-efficacy moderators for coping with perceived stressors and influencing psychological well-being. This is significant when considering Diener's (1984) observations that those employees who report higher levels of psychological well-being will also report lower levels of strain. Ryff (1989) suggested the higher employees' psychological well-being, the happier and more personally fulfilled they will be.

In the work-stress research field, there is a lack of agreement on the definition and application for the word *stress* (Jex, Beehr, & Roberts, 1992). Jex et al. suggested when doing research to avoid using the term stress and to define the research constructs that will be used. I

used two research constructs when discussing stress. *Stressors* may refer to external stimuli, and *strain* refers to behavior responses that result from the stimuli (Lazarus, 1999). This is consistent with Lazarus and Folkman's (1984) description of stress as having two clear parts, the first being the stimulus and the second being the response to the stimulus. Cooper, Dewe, and O'Driscoll (2001) described three aspects of stress: the perceived stressors, such as environmental antecedents; coping responses; and strain, such as responses to stimuli. I adopted this framework.

Perceived job stressors can be described as any element in an employee's workplace that has the potential to result in health-related illness if not properly managed (Spector, Dwyer, & Jex, 1988). Globally, Lazarus and Folkman (1984) suggested there are two types of stressors: physical and psychological. I focused on psychological stressors that employees might have perceived threaten their psychological well-being. According to Rodell and Judge (2009), there are two types of psychological stressors: challenge stressors, such as a defined individual sales target and reward, which can provide internal motivation that is viewed as a positive, and hindrance stressors, such as job demands, which employees view as negative and unwanted.

There is a strong relationship between perceived stressors and strain (Bhagat et al. 2010; Brown, Shannon, Mustard, & McDonough, 2007). Cooper et al. (2001) suggested that any type of stress agent in the environment that is defined by an employee as a perceived stressor can result in strain. Strain is described as psychological, physiological, and behavioral outcomes of perceived stressors that are most often negative (Griffin & Clarke, 2010). Spector (2009) explained that some employees without the skills to cope often will perceive stressors as being unmanageable.

Glasser (1984) described a perceived stressor as the gap between what employees want to have and what they actually have. Despite research on the causes of perceived stressors, employers, unions, insurance companies, and other stakeholders do not have a shared definition for stress or how employees and employers can best manage perceived workplace stressors (Griffin & Clark, 2010).

Cooper and Marshall (1978) listed five external causes of strain: (a) factors intrinsic to the job, including work overload, time pressures, and working conditions; (b) the employee's role in the organization, including role conflict and job security; (c) career development, including lack of mobility, promotion, or job security; (d) relationships at work, including weak relationships with peers and manager, fear in the workplace due to bullying or harassment; and (e) organizational climate and structure, including office politics and leadership ethics. When under strain, employees are at greater risk for becoming psychologically exhausted and developing a negative attitude toward work and employer (Demerouti, Mostert, & Bakker, 2010). One of the consequences of strain is it can negatively influence employees' psychological wellness as well as their physical health (Lazarus, 2000). Examples of possible physical health outcomes associated with prolonged strain include high cholesterol, ulcers, and heart disease, all of which can lead to short- and/or long-term illnesses (Giga, Cooper, & Faragher, 2003). Beehr and Newman (1978) provided evidence of the negative impact of physiological, psychological, and behavioral strain.

Some employees experience strain in the workplace differently because of their cognitive skills to cope and manage perceived stressors (Jones, 2009). Cognitive appraisal theory teaches that employees' coping strategies are dependent on their cognitive resources and ability to take

the necessary steps to solve perceived stressors and to manage their emotions (Lazarus, 1999). Knowing potential causes of perceived stressors alone does not provide insight into why some employees in the same environment cope differently.

Employees who are able to cope with work-related perceived stressors do so because they have a set of knowledge and skills that allows them to make healthier choices and implement responses that support developing their psychological well-being (Lee, 2007). Lee explained that having learned core skills for coping with perceived stressors is a critical factor for predicting good psychological well-being. Ryff's (1989) research suggested there are relationships between employees' psychological well-being (i.e., happiness), their behavioral choices, and their quality of life. Ryff taught that the actions employees take will ultimately define their quality of life and perceived happiness. For employees to learn how to be happy they must learn to overcome challenging situations such as perceived stressors (Glasser, 2000). By learning how to overcome life challenges, employees develop the capacity, resiliency, and confidence to overcome similar challenges in the future (Bandura, 1986). Researchers supported the view that self-efficacy can have a moderating impact on the relationship between perceived stressors and strain (Arnstein, Caudill, Mandle, Norris, & Beasley, 1999; Schiaffino & Revenson, 1992).

McGregor and Little (1998) implied that the gap between why some people are able to be happier in the same situation than others is not clearly understood. Johnson and Cooper (2003) suggested that the better employees can manage perceived stressors, the less likely they are to experience strain, and, as a result, the more likely to take the actions that promote psychological well-being.

Statement of Problem

The research problem addressed in this study is that the moderating roles of ILOC and self-efficacy for preventing strain and facilitating the behaviors necessary for developing psychological well-being, as defined by Ryff's (1989) six scales, is unclear and requires exploration. I have provided research that has suggested locus of control (LOC) and self-efficacy have a moderating role on the stressor-strain relationship. Ryff and Singer (2008) have implied that employees' actions will ultimately define their psychological health.

There is ample research discussing the cause and effect relationship between perceived stressors and strain (Johnson & Cooper, 2003). There is little agreement in the research as to why employees performing the same job function within the same work environment manage perceived work stressors differently (Conference Board of Canada, 2010; Terry & Callen, 2000). The longer employees perceive job stressors, the greater the risk for strain and other psychological health-related problems such as anxiety, burnout, and depression and the costs associated with employee lost time and productivity (Cooper & Marshall, 1978; Park, 2010; Rousseau, Salek, Aubé, & Morin, 2009).

Prati, Pietrantoni, and Cicoganani (2011) reported that there is little research on employees who experience the same types of workplace stressors with respect to what factors mediate their cognitive appraisal perception, which positively moves them in the direction of well-being. Glasser (1984) reported that the more employees believed they were in control of their actions, the happier and healthier they were.

There are financial benefits for organizations to understand the relationship between perceived stressors and psychological well-being (Christian, Bradley, Wallace, & Burke, 2009).

Cognitive-behavioral researchers have suggested ILOC and self-efficacy are two cognitive skills that can positively influence employees' psychological well-being (Bandura, 1986; Glasser, 2004).

The Nature of the Study

A quasi experimental study was introduced to 1,200 male and female tire manufactory workers working shift work in a manufacturing environment who were eligible to participate voluntarily. Each manufactory worker was invited by the organizational leadership to participate. To examine the moderating roles of ILOC and self-efficacy, I used the guidelines established by Baron and Kenny (1986). Figure 1 shows a model examining how employees' perceived stressors level through ILOC and self-efficacy influence the outcome variable psychological well-being as defined by Ryff's (1989) six scales of psychological well-being.

Demographic information also was collected to assist in describing the study population's age, gender, education, ethnicity, and years of service.
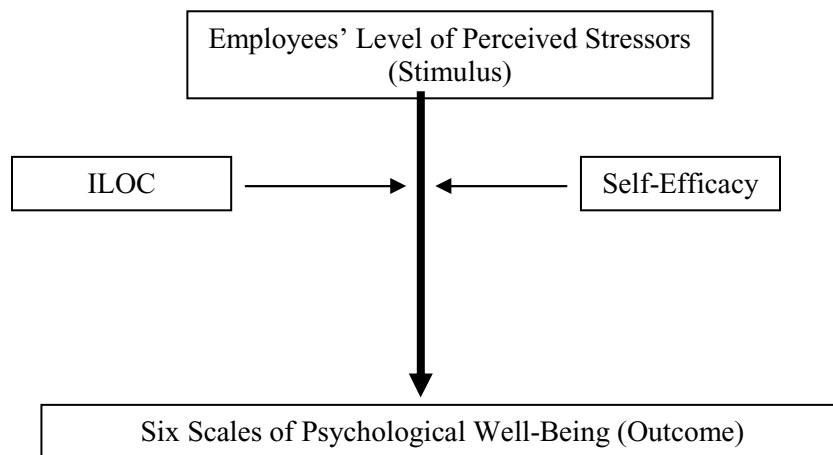
Figure 1. A model for examining an employee's perceived stressors level through ILOC and self-efficacy on psychological well-being.

The research participants' perceived stressors were measured by the Perceived Stress Scale (PSS). The participants' perceived psychological well-being was measured using the six scales of the Scales of Psychological Well-Being instrument. The six scales are autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life. The Multidimensional Health Locus of Control (MHLC) Form C was used to measure the participants' perceived LOC. The four subscales of the MHLC are internal, chance, doctors, and other people. The General Perceived Self-Efficacy Scales (GPSES) were used to measure participants' beliefs in their skills to manage a situation. These four instruments were combined into one secure online survey.

Research Questions and Hypotheses

The following research questions and hypotheses were examined in this study:

Research Question 1: To what extent does ILOC moderate how employees manage their perceived work stressors and positively engage in the behaviors that facilitate autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life?

$H1_o$: ILOC will not moderate the relationship between perceived work stressors and positively facilitate employee engagement in behaviors that promote autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life.

$H1_a$: ILOC will moderate the relationship between perceived work stressors and positively facilitate employee engagement in behaviors that promote autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life.

Research Question 2: To what extent does self-efficacy moderate how employees manage their perceived work stressors and positively engage in the behaviors that facilitate autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life?

H2$_o$*:* Self-efficacy will not moderate the relationship between perceived work stressors and positively facilitate employee engagement in behaviors that promote autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life.

H2$_a$*:* Self-efficacy will moderate the relationship between perceived work stressors and positively facilitate employee engagement in behaviors that promote autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life.

Purpose of Study

The purpose of this study was to give insight on the moderating role of ILOC and self-efficacy to prevent strain and facilitate psychological well-being as defined by Ryff's (1989) six scales. It was also designed to provide administrators of occupational health and safety and human resources research on the potential benefits of ILOC and self-efficacy for promoting psychological well-being and preventing strain.

Conceptual Frameworks

I used five different theoretical models. Lazarus (1999) explained a core construct of transactional theory is the notion of how employees appraise and evaluate external stressors, and the coping strategies they believe they have available to them, influences how they react and

respond psychologically. Lazarus (2000) suggested how effectively employees respond to perceived workplace stressors determines the amount of strain they experience.

Glasser (1984), author of choice theory, reported regardless of the type of perceived stressor all employees still have the ability to make healthy choices regardless of the situation. Choice theory is grounded in Rotter's (1954, 1966) work on LOC. Choice theory has been found to be effective in mental health, business, and education (Corsini & Wedding, 2000; Leathey, 2000).

Rotter's (1966) social learning theory suggested that employees typically process their environment through an ILOC or, at the opposite end of the same continuum, external locus of control (ELOC). For example, employees who operate from an ELOC perceive the environment is controlling their choices. These employees are more at risk for reporting negative health outcomes such as strain than employees who operate from an ILOC (Glasser, 2004). Rotter implied that there are advantages for employees to learn how to operate from an ILOC. Glasser (2000) reported that employees who operated under an ILOC were better able to make the kinds of choices needed to manage a perceived stress, compared to employees who operated from an ELOC. This is theoretically significant when considering Glasser's (1964) suggestion that employees can be taught to operate from an ILOC. Though Glasser's assertion may be right, employees must first be internally motivated to learn how to take responsibility for their own behavior and to learn to operate from an ILOC (Prochaska, DiClemente, & Norcross, 1992).

Bandura (1995) reported that self-efficacy is employees' internal perception of their capabilities to generate the behaviors required to manage their current situation. Bandura explained that all employees' capabilities to achieve life goals are directly related to their

thinking, feeling, and behaviors. Employees are more at risk for not fully enjoying life when there is a division between what success looks like and their internal confidence in their capabilities to achieve this defined success. When employees do not believe they have the knowledge or skills to address a perceived stressor, their self-worth decreases (Bandura, 1977).

Glasser's (2000) and Bandura's (1995) cognitive theoretical models provide insight into how employees may cognitively appraise a perceived stressor and cope. Both agreed that regardless of the perceived stressors level it is up to all employees to take responsibility for all of their thinking and behaviors as well as to take the actions required to create psychological well-being. Ryff (1989) suggested there are observable behaviors that can predict employees' overall happiness and psychological well-being—the antithesis of strain. Ryff reported that how effectively employees are able to manage their perceived stressors will influence their psychological well-being, which Ryff defined as measured on six scales:

1. Self-acceptance: A positive attitude toward oneself and one's past life.

2. Positive relations with others: High-quality, satisfying relationships with others.

3. Autonomy: A sense of self-determination, independence, and freedom from norms.

4. Purpose in life: Having life goals with a defined purpose.

5. Environmental mastery: the ability to manage life and one's surroundings.

6. Personal growth: Open to new experiences and on-going personal growth.

Ryff and Keyes (1995) inferred that employees' perception of their life situation has a direct impact on their personal happiness and life satisfaction. Ryff (1989) found there are specific kinds of behaviors employees can engage in that will facilitate their psychological well-being that is related to mental health, which is at the opposite end of strain. Ryff and Singer

(2008) implied that psychological well-being is not an event; it is a process that requires employees to make healthy life choices and take appropriate actions.

Ryff and Deci (2001) suggested that employees who report lower levels of psychological well-being, as defined by Ryff's six scales, are likely to report strain. Ryff (1989) suggested that employees with a higher level of psychological well-being will be in a better position to manage daily perceived stressors than those with a lower level of psychological well-being. The literature review in Chapter 2 provides more information on Glasser's, Bandura's, and Ryff's work.

Definitions

Burnout: Physical, emotional, and mental exhaustion that is the direct result of prolonged exposure to a situation that is defined as stressful (Vecchio, 1991).

Choice theory: A theoretical model developed by Glasser (1984) that provides an explanation as to why employees choose the behaviors they do. This theory teaches how employees can take charge of their own choices and behaviors.

Locus of Control (LOC): A theoretical construct from Rotter's (1954) social learning theory that refers to an employee's belief with respect to how much control the employee has over his or her own behavior (i.e., ILOC) or not (i.e., ELOC).

Self-efficacy: A theoretical construct from Bandura's social learning theory that refers to an employee's belief about his or her capabilities to produce a set of behaviors in a defined situation to achieve a defined result (Bandura, 1977).

Stressors: External stimuli that are perceived by employees as being the root cause of their perceived stress (König, Oberacher, & Kleinmann, 2010; Lazarus & Folkman, 1984).

Strains: The adverse consequences resulting from stressors that can threaten an employee's health and well-being (Jex, Beehr, & Roberts, 1992; Pratt & Barling, 1988).

Psychological Well-Being: Overall, how a person feels internally, the level of contentment and life satisfaction that is defined by an employee's collective success in each of the six dimensions: self-acceptance, positive relationship with others, personal growth, purpose in life, environmental mastery, and autonomy (Ryff, 1989).

Assumptions and Delimitations

The primary assumptions of this study were that the manufactory employees working in a 24/7 manufacturing environment would report different levels of perceived stressors and psychological well-being. Additional assumptions:

- There would be enough volunteer participation to achieve the target number to achieve statistical power.

- The respondents would trust the limits of confidentiality.

- The respondents would comprehend the survey directions.

Delimitations of this study included the factory leadership would authentically engage volunteer participation of tire manufacturing production workers to participate in this study. Participation in this kind of occupational health survey can be limited if the workforce does not believe the organization's leadership is actually interested in the wellbeing of its employees (Occupational Health Management, 2009b). The success of collecting the necessary data was influenced by management's commitment to embrace and engage the workforce to participate in the survey.

Significance of the Study

Despite the assumptions and delimitations above, this study has the potential to contribute to stress literature by providing more insight on how two cognitive skills, ILOC and self-efficacy, facilitate psychological well-being, the antithesis of strain. One potential professional application from this study is its influence on administrators to examine the benefits of ILOC and self-efficacy when screening and on-boarding new hires, as a strategy for promoting employees' psychological well-being, and for reducing employees' strain and the financial costs associated with strain. One positive social change outcome from this study is there may be enough evidence to suggest to employees and employers the benefits for teaching ILOC and self-efficacy to employees who operate from an ELOC as a strategy for preventing strain and to facilitate psychological well-being.

Although LOC and self-efficacy may not explain all the variances associated with the relationships between strain and psychological well-being, having developed cognitive skills can assist employees in the cognitive appraisal process to better cope with perceived stressors (Lazarus & Folkman, 1984). Totterdell and Parkinson (1999) suggested that when employees develop the skills to cognitively self-regulate perceived stressors they are better able to create responses for managing and improving their mood.

This is consistent with the primary mandate for occupational health and safety management, that being the utilization of therapeutic concepts for reducing the risks for health, illness, and injury (Occupational Health Management, 2007). One common disability management approach for managing employees is the control-oriented approach where the emphasis, regardless of the employee's strain, is on the enforcement of rules and compliance

(Barling & Hutchinson, 2000). There is a need today for organizations to move from the control-oriented approach to one that is more oriented to embracing employee involvement, ownership, empowerment, and competency development (Barling, Kelloway, & Iverson, 2003).

Westmorland, Williams, Amick, Shannon, and Rasheed (2005) reported that the vast majority of disability management efforts are reactive, suggesting a need for organizations to focus more on health prevention. Westmorland et al. were the first to report the positive benefits of educating employees on how to better manage their perceived stressors (Larrabee et al., 2010). Mook (1983) suggested if this study's results are significant, the benefits can be generalized to other work settings.

Summary

This study was designed to provide knowledge for administrators of occupational health and safety and human resources on the moderating roles of ILOC and self-efficacy on how employees manage perceived work stressors and their current levels of psychological well-being as defined by Ryff's (1989) six scales of psychological well-being. A review of the literature relevant to stress theory, impact of stress on the body, stressors, strain, LOC, choice theory, social learning theory, psychological well-being, and research method is presented in Chapter 2. In Chapter 3, the methodology of the study, including setting and participants, the test instruments, and method of data collection and data analysis are described. Chapter 4 is a summary of the results, and Chapter 5 is this study's final conclusions.

Chapter 2: Literature Review

Introduction

This literature review introduces the core research variables examined in this study, including perceived stressors, LOC, self-efficacy, and Ryff's (1989) six scales of psychological well-being. This chapter will begin with a discussion of stress theories, how strain impacts the mind and body, and examples of perceived workplace stressors. Then the chapter will discuss additional theoretical rationale relevant to the study's hypotheses, including a review of LOC, choice theory, self-efficacy, and the six scales of psychological well-being. The chapter will end with an introduction to research methodology.

Multiple researchers have examined the common cause and effect of perceived workplace stressors. There is ample evidence that organizations are spending billions of dollars on lost time each year, as well as incurring increased health costs and lost productivity due to strain (Cooper & Marshall, 1978). In addition, there is a large body of research that explored the different types of perceived stressors that may result in employees experiencing strain. However, there appears to be a need for more research to better understand why some employees experiencing the same kinds of stressors as their peers are more likely to engage in proactive behaviors after work that facilitate psychological well-being. Ryff's (1989) six scales of psychological well-being measures behaviors employees are participating in that define their levels of autonomy (i.e., self-determining and independent), environmental mastery (i.e., belief in one's competency to manage environment), personal control (i.e., sense of personal development), positive relationship with others (i.e., degree of trusting relations), purpose in life (i.e., sense of direction), and self-acceptance (i.e., positive attitude towards self). This

dissertation examines the moderating roles of ILOC and self-efficacy (i.e., moderating variables) on how employees manage perceived stressors (i.e., predictor variable) and their psychological well-being (i.e., outcome variable) as defined by Ryff's (1989) six scales.

In Chapter 1, it was reported that LOC and self-efficacy have been found to have a moderating role on perceived stress and strain. However, the role of these two variables on managing perceived stressors and achieving psychological well-being appears to have not been thoroughly examined. This study's foundation is grounded in the theoretical underpinning that organizations' actions alone cannot stop mounting disability management costs. There are actions employees also can take to be a part of the solution. Glasser (2004) suggested that an employee's health is dependent on his or her participation and willingness to learn how to take responsibility for their choices and behaviors.

A literature review search was completed to identify peer-reviewed published articles, relevant government sponsored websites, seminal books, and research resource books that related to the topic of stress and the prevention of stress in the workplace. Keywords for the literature searches included combinations of the following: *choice theory, LOC, self-efficacy, health needs assessments, stress appraisal, psychological well-being, stress in the workplace, personality, occupational health and safety, mental health in the workplace, stress* and *safety in the workplace, Perceived Stress Scale, Multidimensional Health Locus of Control Scales Form C, Scale of Psychological Well-Being, disability management, occupational stress, prevention*, and *disability insurance.*

Through June 2009 to October 2011, electronic literature searches were conducted using the Walden Library databases, including Academic Search Premier, Business Sources Premier,

Education Research Complete, Mental Measurements Yearbook, PsycARTICLES, and PsycINFO. In addition, manual searches of major journals relevant to industrial-organizational psychology and occupational safety that did not surface in the on-line database searches were conducted at Acadia University and Saint Mary's University libraries, both located in Nova Scotia, Canada.

Strain

Strain can influence employees' behavior, thoughts, psychology, emotions, and physiology and is a byproduct of employees' perception of their inability to manage perceived stressors. When employees are experiencing workplace stressors their cognitive appraisal system determines what resources they perceive they have to respond to (Nakao, 2010). How effectively employees are able to respond to workplace stressors defines the amount of strain they experience (Catano et al., 2010). The U.S. National Institute for Occupational Safety and Health (1999) described strain as the signs and symptoms an employee experiences as a result of physical and emotional responses to a job that is not aligned with the employee's abilities, skills, or needs. For employees to experience strain, regardless of the antecedent (i.e., type of perceived stressor), they must first perceive they do not have the ability to cope with or manage the situation.

Strain evolves out of responding to some type of perceived stressor that can be categorized in two ways: (a) Acute stressors arise from day-to-day interaction due to some kind of external stressor that is often perceived as being temporary (Bryant, Allison, & Harvey, 2000); (b) Gottlieb (1997) suggested that chronic stressors (subordinate stress) are the result of acute stressors such as work related issues that go on day in and day out (e.g., conflict with the

manager). Over time, chronic stressors can wear down the mind and body and lead to a psychologically distressed state that without support or intervention can transform into mental or physical illness (Gottlieb, 1997).

Hurrell (2005) purported that there are many different types of hindrance stressors: environmental (e.g., noise pollution), social (e.g., peer pressure and negative workplace), psychological (e.g., anxiety disorder), emotional (e.g., anger), financial (e.g., debt), and work (e.g., demands of the job). Uzzi (2004) suggested that work related stressors can be linked to many different situations such as lack of communication, inadequate training, ineffective leadership, lack of job recognition, lack of growth, lack of promotional opportunities, personality conflicts, double standards, change happening without any knowledge of why, and mistrust of senior leadership. The outcome of employees experience strain can include: drug abuse, anger, isolation, and loss of identity (Lazarus & Folkman, 1984).

Clarke (n.d.), the National Health, Safety, and Environmental manager, purported that 80% of all modern diseases can be linked to strain. Goleman (1995; 1998) found one predictor for employees' ability to manage perceived stressors is their ability to regulate their emotions. If an employee who is injured in the workplace is not dealt with correctly, this stressor can become a root cause for more serious health related illness. O'Donnell et al. (2008) showed that 10% to 30% of all injured workers (classified as nonfatal injuries) will develop posttraumatic stress disorder (PTSD), which has been shown to have a negative impact on employees' physical recovery and return to work.

Employees who are under strain are at higher levels of risk for safety related issues such as workplace accidents (Fernández-Muñiz, Montes-Peón, & Vázquez-Ordás, 2007). Catano et al.

(2010) reported strain was also directly related to physical health symptoms. The 28 examples in Table 1 represent the kinds of overt risk behavior signs that can indicate that an employee is experiencing strain in the workplace that warrants further investigation and clarification (James & Gilliland, 2005).

Table 1

Overt Risk Behaviors Signs

Decreased work productivity	Decrease in job skills and knowledge	Periods of unexplained neglect of personal grooming
Decrease in attendance dependability	Decrease in memory	Reporting interpersonal problems at home and at work
Changes in personality and attitude towards work	Decrease in the ability to solve problems	Legal issues
Change in personal care (e.g., hygiene)	Decrease in motivation	Experiencing poor coordination
Conflict with peers and supervisors	Decrease in performance quality	Poor concentration and/or visual disturbance
Social challenges impact work (e.g., legal issues such as a charge for theft associated with gambling addiction)	Increase in physical presence accidents or near-miss incidents	Lying
Decreased work productivity	Involved in domestic violence	Confusion

Smell of alcohol in workplace	Poor timekeeping	Short tempered and irritable
Reduction in performance	Decrease in motivation	Burnout

Burnout

One outcome with employees who are under strain without any relief or break from perceived external stress is burnout. Burned out employees are "characterized by physical depletion, by feelings of helplessness and hopelessness, by emotional drain, and by the development of negative self-concept and negative attitudes toward work, life, and other people" (Pines & Aronson, 1981, p. 15). Edelwich and Brodsky (1980) delineated four stages of employee burnout:

Stage 1: Enthusiasm—the employee accepts and begins a new role, often with high hopes and even, perhaps, unrealistic expectations as to what his or her new role will be. The employee is excited and committed.

Stage 2: Stagnation—this occurs when the employee starts to focus more on his or her financial, personal, and career needs as not being fulfilled. The employee becomes more concerned and worried about his or her assigned role and does not meet his or her needs.

Stage 3: Frustration—the employee begins to question his or her capabilities, perceived value, and productivity, which clearly indicates the employee is in trouble. When the employee is in this stage it is important to confront him or her to discuss the risk of burnout. This effort may lead the employee back to a tempered form of

enthusiasm or, if not effective, the final stage of burnout is likely the employee's next step.

Stage 4: Apathy—is the chronic indifference to a situation. At this stage, the employee is in a state of disequilibrium (i.e., inability to control emotions or cognitions) and immobility (i.e., inability to behave up to potential due to being in a state of stress); the employee in this stage is in a state of denial with little insight with respect to what is happening or the potential risk. In this stage, the employee will require professional assistance to get back to stage 1.

The Canadian Centre on Substance Abuse (as cited in Rehm et al., 2006) reported that on average each year $40 billion worth of lost time, productivity, and health costs can be attributed to alcohol and other drug addictions, and many of those affected are or were actively employed. Some critics have reported that there is no evidence to support the relationship between workload, cognitive demands, job boredom, and low autonomy, and that these are unrelated to the use of alcohol and drugs to cope with such stressors (Weisner, Windle, & Freeman, 2005). However, these critics did not adequately explain the antecedents of why employees move towards substance abuse as a way to cope with work related stressors (Frone, 2006). Frone reported that Conger in 1956 suggested that substance abuse was induced for tension reduction to lower stress symptoms. Today, it is also important to consider the second proposition, that substance abuse is linked to perceived work stressors as a root cause for at-risk behaviors (e.g., drinking). This may result in stress-induced substance abuse and may explain why some employees choose to use alcohol and drugs prior to coming to work as a way to cope with the demands of their role (Frone, 2006).

Employees with high sick time usage are four times more likely to make some type of future disability claim (Christian, Bradley, Wallace, & Burke, 2009). Christian et al. reported that in many cases where employees took high levels of sick leave it was found they believed they had few options for assistance to deal with their perceived workplace stressors. Another commonly used indicator is employee intentions or actual turnover that helps management assess workforce stability and health (Branham, 2001).

One of the most overt signs of strain is suicide. The Canadian Association for Suicide Prevention (2011) reported that suicide continues to be a major concern in Canada and the root cause of why people commit suicide is linked to the perception of not having the resources to cope with day-to-day stress. This supports the assertion that employees with high perceived stressor levels are at increased risk for suicide (James & Gilliland, 2005). Evidence of how serious this risk is becoming for organizations was demonstrated in October 2009 when the CEO of France Telecome resigned his position after 24 employees in the company took their own lives. This was after the union challenged the executive leadership's behavior (i.e., bullying management styles and lack of regard for employees' well-being) as being one of the major root causes for these deaths (Chrisafis, 2009).

Shaw, Fields, Thacker, and Fisher (1993) purported in their study of 110 American Telephone and Telegraph employees that one key indicator for predicting how effectively employees were able to cope with workplace stress was their internal coping skills, which reduced this group's risk for stress related issues. Illness of employees under strain is currently the number one cause of short-term disability in Canada, accounting for nearly 30% of disability claims and 70% of the total costs (Public Health Agency of Canada, 2006). Employees under

strain were found to cost companies on average $1,700.00 more per year than employees who reported none to lower amounts of strain (Goetzel, et al., 1998).

Stress Theory

Lazarus's (1999) psychological stress theory has two core concepts: appraisal and coping. Lazarus found employees under strain often do not believe they have the necessary psychological resources to manage some perceived stressors. Lazarus (2000) explained that the employees use one of three primary appraisals when evaluating external stressors as: (a) harm/loss—impact of damage that has occurred to an employee (e.g., fired from job), (b) threat—there is perceived risk (e.g., layoffs), and (c) challenge—there is an opportunity for personal and emotional gain, but the employees must focus and muster all physical and psychological energy to succeed in this challenge. Lazarus (1999) purported that perceived stressors are dealt with via two kinds of actions: (a) problem-focused coping—controlling the perceived stressors directly, and (b) emotion-focused coping—controlling one's emotion in the face of perceived stressors. Lazarus suggested that employees normally will not employ both options and will choose one. Lazarus (2000) suggested that when employees can deal with a situation they often choose options within their perceived control. Lazarus explained that if perceived stressors are determined to be overwhelming and the employees perceive the situation is outside their direct control, they will focus on controlling their emotions. The inability to do this in a healthy and effective manner will determine how much strain the employees will experience.

Selye (1976) developed the general adaptation syndrome (GAS), a theory that explains how perceived stressors impact the body. The GAS theory has three phases:

Phase 1: Alarm

Each day, the employee begins in a state with no perceived stressors, but once a perceived stressor starts to intrude, such as someone taking an employee's parking spot, this becomes a stressor that impacts the body as an alarm (e.g., difference between what one has and wants). The purpose of the alarm phase is to prepare to protect and defend the body. The body becomes aroused and activates the sympathetic nervous system, releasing hormones to activate the *fight or flight* response. Harvard physiologist Cannon indicated that the core function of the fight or flight response is to protect the body (Wolfe, Barger, & Benison, 2000). White and Porth (2000) explained that the fight or flight response can be monitored by observing how external stressors can trigger and stimulate an employee's physiological state. Throughout the day, employees are exposed to a variety of perceived stressors in their work environment that can increase their level of strain caused by perceived stressors. In this phase, Selye (1980) explained that the following occur: temperature and blood pressure drop, heart rate quickens, and muscles become weakened with excessive hormones. Selye explained that the body cannot maintain a heightened degree of arousal for long. As a result, if the perceived stressor continues, the employee will move to Phase 2.

Phase 2: Resistance

Most perceived stressors are not severe enough to cause death, and as a result the employee will enter Phase 2, called resistance. In this phase, the body attempts to adapt and adjust to the perceived stressors (Selye, 1976). Selye reported the body's physiology has been elevated to the maximum level and the employee is still alive and functioning. Though the

employee is still functioning, it is important to note that the employee's cognitive abilities in this phase are decreased, and that can impact his or her decision-making abilities (Selye, 1976).

During this phase, the pituitary gland releases Adrenocorticotropic Hormones which stimulate the adrenal cortex to continue releasing corticosteroids (Selye, 1980). This hormone helps the employee resist the perceived stressors. However, as the body attempts to adapt to the perceived stressors, the employee may appear to be functioning normally (i.e., physiologically), but is not. Selye (1976) reported that in this phase if the perceived stressors continue, the employee will be forced to use up his or her supplies of mineral, sugar, and hormones. If this continues for too long, the employee becomes at risk for developing some type of stress related illness (Selye, 1993).

Phase 3: Exhaustion

Stressors will likely be perceived as increasingly negative with continued exposure. The employee's ability to resist strain becomes reduced and puts him or her at risk for physiological collapse (Selye, 1976). The point at which the employee can no longer resist is the beginning of the exhaustion phase, in which the pituitary gland and adrenal cortex are unable to continue secreting hormones (Selye, 1976). The result is that the employee is unable to keep energy levels up to fight perceived stressors or cope with the strain (Selye, 1980). The employee in this phase has a reduced ability to produce adrenaline, due to reduced blood sugar levels (Selye, 1993), has inadequate coping mechanisms to manage the strain, and will commonly report being mentally and physically tired. When the employee continues to experience a chronic level of perceived stressors in the workplace, his or her body will keep releasing chemicals even after the threat or stressor is gone (i.e., the shift is over and employees are on their way home). At this point, the

hypothalamus-pituitary-adrenal (HPA) axis (critical component of the human endocrine system) is actively producing more chemicals than the body needs (Selye, 1980). The consequence is the HPA generates more chemical than the employee requires and if not turned off and managed the next consequence is a drop in the production of interleukin-6, an immune-system messenger (Selye, 1976). In this phase, the employee has a compromised immune system and is at greater risk of psychological and physiological illness.

Impact of Stress on the Body

Selye (1980) found chronic strain changes the body's normal functioning in both the sympathetic adrenal medulla and anterior pituitary adrenal-cortex systems. The levels of glucocorticoids in the blood system are directly related to the amount of strain the employee is under, and the greater the levels of norepinephrine, glucocorticoids, and epinephrine, the greater the strain (Cohen, Miller, & Rabin, 2001). These chemicals have been linked to the development of physiological disease (Cohen et al., 2003). Talbott and Kraemer (2000) explained that chronic and prolonged strain releases chemicals such as cortisol (stress hormone), resulting in the endocrine system and other hormones causing damage to the employee's health. The type of damage can vary over time, from damage to the employee's immune and organs systems (e.g., heart) to other types of physical illness (Miller, et al., 2004).

In addition, strain can have a major impact on the brain, negatively impacting behavior and putting a worker at risk for making mistakes that may result in minor or fatal accidents (Maslach, 1982). Intense perceived stressors, which last for only a few hours, can cause significant damage such as changes to the hippocampal region of the brain (McEwen, 2000), negatively impacting the employee's ability to perform.

Miller (1998) pointed out that chronic psychological distress can negatively impact an employee's immune system. Miller et al. (2004) reported that prolonged and intense stress weakens the immune system and impacts the body's resiliency for preventing or healing illness. Logan et al. (2001) purported in one study that employees who are under prolonged perceived stressors and undergo a simple dental procedure are at greater risk for infection than employees who are not experiencing the same degree of stress.

Medical researchers are becoming more interested in psychoneuroimmunology, a science committed to understanding the connection between stress and illness/disease. Plotnik (2002) defined psychoneuroimmunology as "the study of the relationship among three factors: the central nervous system (brain and spinal cord), the endocrine system (network of glands that secrete hormones), and psychosocial factors (stressful thoughts, personality traits, and social influences" (p. 488). Strain can result in emotional and cognitive problems like depression (Beck, 1967), upper respiratory illness (Cohen, et al., 2002), and a negatively impacted immune system (Cohen, et al., 2003).

Examples of Perceived Workplace Stressors

In a tire factory, the setting for this study, all tire manufacturing production workers are given a defined set of job functions and duties. Each job has a set of written performance expectations that include the standards and measures used to evaluate the employees' performance. This approach reduces the risk for confusion with respect to what each employee's role is. Each day, most employees are exposed to the same kinds of perceived stressors that can be thought of as hindrance stressors (e.g., demands to achieve defined production targets). The cognitive appraisal skills to make healthy choices influence how effectively an employee is able

to cope with and manage a perceived stressor (Glasser, 1984). The examples below represent the kinds of perceived hindrance stressors an employee may be faced with in a tire factory, and, as Glasser (2004) suggested, regardless of the type of perceived stressor, it is dependent on the employee's belief in his or her ability to manage the perceived stressor and make healthy choices.

This study's design did not measure the different types of perceived stressors as there are many different types that could be measured. In this study, only the degree that employees perceive stress was measured. The following section will provide a review of the different types of stressors that collectively may influence employees' perception of workplace stressors. Regardless of the type of stressors in the workplace, how employees cope will predict the types of behaviors they will choose.

Work Demand

Karasek's (1979) seminal article on demand-control model reported the relationship between job related work stressors and job demands (i.e., psychological job demand and level of control to make job decisions). Karasek further explained that jobs that resulted in the most stress related issues, such as fatigue and psychosomatic complaints, were jobs where employees perceived there were high demands being placed on them by the employer, with little decision making latitude.

Demand-control literature reported that higher employee perception of control over work and lower levels of psychological demands have been found to independently promote better employee health (Grzywacz, et al., 2010). Although the demand-control model has been well accepted in the literature, researchers such as Van Der Doef and Maes (1999) have criticized this

model for its inability to balance the different interconnections of variables that can influence an employee's perception of what is and is not a stressor.

Fox and Spector (2006) found employees' perceptions of their work demands were influenced by their perceptions of injustice and unfair treatment (e.g., others got better treatment or had less pressure put on them), resulting in increased anger and anxiety. Experimental studies reported another type of work demand often found in shift workers was balancing different shift schedules (i.e., night to day) and having the ability to adjust to irregular sleep patterns (Son, Kong, Koh, Kim, & Härmä, 2008). It is also common for tire manufacturing production workers to be faced with the challenge of learning how to manage the demands of repetitive tasks that can wear out the body (Lundberg et al., 1999).

Conservation of resources theory supports work demand theory by reporting that it is common when individual employees perceive themselves becoming more exhausted mentally and/or physically to sense their resources are being depleted. That signals to the employees that it is time for them to be careful with how they use their resources (Weigl, Hornung, Parker, Petru, Glaser, & Angerer, 2010). This kind of defensive mindset can result in employees looking for energy saving strategies in a weakened cognitive and physical state such as a method to save energy by participating in work-arounds (i.e., shortcuts that often breach safety protocols) that can result in serious injury (Halbesleben, 2010).

Roch and Shanock (2006) showed employees' perception of being treated fairly with respect to what the employer expected compared to what the employees received as a benefit (e.g., pay, promotions, and awards). Their study found that when employees perceived that the benefit (i.e., pay and bonus) was insufficient in relation to the contribution being made and the

demands expected, the employees concluded treatment was unfair and this perception increased their stress (Roch & Shanock, 2006). As a result, over a period of time the longer employees perceived work demands as unfair and the less input they perceived to influence decisions, the greater the risk to develop psychological stress related illness (Spell & Arnold, 2007).

One potential challenge for employers is when employees are experiencing feelings of injustice and unfair demand. With each day that passes, employees with this mindset are more at risk for strain and/or health related illness (Tepper, 2001). Glasser (2004) reported that when employees cannot meet their needs they will create behaviors in an attempt to regain control, and if employees feel helpless, the behaviors created are often at-risk behaviors (e.g., avoidance, isolation, negative internal self-talk, and anger). Researchers reported that employees who develop positive constructs such as optimism, adaptive mental mechanism, and happiness are more likely to have the cognitive resources to adapt to the demands of work and that these constructs can be positively correlated to predicting employees' perception of their current health and well-being (Avey, Luthans, Smith, & Palmer, 2010).

Role Stability

The perceived job-secure working environment has been reported in the literature as having a major impact on employees' health (Røssberg, Eiring, & Friis, 2004). Kraimer, Wayne, Liden, and Sparrowe (2005) showed that employees who had a low sense of job security worried daily about losing their job and this was positively related to anxiety and stress. Kraimer et al. reported that a growing number of studies have shown the direct relationship between job insecurity and poor psychological health. There is little research examining the relationship between prolonged work related stressors and alcohol and illicit drug use (Frone, 2006). Frone

added there is evidence that alcohol and drug use will have a negative impact on an employee's attendance behaviors, work performance, and workplace safety.

Job security from a choice theory perspective can represent a sense of freedom (e.g., financial independence). And when freedom is threatened, as Glasser (2000) taught, the employee must behave and, depending on the choices and actions made, will determine if these choices will have a positive or negative impact on one's current level of health and safety. Probst and Brubaker (2001) found in a longitudinal study regression analysis of 237 food-processing plant employees who reported higher levels of job insecurity displayed a decreased motivation and compliance to safety standards that translated to this population having higher levels of workplace injuries and accidents.

Perceived Fear

Regardless of the root cause of the perceived fear (e.g., conflict with an employee or manager) when employees become fearful and sense they have no ability to make a choice, this can lead to what is referred to as learned hopelessness (Seligman, 1989). Without guidance or direction, it can be difficult for employees who enter a state of mind where they believe they are helpless to take the kinds of actions required to gain control of their perceived fear (Seligman, 2002). In the state of fear, employees will benefit when they learn to believe they can develop new knowledge and competencies (Bandura, 1986).

Deming (2000) reported in one study how organizational systems too often allow negative psychological forces such as fear into the system (e.g., intimidating manager), and this fear will have a negative impact on employees' health as well as on the organization's productivity. Deming (1994) provided examples of how fear enters an organizational system:

- An inspector, mindful of the company's target of 10% for defective product, passes borderline work to ensure the reject rate remains below 10%, out of fear of causing the loss of jobs.

- A committee appointed by a manager to report on a specific issue may over-emphasize data that support the manager's contentions and dismiss data that seem to contradict the manager's view.

Deming (2000) provided examples of potential consequences an organization may face when employees come to work in fear. They may learn how to not ask direct questions because it is perceived not safe to ask for clarification; they may experience anxiety; they may not be creative; they may spend productivity time building psychological alliances; they may accept social conformity, the kind of group think that can increase risk for ethical and rule breaches; they may not think, just do; and they may suffer illness.

Fear can be facilitated through a perception of workplace discrimination. Koonce (2001) reported that discrimination comes in many forms, such as exclusion and invisibility, stereotyping, imbalance and selectivity (defining a meaning for a group of people in a selective and unfair manner), unreality (not paying attention or ignoring because of preconceived beliefs), and isolation. Crawshaw (2009) provided an extensive list of the kinds of behaviors that occur in the workplace that can threaten an employee's sense of safety. This list included behaviors such as: abuse, aggression, bullying, counterproductive workplace behavior, emotional abuse, emotional harassment, and workplace psychological violence.

Sperry (2009) showed that the above kinds of behaviors have a direct negative impact on employees and can create tremendous psychological strain, often without the employer's

awareness. Sperry suggested that employers will be advised to know that harassment and discrimination are happening too often and contributing to employee fear in the workplace. The U.S. Equal Employment Opportunity Commission (2009) received 95,402 discrimination complaints in 2008, the highest in its history of keeping records and a 15% increase from 2007, which is in addition to the 9% increase between 2006 and 2007. Fear is a major concern for many employees who enter the workplace each day.

One negative synergistic relationship is where one employee's response to perceived stressors (e.g., at-risk heavy drinking) facilitates another employee's level of fear and perceived stress. Bacharacd, Bamberger, and McKinney (2007) reported that in 1,301 workers that included 262 women employed in 58 work units in the manufacturing, service, and construction sectors there was a significant association between the proportion of males who engaged in at-risk drinking behavior in a work unit and the probability of participating in gender harassment toward females. For females coming to work each day, the risk and fear of harassment are real, considering the staggering result from one study that estimated all the different forms of sexual harassment impact 40% of women in the workplace (Glomb, et al., 1997).

Culture and Leadership

How employees perceive their organization's culture influences their perception of its commitment to taking care of employees (Cooper & Marshall, 1978). Sauter, Lim, and Murphy (1996) defined a healthy work culture as one that "maximizes the integration of worker goals for well-being and company objectives for profitability and productivity" (p. 250). Climate is an intangible term that is often hard to quantify or measure concretely, but employees nevertheless learn what behaviors are valued, what behaviors are rewarded, and what behaviors are accepted

by senior management. This information can have an influence on how the typical employee will construct his or her perception and value to the organization (Schneider, 1990). In organizations where the senior leadership makes safety an important value and communicates this in a proactive and effective manner with employees to set the tone for the climate as to the importance of safety, one study found there is a positive relationship between the safety climate and employees' safety behavior (Hofmann, Morgeson, & Gerras, 2003). The International Labor Organization (1998) reported that organization cultures that were focused on promoting social justice and human and labor rights and had senior management committed to health, wellness, and safety were positive predictors of the organization's ability to be adaptable to change and receptive to new ideas for preventing and intervening with employee related health issues.

Leaders who display questionable ethical behaviors (e.g., enforcing one set of rules with the workforce and following another set for themselves) and demonstrate little interest in the workforce's well-being have been found to have a negative impact on workforce morale and culture. Toor and Ofori (2009) reported the positive impact on a workforce when the leadership as a whole consistently displayed ethical behavior on a daily basis, made tough ethical decisions, and demonstrated a commitment to action. Those organizations were found to have more productive and healthier workforces than those where leaders did not demonstrate a commitment to ethical behavior or concern for their workforce's well-being.

Attribution theory teaches that leaders are at risk of breaching trust with employees when they do not maintain productive and healthy relationships and also have a pattern of placing blame on issues that under investigation are clearly outside the employees' control (e.g., under-performing piece of equipment; Tomlinson & Mayer, 2009). Tomlinson and Mayer also reported

once this trust is lost it will take considerable effort to gain it back and in the interim the employees live under an umbrella of fear of future blame.

Taylor, Repetti, and Seeman (1997) found organizations whose employees perceived the culture as being not supportive or safe were more at risk for experiencing negative feelings about their organization and more negative health outcomes. This can be a lost opportunity to an organization because employees who feel satisfied in the workplace are more likely to increase their discretionary effort that is directly connected to productivity and profitability potential (Catlette, 2000). Frost (2007) reported that leaders' failure to manage toxic emotions in the workplace resulted in employees being more emotionally and physically drained, with common side effects such as lost enthusiasm for work and increased risk for psychological distress. And if these two variables were not dealt with effectively by leadership the organization often ended up paying a great price (e.g., decreased productivity and increased lost time).

In one study where employees perceived their leadership as being abusive and uncaring, Smye and Wright (1996) described this as a Culture of Sacrifice, characterized as:

- excessive demand for personal sacrifice

- demand on employees to be available at home

- continual crisis

- employees subject to unreasonable deadlines

- Pony Express management philosophy

The result of this pressure (Smye & Wright, 1996):

- employee burnout

- depression in workforce

- turnover

- absenteeism

- accidents

- costly mistakes

- lack of energy in workforce

- poor life balance

- retention of passive and dependent workforce

In summary, each of the above examples can be defined as root causes for perceived stressors. This study's primary focus is not on what types of perceived stressors result in strain but on how effectively employees' management of perceived stressors can predict who will be more at risk for strain.

Locus of Control

Rotter's (1954) social learning theory of personality defined the construct called locus of control (LOC), which suggests that all human beings perceive their world primarily through one of two filters that influence how they behave. Employees who are motivated by ELOC (ELOC) believe the environment is in control and they are casualties of circumstance and mostly powerless (Rotter, 1966). Rotter reported that ILOC employees are more likely to believe they are responsible and accountable for their own behavior and as a result are free to make choices. Grieve (2003) suggested an ILOC is more beneficial than an ELOC for managing day-to-day life. Spector (2009) purported that LOC is an important construct for predicting employees' health, as LOC has an influence on how employees perceive and respond in the workplace.

Spector suggested that LOC and its relationship to stress and employees' wellness are important relationships to examine.

Employees with an ILOC are more predisposed to perceiving their workplace as positive, while ELOC employees are opposite and more likely to perceive the workplace as being negative (Wang, Bowling, & Eschleman, 2010). Wang et al. reported that LOC in a meta-analysis was found to influence employees' perception of job attitude, well-being, perceived work stressors, perceived autonomy (e.g., ability to make decisions), withdrawal behaviors (e.g., absenteeism), motivation, interpersonal relationships, and how employees cope with stress. Levenson (1974) purported that ILOC as defined by Rotter was not necessarily unidimensional, and there are more than just these two meaningful scales. Levenson developed and validated the following three scales: internal perceived mastery over one's life, belief of chance, and expectancy of control by powerful others. This provided evidence that LOC was also able to predict the influence of employees' internal constructs with respect to significance of luck and fate in controlling one's life. Glasser (1984) reported that LOC is a concept that can be taught, and employees who are operating from an ELOC can be taught how to operate from an ILOC.

One study of 281 scientists that examined the role of LOC in influencing employee satisfaction and ability to manage the pressures of the workplace showed employees who operated from an ILOC were more motivated and satisfied and displayed higher performance on average than employees who operated from an ELOC (Dailey, 1980). Another researcher found employees with an ILOC may see work pressures as a challenge to overcome. ELOC employees would not see these pressures as challenges but as negative pressure that directly influence their perceptions, motivation, and self-confidence (Norvilitis, Szablicki, & Wilson, 2003). ILOC acted

as a moderator between leadership style and burnout (De Hoogh & Den Hartog, 2009). Job demand model reports that job demands can impact health and well-being; one study explained employees who had an ILOC were better able to make choices to mitigate the effects of job demand compared to employees who operated from an ELOC (Meier, Semmer, Elfering, & Jacobshagen, 2008).

Choice Theory

Choice theory is dependent on the principles of ILOC (Glasser, 2001). Glasser (1998) purported one of the most important insights for employees who are not happy with their current life situation is to learn they have the ability to make choices to make their life situation better. Glasser (1984) determined every employee has five basic needs. The first four presented are conscious needs and the last one is unconscious: (a) Fun—enjoyment and pleasure, (b) Freedom—ability to move freely and choose activities, (c) Recognition and self-accomplishment—acknowledgement and self-worth, (d) Love and belonging—supportive relationships, and (e) Survival—food, safety, shelter, and reproduction.

Glasser (1998) reported each employee has five basic needs and may have 1,000 different wants. Managers who understand their employees' basic needs and wants are in a better position to help them meet both their career and work expectations (Glasser, 1994). All employees have their own criteria as to what they want and will determine if what they have is meeting their basic needs (Glasser, 2000). Glasser (1998) showed that when employees learn there is a difference between what they want and have they will experience a short, intense feeling of pain that informs them that one or more needs are not being met. This shot of pain is reported to employees similar to when a light in a set of instruments on a dashboard in a car goes on

indicating that there is something wrong. Glasser (2004) also purported that once an employee is notified of these differences, every behavior going forward is based on conscious choice, as choice theory teaches all human behavior is internally motivated and created, and all employees are accountable and responsible for their choices (Glasser, 1984). Glasser (2004) reported that regardless of culture or age, the need for healthy relationships is critical. However, not every human has the skills to develop healthy relationships, and because of this a large percentage of all human psychological pain originates out of unsatisfied relationships.

Glasser (2000) suggested a key objective of choice theory is to teach employees how to more effectively meet their basic needs. One key concept used in Glasser's reality therapy, the therapy that brings choice theory into the counseling relationship, is to discover what employees believe they want in order to perceive their basic needs are met (Glasser, 2001). Choice theory operates on the premise that employees must first want to learn how to change their situation so that they can take the necessary actions to achieve healthier life outcomes (Glasser, 1981).

Once employees understand what they want and are motivated to take responsibility to make the needed changes in their lives, they are in position to learn the knowledge and skills required to take charge and meet their basic needs in a healthy manner. Glasser (2000) defined all human behavior as being total behavior, that thinking, doing, feeling, and physiology collectively work together and define an employee's total behavior. Glasser presented a metaphor of a front wheel drive car for showing the interdependent relationship between the two front wheels (thinking and behaving) and the two rear wheels (feelings and physiology): the two rear wheels have no choice but to follow the front wheels (Glasser, 1984). For example, for employees who perceive their current role is not personally fulfilling, the behavior of

complaining fueled by negative internal thoughts will create negative emotions that will result in changes in physiology (e.g., stress response). Glasser (1998) taught that when employees learn how to make their own personal choices (i.e., ILOC) this can positively influence their ability to manage their external stimuli, regardless of the stressor.

Glasser (2004) suggested that before deciding what new behaviors employees will benefit from it is necessary to be clear on what they want and then confirm how these choices will benefit their current situation. Provided the wants are safe and promote health, the next step is for the employees to learn the skills needed to get what they want. Glasser (2004) suggested that much of mental health and/or illness is happening because of employees' perception of their lack of choices. When employees learn they have choices to create the new behaviors required to take charge of their current behaviors, according to Glasser (1984), they are now metaphorically driving their car in the direction they really want to go, instead of allowing the environment to determine their direction.

Glasser (2004) purported that the majority of all human beings, with the exception of the severely disabled, have the internal resources to make personal choices (ILOC). Glasser (1998) reported that it is critical for onlookers not to assume employees have the skills readily available to make better choices; often, employees will need the opportunity to learn new skills. For example, employees who perceive external stressors are impacting their ability to meet their personal needs (e.g., enjoyment and pride in their work) are more at risk for developing strain and as a result make ineffective choices (e.g., anger, anxiety, and heavy consumption of alcohol) as an attempt to cope with their stress (Glasser, 2004).

Breggin, director of the International Center for the Study of Psychiatry and Psychology, stated, "Dr. Glasser's theory is based on inescapable truths: meaningful relationships are central to the good life, the choices we make will determine their quality, and we can create them only if we take responsibility for ourselves without controlling other people" (Glasser 2000, p. xiii). Glasser (1984) suggested that employees who learn to operate from an ILOC are better able to meet their basic needs and as a result are more likely to achieve personal happiness and fulfillment. Ellis (2000), regarded as the grandfather of modern day cognitive-behavioral psychology, endorsed the effectiveness of choice theory and its ability to explain the connection between thinking, behavior, feelings, and physiology.

Bjornstad (2010) reported leaders who are aware of their current intrinsic basic needs and are comfortable with how they are meeting those needs are more likely able to manage their self-control and are better able to negotiate with less conflict and mistrust. Another study that included 13 university faculty members—all experts in human behavior—reported choice theory concepts have been found effective for teaching people how to take responsibility for their personal choices and actions (Burdenski, et al., 2009).

Social Learning Theory

Social learning theory (today referred to as social cognitive theory) was developed by Bandura (1977) and one construct developed in this theory that is of interest for this study is self-efficacy. Self-efficacy refers to employees' belief about their current capabilities to perform the skills necessary to achieve a desired result (Bandura, 1986). Bandura taught that employees' beliefs are influenced by four different processes: cognitive (i.e., capacity to think and use learned information), motivational (i.e., internally motivated to make a choice, define personal

course of action, or willingness to persist), affective (i.e., managing emotions), and decisional processes (i.e., what an employee does in a situation).

For employees to develop their self-efficacy they need to learn how to move past personal failures and setbacks. Employees who have learned to expect quick success when faced with a situation that results in failure are often at risk for becoming discouraged and giving up if challenged (Bandura, 1995). These employees are at risk for developing a belief that they lack the internal self-resiliency to overcome perceived obstacles that can impede them from taking the actions required to eventually learn how to overcome a defined obstacle. Taking the action required to overcome personal life obstacles is a critical step for developing one's self-efficacy (Bandura, 1991).

Employees can learn to develop self-efficacy through learning new skills, observing others demonstrate competency, and practicing to master a defined set of skills (Bandura, 1977). Bandura showed that through practice employees can develop their skills and self-confidence. Self-efficacy can be strengthened through supportive feedback and encouragement that can fuel employees' internal motivation and confidence in their ability to learn (Bandura, 1995).

A positive benefit of self-efficacy is its influence on employees' mood. For example, employees who become confident in their ability to manage the daily challenges they face will be more resilient to manage the daily stressors of home and work—a key requirement for achieving personal life satisfaction (Bandura, 1991). Most employees are faced with work related stressors. The better their belief they can manage these stressors, the less likely they will be negatively impacted by life challenges (Bandura, 1995). Bandura reported that this mindset

provides employees with the ability to have less self-doubt in their ability and more confidence in their ability to manage daily stressors.

Liu, Siu, & Shi (2010) reported that self-efficacy fully mediated the influence of transformational leadership (i.e., positive leadership) on perceived stress and stress symptoms, suggesting the positive impact of this intrapersonal capability. This finding suggested employees' self-efficacy skills can have a positive influence on how the employees process their workplace and as a result how they behave in their workplace. Webster, Beehr, and Christiansen (2010) looked at the role of self-efficacy in understanding the relationship between job satisfaction and strain, which found the link between self-efficacy and job performance was not significant. Webster et al. did not discuss the prospect of developing the employees' competencies to better manage their perception of work demand as a solution to mitigate strain.

Schreurs, van Emmerik, Notelaers, and De Witte (2010) showed that buffering the effects of job control and job self-efficacy showed job control, not job efficacy, assisted in reducing the negative influence of job insecurity on employee wellness, where the recommendation from the study was to give employees more control over the environment. However, the results did not provide clear insight into the role of the employees' individual choices on their health (Schreurs, van Emmerik, Notelaers, & De Witte, 2010).

Psychological Well-Being

Thus far in this literature review it has been reported that employees who experience chronic perceived stressors and do not think they have the ability or options to improve their circumstances are less likely to meet their basic needs as defined by Glasser (1998). In addition, Glasser's (2004) work inferred that these types of employees are more likely to experience strain

and/or mental health issues. When employees continue to enter the workplace under stress and/or strain they are at greater risk for damaging their psychological well-being (Ryff & Singer, 2008).

Psychological well-being from an employee's perspective may be described as a sense of personal acceptance, personal life satisfaction, or the ability to balance the positive and negative effects of life, with the result being internal happiness (Ryff, 1989). Using this framework, psychological well-being (e.g., personal happiness) is not something that happens to a human being; it is something employees must do that requires making healthy personal choices, and will often require hard work and persistence (Ryff & Singer, 2008). Ryff (1989), a developmental life span psychologist, developed the Six Scales of Psychological Well-Being through first examining psychological theories that were aligned to the constructs that Ryff determined to be of interest. Ryff then used a construct-oriented approach to personality assessment that resulted in the development of high and low scores for each of the Six Scales of Psychological Well-Being:

Self-acceptance

A result of having a positive attitude towards self, accepts both the good and bad qualities and overall feels positive about past life experiences (Ryff & Singer, 2006). The theories that influence the construction of this scale were Maslow's self-actualization, Rogers's optimal functioning, Allport's maturity, and Erikson's acceptance of life (Ryff, 2006).

Employees' ability to develop healthy, positive relations with other people is dependent on factors such as affection, intimacy, give and take, and genuine concern for human relationships (Ryff & Singer, 2008). The theories that influenced this scale were Aristotle's Ethics, Russell's work on affection, Allport's maturity, Erickson's adult development stage

theory, and the nearly universal acceptance across all cultures of the benefits of this feature for living life (Ryff, 2006).

Autonomy

The result of persons learning to be self-determined and independent, able to avoid the temptation of social and peer pressure, capable of thinking and acting on their own, as well as being able to make personal choices to meet personal needs and values (Ryff & Singer, 2003). The theories used for this scale were Maslow's autonomous functioning, Jung's Individuation, Sartre's self-determination, and Erikson's gaining a sense of freedom (Ryff, 2006).

Environmental Mastery

The result of developing a sense of personal competency and confidence in interacting, and managing and meeting personal needs (Ryff, 1989). The theories used for this scale were based on Jahoda's theory of an individual's ability to choose and Allport's maturity (Ryff, 2006).

Purpose in Life

Occurs through the development of a set of personal goals that sets a life course that provides employees with a sense of purpose and meaning in past, present, and future life (Ryff & Keyes, 1995). The theories used for this scale were based on Frankl's *search for meaning*, Sartre's living authentically, Jahoda's definition of mental health with respect to the importance of having a life purpose, and Allport's maturity (Ryff, 2006).

Personal Growth

Recognition of an internal commitment to continued development, open to new experiences, observes and acknowledges self-development growth with the purpose of gaining more self-knowledge and skills to enjoy life to its fullest (Ryff, 1989). The theories that

influenced this scale are Maslow's self-actualization, Roger's description of the functioning person, Jung's notion of the need to confront life challenges, Buhler and Erickson's teachings on the need to continue to solve life problems, and life is never a fixed state (Ryff, 2006).

Positive Relationship With Others

Defined by employees' ability to get along with others and to develop meaningful relationships, such as love and friendships, that have a direct impact on employees' overall psychosocial well-being (Ryff, 1989).

The higher employees' psychological well-being, based on Ryff's (1989) definitions, the more likely employees will be able to manage their perceived stress and make healthy choices. One study designed to validate the reliability of the Turkish version of the Scales of Psychological Well-being developed by Ryff involved 1,214 university students. The study found language equivalency showed that correlations between the Turkish and English forms were .94 for autonomy, .97 for environmental mastery, .97 for personal growth, .96 for positive relations with others, .96 for purpose in life, and .95 for self-acceptance. That provided evidence to support the cross cultural utility of this tool (Akin, 2008). Another study looked at the relationship of paid and unpaid work to the six scales on psychological well-being proposed by Ryff and found there were differences between how men and women perceived these two factors (Lindfors, Berntsson, & Lundberg, 2006). The study suggested that gender differences may exist between men and women with respect to interpreting perceived stress.

Research Method

This study was quasi experimental and used quantitative data that was collected using a survey methodology. Data were collected from a tire manufacturing production workers population consisting of 1,200 research participants who all work in one factory in Nova Scotia, Canada. All tire manufacturing production workers were invited to voluntarily participate in this study.

The independent variable for this study was the PSS that measured employees' perceived stress levels. The moderating variables for this study were the MHLC, ILOC and ELOC scales, and GPSES. The dependent variables for this study were the Six Scales of Psychological Well-Being. This research data collection relied on research participants from a manufacturing environment completing one survey that was made up of dependent, moderating, and independent variables scales. This study explored the significant relationships between the PSS (independent variable) and PSWB (dependent variable) scales, as well as the buffering effect of the three moderating variables, ILOC and ELOC scales, and self-efficacy. Testing the research questions in this study required moderation analyses, using guidelines established by Baron and Kenny (1986).

I elected not to use a research method that would look for differences. However, there could be an interesting study that asks a different set of core research questions in regard to what differences may exist between employees (e.g., gender) and years of service. Such a design would be set up to utilize different inferential statistics such as ANOVA (Morgan, Leech, Gleockner, & Barret).

Summary

This chapter provided an introduction to stress and stress theory, stressors, the impact of stress on the body, and strain that includes burnout. Choice theory provided a theoretical line that explained the role of personal choice (i.e., ILOC) and its role in facilitating employees to meet their basic needs that influence their psychological well-being. This literature review provided background information for all the research variables used in this study. Chapter 3 introduces the research method used, Chapter 4 reports the results, and Chapter 5 presents the final discussion for this study.

Chapter 3: Research Methodology

Introduction

I used a quasiexperiment methodology to examine the moderating roles of LOC and self-efficacy on the relationship between perceived workplace stressors and psychological well-being as defined by Ryff (1989). Data collection came from volunteer research participants from one tire building factory who each completed one online survey that included the PSS, MHLC Form C four subscales, GPSES, and the six SPWB. Each of the 1,200 research participants was individually invited in writing by the organization's senior management to participate in this confidential research study.

Surveys have been found as an effective way to gather data that can be measured and analyzed (Arsenault & Dolan, 1983). Howard (1994) reported that self-reporting surveys are generally an accepted method for studying human behavior and for providing defined performance standards that can be used to predict behavior results. There are challenges and critics for the application of self-reporting surveys. Spector (1994) warned the challenge with surveys is respondent bias (e.g., central tendency responding) that can impact the variables being measured and lead to distortions in the accuracy of the results. Harrison, McLaughlin, and Coalter (1996) indicated that self-reporting surveys will most likely remain as one of the most common and useful tools for conducting organizational research. Testing the research questions in this study required linear regressions, binary logistic regression, and moderation analyses, using guidelines established by Baron and Kenny (1986).

Prior to launching the survey, the organization's senior management mandated that employee education be completed to ensure the 1,200 tire manufacturing production workers

were informed on the purpose and context for this study. Based on previous experiences, senior management determined that educating the workforce would help increase the likelihood tire manufacturing production workers would be open to participate in this study. Keeping and Levy (2000) found it important not to underscore the importance of employees' reaction prior to engaging them to participate in a new initiative. Fang, Shao, and Lan (2009) reported the level of trust participants had in the sponsor who administered a survey had a direct relationship with the participants' intention to take part, and impacted the number of surveys completed.

This study provided an opportunity to examine the influence of cognitive theory construction's influence on cognitive appraisal. Gaining insight into why some employees are more at risk for being negatively influenced by workplace stressors may help reduce these same employees' risk for developing future stress related illness (e.g., depression, anxiety, and addiction).

Research Design

This is a quasi-experimental research design where the data were collected through Survey Monkey, a secure online survey that protects the research participants' autonomy. This study was facilitated in a tire factory in Nova Scotia, Canada, that currently employs 1,200 manufactory workers. All of the potential research participants were individually invited to voluntarily take part in this study to promote employee engagement, equity, and inclusion. Each volunteer participant was asked to complete in one sitting this study's online survey that measured the employee's perceptions over the previous 90 days. It was estimated it would take each participant 30 to 40 minutes to complete the online survey that included all scales defined in the instrument section.

The organization senior management who provided permission to conduct this study with their workforce wanted it made clear to all potential research participants in the education and invitation process that the study's results would have no bearing on the employees' performance appraisals or status. Neither would the results have any impact on job security, income, or promotion. The research participants were informed that individual results would be kept confidential and the organization's leadership would not be given access to any employee's results. Finally, senior management wanted all potential participants to know the collective survey results have the potential to help educate as well as influence the organization's leadership as to what it can do better to facilitate a healthier workplace that can improve the quality of life for all employees.

The organization's senior management determined that a collaborative research advisory committee would be put in place prior to launching the survey to support in the education, engaging, and facilitation of the survey. Senior management wanted the advisory committee to provide guidance and recommendations as to how to best introduce this study to the workforce. Senior management also wanted the advisory committee to support me, to increase the likelihood there would be maximum interest and participation in this study.

The committee was made up of employees, frontline leaders, and middle managers. Senior management wanted this survey positioned in the workforce right with respect to its objectives, purpose, and potential benefits to the manufactory workers. The committee's role was to develop strategies for: (a) how to best introduce the study to all potential research participants (i.e., manufactory workers), (b) how to motivate and obtain participation in the study, (c) define what types of incentives might influence and motivate participation, (d) how best to implement

the survey so as not to disrupt operations, and (e) how to gain the employees' confidence that the survey would be confidential and the organization would not have access to individual employee results. The objective of this recruitment strategy was to overcome and/or reduce potential barriers and employees' fear to participate in this study.

There is little agreement in the research as to why employees performing the same job function within the same work environment manage perceived stressors differently (Terry & Callen, 2000). There is a gap between what society knows about perceived stressors and strain with respect to why some employees are more at risk than others (Conference Board of Canada, 2010). I investigated two cognitive theory constructs, ILOC and self-efficacy influence on cognitive appraisal, with respect to their roles for moderating perceived stressors and psychological well-being as defined by Ryff (1989).

To examine the moderating role of LOC and self-efficacy, I used the guidelines established by Baron and Kenny (1986). The following research questions and hypotheses were examined in this study:

Research Question 1: To what extent does ILOC moderate how employees manage their perceived work stressors and positively engage in the behaviors that facilitate autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life?

$H1_o$: ILOC will not moderate the relationship between perceived work stressors and positively facilitate employee engagement in behaviors that promote autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life.

*H*1$_a$*:* ILOC will moderate the relationship between perceived work stressors and positively facilitate employee engagement in behaviors that promote autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life.

Research Question 2: To what extent does self-efficacy moderate how employees manage their perceived work stressors and positively engage in the behaviors that facilitate autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life?

*H*2$_o$*:* Self-efficacy will not moderate the relationship between perceived work stressors and positively facilitate employee engagement in behaviors that promote autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life.

*H*2$_a$*:* Self-efficacy will moderate the relationship between perceived work stressors and positively facilitate employee engagement in behaviors that promote autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life.

Setting and Sample Size

All 1,200 employees as defined by the organization fall under the job family of tire manufacturing production workers within the tire factory assembly line process within a 24/7 factory. The work environment for these workers is high demand. All are given defined production targets that they are expected to achieve each day. The work is highly repetitive, complete within 12-hour shifts, and work activities are measured and monitored daily. The tire factory where this study is being completed is one of 19 in the North American region, which represents one division within this multinational corporation. Each plant has expectation and

performance targets set by corporate for production levels that influence the senior management team to continue to be diligent and to monitor the plant's production results.

Cohen (1988, 1992) suggested that researchers should strive to obtain a minimum power of .80 with alpha set at .05 to detect a medium effective size to increase the opportunity to achieve a level of statistical significance. Due to the number of tests and variables involved in this study, to mitigate the potential risk of rejecting the null hypothesis, the Bonferonni correction was used to protect against alpha inflation (Hochberg, 1988). The study involved moderation analysis. Each type of analysis requires a sample size, and of these analyses, the logistic regression, requires the most stringent sample size to detect a significant model. With alpha set at .05, to achieve a power of .80 with a medium effect size, the desired sample size is 300 participants (Hsieh, Block, & Larsen, 1998).

Instrumentation and Materials

Four different instruments were used to collect the data required to examine the research questions proposed in this study. The PSS was developed by Cohen (Cohen, Kamarck, & Mermelstein, 1983), which is now in the public domain and does not require permission to use. The PSS is a scale that evaluates the degree an employee is perceiving life situations as being stressful. The motivation behind the development of PSS was to evaluate how individuals perceive and evaluate uncontrollable, unpredictable, and overload situations on a stress scale (Cohen, Kamarck, & Mermelstein, 1983). Cohen et al. recommended using the 10-item scale, as it has been found to have the most reliability and validity. The PSS was developed so that an individual would need at least a junior high level education; tire manufacturing production workers in this study must meet a job requirement of a minimum of grade 12.

PSS scores range from 10 to 40, with higher scores meaning higher stress levels. PSS scores are obtained by reversing the scores on the four positive items (e.g., *0 = 4, 1 = 3, 2 = 2,* etc.) and then summing across all 10 items. Items 4, 5, 7, and 8 are the positively stated items. The 5-point Likert scale ranges from "never" to "almost never," "sometimes," "fairly often," and "very often." One example of the type of questions asked in the PSS is, "In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?" Internal reliability was found to be .84 to .86 and the predictive validity was found to be .52 to .76 (Cohen et al., 1983). See Appendix A to see the PSS.

The MHLC Form C developed by Wallston, Stein, and Smith (1994), originated from the MHLC developed earlier by Wallston, Wallston, and DeVellis (1978). The MHLC Form C is based on the work of Rotter's LOC and is an 18-item questionnaire that was first implemented in 1994 for the purpose of creating a generic LOC scale that could be adapted to predict different types of health conditions by replacing the word condition with the word that represents what I was looking to study. In this study, the word stress was inserted (Wallston, 2005). The MHLC Form C four scales are internal (ILOC), chance (ELOC), doctors (health is due to actions of), and other (powerful) people (Wallston et al., 1994). This study used the internal and chance scales only for testing the hypothesis; however, it collected data on all four scales for the descriptive analysis.

The rating scale is a 6-point Likert scale 1 = *strongly disagree*, 2 = *moderately disagree*, 3 = *slightly disagree*, 4 = *slightly agree*, 5 = *moderately agree*, and 6 = *strongly agree*. The authors of the MHLC original form chose an even number because they wanted to force the respondent to either agree or disagree with a statement, as a strategy to get a better distribution of

scale scores. An example question is, "If my stress worsens, is it my own behavior which determines how soon I will feel better again?" No items need to be reversed before summing. The scoring system required for the scoring of each subscale is the sum of the values circled for each item on the subscale. All of the subscales are independent of one another; there is no such thing as a total MHLC score.

Wallston (2005) wrote an article as a response to questions from researchers on the validity and reliability of the MHLC because the authors had been reporting the MHLC Cronbach alphas in the .60-.75 range and test-retest stability coefficients ranging from .60 to .70 (Wallston, 2005). These ranges often raise questions to researchers because Cronbach (1951) provided insight that normally .70 or higher is evidence of a test's internal consistency (i.e., reliability). Walton admitted the answer to this question is complex because of all the different MHLC scale versions that have been developed, as well as the wide variety of research applications. However, he responded that empirical evidence may be the best answer to this question as there have been hundreds of published articles that have used the MHLC scales and there is now a need for a detailed examination of all these studies to provide more insight into the best way to examine all the potential MHLC data available today in the literature. The MHLC Form C is now in the public domain and does not require permission to use. The MHLC Form C four scales take on average 10 minutes to complete. See Appendix B to see the MHLC Form C.

The GPSES is an internationally accepted scale that was developed by Jerusalem and Schwarzer (1992) for the general population for ages 12 years and up to evaluate an individual's perceived self-efficacy. The scales measure employees' perception of their beliefs with respect to their skills to cope with and manage daily stressors (Schwarzer, 1992). The scale has 10 items

that use a Likert scale that ranges from 1 to 4 as follows: 1 = *not at all true*, 2 = *barely true*, 3 = *moderately true*, 4 = *exactly true.* The total scoring range falls from 10 to 40. The higher the score indicates the greater the employee's stress and the lower the employees' belief in their general competencies to cope. A sample item is, "I can always manage to solve difficult problems if I try hard enough." The internal reliability of Cronbach's alphas has been found to range from .76 to .90, with the majority ranging in the high .80s (Schwarzer & Jerusalem, 1995). The criteria related validity is well documented. For example, this scale has been used by more than 1,000 studies and has been found to be effective across different cultures; in fact, it has been adapted to 30 languages (Scholz, Gutiérrez-Doña, Sud, & Schwarzer, 2002). This instrument is in the public domain and permission was not needed for this study. See Appendix C to see the GPSES scale.

The SPWB was constructed to measure the dimension of autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance by Ryff (1989). Each of the six scales has a total of 14 items. This study used SPWB 9-item scales that are currently in use in the Wisconsin Longitudinal Study, which requires research participants to answer a total of 54 items to complete all six scales of the SPWB. These scales collectively have been developed to measure employees' current perception of their psychological well-being (Ryff & Keyes, 1995). Participants respond using a 6-point Likert scale: 1 = *strongly disagree,* 2 = *moderately disagree,* 3 = *slightly disagree,* 4 = *slightly agree,* 5 = *moderately agree,* 6 = *strongly agree.* Responses to negatively scored items (-) are reversed in the final scoring procedures so that high scores indicate high self-ratings for each scale. One example of a question from the Purpose of Life dimension is, "I find it satisfying to think about

what I have accomplished in life." The internal consistency (coefficient alpha) for Environmental

Master = .86, Autonomy = .83, Personal Growth = .85, Positive Relationships with Others = .88,

Purpose in Life = .88, and Self-Acceptance = .91 (Ryff, 1989). See Appendix D to see the six

scales used in this study. Permission to use this tool was provided from Ryff's office directly.

See Appendix H for an introduction to the SPWB.

Procedure

All 1,200 employees in the factory were personally invited through the organization's

internal mail to participate in this online survey 2 weeks prior its launch. I wrote the letter of

invitation. The objective of the letter was to provide all participants an overview of the survey's

purpose. It also provided a preframe of the terms and conditions of the study, such as: listed

confidentiality terms; informed participants that this is a voluntary survey; outlined the roles of

the factory's management team, advisory committee, and researcher; listed what incentives

would be offered to employees who completed the entire survey; and detailed the procedure used

to obtain employees' consent to protect their confidentiality. The letter's design was aligned

closely to Walden's Institutional Review Board (IRB) requirements as to what information must

be shared with potential research participants prior to active participation.

In addition to the invitation letter, the tire factory's internal communication team

provided on-going promotion of the survey as to when and where the survey would be

implemented once a date for the survey launch had been confirmed. The organization has a

standard operating procedure (SOP) for how it implements surveys, to protect the integrity of the

operation and employees. This study adhered to those organizational policies and procedures,

which adhere to the Nova Scotia employment laws with respect to securing and protecting

employees' personal information and confidentiality. The SOP provides direction that the surveys will be open for no more than 10 working days. This is to ensure this process does not disrupt operations, and provides ample opportunity for all employees to participate.

All employees who wanted to participate in the study were asked to inform an organizational designate of their intentions to complete the survey. This organizational designate was charged with providing each potential participant with a private password and instructions as to how to log into the online survey. Participants were given the URL with their password so that they could log in using their employee ID and complete the online survey. Each of the four crews was given a set of defined times over a 2-week period to complete the survey. Research participants were informed that they had the option over this 2-week period to do the survey in the quiet of their own homes, as the online tool could be accessed through the Internet.

The survey was delivered through Survey Monkey, a secure online portal survey platform that facilitated the survey, protected employees' confidentiality, and secured and protected the research data. I was not given any employee names, only the employees' IDs and passwords. The factory's management put a work plan together and coordinated the process where all employees who wanted to participate in the survey (i.e., during working hours) were provided a time and opportunity on their regular shift to be scheduled in to complete the survey. Each participant was given up to 60 minutes to complete the online survey and given access to a computer in the organization's learning center to log in and complete the survey. Technical support was available in the event an employee needed any guidance.

To meet Walden's IRB requirements for a signed consent form, an electronic consent process ensured I would never have access to an employee's name. The consent form was signed

with an electronic signature (i.e., employee's ID). Once the employee logged into the survey the first page provided an overview of the purpose of the study and a series of statements that the employee was required to check to confirm they understood and agreed (see Appendix E). The employee was not able to continue the survey until he or she checked all the boxes and clicked on "I accept and agree with the terms of this study and give my consent to participate." The employee was prompted that if he or she wanted a copy of the consent to agreement form to press print or request a copy directly from me. Once the employee confirmed consent to participate, he or she was provided with instructions and prompted to begin the survey. After answering all survey questions, the employee moved to the last screen that asked for demographic information.

The tire factory senior management provided each employee in the sample population an incentive for fully completing the online survey. The incentive was defined by the Research Advisory Committee. All participants were informed that their employee IDs would be tagged with being either completed or uncompleted surveys, and all completed surveys were eligible for the defined incentive for participation.

Data Collection and Analysis

Before data were collected, I obtained approval from the IRB. The tire factory senior management team gave permission to conduct this study (See Appendix F). The data collection for this survey included the PSS that measured stress, MHLC four subscales that measured LOC, GPSES that measured perceived self-efficacy, SPWB six scales that collectively measured psychological well-being, and three defined demographic questions. The advantage of an online survey is that it is easy to collect and manage data. All participation in this study was voluntary.

The scales used require a minimum of a grade 8 reading level in English. This was not a concern in this population, as a minimum of an English grade 12 is a requirement for employment.

Data were entered into Predictive Analytics SoftWare (PASW) version 18.0 for Windows for analysis. Descriptive statistics were conducted on the sample demographics and the research variables and included frequencies and percentages for categorical or nominal data, and means and standard deviations for interval/ratio data (Howell, 2010).

Cronbach's alphas were conducted to assess the reliability and internal consistency of the instruments under investigation. This included the SPWS and its six scales (autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life); two scales from MHLH Scales-Form C (internal and chance-external); the PSS and the GPSES total score. The following rules were used for evaluating alpha coefficients, > .9 *Excellent, > .8 Good, > .7 Acceptable, > .6 Questionable, > .5 Poor, < .5 Unacceptable* (George & Mallery, 2009).

To examine Research Questions 1 and 2, 18 moderation analyses, using guidelines established by Baron and Kenny (1986), were conducted to assess if LOC (ILOC vs. ELOC) and perceived self-efficacy moderate the relationship between perceived stress score and psychological well-being in each of the six dimensions (autonomy, environmental mastery, self-acceptance, personal growth, positive relations with others, and purpose in life). In this analysis, the predictor variable is the perceived stress score, which is an interval level of measurement. These are an interval level of measurement.

Three moderating variables needed to be explored to test the hypothesis, including ILOC and ELOC, a dichotomous level of measurement that was coded as 0-1, and perceived self-

efficacy, an interval level variable. One moderation analysis was conducted for each dependent variable (autonomy, environmental mastery, self-acceptance, personal growth, positive relations with others, and purpose in life) with each moderating variable (ILOC, ELOC, perceived self-efficacy), creating 18 moderating regression analyses.

Prior to analysis, the predictor and moderating variables were centered to eliminate possible multicolliniarity effects between the predictor, the moderator, and the interaction terms. Centering was accomplished by subtracting the mean from all individual scores on the variable and obtaining a revised sample mean of 0 for that variable (Tabachnick & Fidell, 2007). The predictor and moderator variable were entered into Block 1 of the regression, followed by the interaction term (i.e., perceived stress score x ELOC x ILOC x self-efficacy) in Block 2. Prior to completing this analysis, all statistical assumptions for this statistical test were assessed.

Ethical Considerations

Working carefully with senior management, I assisted in the design of the written personal invitation that ensured all potential research participants that all the guidelines set by Walden IRB were included. The personal invitation informed the potential participant of the following information that I would only ever be able to identify employees by employee ID; no names would be given to me so the statistical analysis could be conducted; the employer would not be given the employees' individual results, only the statistical findings; the online survey would be completed through Survey Monkey that would assist in protecting and securing each employee's anonymity; and this study would adhere to Walden's and APA research guidelines. Management agreed to present to the factory population in writing what senior management

learned from the study and how it plans on using the results to benefit the quality of life for all employees. The study's IRB approval number is 11-14-11-0091563.

Summary

A quantitative quasi experimental design was used in this study. The purpose of this study was to evaluate the moderating role of ILOC and self-efficacy to prevent strain and facilitate psychological well-being as defined by Ryff's (1989) six scales. Moderated multiple regression analyses were used to evaluate the roles of ILOC and self-efficacy. Chapter 4 provides an overview of the statistical findings, and Chapter 5 presents the final discussion.

Chapter 4: Results

Introduction

The purpose of this study was to provide insight on the moderating role of ILOC and self-efficacy to prevent strain and facilitate psychological well-being as defined by Ryff's (1989) six scales. Specifically, this study was conducted to answer two research questions:

1. To what extent does ILOC moderate how employees manage their perceived work stressors and positively engage in the behaviors that facilitate autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life?

2. To what extent does self-efficacy moderate how employees manage their perceived work stressors and positively engage in the behaviors that facilitate autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life?

The first research question was examined using the PSS, MHLC, and SPWB. The second research question was measured using the PSS, GPSES, and SPWB. Hypotheses were analyzed using moderated multiple regression analyses.

Demographic Characteristics of the Sample

Descriptive statistics were calculated for the demographic variables. The majority of participants were male (167, 78.4%). Seventy-four (34.7%) participants reported they are age 51 years or over, while 73 (34.3%) reported their age as 40 to 50 years. Of those who took part in the study, 115 (54.0%) reported they have been working for the tire factory as a manufacturing production worker for 16 or more years. Many reported that high school (63, 29.6%) is the

highest level of education completed, while 52 (24.4%) reported university, and 50 (23.5%)

reported community college. The majority of participants are Caucasian (206, 96.7%).

Frequencies and percentages for the categorical research characteristics of participants are

presented in Table 2.

Table 2

Demographic Characters of the Sample (n = 227)

Research variable	*n*	*%*
Gender		
Male	167	78.4
Female	46	21.6
Age		
18 - 22	2	0.9
23 - 30	16	7.5
31 - 39	48	22.5
40 - 50	73	34.3
51 and over	74	34.7
Years working as a tire manufacturing production worker		
1 - 2	33	15.5
3 - 5	14	6.6
6 - 8	22	10.3
9 - 12	13	6.1
13 - 15	16	7.5
16 and over	115	54.0
Highest level of education		
High school	63	29.6
Vocational school/training	32	15.0
Community college	50	2.5
University	52	24.4
Graduate	16	7.5
Ethnicity		
Caucasian	206	96.7

African Canadian	1	0.5
First Nations	1	0.5
South Asian	1	0.5
South East Asian	4	1.9

Data Screening

Two hundred twenty-seven individuals responded to the survey. The data were transferred into the PASW for analysis. Data were screened for accuracy, missing data, and outliers. Descriptive statistics and frequency distributions were calculated to determine that responses were within the possible range of values and that the data were not distorted by outliers. Standardized values were created for each subscale score and cases were examined for values that fell above 3.29 and below -3.29 (Tabachnick & Fidell, 2007); four cases were removed. Cases with missing data were examined for nonrandom patterns; 14 cases were removed for missing data. The responses from 209 participants were used in the final data analysis.

Overview of Design and Procedures

Scores were calculated for the PSS, the subscales of the MHLC Form C (internal, chance, doctors, and other people), the GPSES, and the scales of the SPWB (autonomy, environmental mastery, personal growth, positive relationship with others, purpose in life, and self-acceptance).

Cronbach's alphas were conducted to examine the reliability and internal consistency of the scales and subscales. The alpha coefficients are presented in Table 3, where the scales range from *acceptable* to *excellent,* according to George and Mallery (2003), where > .9 – *excellent, >*

.8 – *Good, > .7 – Acceptable, > .6 – Questionable, > .5 – Poor, < .5 –* Unacceptable. Means and

standard deviations as well as Cronbach's alphas for the scales are presented in Table 3.

Table 3

Means and Standard Deviations of the PSS, the Subscales of the MHLC-C, GPSES, and the

Scales of the SPWB

Variable	*M*	*SD*	*n* of items	α
PSS	24.14	5.40	10	0.86
MHLC-C				
Internal	25.46	4.91	6	0.88
Chance	17.05	4.58	6	0.80
Doctors	9.60	2.98	3	0.81
Other people	11.30	2.71	3	0.79
GPSES	40.21	5.40	10	0.92
SPWB				
Autonomy	38.76	5.98	9	0.81
Environmental mastery	39.29	7.06	9	0.90
Personal growth	41.83	6.38	9	0.86
Positive relationship with others	39.01	7.19	9	0.86
Purpose in life	40.08	7.31	9	0.90
Self-acceptance	39.44	7.46	9	0.92

Data Analysis Results

Data analysis was conducted using the PASW. Research Question 1: To assess Research Question 1, 12 moderation analyses were conducted. In six of the moderation analyses, ILOC was the moderator, perceived work stressors was the independent variable, and a subscale of the SPWB was the dependent variable. One analysis was conducted for each dependent variable. In the other six moderation analyses, ELOC was the moderator, perceived work stressors was the independent variable, and a subscale of the SPWB was the dependent variable.

Prior to conducting the moderation analyses, linearity and homoscedasticity were assessed. Linearity was assessed by the examination of Q-Q plots and data appeared to be linear, indicating the assumption was met. Homoscedasticity was assessed by the examination of a scatterplot; data appeared to be rectangularly distributed around the regression line and the assumption was met. Due to the number of tests and variables involved in this study, to mitigate the potential risk of rejecting the null hypothesis when it is true, the data analysis used the Bonferonni correction to protect against alpha inflation (Hochberg, 1988). The alpha value of .05 was divided by the number of times a dependent variable was repeated in the analyses. Each dependent variable was used three times, setting the new alpha value at .017 (.05/3).

The analysis with the interaction effect of PSS and ILOC in the model predicting autonomy was not statistically significant, $t = -1.54$, $p = .125$, indicating moderation is not supported. The results of the moderation analysis are presented in Table 4. The analysis with the interaction effect of PSS and ILOC in the model predicting environmental mastery was not statistically significant, $t = -1.80$, $p = .075$, indicating moderation is not supported. The results of the moderation analysis are presented in Table 5.

Table 4

Regression Examining ILOC Moderating the Relationship Between the Perceived Work Stressor and Autonomy

Predictors	*B*	*SE*	β	*t*	*p*
BLOCK 1					
PSS	-0.44	0.08	-.37	-5.84	.001
ILOC	0.22	0.08	.17	2.68	.001
BLOCK 2					
PSS	-0.42	0.08	-.36	-5.57	.001
ILOC	0.21	0.08	.16	2.53	.012
PSS*ILOC	-0.02	0.01	-.10	-1.54	.125

Note. F (3, 205) = 17.62, *p* < .001; R^2 = .205.

Table 5

Regression Examining ILOC Moderating the Relationship Between the Perceived Work Stressor and Environmental Mastery

Predictors	*B*	*SE*	β	*t*	*p*
BLOCK 1					
PSS	-0.88	0.06	-.68	-13.79	.000
ILOC	0.19	0.07	.13	2.70	.008
BLOCK 2					
PSS	-0.86	0.06	-.67	-13.45	.000
ILOC	0.18	0.07	.12	2.53	.012
PSS*ILOC	-0.02	0.01	-.09	-1.79	.075

Note. $F(3, 205) = 76.27$, $p < .001$; $R^2 = .527$.

The analysis with the interaction effect of PSS and ILOC in the model predicting personal growth was not statistically significant, $t = -1.22$, $p = .225$, indicating moderation is not supported. The results of the moderation analysis are presented in Table 6. The analysis with the interaction effect of PSS and ILOC in the model predicting positive relationship with others was not statistically significant, $t = -1.73$, $p = .085$, indicating moderation is not supported. The results of the moderation analysis are presented in Table 7.

Table 6

Regression Examining ILOC Moderating the Relationship Between the Perceived Work Stressor and Personal Growth

Predictors	*B*	*SE*	β	*t*	*p*
BLOCK 1					
PSS	-0.32	0.08	-.26	-4.06	.000
ILOC	0.43	0.09	.31	4.94	.000
BLOCK 2					
PSS	-0.30	0.08	-.25	-3.83	.000
ILOC	0.42	0.09	.31	4.81	.000
PSS*ILOC	-0.02	0.01	-.08	-1.22	.225

Note. F $(3, 205) = 17.74, p < .001; R^2 = .206.$

Table 7

Regression Examining ILOC Moderating the Relationship Between the Perceived Work Stressor and Positive Relationship with Others

Predictors	*B*	*SE*	β	*t*	*p*
BLOCK 1					
PSS	-0.72	0.08	-.54	-8.95	.000
ILOC	0.00	0.09	.00	-0.03	.973
BLOCK 2					
PSS	-0.70	0.08	-.52	-8.63	.000
ILOC	-0.02	0.09	-.01	-0.20	.844
PSS*ILOC	-0.02	0.01	-.10	-1.73	.085

Note. F $(3, 205) = 29.18, p < .001; R^2 = .299.$

The analysis with the interaction effect of PSS and ILOC in the model predicting purpose in life was not statistically significant, $t = -0.88$, $p = .381$, indicating moderation is not supported. The results of the moderation analysis are presented in Table 8.

Table 8

Regression Examining ILOC Moderating the Relationship Between the Perceived Work Stressor and Purpose in Life

Predictors	*B*	*SE*	β	*t*	*p*
BLOCK 1					
PSS	-0.54	0.09	-.40	-6.25	.000
ILOC	0.23	0.10	.15	2.33	.021
BLOCK 2					
PSS	-0.53	0.09	-.39	-6.04	.000
ILOC	0.22	0.10	.14	2.24	.026
PSS*ILOC	-0.01	0.01	-.06	-0.88	.381

Note. $F (3, 205) = 17.90$, $p < .001$; $R^2 = .208$.

The analysis with the interaction effect of PSS and ILOC in the model predicting self-acceptance was statistically significant, $t = -2.79$, $p = .006$, $f^2 = .036$, indicating moderation is supported. The results of the moderation analysis are presented in Table 9, and a figure depicting the two-way interaction effects is presented in Figure 2.

For purposes of interpretation, the IV (PSS) and moderator (ILOC) are dichotomized each into high and low groups. When ILOC is low, lower PSS scores yield higher DV (self-acceptance) scores than when the PSS is high. When ILOC is high, lower PSS scores yield higher self-acceptance scores than when PSS is high. In terms of effect size, Aguinis, Beaty, Boik, and Pierce (2005) showed that effect size for moderation analyses are much lower than the

typical Cohen values of 0.02, 0.15, and 0.35 for small, medium, and large effect sizes,

respectively. Aguinis et al. showed that the average effect size for moderation is 0.009.

Therefore, realistic effect sizes for moderation would be 0.005, 0.01, and 0.025 for small,

medium, and large effect sizes, respectively (Aguinis et al., 2005). An effect size of .036

indicates a large strength of the relationship.

Table 9

Regression Examining ILOC Moderating the Relationship Between the Perceived Work Stressor

and Self-Acceptance

Predictors	B	SE	β	t	p
BLOCK 1					
PSS	-0.76	0.08	-.55	-9.60	.000
ILOC	0.22	0.09	.14	2.50	.013
BLOCK 2					
PSS	-0.72	0.08	-.53	-9.23	.000
ILOC	0.20	0.09	.13	2.27	.024
PSS*ILOC	-0.04	0.01	-.16	-2.79	.006

Note. $F(3, 205) = 41.75$, $p < .001$; $R^2 = .379$.

     Research Question 1 results moderation analysis results were not significant for

autonomy, environmental mastery, personal growth, positive relations with others, and purpose

in life. However, the moderation analysis found ILOC does moderate the relationship between

PSS and self-acceptance. As a result, the null hypothesis must be partially rejected.
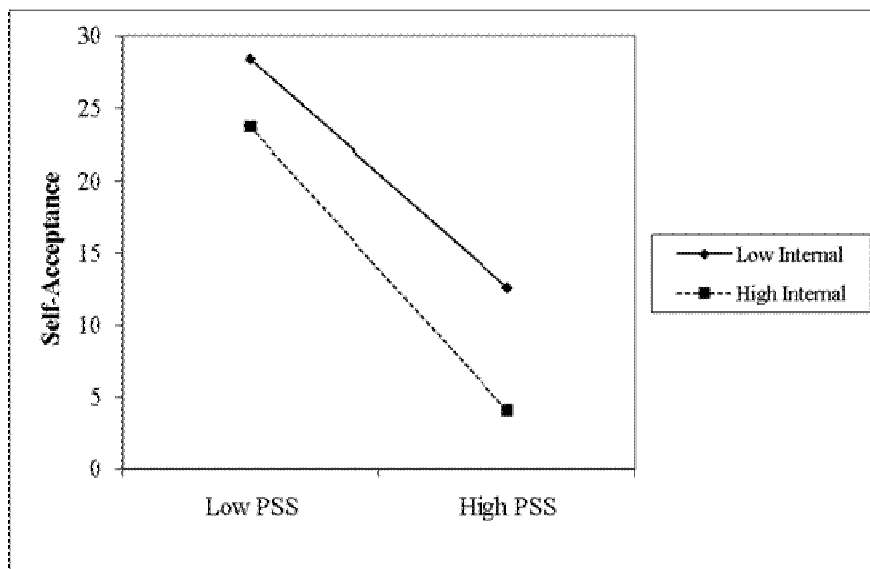
Figure 2. Two-way interaction effects for the unstandardized variables of PSS*ILOC predicting self-acceptance.

The analysis with the interaction effect of PSS and ELOC in the model predicting autonomy was not statistically significant, $t = 0.20$, $p = .839$, indicating moderation is not supported. The results of the moderation analysis are presented in Table 10. The analysis with the interaction effect of PSS and ELOC in the model predicting environmental mastery was not statistically significant, $t = 0.19$, $p = .847$, indicating moderation is not supported. The results of the moderation analysis are presented in Table 11.

Table 10

Regression Examining ELOC Moderating the Relationship Between the Perceived Work Stressor and Autonomy

Predictors	*B*	*SE*	β	*t*	*p*
BLOCK 1					
PSS	-0.38	0.07	-.33	-5.25	.000
ELOC	-0.41	0.08	-.31	-5.02	.000
BLOCK 2					
PSS	-0.38	0.07	-.32	-5.14	.000
ELOC	-0.41	0.08	-.31	-4.97	.000
PSS*ELOC	0.00	0.01	.01	0.20	.839

Note. F (3, 205) = 23.83, *p* < .001; R^2 = .259.

Table 11

Regression Examining ELOC Moderating the Relationship Between the Perceived Work Stressor and Environmental Mastery

Predictors	*B*	*SE*	β	*t*	*p*
BLOCK 1					
PSS	-0.84	0.06	-.65	-13.41	.000
ELOC	-0.34	0.07	-.24	-4.89	.000
BLOCK 2					
PSS	-0.83	0.06	-.65	-13.18	.000
ELOC	-0.34	0.07	-.23	-4.84	.000
PSS*ELOC	0.00	0.01	.01	0.19	.847

Note. F (3, 205) = 85.17, *p* < .001; R^2 = .555.

The analysis with the interaction effect of PSS and ELOC in the model predicting personal growth was not statistically significant, $t = -0.96$, $p = .338$, indicating moderation is not supported. The results of the moderation analysis are presented in Table 12.

Table 12

Regression Examining ELOC Moderating the Relationship Between the Perceived Work Stressor and Personal Growth

Predictors	B	SE	β	t	p
BLOCK 1					
PSS	-0.27	0.08	-.22	-3.50	.001
ELOC	-0.56	0.09	-.40	-6.48	.000
BLOCK 2					
PSS	-0.28	0.08	-.23	-3.61	.000
ELOC	-0.57	0.09	-.41	-6.54	.000
PSS*ELOC	-0.01	0.01	-.06	-0.96	.338

Note. F (3, 205) = 24.04, *p* < .001; R^2 = .260.

Table 13

Regression Examining ELOC Moderating the Relationship Between the Perceived Work Stressor and Positive Relationship with Others

Predictors	*B*	*SE*	β	*t*	*p*
BLOCK 1					
PSS	-0.68	0.08	-.51	-8.41	.000
ELOC	-0.16	0.09	-.11	-1.80	.073
BLOCK 2					
PSS	-0.69	0.08	-.51	-8.38	.000
ELOC	-0.17	0.09	-.11	-1.84	.067
PSS*ELOC	-0.01	0.02	-.03	-0.56	.577

Note. $F(3, 205) = 29.43$, $p < .001$; $R^2 = .301$.

The analysis with the interaction effect of PSS and ELOC in the model predicting positive relationship with others was not statistically significant, $t = -0.56$, $p = .577$, indicating moderation is not supported. The results of the moderation analysis are presented in Table 13. The analysis with the interaction effect of PSS and ELOC in the model predicting purpose in life was not statistically significant, $t = -0.94$, $p = .349$, indicating moderation is not supported. The results of the moderation analysis are presented in Table 14. The analysis with the interaction effect of PSS and ELOC in the model predicting self-acceptance was not statistically significant, $t = -0.22$, $p = .828$, indicating moderation is not supported. The results of the moderation analysis are presented in Table15.

Table 14

Regression Examining ELOC Moderating the Relationship Between the Perceived Work Stressor

and Purpose in Life

Predictors	*B*	*SE*	β	*t*	*p*
BLOCK 1					
PSS	-0.46	0.08	-.34	-5.59	.000
ELOC	-0.50	0.09	-.33	-5.34	.000
BLOCK 2					
PSS	-0.48	0.08	-.35	-5.66	.000
ELOC	-0.51	0.09	-.33	-5.41	.000
PSS*ELOC	-0.02	0.02	-.06	-0.94	.349

Note. F (3, 205) = 27.39, *p* < .001; R^2 = .286.

Table 15

Regression Examining ELOC Moderating the Relationship Between the Perceived Work

Stressor and Self-Acceptance

Predictors	*B*	*SE*	β	*t*	*p*
BLOCK 1					
PSS	-0.71	0.08	-.52	-9.13	.000
ELOC	-0.38	0.09	-.24	-4.32	.000
BLOCK 2					
PSS	-0.71	0.08	-.52	-9.03	.000
ELOC	-0.38	0.09	-.24	-4.32	.000
PSS*ELOC	0.00	0.01	-.01	-0.22	.828

Note. F (3, 205) = 43.95, *p* < .001; R^2 = .391

ELOC was found not to moderate how employees manage their perceived work stressors

and positively engage in the behaviors that facilitate autonomy, environmental mastery, personal

growth, self-acceptance, positive relations with others, purpose in life, and self-acceptance. As a result, the hypothesis cannot be rejected.

To assess Research Question 2, six moderation analyses were conducted. GPSES was the moderator, perceived work stressor was the independent variable, and a subscale of the SPWB was the dependent variable. One analysis was conducted for each dependent variable.

Prior to conducting the moderation analyses, linearity and homoscedasticity were assessed. Linearity was assessed by the examination of Q-Q plots and data appeared to be linear, indicating the assumption was met. Homoscedasticity was assessed by the examination of a scatterplot; data appeared to be rectangularly distributed around the regression line, and the assumption was met. Additionally, due to the number of tests and variables involved in this study the Bonferonni correction was used to protect against alpha inflation (Hochberg, 1988). The alpha value of .05 was divided by the number of times a dependent variable was repeated in the analyses. Each dependent variable was used three times, setting the new alpha value at .017 (.05/3).

The analysis with the interaction effect of PSS and GPSES in the model predicting autonomy was not statistically significant at the .017 level, $t = -2.04$, $p = .043$, indicating moderation is not supported. The results of the moderation analysis are presented in Table 16. The analysis with the interaction effect of PSS and GPSES in the model predicting environmental mastery was not statistically significant at the .017 level, $t = -2.37$, $p = .019$, indicating moderation is not supported. The results of the moderation analysis are presented in Table 17. The analysis with the interaction effect of PSS and GPSES in the model predicting

personal growth was not statistically significant, $t = -1.60$, $p = .111$, indicating moderation is not supported. The results of the moderation analysis are presented in Table 18.

Table 16

Regression Examining GPSES Moderating the Relationship Between the Perceived Work Stressor and Autonomy

Predictors	B	SE	β	t	p
BLOCK 1					
PSS	-0.25	0.08	-.22	-3.17	.002
GPSES	0.45	0.08	.39	5.66	.000
BLOCK 2					
PSS	-0.22	0.08	-.19	-2.77	.006
GPSES	0.47	0.08	.40	5.91	.000
PSS*GPSES	-0.03	0.01	-.12	-2.04	.043

Note. $F(3, 205) = 28.47$, $p < .001$; $R^2 = .294$.

Table 17

Regression Examining GPSES Moderating the Relationship Between the Perceived Work Stressor and Environmental Mastery

Predictors	B	SE	β	t	p
BLOCK 1					
PSS	-0.72	0.07	-.55	-10.58	.000
GPSES	0.40	0.07	.31	5.91	.000
BLOCK 2					
PSS	-0.69	0.07	-.53	-10.09	.000
GPSES	0.42	0.07	.32	6.22	.000
PSS*GPSES	-0.03	0.01	-.11	-2.37	.019

Note. $F(3, 205) = 96.90$, $p < .001$; $R^2 = .586$.

The analysis with the interaction effect of PSS and GPSES in the model predicting positive relationship with others was not statistically significant, $t = -0.62$, $p = .537$, indicating moderation is not supported. The results of the moderation analysis are presented in Table 19.

Table 18

Regression Examining GPSES Moderating the Relationship Between the Perceived Work Stressor and Personal Growth

Predictors	B	SE	β	t	p
BLOCK 1					
PSS	-0.08	0.08	-.07	-0.98	.331
GPSES	0.64	0.08	.52	7.78	.000
BLOCK 2					
PSS	-0.06	0.08	-.05	-0.67	.502
GPSES	0.66	0.08	.53	7.94	.000
PSS*GPSES	-0.02	0.01	-.09	-1.60	.111

Note. $F (3, 205) = 31.74$, $p < .001$; $R^2 = .317$.

Table 19

Regression Examining GPSES Moderating the Relationship Between the Perceived Work Stressor and Positive Relationship with Others

Predictors	B	SE	β	t	p
BLOCK 1					
PSS	-0.55	0.09	-.41	-6.32	.000
GPSES	0.33	0.09	.25	3.75	.000
BLOCK 2					
PSS	-0.54	0.09	-.41	-6.09	.000
GPSES	0.34	0.09	.25	3.79	.000
PSS*GPSES	-0.01	0.01	-.04	-0.62	.537

Note. $F (3, 205) = 34.52$, $p < .001$; $R^2 = .336$.

The analysis with the interaction effect of PSS and GPSES in the model predicting purpose in life was not statistically significant, $t = -1.46$, $p = .146$, indicating moderation is not supported. The results of the moderation analysis are presented in Table 20. The analysis with the interaction effect of PSS and GPSES in the model predicting self-acceptance was statistically significant at the .017 level, $t = -2.61$, $p = .010$, $f^2 = .034$, indicating moderation is supported. The results of the moderation analysis are presented in Table 21and a figure depicting the two-way interaction effects is presented in Figure 3.

Table 20

Regression Examining GPSES Moderating the Relationship Between the Perceived Work Stressor and Purpose in Life

Predictors	B	SE	β	t	p
BLOCK 1					
PSS	-0.33	0.09	-.24	-3.57	.000
GPSES	0.51	0.09	.37	5.50	.000
BLOCK 2					
PSS	-0.30	0.09	-.22	-3.25	.001
GPSES	0.53	0.09	.39	5.65	.000
PSS*GPSES	-0.02	0.01	-.09	-1.46	.146

Note. $F (3, 205) = 28.65$, $p < .001$; $R^2 = .295$.

Table 21

Regression Examining GPSES Moderating the Relationship between the Perceived Work

Stressor and Self-Acceptance

Predictors	B	SE	β	t	p
BLOCK 1					
PSS	-0.55	0.08	-.40	-6.60	.000
GPSES	0.50	0.08	.36	5.95	.000
BLOCK 2					
PSS	-0.51	0.08	-.37	-6.11	.000
GPSES	0.52	0.08	.38	6.30	.000
PSS*GPSES	-0.03	0.01	-.14	-2.61	.010

Note. $F(3, 205) = 56.25$, $p < .001$; $R^2 = .452$.
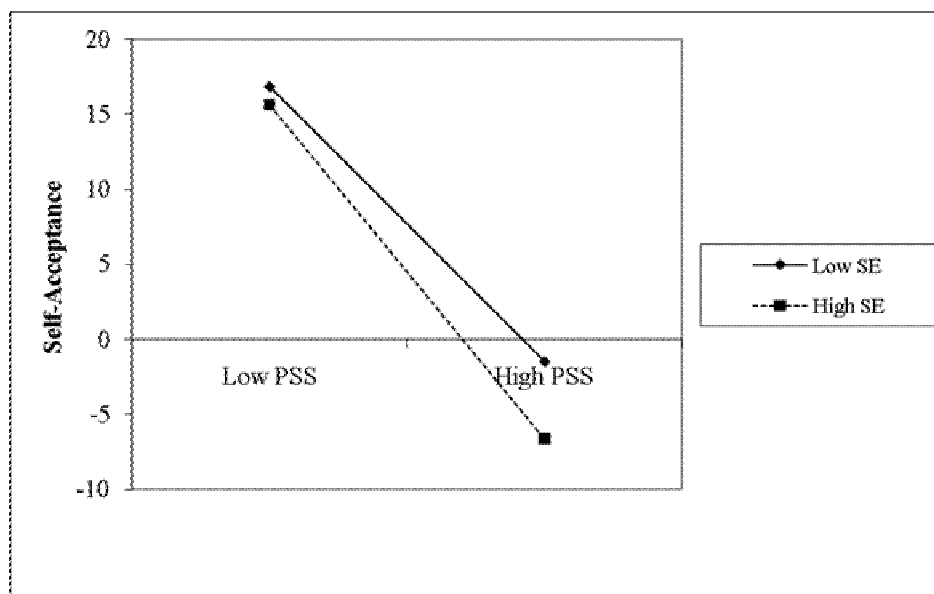
Figure 3. Two-way interaction effects for the unstandardized variables of PSS*GPSES predicting

self-acceptance.

For purposes of interpretation, the IV (PSS) and moderator (GPSES) are dichotomized each into high and low groups. When GPSES is low, lower PSS scores yield higher DV scores than when the PSS is high. When GPSES is high, lower PSS scores yield higher DV scores than when PSS is high. In terms of effect size, Aguinis, Beaty, Boik, and Pierce (2005) have previously shown that effect size for moderation analyses are much lower than the typical Cohen values of 0.02, 0.15, and 0.35 for small, medium, and large effect sizes, respectively. Aguinis et al. showed that the average effect size for moderation is 0.009. Therefore, realistic effect sizes for moderation would be 0.005, 0.01, and 0.025 for small, medium, and large effect sizes, respectively (Aguinis et al., 2005). An effect size of .034 indicates a large strength of the relationship.

Research Question 2 moderation analysis results were not significant for autonomy, environmental mastery, personal growth, positive relations with others, and purpose in life. However, the moderation analysis found self-efficacy does moderate the relationship between PSS and self-acceptance. As a result, the null hypothesis must be partially rejected. The results of the moderation analysis are presented in Table 21and a figure depicting the two-way interaction effects is presented in Figure 3.

<div align="center">**Summary**</div>

For both research questions, the two moderators (ILOC and self-efficacy) were found to be significant between perceived stress level and self-acceptance. Employees with higher levels of ILOC and self-efficacy were found to have higher levels of self-acceptance and lower levels of perceived stress.

Chapter 5 is a brief summary of the purpose of the study, the results, data interpretation, and limitations. Conclusions are presented, as well as the projected impact of the findings on social change. There is also a discussion of indications for future research, and recommendations for future action to address the findings are offered.

Chapter 5: Discussion

Introduction

I examined two research questions. Research Question 1 tested whether ILOC moderated how employees perceive stress and how they engage in the positive behaviors as defined by Ryff's (1989) six scales: autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life that have been found to facilitate health and well-being. Research Question 2 tested whether self-efficacy moderated how employees perceive stress and engage in the behaviors as defined by Ryff's six scales. This study's design included one independent variable, PSS; two moderators, self-efficacy scale and LOC scale; and six dependent variables scales (autonomy, environmental mastery, personal growth, self-acceptance, positive relations with others, and purpose in life). Due to the large number of scales involved in each analysis, Chapter 4 explains why the Bonferonni correction used resulted in alpha being set at .017.

The cost of workplace stress continues to be a mounting problem for organizations across the globe. Townsend International (2010) reported the cost of workplace stress in the United States is approximately $300 billion annually in terms of lost productivity and increased absenteeism and turnover. Buys, Matthews, and Randall (2012) reported in their research that in Australia workplace stress claims are 2:1 compared to other injury types. Stress claims, on average, cost employers $13,800 compared to $5,800 for all other claims. The Conference Board of Canada (2010) reported the cost of casual absences for organizations in Canada is approximately 1.2% of the total annual payroll, and considering the estimated wages paid in 2010 totaled $612.9 billion, that equals a direct $7.4-billion loss to the Canadian economy.

The data results provided evidence to suggest that ILOC and self-efficacy in this study's

sample population are significant moderators between perceived stress and self-acceptance, as

defined by Ryff's (1989) scales of psychological well-being.

Interpretation of the Findings

Springer and Hauser (2003) reported that the majority of mental health research focuses

on negative outcomes and that there is a need for researchers to look at the positive aspects that

support an individual's ability to facilitate positive behaviors that promote psychological well-

being. There continues to be a need for more research that focuses on how employees perceive

stress (i.e., job demand) and make choices to engage in positive behaviors that promote

psychological well-being. For Research Question 1, the research methodology framed in Chapter

3 called for the completion of six moderated multiple regression analyses to measure ILOC's

influence on employees' perceived stress and psychological well-being scales (autonomy,

environmental mastery, personal growth, self-acceptance, positive relations with others, and

purpose in life) scores. The analysis in Chapter 4 showed moderation occurred with only one of

the six scales. Table 9 showed that self-acceptance was statistically significant. As a result, the

null hypothesis for Research Question 1 was partially rejected because the self-acceptance scale

was found to be a moderator by ILOC and the other five scales were not.

Ryff (1989) found that self-acceptance is the most central psychological well-being

construct used in the literature for understanding the relationship between individuals' self-

actualization, maturity, and optimally psychological well-being. The self-acceptance significant

finding suggests that employees who operate from an ILOC are more likely to possess a positive

attitude towards self, be more tolerant and accepting of their positive and negative traits, and

more satisfied and content with their past life (Ryff, 1989). Figure 2 shows the statistic depicting

a two-way interaction result that indicates employees with lower perceived stress levels have

higher levels of ILOC and higher self-acceptance scores. This group of employees is not only

more likely to have less strain, but also will feel more in control, will be more satisfied in their

current role, and less likely to seek job change (Chiu, Lin, Tsai, & Hsiao, 2005; Mclntyre,

Srivastava, & Fuller, 2009; Ng & Butts, 2009).

Research Question 1 also included six moderated multiple regression analyses to measure

ELOC, the opposite end of Rotter's (1954) LOC continuum moderation influence on perceived

stress and the six scales of psychological well-being. The results in Chapter 4 were that ELOC

was not statistically significant, indicating moderation was not supported for any of the six

analyses. The findings from this study are consistent with Rotter's (1958) and Glasser's (1984)

conclusions, that employees who operate from an ELOC are less likely to perceive they are in

control of their past and/or future life. A core theoretical underpinning of Glasser's (2004) choice

theory is that employees who operate from an ILOC are in position with a core skill for meeting

their basic needs (belonging, fun, self-recognition, freedom).

Though this study's power design recommended a sample population of at least 300, the

participation level was 227. After the data cleaning, the analysis was completed with 209 clean

files. Chapter 4 shows the interaction effect of PSS and ILOC in the model predicting self-

acceptance was statistically significant, $t = -2.79$, $p = .006$, $f^2 = .036$, because a moderation

analysis .036 is a large strength effect size (Aguinis, Beaty, Boik, & Pierce, 2005). This suggests

the findings in Research Question 1 are statistically relevant.

Research Question 2 included six moderated multiple regression analyses with self-efficacy to explore the moderating role between perceived stress and the six psychological well-being scales. The analysis was similar to Research Question 1: only self-acceptance moderation was supported. As a result, the null hypothesis for Research Question 2 was partially rejected because the self-acceptance scale was found to be a moderator by self-efficacy, and the other five scales were not. The analysis in Chapter 4 found interaction effect of PSS and GPSES in the model predicting self-acceptance was statistically significant at the .017 level, $t = -2.61$, $p = .010$, $f^2 = .034$, indicating moderation and a large strength effect size.

Bandura (1997) explained that self-efficacy levels will influence employees' confidence in their capability to align their internal resources to obtain a desired goal. Bandura (1995) found employees who have lower levels of self-efficacy are more at risk for perceiving their life is out of control and as a result are more at risk for addictive disorders, anxiety, and depression. Glasser (1998) found that employees who believe they have no choice are more likely to feel helpless, and are less capable of managing their daily perceived stress. O'Neill and Mone (1998) found that self-efficacy moderated employee workplace attitudes, which suggests that the higher the employees' self-efficacy, the more likely they will take positive action to achieve personal goals.

Implications for Social Change

This study was conducted in alignment with Walden University's goal for positive social change and to add to the existing research on the roles of two cognitive skills, ILOC and self-efficacy, for facilitating psychological well-being. A review of literature showed a strong relationship between perceived stressors and strain (Bhagat et al., 2010; Brown, Shannon,

Mustard, & McDonough, 2007). There is an obvious social benefit for employees to learn how to better manage their perceived stress. Lazarus (1999) found that employees will be better able to manage their perceived stressors through development and improvement of their cognitive appraisal skills. Ryff (1989) outlined directional reports that showed individuals who are able to engage in the kinds of behaviors that are defined in the six scales of psychological well-being will be healthier and happier. ILOC and self-efficacy are two variables, based on the literature and this study, that have the ability to influence employees' behaviors and motivation to engage in positive behaviors.

I found some of the potential benefits of employees operating from a higher level of ILOC and self-efficacy for predicting self-acceptance. Glasser's (1984, 1998) choice theory teaches how employees can, if they choose, improve their cognitive appraisal capabilities through learning how to operate from an ILOC. Bandura's (1977) social learning theory provides insight on how employees can learn to develop and enhance their self-efficacy. With this insight, organizations do not necessarily have to figure out how to solve every employee's work related issue. If more employees had the skills suggested by Glasser and Bandura, they would be more able to make the choices that Ryff defined as being healthy, and would lead them to happiness.

Though the null hypothesis for both Research Questions 1 and 2 were only partially rejected, I hope that the result will generate the interest of future researchers, HR professionals, and administrators to explore the benefits of this study's two moderating variables and their role in reducing employees' strain, and facilitate employees to adopt behaviors that will lead to positive psychological well-being.

Chapter 2 provided statistics on the costs associated with employee strain, as well provided the different root causes of perceived stress that lead to strain. There appears to be a large number of employees missing work due to stress every day who also engage in addictive behaviors or develop mental health issues that may in some cases stem from a lack of skill development as defined by Glasser (2004) and Bandura 1997), and that will limit their potential to engage in positive psychological well-being behaviors as defined by Ryff (1989).

This study has the potential to influence organizations to examine their commitment and the associated benefits of supporting employees who require assistance to develop their self-efficacy and ILOC levels. Glasser (1994, 1998, 2000, 2001, 2004) provided insight and recommendations as to how to teach employees to develop their ILOC. Bandura (1977, 1986, 1991, 1995, 1997) provided strategies and ideas as to how to evolve and enhance an individual's self-efficacy. Glasser (2004) asserted that many individuals who are thought to have mental health issues are more discouraged and lack the skills to meet their basic needs. His core message was to be careful not to label people as being mentally ill when they may, in fact, simply be unhappy, and if they could learn to be happy, would want that.

Organizations today are using several different adult learning strategies such as mentoring, coaching, on-line training, communities of learning, and traditional classroom that could be avenues to transfer knowledge and skills that develop and improve ILOC and self-efficacy. Sosik and Godshalk (2000) found that mentoring has the potential to help employees overcome perceived job related stress. Coaching, combined with wellness training, was found to help reduce stress and absenteeism levels in one workforce by 25% within 6 months (Wright, 2007).

This research may help organizations step back and consider the costs associated with doing nothing (no intervention), compared to the costs of taking proactive action to assist employees to understand the benefits for developing their ILOC and self-efficacy levels. The Conference Board of Canada (2010) reported, for example, a reduction of .01% in employee absenteeism could realize Canadian organizations a saving of over $610 million annually. This suggests that small changes and improvement could have a positive incremental impact on society. Any reduction in employee strain and its associated costs, along with reduced absenteeism, could benefit both employees and employers. In addition, employees who are feeling healthy, happy, and in control may also help improve an organization's productivity and profitability.

Tangible social change improvements might be achieved by organizations to net a significant reduction in the financial costs and hardships associated with work related perceived stress and the consequences of strain. Latham and Saari (1979) found that providing employees behavior modeling training grounded in Bandura's social learning theory had a significant positive impact, suggesting that these skills can be transferred to employees and the workplace.

Recommendation for Action

Although in this study self-efficacy and ILOC were found to be only moderators between employees' perceived stress and self-acceptance, and there were five other dependent variables where no significance was found, this study could have important benefits for tire building and other manufactory organizations that are looking for strategies to reduce the risk of workplace perceived stress and strain and the associated costs. The heads of human resources and disability management and administrators in the factory where this study was completed will be made

aware of the findings and the potential benefits of this research. These findings could be disseminated through professional journals and conferences.

The financial costs of disability management and absenteeism, the social costs (e.g., addictive treatment programs and bankruptcy due to gambling), and lost productivity that can be linked to work related stress are staggering and growing. Organizations should consider the benefits not only of taking a role in developing traditional job-specific core competencies but also supporting employees to develop ILOC and self-efficacy core competencies. Such initiatives could prevent the risk for strain through helping employees get into position to engage in psychological well-being behaviors as defined by Ryff's (1989) six scales, which have been shown to increase employees' ability to be happy and healthy.

Recommendations for Further Study

Partial support was found for the two proposed hypotheses, which provided direction for recommendations for future research to further evaluate the potential social impact of the variables in this study.

1. One limitation of this study was the sample population was not as large as originally planned. Even though there was significance found with large strength effect size with one of Ryff's (1989) six scales (self-acceptance), I recommend this type of study be repeated with a larger sample population.

2. Continue to identify and examine different variables that can predict self-acceptance and assist employees to better manage workplace perceived stressors, regardless of the stressors' antecedents. In addition, these variables could potentially have an impact on Ryff's (1989) five other scales.

3.   Conduct additional research on the current data to examine the moderating role of

education level and gender to see if there are differences within these sample

groups.

4.   Develop a study that examines the feasibility and effectiveness of self-efficacy

and ILOC training and the potential return on investment for offsetting the costs

associated with work-related stress.

Conclusion

The purpose of this study was to examine the moderating roles of ILOC and self-efficacy

in reducing strain and facilitating psychological well-being as defined by Ryff's (1989) six

scales. The results from this study have provided administrators of occupational health and

safety, human resources, and corporate leaders with data on the potential benefits of ILOC and

self-efficacy for promoting psychological well-being and preventing strain. Employees who

operate from an ILOC and who demonstrate high levels of self-efficacy reported lower levels of

perceived stress and higher levels of self-acceptance.

Organizations today are faced with a growing problem with respect to an increase in

stress related claims and absenteeism linked to perceived work-related stressors, and the

literature reported in this study suggests that those costs are growing. It is unlikely that any

employer will be able to make all employees happy or to eliminate their perceived stress or

strain. I believe that one important part of the solution revolves around employees being able to

better cope with and manage their environment.

Glasser (1998) found that employees can be influenced by their environment; however,

regardless of how stressful the workplace is, all employees are ultimately responsible for their

own behavior. This suggests that regardless of how much an employer does for their employees, the employees need the knowledge and skills required for their jobs before they can achieve psychological well-being. Employees who do not know they have a choice often will make choices that result in feeling they are victims of circumstances and have no options (Glasser, 2004). More research is warranted to examine the potential ROI when employees who operate from an ELOC and have low self-efficacy are given an opportunity to enhance their levels of ILOC and self-efficacy.

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Appendix A

Perceived Stress Scale

Over the past three months, how often have you:

1. Been upset because of something that happened unexpectedly?

2. Felt that you were unable to control important things in your life?

3. Felt nervous, under pressure and strain (e.g., worried, anxious, and depressed)

4. Felt confident about your ability to handle your personal problems?

5. Felt that things were going your way?

6. Found that you could not cope with all the things you had to do?

7. Been able to control irritations in your life?

8. Felt that you were on top of things?

9. Been angered because of things that happened that were out of your control?

10. Felt difficulties were piling up so high that you could not overcome them?

Permission to use scale found at

http://chipts.ucla.edu/assessment/IB/List_Scales/PERCEIVED%20STRESS%20SCALE.htm

Appendix B

Multidimensional Health Locus of Control (MHLC) Scales

Form C

Example Instructions:

Each item below is a brief statement about your current strategy for managing perceived workplace stressors (e.g., work demands placed on employees by management, workplace conflict and culture) over the past three months. For each statement you will be asked how much you agree or disagree. Beside each statement is a scale which ranges from strongly disagree (1) to strongly agree (6). The more you agree with a statement, the higher you should rank this statement. The more you disagree with a statement, the lower you should rank this statement.

		SD	MD	D	A	MA	SA
1	If my perception of stressors worsens, it is my own behavior which determines how soon I will feel better again.	1	2	3	4	5	6
2	As to what I can do about workplace stressors, my response is hopefully the management will take action.	1	2	3	4	5	6
3	If I see my doctor regularly, I am less likely to have problems managing workplace stressors.	1	2	3	4	5	6
4	Most things that affect why I am experiencing perceived stressors is because of my circumstances and chance.	1	2	3	4	5	6
5	Whenever my perceived stressors worsen, the best strategy is to consult a medically trained professional.	1	2	3	4	5	6
6	I am directly responsible for how I manage perceived stressors.	1	2	3	4	5	6
7	Other people play a big role in whether my perception of workplace stressors improves, stays the same, or gets worse.	1	2	3	4	5	6

1=STRONGLY DISAGREE **(SD)**   4=SLIGHTLY AGREE **(A)**

2=MODERATELY DISAGREE **(MD)**   5=MODERATELY AGREE **(MA)**

3=SLIGHTLY DISAGREE **(D)**   6=STRONGLY AGREE **(SA)**

8	Whatever goes wrong with how I respond to perceived stressors is my responsibility.	1	2	3	4	5	6
9	Luck plays a big part in determining how my stress improves.	1	2	3	4	5	6
10	In order for me to effectively manage my perceived stressors I need other people to do the right things.	1	2	3	4	5	6
11	Whatever improvement occurs with my perception of stressors it is mostly because I got lucky that things at work were not as bad.	1	2	3	4	5	6
12	The main thing which affects my ability to cope with perceived stress is what I do myself.	1	2	3	4	5	6
13	I deserve the credit when responses to perceived stressors improve my health, and the responsibility when it gets worse.	1	2	3	4	5	6
14	Following doctor's orders is the most effective strategy for managing workplace stressors from getting any worse.	1	2	3	4	5	6
15	If workplace stressors get worse, it's a matter of fate.	1	2	3	4	5	6
16	If I am lucky, the causes of workplace stressors will stop.	1	2	3	4	5	6
17	If my responses to workplace stressors lead to sick time, it is because I have not taken healthy actions to improve my situation.	1	2	3	4	5	6

| 18 | The type of help I receive from other people determines how effectively I will be able to cope with my stressors. | 1 | 2 | 3 | 4 | 5 | 6 |

Scoring Instructions

SUBSCALE	POSSIBLE RANGE	ITEMS
Internal	6 - 36	1, 6, 8, 12, 13, 17
Chance	6 - 36	2, 4, 9, 11, 15, 16
Doctors	3 - 18	3, 5, 14
Other People	3 - 18	7, 10, 18

The score on each subscale is the sum of the values circled for each item on the subscale (i.e., where 1 = *strongly disagree* and 6 = *strongly agree*). No items need to be reversed before summing. All of the subscales are independent of one another. There is no such thing as a "total" MHLC score.

Permission to use tool granted from

http://www.vanderbilt.edu/nursing/kwallston/mhlcscales.htm

Appendix C

General Perceived Self-Efficacy Scale

1. I can always manage to solve difficult problems if I try hard enough.

2. If someone opposes me, I can find the ways and means to get what I want.

3. I am certain that I can accomplish my goals.

4. I am confident that I could deal efficiently with unexpected events.

5. Thanks to my resourcefulness, I can handle unforeseen situations.

6. I can solve most problems if I invest the necessary effort.

7. I can remain calm when facing difficulties because I can rely on my coping abilities.

8. When I am confronted with a problem, I can find several solutions.

9. If I am in trouble, I can think of a good solution.

10. I can handle whatever comes my way

Permission to use scale found at http://userpage.fu-berlin.de/~health/faq_gse.pdf

Appendix D

Six Scales of Psychological Well-Being

Autonomy

Definition: <u>High Scorer:</u> Is self-determining and independent; able to resist social pressures to

think and act in certain ways; regulates behavior from within; evaluates self by

personal standards.

<u>Low Scorer:</u> Is concerned about the expectations and evaluations of others; relies on

judgments of others to make important decisions; conforms to social pressures to

think and act in certain ways.

(+) [1.] I am not afraid to voice my opinions, even when they are in opposition to the

opinions of most people.

(+) [2.] My decisions are not usually influenced by what everyone else is doing.

(-) [3.] I tend to worry about what other people think of me.

(+) [4.]   Being happy with myself is more important to me than having others approve of

me.

(-) [5.]   I tend to be influenced by people with strong opinions.

(+) [6.] I have confidence in my opinions, even if they are contrary to the general consensus.

(-) [7.] It's difficult for me to voice my own opinions on controversial matters.

(-) [8.] I often change my mind about decisions if my friends or family disagree.

(+) [9.] I judge myself by what I think is important, not by the values of what others think is

important.

(+) indicates positively scored items

(-) indicates negatively scored items

Environmental Mastery

Definition: High Scorer: Has a sense of mastery and competence in managing the environment; controls complex array of external activities; makes effective use of surrounding opportunities; able to choose or create contexts suitable to personal needs and values.

Low Scorer: Has difficulty managing everyday affairs; feels unable to change or improve surrounding context; is unaware of surrounding opportunities; lacks sense of control over external world.

(+) [1.] In general, I feel I am in charge of the situation in which I live.

(-) [2.] The demands of everyday life often get me down.

(-) [3.] I do not fit very well with the people and the community around me.

(+) [4.] I am quite good at managing the many responsibilities of my daily life.

(-) [5.] I often feel overwhelmed by my responsibilities.

(+) [6.] I generally do a good job of taking care of my personal finances and affairs.

(+) [7.] I am good at juggling my time so that I can fit everything in that needs to get done.

(-) [8.] I have difficulty arranging my life in a way that is satisfying to me.

(+) [9.] I have been able to build a home and a lifestyle for myself that is much to my liking.

Personal Growth

Definition: High Scorer: Has a feeling of continued development; sees self as growing and

expanding; is open to new experiences; has sense of realizing his or her potential;

sees improvement in self and behavior over time; is changing in ways that reflect

more self-knowledge and effectiveness.

Low Scorer: Has a sense of personal stagnation; lacks sense of improvement or

expansion over time; feels bored and uninterested with life; feels unable to develop

new attitudes or behaviors.

(-) [1.] I am not interested in activities that will expand my horizons.

(-) [2.] I don't want to try new ways of doing things – my life is fine the way it is.

(+) [3.] I think it is important to have new experiences that challenge how you think about

yourself and the world.

(-) [4.] When I think about it, I haven't really improved much as a person over the years.

(+) [5.] I have the sense that I have developed a lot as a person over time.

(-) [6.] I do not enjoy being in new situations that require me to change my old familiar

ways of doing things.

(+) [7.] For me, life has been a continuous process of learning, changing, and growth.

(-) [8.] I gave up trying to make big improvements or changes in my life a long time ago.

(-) [9.] There is truth to the saying you can't teach an old dog new tricks.

Positive Relationship With Others

Definition: High Scorer: Has warm, satisfying, trusting relationships with others; is concerned

about the welfare of others; capable of strong empathy, affection, and intimacy;

understands give and take of human relationships.

<u>Low Scorer:</u> Has few close, trusting relationships with others; finds it difficult to be

warm, open, and concerned about others; is isolated and frustrated in interpersonal

relationships; not willing to make compromises to sustain important ties with

others.

(+)   [1.]   Most people see me as loving and affectionate.

(-)   [2.]   Maintaining close relationships has been difficult and frustrating for me.

(-)   [3.]   I often feel lonely because I have few close friends with whom to share my concerns.

(+)   [4.]   I enjoy personal and mutual conversations with family members or friends.

(-)   [5.]   I don't have many people who want to listen when I need to talk.

(-)   [6.]   It seems to me that most other people have more friends than I do.

(+)   [7.]   People would describe me as a giving person, willing to share my time with others.

(-)   [8.]   I have not experienced many warm and trusting relationships with others.

(+)   [9.]   I know that I can trust my friends, and they know they can trust me.

Purpose in Life

Definition: High Scorer: Has goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; has aims and objectives for living.

Low Scorer: Lacks a sense of meaning in life; has few goals or aims, lacks sense of direction; does not see purpose of past life; has no outlook or beliefs that give life meaning.

(-)   [1.]   I live life one day at a time and don't really think about the future.

(-)   [2.]   I tend to focus on the present, because the future nearly always brings me problems.

(-)   [3.]   My daily activities often seem trivial and unimportant to me.

(-)   [4.]   I don't have a good sense of what it is I'm trying to accomplish in life.

(-)   [5.]   I used to set goals for myself, but that now seems like a waste of time.

(+)   [6.]   I enjoy making plans for the future and working to make them a reality.

(+)   [7.]   I am an active person in carrying out the plans I set for myself.

(+)   [8.]   Some people wander aimlessly through life, but I am not one of them.

(-)   [9.]   I sometimes feel as if I've done all there is to do in life.

Self-Acceptance

Definition: High Scorer: Possesses a positive attitude toward self; acknowledges and accepts

multiple aspects of self, including good and bad qualities; feels positive about past

life.

Low Scorer: Feels dissatisfied with self; is disappointed with what has occurred in

past life; is troubled about certain personal qualities; wishes to be different than

what he or she is.

(+)   [1.]   When I look at the story of my life, I am pleased with how things have turned out.

(+)   [2.]   In general, I feel confident and positive about myself.

(-)   [3.]   I feel like many of the people I know have gotten more out of life than I have.

(+)   [4.]   I like most aspects of my personality.

(+)   [5.]   I made some mistakes in the past, but I feel that all in all everything has worked out

for the best.

(-)   [6.]   In many ways, I feel disappointed about my achievements in life.

(-)   [7.]   My attitude about myself is probably not as positive as most people feel about

themselves.

(+)   [8.]   The past had its ups and downs, but in general, I wouldn't want to change it.

(+)   [9.]   When I compare myself to friends and acquaintances, it makes me feel good about

who I am.

Appendix E

Introduction to Online Survey, Confidentiality and Consent Terms

Access to Survey

Research participants will use their Employee ID to log in with their assigned password to the online survey that will be hosted by Survey Monkey. The researcher will not have access to the employee's name. The organization will not have access to the individual employee data.

Online Survey Title: Quality of Work Life Survey

Welcome (screen)

At _____ (name of plant) for the past several years we have been working with employees to create a safer workplace. We have made great success, as evidenced by our OSHA rates. However, based on the organization's commitment to continuous improvement, we believe one area that we can get better at is supporting employees affected by stress before it becomes problematic. All employees are familiar with and know we have an MELS. However, we know in many cases by the time you get to MELS there is a good chance much damage has been done. This survey falls under the framework of what we are calling early prevention (i.e., addressing issues early before they become major problems).

The purpose of this ***Quality of Work Life Survey*** is to assist _____ (title of company) to explore what we can do better for our employees to support them earlier before employees are faced with situations that can negatively impact their quality of work life. The ultimate outcome of this process for you as an individual will be either neutral, nothing will happen, or likely something good will happen.

Click here to continue survey

Confidentiality and Consent *(Instead of signed hard copy consent form each*

participant will complete the consent process electronically)

Please review and check each item if you agree with the statement. If you agree with **all**

items you will be asked to please press the consent button at the bottom to continue:

o   I understand the purpose of this study and how the collective results of this survey

    may influence management's decisions.

o   I have been informed this survey is part of a graduate research study being

    completed by William Howatt.

o   I understand that I am volunteering to participate in this confidential survey.

o   I can stop this survey at any point in time without any penalty.

o   I understand my only active involvement in this study is the completion of this

    survey.

o   I understand my individual results will be kept confidential by the researcher, and

    my results will be combined with others to protect my identity.

o   I understand I can request a copy of this consent form for my records by emailing

    william.howatt@waldenu.edu.

o   I understand if I have any questions about this research I can contact William

    Howatt at the above email.

o   I understand the researcher will not use any of my information for any purposes

    outside of this research project. Also, the researcher will not include my name or

    anything else that could identify me in any reports, including this study.

o I understand management will be providing in writing what they have learned from this research and the actions they will be taking as a result.

o I understand by clicking on the "agree with terms" button below I am accepting the condition of this study and am providing the researcher with my consent to participate in this study.

Button: Agree with Terms

Demographic Questions

1. What is your gender?

   a. Male

   b. Female

2. On your last birthday, how old were you?

   a. 18-22

   b. 23-30

   c. 31-39

   d. 40-50

   e. 51-up

3. How many years have you been working for Michelin as a tire builder?

   a. 1-2

   b. 3-5

   c. 6-8

   d. 9-12

   e. 12-15

    f.   16 and up

4.   What is your highest level of education?

    a.   Grade 12

    b.   Vocational School training

    c.   Community College

    d.   University

    e.   Graduate Degree

5.   What is your ethnicity?

    a.   Caucasian

    b.   African Canadian

    c.   First Nations

    d.   East Asian

    e.   South Asian

    f.   South East Asian

    g.   West Asian & Arab

    h.   Mexican

Appendix F

Permission to Use the Scales of Psychological Well-being

Original E-mail

From: Theresa Berrie <berrie@wisc.edu>

Date: 08/05/2010 02:57 PM

To: william.howatt@waldenu.edu

Subject: Re: Fwd: Scales of Psychological Well-Being

Greetings,

Thanks for your interest in the well-being scales. I am responding to your request on behalf of

Carol Ryff. You have her permission to use the scales. They are attached in the following files:

"14 Item Handout" includes all 14 items for each of the six scales of well-being (14x6=84 items),

plus a list of published studies using them. "Form In Word 6 Format" includes a formatted

version of the full instrument with all 84 items.

Please note, Dr. Ryff strongly recommends that you NOT use the ultra-short-form version (3

items per scale, 3x6=18 items). That level of assessment has psychometric problems and does

not do a good job of covering the content of the six well-being constructs. There is no charge to

use the scales, but we ask that if you do use them, please send copies of any resulting

publications to us at berrie@wisc.edu and cryff@wisc.edu.

Best wishes for your research,

Theresa Berrie

Administrative Assistant

UW-MADISON INSTITUTE ON AGING (IOA)

Email: berrie@wisc.edu

Web: http://www.aging.wisc.edu

Appendix G

Letter of Support from Michelin

Date - June 21, 2011

Dear Bill,

Based on my review of your research proposal, we have given you permission to conduct the study entitled: Examining the Moderating Roles of Internal Locus of Control and Self-Efficacy on Perception for Managing Job Stressors and Ryff's Six Scales of Psychological Well-Being

As part of this study, our senior management at this plant has authorized you to have access to our workforce to give them one survey. We will assist in the facilitation of the delivery of the survey and collection of data.

I confirm that I am authorized to approve and oversee the implementation of this research in this setting. I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the Walden University IRB or Michelin North America.

Sincerely,

Ted Peters – Safety and Security Manager, Michelin Granton facility, Nova Scotia.

Appendix H

IRB Approval to Conduct Research

Original E-mail

From: IRB <IRB@waldenu.edu>

Date: 11/14/2011 10:21 PM

To: William Howatt <william.howatt@waldenu.edu>

Subject: Notification of Approval to Conduct Research-William Howatt

Dear Mr. Howatt,

This email is to serve as your notification that Walden University has approved BOTH your dissertation proposal and your application to the Institutional Review Board. As such, you are approved by Walden University to conduct research.

Please contact the Office of Student Research Support at research@waldenu.edu if you have any questions.

Congratulations!

Jenny Sherer

Operations Manager, Office of Research Integrity and Compliance

Leilani Endicott

IRB Chair, Walden University