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Recognizing and Anticipating Stress Related Complacent Behavior in Manufacturing Industries

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This is to certify that the doctoral dissertation by

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has been found to be complete and satisfactory in all respects,
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Walden University
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Abstract

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MBA, University of Phoenix, 2003

BSEE, California State University, Northridge, 1988

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Numerous safety studies suggest that stress complacency related accidents in manufacturing industries continue to cause injuries or fatalities because of the absence of emotional resources for leaders, who are unable to prevent accidents when these conditions exist. Leaders of the manufactory industries may not have the appropriate emotional measures which are significant to recognize employees' underlying complacent behavior. The purpose of this quantitative correlational study was to evaluate the relationship between leaders' emotional intelligence resources and their ability to manage to prevent injuries and fatalities in the workplace. The research questions address key traits of emotional intelligence regarding emotional perceptions and control which are needed to make the leaders more effective at recognizing and responding to stress complacency related incidents. Specifically, this study includes a method of inquiry in the form of a survey designed to measure 140 leaders' emotional intelligence competencies in 3 Western Virginia food and beverage manufactories. Structural equation modeling was used to determine the multivariate relationships among leaders' skills and safety prevention. Leaders' emotional intelligence results indicated a negative effect on stress identification in either upper or middle leadership groups preventing them from exercising safe prevention error with their employees. Promoting leaders' emotional intelligence engagement may potentially contribute to social change helping the food and beverage organizations to protect their employees from getting hurt, promoting strong safety cultures, maintaining a positive impact on families and workers and thereby, increasing community resilience

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Dedication

I want to dedicate this dissertation to the memory of my father Zosimo Pineda Reyes and the perseverance of my mother Luisa Toledo de Pineda who were the greatest motivators and inspiration to me. I also would like to dedicate this dissertation to my wife Liliana Herrera Arrieta de Pineda whose unconditional love was an ever encouraging and supporting force during this journey and to all our children, my brothers, and sister who believe in me and stood by me in difficult and cheerful times.

Acknowledgments

I want to thank and acknowledge my Lord and Savior Jesus Christ for giving me the strength to complete my dissertation for His glory. I would like to recognize and acknowledge each of the members of my committee members for their effort, support, and contributions, which provided me with the impetus for accomplishing a successful dissertation. All my heartfelt gratitude for my mentor and Chairman of my Dissertation Committee, Dr. Teresa Lao, for her countless advising, limitless patience, and faith in my potential. To Dr. David Cavazos who possess the exceptional gift to transform complex theory into transferable knowledge for social change and to Dr. Aridaman Jain who guide my work with his expertise and wisdom keeping my path on course during this process.

The combined skills and professionalism of the members of my dissertation committee made this research study possible. I am thankful and forever grateful to each one of you for the time you put forth towards the completion of my dissertation.

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Chapter 1: Introduction to the Study

Globalization, technology, and skilled labor competition continue to increase the speed by which manufacturing industries currently operate (Khan & Bashar, 2016). New technology allows corporations to achieve greater efficiencies and under lean manufactory rules, employees have zero error tolerance while attaining peak performances during their work (Hallett and Hoffman, 2014; Kumar, Dhingra, & Singh, 2017). Although significant safety training is mandated by federal regulators to prevent major accidents, numerous injuries are caused by employees under implicit stress as they become complacent while doing tedious work (Arstad & Aven, 2017). Current records indicate that accidents due to human errors are responsible for many occupational injuries in the workplace (United States Department of Labor, 2015). These findings underscore the need for increased research on leaders' responsibility to identify and prevent anxiety-ridden employees from taking unnecessary risks that cause harm (Strutton & Tran, 2014).

The core of this quantitative study was in the analysis of the leaders' emotional resources, which influenced their safety performance and help them perceive employees' underlying emotions under job stress (Lu & Kuo, 2016). Prior research has been conducted on the effects of job stress. Previous researchers identified relationships between job-related stress, emotional intelligence, and safety behavior; however, this research did not consider the leaders' emotional traits and their self-initiative competencies needed to take control of a safety situation when employees' complacent stress is present (Lu & Kuo, 2016). In this study, the researcher narrowed this literature

gap by adding an in-depth review of the links between self-efficacy and management competencies in the prevention of workplace injuries in a manufactory environment to the canon of work on leadership. This study helped explain the reasons why leaders in the manufacturing industry emotional unbalance continue to experience safety incidents caused by employees' underlying stress while performing their daily tasks. Although anxiety is a natural response to stress, it represents a hazard to employees who work under this emotional and physical strain (Strutton & Tran, 2014). This quantitative correlational study may promote a leader's deep involvement in the prevention of employees' safety errors by helping them develop a sense of emotionality and perception needed to prevent employees' safety errors. Contributing to the development of healthy and safe workplaces in the manufacturing industry may advance social changes in the communities. Therefore, Chapter 1 described the literature gaps related to the background of the study found in prior research and theories. Furthermore, the introduction of the problem statement was made to described the intent of the study and discussed the independent and dependent variables, the analysis of the proposed research questions and their hypotheses. Finally, the introduction of a theoretical and conceptual model was made to provide the assumptions, explored the limitations and the significance of the study, and concluded by offering a summary of these components.

Background of the Study

The background of this study begins with the evaluation of employee accidents caused by safety errors in the workplace (Adhikari, 2015). The investigation of three food

and beverage manufactories took place to understand their foundational elements and philosophies that help leaders identify employees from adopting complacent behaviors in workplaces (Haber, 2016). According to food and beverage manufactory safety practices, the labor force must enforce safety as their top priority; thus, food and beverage manufactory leaders must adopt behavior-based safety (BBS) as the foundation of their safety management systems to minimize safety error gaps (Haber, 2016; Joost, 2016). To truly enhance employees' safety performance and to eliminate error gaps, food and beverage manufactory leaders must create an environment of positive feelings that establish strong relationships with their employees, thus, helping them to recognize and prevent unnecessary risks (Haber, 2016).

To understand the reasons for mistakes that cause injuries or fatalities, food and beverage manufactory leaders, who demand top-notch performance from their employees, must first comprehend that attaining high performance is especially challenging during peak season. Hallet and Hoffman (2014) suggested that "employee performance is affected by high-pressure accountability, which in turn creates a state of anxiety during the execution of their tasks" (p. 213). According to a study by Lu and Kuo (2016), stressors are particularly more dynamic when attainment commitments, family demands, and job insecurities generate higher levels of anxiety in the workforce and are unnoticed by leaders. Employees' anxiety may have been subject to bias due to their unwillingness to accurately report the reasons for their stress out of fear of recriminations (Lu & Kuo, 2016).

Adopting a complacent attitude because of underlying stress can manifest negligence and lack of foresight in the quality of product fabrication. Addressing it in large organizations becomes necessary and must take top priority, as customers quality complaints could be devastating to an organization's credibility (Ali, 2014). Mannion et al. (2012) described complacency as "the lack of ambition for improvement brought about by perceptions that one's comparative performance is adequate" (p. 571). Complacency is often recognized as an important reason for why a disaster occurred, which shows a sign of process degradation like a disease breaking unexpectedly (Arstad & Aven, 2017). Historically, leadership has been one of the most important attributes from the beginning of civilization (Wells, 2015). According to Wells (2015), traditional or authoritarian leadership began with the belief that employees were just a means to an end, where the dependent relationship was established based on the needs of the organizational goals and of those seeking employment. Today, organizations value employees—a move demonstrative of the positive transition from the authoritarian style of ruling to one where leaders empower employees, support progressive thinking, and encourage career growth at all levels (Hedayat & Shahniani, 2017). The responsibility for employee safety errors must fall on leaders because they are accountable to the people they lead (Adhikari, 2015). Leaders' main objective is to improve the performance of their employees by leading by example to establish their performance (Yulk, 2012) and by creating a positive environment that will bring out the best in the people they lead (Goleman, Boyatzis, & McKee, 2013).

Before the creation of the Occupational Safety and Health Administration (OSHA) by the Department of Labor, the estimation was that 14,000 workers died on the job every year (OSHA, 2017). Today, workplaces have become much safer. There has been a decrease from 38 fatalities a day to 12 fatalities. Despite this drop, one fatality is one too many, and much more works remain to be done (OSHA, 2017). This study was done for leaders of the food and beverage manufactory industry to become aware of the power of emotional intelligence (EI) and to use it to make the right decision when complex stress behavior arise. Description of the literature that helps assist leaders in recognizing their traits, improving their management skills to prevent employees' underlying conduct, applying calculated risk in what they do, and open the lines of communication with their employees was presented (Goleman et al., 2013).

Problem Statement

Despite significant safety controls mandated by federal regulators to prevent major accidents in manufactories, numerous injury accidents and fatalities show that control is still not sufficient in many cases (Adhikari, 2015). Accidents that result from human errors are responsible for many occupational injuries in all workplaces as reported by the Federal Government. The Department of Labor safety records indicated that fatalities in workplaces average 12 per day, or 4,380 deaths per year (United States Department of Labor, 2015). New technologies allow corporations to achieve greater efficiencies and under lean manufactory rules, employees have zero error tolerance when working their equipment (Kumar et al., 2017). Maintaining a strong competitive edge in

the marketplace demands that employees attain peak performance while executing their tasks safely (Hallett & Hoffman, 2014).

Employees' stress caused by family problems impact their job performance and cannot be ignored since it is part of their life (Ismail et al., 2013). Identifying individuals under family stress, a critical factor that impacts behavior and puts human safety in jeopardy, is not easily recognized, especially when employees' emotions are not manifested out of fear of recrimination or losing their jobs (Nohe, Meier, Sonntag, & Michel, 2015). Underlying individual stressors of employees in the food and beverage manufactory industry play a contributing role in recordable accidents and fatalities (Adhikari, 2015). The general problem is that employees' adoption of an attitude of complacency due to unforeseeable role stressors in the food and beverage manufactories labor force continues to be one of the main reasons for accidental injuries in workplaces (Adhikari, 2015). The specific problem is that leaders of the food and beverage manufactory may not have the proper emotional intelligence traits to recognize employees' underlying complacent stress behavior (Goleman et al., 2013). Miao, Humphrey, and Qian (2016) recommended the importance for leaders to have these emotional intelligence traits in place so that they become proficient in displaying their emotions, invoking emotions in others, and conveying a message of authenticity to their followers.

Purpose of the Study

The purpose of this quantitative correlational study was to examine if the leaders of the food and beverage manufactory have the proper emotional intelligence traits to recognize employees' underlying complacent stress behavior (Goleman et al., 2013). In this study, I examined and explained the influence of leadership competency variables, as recommended by Jacob (2013). This study assisted with the creation of two SEM models to test the groups' power of leadership self-mastery skills (Hamzah, Othman, Rashid, Besir, & Hashim, 2012). This proposed models will help leaders develop an effective mindset when making decisions to prevent implicit complacent behavior due to stress (Hamzah et al., 2012; Naderpour, Lu, & Zhang, 2014). The independent variables will be the emotional leadership competencies that manipulate the leadership's outcomes while the dependent variables will be the latent emotional categories that guide the behavioral leadership skills. Leaders who apply emotional intelligence are powerful in showing their emotions, bringing out emotions in others, communicating truthfully in all they do, and impacting their employees' trust. Thus, contributing to the development of healthy and safe workplaces in the food and beverage manufactories may impact social changes in the industrial communities.

Research Questions and Hypotheses

The following research questions guided the study as follows:

Research Question 1: Do food and beverage manufactory leaders have the proper emotional intelligence traits to recognize employees' underlying complacent stress behavior?

$H_0$1*:* Food and beverage manufactory leaders do not have the proper emotional intelligence traits to recognize employee's underlying complacent stress behavior.

H_a1*:* Food and beverage manufactory leaders have the proper emotional intelligence traits to recognize employee's underlying complacent stress behavior.

Research Question 2**:** Do food and beverage manufactory leaders execute emotional perceptions and controls to prevent employees' underlying complacent stress behavior?

$H_0$2*:* Food and beverage manufactory leaders do not execute emotional perceptions and control to prevent employees' underlying complacent stress behavior.

H_a2*:* Food and beverage manufactory leaders execute emotional perceptions and control to prevent employees' underlying complacent stress behavior.

The association tested used SEM statistical correlations models to investigate the relationship between variables (Trejo, 2014). The results of the survey gave the original SEM models to analyze the leaders' emotional resources (Bryman & Duncan, 2016). SEM models were tested to fit in all leaders and in all upper and middle leaders separately to provide if the relationship between groups were significant in recognition of employees under personal stress conditions (Webb, 2014).

Theoretical Foundation

Three theories served as the foundation for this study. Transformational leadership (TL) theory by James V. Downton, primal leadership theory (PL) by Goleman et al. (2013) and Vroom expectancy theory of motivation by Victor H. Vroom (1964). These theories described the critical leadership emotional resources that open the doors of communication between leaders and followers (McCleskey, 2014). The overlay of TL theory and emotional intelligence traits help frame the food and beverage manufactory leaders' components that influence the employees' performance (Jadhav & Gupta, 2014; Malos, 2012; Mathew & Gupta, 2015; Petrides, 2017).

The TL theory aid leaders in recognizing a broad range of emotional signals and letting them sense the felt but unspoken emotions in a person or a group (Goleman et al., 2013; Petrides, 2017; Sunindijo & Zou, 2013). Applying Petrides' (2017) trait emotional intelligence (EI) constructs, a trait emotional intelligence survey tool help to test the hypotheses that emotional intelligence traits have moderating effects in transformational leaders and mitigate the negative effects of job stressors on employees. Petrides suggested constructs will be used to frame the independent variables of emotional intelligence.

PL theory by Goleman et al. (2013) will be the foundation for the food and beverage manufactory leaders to create a positive environment that will impact their followers' behavior. PL theory will aid the food and beverage manufactory leaders to lead with emotional intelligence, not just to gain positive results, but to establish deep

emotional connections with others and to bring out the best in their people (Ackley, 2016; Goleman et al., 2013). The application of this theory help employees brings forth their problems that cause their stress inside or outside the workplace (Newton, Teo, Pick, Ho, & Thomas, 2015; Yang, Rosenblau, Keifer, & Pelphrey, 2015).

The Vroom expectancy theory of motivation was used to frame the dependent variables of self-mastery development, which helps leaders recognize employees under fatigue, complacency, or anxiety. This theory tested the leaders' ethical standards and expectation to choose safety first in all they do despite corporate attainments needs (Ernst, 2014; Lazaroius, 2015; Parijat & Bagga, 2014). This previously applied theory aligned current transformational leadership skills (Mathew & Gupta 2015) with emotional intelligence traits and learned abilities (Goleman et al., 2013; Petrides, 2017) which lead to the investigation of leadership groups levels of emotion (Adhikari, 2015; Joost, 2013).

The approach and theories of this study related to the research questions and their hypotheses, as they explained and tested the principles that describe leaders' quality attributes that would prevent accidents from continuing (Goleman et al., 2013; Parijat & Bagga, 2014; Petrides, 2017). These theories deepen our understanding of the motivational mechanisms involved in the relationship between leaders and followers (Eberly, Johnson, Hernandez, & Avolio, 2013), thus, obtaining a leaders' optimal prevention resources to avoid accidents in the workplace (Lu & Kuo, 2016). Figure 1 represents the theoretical, study conceptual framework model**.** The model accounts for a

cross-sectional analysis that seeks leaders' emotional resources to mitigate employees' stress in the workplace.

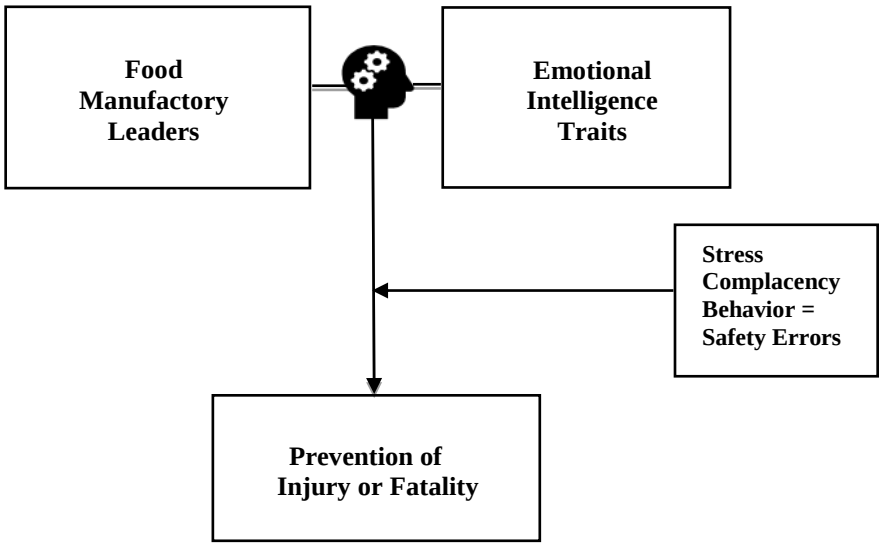

Figure 1. Theoretical Conceptual Framework. A cross-sectional analysis on the food manufactory leaders' EI traits resources to mitigate employees' complacent hidden stress that causes injuries or fatalities.

Nature of the Study

Quantitative methodology study is a systematic empirical investigation of observed phenomena that, emphasize objective measurements of validity on statistical, mathematical, or numerical analysis of data, collected through polls, questionnaires, or surveys (Spector & Meier, 2014). This quantitative method study was done to investigate and analyze the food and beverage manufactory leaders' emotional resources that influence their safety performance outcomes. A qualitative method of study was not used

since it did not provide the mathematical methods nor the statistical techniques to measure and define the relationship between independent variables and dependent variables within the proposed population of this study (Spector et al., 2014).

The key independent variables consisted of major facets of EI suggested by Petrides' (2017) study on emotional intelligence. These factors provided the scores of the leaders' trait personalities, which are the EI traits known as well-being, self-control, emotionality, sociability, and independent facets (Petrides, 2017). These trait personalities were found to be significant psychological components for the participant leaders (Petrides, 2017). It was the hope of this study that leaders of the food and beverage manufactory had these innate trait personalities and that they have had learned abilities that help them advance their careers. Goleman et al.'s (2013) ability model provided the EI domains and their associated learned competencies that create great leaders. These competencies were divided into personal skills, to determine how leaders should manage themselves their social skills, as well as to determine how the leaders manage their relations (Goleman, Boyatzis & McKee). Petrides suggested a sample domain consistent with variables that demonstrate the leadership competency constructs of self-mastery known as well-being, self-control, emotionality, sociability, and independent facet. These latent variables focused on the leaders' proficiency development status through the practice of clear thinking and the capability of managing stress on employees while upholding integrity in all they do (Hamzah et al., 2012).

Petrieds (2017) survey was used to audit 140 leaders from the food and beverage manufactories in the United States Eastern Shenandoah Valley located in Virginia. Correlation and path analysis will examine and explain the influence of the leading personalities and competencies variables as recommended by Jacob (2013). SEM will assist with the creation of a model to test the groups' power of leadership self-mastery skills (Hamzah et al., 2012). The SEM proposed model will add to the leadership literature the development of the leaders' effective mindset to prevent implicit complacent behavior due to stress (Naderpour et al., 2014). Correlation among variables will exist if the leadership variable coefficient levels are either positive or negative. If the variables measurements correlate zero, then they will have no relationship between variables (Trejo, 2014) and organizations may have to consider reassessing their leaders' competencies, work ethics, and emotional traits (Chamorro, 2015).

Definitions

Several key terms were used in this research study, and are defined as follows:

Complacency: The lack of ambition for improvement brought about by perceptions that one is comparative performance is "adequate" (Mannion & Braithwaite, 2012, p. 571).

Manufacturing industry: The branch of manufacture and trade based on the fabrication, processing, or preparation of many types of products from raw materials and commodities (Niranjan, 2016).

Food and beverage manufactory industry: A specific sector of the agriculture manufacturing industry that supplies most of the foods and beverages consumed by the world population (Niranjan, 2016).

Food and beverage manufactory: A plant or factory where foods and beverages products get manufactured or produced (Niranjan, 2016).

Stress: Stress is defined as the homeostatic, nonspecific defensive response of the organism to challenges (Pantelidou, Tsiakitzis, Rekka, & Kourounakis, 2017).

Homeostatic: Homeostatic is the tendency of the body to seek and maintain a condition of balance or equilibrium with its internal environment, even when faced with obvious changes (Pantelidou et al., 2017).

Self-Awareness: Self-awareness is the ability to recognize one's internal states, preferences, resources, intuitions, and other individuals (Ackly, 2016).

Transformational leadership: Transformational leadership style is a leadership relationship centered upon the identification of change and enhances motivations, morale, and job performance on others (Mathew & Gupta, 2015).

Self-Mastery: Self-mastering focuses on proficiency through the practice of clear thinking and the capability of managing stress on employees with integrity (Hamzah et al., 2012).

Self-Management: Self-management is a form of managing one's internal states, impulses, and resources (Ackly, 2016).

Social awareness domain: Social awareness domain provides the ability to understand and respond to the needs of others' feelings, needs, and concerns (Ackly, 2016).

Relationship management: Relationship management refers to a strategy in where a high level of engagement exists between an organization and others (Ackly, 2016).

Performance plateau: A performance plateau is the leveling off when a performance achievement is complete; in safety, this means an organization has achieved and sustained but is unable to go beyond this point (Colm, 2014).

Emotional intelligence (EI): Emotional intelligence is the capability of individuals to recognize their own and other peoples' emotions (Humphrey, & Qian, 2016).

Primal leadership: Primal leadership is a critical component of effective leadership that enables a leader to engage and direct the emotions of his or her followers (Goleman et al., 2013).

Cultural intelligence: Cultural intelligence is defined as the measure of a persons' capacity to function effectively in a multicultural environment (Daher, 2015).

Structural Equation Model (SEM): Structural equation model is a diverse set of mathematical models, computer algorithms, and statistical methods that can impute relationships between unobserved constructs from variables (Webb, 2014).

Trait emotional intelligence questionnaire (TEIQUE): The TEIQUE is a self-report inventory that comprehensively covers the sampling domain of Trait Emotional Intelligence (Aluja, Blanch, & Petrides, 2016).

Assumptions

Assumptions are important facts that are presumed to be true but are not yet verified and are somewhat out of the researchers' control (Simon & Goes, 2013). Certain assumptions are necessary to discover the correlation between variables and to validate the hypotheses that guide this study. The first assumption for this study was that all books, articles, and journals used to conduct prior emotional intelligence competencies studies, stress in the workplace studies, and complacency literature was performed with the highest ethical standards and procedures. The second assumption is that all survey instruments that conducted prior statistical analysis were carried out with the highest ethical standards and with the most accurate results, as is normally expected from credible institutions and researchers. The third assumption is that all participants who responded to many previous survey's questions were done honestly and without any internal/external social or workplace pressures. The final assumption was that all previous statistical analyses were conducted with the privacy, accuracy, and with no external or internal influence on the participants. Although current limitations and errors of prior studies may not be able to be corrected, the new statistical analysis may not inherit the same mistakes.

Scope and Delimitations

The study scope pertains to the operational parameters that the study develops and functions, and the scope is closely linked to the framing of the problem, while delimitations are the attributes that arise from the limitations in the scope of the study and

from the decisions made during the survey development (Simon & Goes, 2013). In this study, the focus was on leaders of the food and beverage manufactory industry who may not have the appropriate emotional intelligence traits and learned competencies in place to recognize employees' underlying complacent emotional stress behavior (Goleman et al., 2013). This study was chosen because of the limited number of prior emotional intelligence studies on leaders' capability of managing their emotions and that of others (Miao et al., 2016). Focusing on emotional intelligence traits and learned abilities domains helped to understand the most likely reasons for leaders' inability to recognize and prevent employees' stress caused by personal or workplace conflicts (Goleman et al., 2013; Petrides, 2017). As a result of this study, the reasons why leaders cannot recognize employees' complacent behavior, which impairs an employee's job performance and placed them in an unstable, unsafe position determined by the acceptance or not of the assumptions in question. As this complacent behavior continues, their sense of extreme comfort will eventually lead to an accident, fatality and possibly to an eventual downfall of the organization (Ali, 2014).

In this study, the concentration was delimited to three food and beverage manufactory populations, where the study took place. The targeted teams were the executive or upper leadership group and the operational or middle leadership group. The proposed demographic data allowed me to separate the groups from analyzing their safety awareness differences. Results were valid and specific to the food and beverage manufactory industries; it is possible for EI safety-based cultures to expand to other

industries such as the energy, transportation, health and agriculture industries. My expectation for this study was to add to the body of literature on transformational leadership and emotional intelligence to potentially decrease accidents and fatalities in the entire manufacturing industry and to increase the knowledge of behavior-safety champions to protect their employees.

Limitations

Limitations are matters and circumstances in a study that is out of the researcher's control and are potential weaknesses in the study (Simon & Goes, 2013). Every study, no matter how well it is conducted and constructed, has limitations (Bonnici, 2013). In this study, Limitations found in prior studies' results, strategic settings, and diverse populations were found (Trejo, 2014; Webb, 2014) which provided the kind of reliability and validity expected from the methods used. Another limitation was the different organizational settings among leadership groups. This study called for two levels of leaders: the upper leadership group and the middle leadership group. Some organizations include up to two lower layers of leadership in their hierarchal chart redefining their roles and responsibilities. Lower tier leadership groups, under the middle leadership group of the organizational chart, may be included if needed.

Additional limitations were taken into consideration in the interpretation of theoretical contributions, such as cross-sectional design results and participation rate (Fernet, 2015). Obtaining a good understanding of the leadership of innate traits and competencies and their benefits did help leaders who may need to adopt a safety attitude

and engagement. The use of structural equation models (SEM) guidelines, assisted with the creation of a model to examine the group's relationship between self-management competencies and the leadership teams' outcomes (Hamzah et al., 2012; Naderpour et al., 2014).

Significance of the Study

This study added an original contribution by filling the gap in the leadership literature in recognizing the leader's lack of emotional resources, which influences their safety performance outcomes and prevents them from perceiving employees' underlying emotions under job stress (Lu & Kuo, 2016). Understanding this gap may explain the reasons why leaders do not establish and practice the appropriate relationships that promote their employees' trust, thus, precluding them from recognizing their employees' behavior (Lu & Kuo). By promoting leaders' predictive engagement to prevent accidents, leaders could potentially contribute to social change helping organizations protect their employees from getting hurt, promoting strong safety cultures, and maintaining a positive impact on the families of the food and beverage manufactory workforce, thus, increasing community resilience.

Significance of Theory

This study added to the foundation of knowledge by explaining the reasons why the leaders of the food and beverage manufactory industry do not practice the appropriate trait or ability measures that help them prevent accidents (Lu & Kuo, 2016). The study provided valuable information about the levels and distribution of variables, the

relationship between such variables, and effect size of the relationship between or among independent and dependent variables (Spector & Meier, 2014). Establishing a relationship position as well as aiding leaders in their decisions to prevent employees' safety errors, enhanced the leadership literature that fosters correct decision-making, putting safety as their priority, and helping employees to avoid the creation of an unnecessary safety performance plateau (Colm, 2014). The literature on previously correlated research methods, books, and articles about leaders' emotional intelligence helped explore the relationships' ranking between different group levels of leaders' emotional traits and competencies, helping them understand their decisions outcomes (Spector & Meier, 2014).

Significance to Practice

There was a significant opportunity for leadership literature to increase the level of organizational awareness and performance at all levels of their leadership position. This study contributed to decreasing the number of safety errors made in organizations' daily operations; thus, protecting the organizations' greatest assets: their workers. This study provided leaders with the need to move from motivation to engagement of emotional change that may increase the food and beverage manufacture leaders' safety awareness. This awareness would move them to the next level of transformational leadership for the safety of the people they must protect (Goleman et al., 2013)

Significance of Social Change

Leaders who live responsible lives by sharing and expanding knowledge, developing skills, and fostering safety values which promotes social responsibility (Daher, 2015). Leaders who develop safety skills in others will motivate future strong leaders and will maintain a positive perception of society, increasing community resilience (Pater, 2014). By advancing leaders' involvement to prevent accidents in the workplace, leaders at all levels will potentially contribute to social change; thus, helping organizations and protecting their employees from getting hurt (Chileshe & Dzisi, 2012).

Summary and Transition

The purpose of this quantitative, correlational study was to examine if leaders in food and beverage manufactories have the proper emotional intelligence traits to recognize employees' underlying complacent emotional stress behavior (Goleman et al., 2013). Transformational leaders cannot monitor every move their followers made, and it is even more difficult for them to recognize when their followers' complacency attitude hides their stress condition if no emotional connection exists between them. Thus, transformational leaders of the food and beverage manufactories must go beyond their competencies to develop and adopt an emotional intelligence frame of mind in all they do. Such leaders are responsible for developing relationships to recognize their followers' anxieties, recognizing when their followers succeed, coaching and holding their direct reports accountable when a safety violation occurs.

In Chapter 1, the description of the gap found in previous research literature was done by addressing the leaders' emotional involvement with their followers. Identification of the independent and dependent variables while proposing a quantitative correlational study took place; discussion of the research questions and their hypotheses was executed and concluded with the significance and implications of the current study.

In Chapter 2, I reviewed the literature about the reasons and preventions of safety errors that cause accidents in the workplaces, employees' complacency behavior and hidden stress, and the relationship between transformational leaders and emotional intelligence. Further, a description of the reasons why leaders must use emotional intelligence in their daily operations and stressed the concept of primal leadership was implemented, leaders' emotional labor was discussed, their motivational factors and the need to develop safe cultures and behavior-based safety programs in the workplace was suggested.

Chapter 2: Literature Review

Introduction

Researchers have extensively studied the effects of stress on employees' safety performance, and despite significant safety training to prevent major accidents from occurring, unsafe errors continue to occur in manufactories (Floyd, 2015). Fear of criticism, high-performance expectations, the perception of negative judgments from others, financial commitments, and personal problems produce extreme anxiety for employees who become complacent due to stress; thus, despite hiding their feelings out of fear of losing their positions, their performance diminishes (Hallett & Hoffman, 2014). This implicit stress due to personal matters affects employees' safety performance, leaving them in harm's way (Lu & Kuo, 2016). When this complacency takes place, an accident eventually happens because of the absence of emotional resources by leaders who are unable to ascertain when this condition exists (Goleman et al., 2013).

More specifically, the problem of this quantitative correlational study is that leaders of the food and beverage manufactory may not have the proper emotional intelligence traits to recognize employees' underlying complacent behavior (Arstad & Aven, 2017; Lu & Kuo, 2016). The lack of emotional intelligence resources can prevent leaders from perceiving and preventing the underlying emotions of employees under job stress (Lu & Kuo). Although leaders' responsibility is to manage their followers' behavior (Miao et al., 2016), they continue to demonstrate an absence of emotional resources and this absence influences their safety perception outcomes and fails to

prevent accidents. The purpose of this correlational study is to examine if leaders of the food and beverage manufactories have the proper emotional intelligence traits that help them recognize employees' underlying stress behavior (Goleman et al., 2013). In Chapter 2, the researcher will present the strategy behind the literature research, theoretical foundation of the study and its conceptual framework, study literature review, summary, and conclusions.

Literature Search Strategy

Literature review information was gathered from electronic databases, e-books, journal websites, and previous research articles. The electronic documents included a variety of business, management and multidisciplinary databases, such as EBSCO, ProQuest, SAGE, Science Direct, ProQuest Central, PsycINFO, Academic Search Complete, and USDOL database. The following key search terms were used to search the databases: stress, complacency, safety errors, emotional intelligence, leadership theories, psychometrics, leadership competencies, primal leadership, and building safety cultures. This study focused on specific subjects such as the following: stress recognition and leading with emotional resources, Occupational Safety and Health Administration (OSHA) safety recordable incidents and fatalities updates, and the differences between transformational leadership and primal leadership skills. The search was for articles dated from January 2012 to August 2017 and was restricted to articles published in the English language.

I sought and obtained information on current leadership and emotional intelligence textbooks such as *Emotional Intelligence: An International Handbook* (2015), by Ralf Schulze and Richard Roberts, *Primal Leadership, Unleashing the Power of Emotional Intelligence* (2013) by Daniel Goleman and several statistical books using SPSS by SAGE Publications (2012). All articles presented several cases of SEM applications in modeling creation, which was verified using Path Analysis. A literature review study assessed the methodologies, theoretical models, procedures, results, and conclusions. In this study, I used the Trait Emotional Intelligence Questionnaire-Short Form (TEIQUE-SF) with permission from the London Psychometric Laboratory at University College London (UCL), England (Petrides, 2017).

Theoretical Foundation

The theoretical foundation for this study was based on three main theories: Transformational leadership theory by James V. Downton in 1973 (Mathew & Gupta, 2015); the 1995 Goleman's Primal leadership theory; 4-Dimensional ability model (Goleman et al., 2013); and Victor H. Vroom's 1964 Expectancy theory of motivation (Ernst, 2014; Lazaroius, 2015; Parijat & Bagga, 2014). These theories framed this research study and helped understand the transformational leaders' competencies levels that assist them in building relationships with their employees. Although most food and beverage manufactory organizations put safety at a higher priority, they continue to suffer losses because there is no easy way of mitigating human errors from employees working under stress (Joost, 2013; Strutton & Tran, 2014).

Transformational leadership theory suggested that leaders are the ones who use intellectual stimulation to challenge their followers' old ways of doing things; thus, transformational leaders encourage their employees to use new innovating methods that yield better results (Mathew & Gupta 2015). Goleman et al. (2013) suggested that resonant leaders establish deep emotional connections with others, showing that there is a relationship between transformational leadership and emotional intelligence resources. Previous research proved that emotional intelligence had the moderating effects needed by most of the manufacturing industry leaders to mitigate the negative effect of job stressors by their employees (Ackley, 2016; Lu & Kuo, 2016). Vroom's Expectancy theory of motivation helped to frame the dependent variable of self-mastery development that helps leaders recognize employees under fatigue, complacency, or stress and tested the leaders' ethical standards and expectation to choose safety first in all they do despite corporate attainments (Ernst, 2014; Lazaroius, 2015; Parijat & Bagga, 2014). This previously applied theory aligned current transformational leadership skills (Mathew & Gupta 2015), with emotional intelligence learned abilities and traits (Goleman et al., 2013; Petrides, 2017), which lead to the investigation of leadership groups' levels of emotion (Adhikari, 2015; Joost, 2013).

By applying these theories, two models using a Structural Equation Model (SEM) were proposed. The first model investigated if there exists any correlation between exogenous or upstream variables (independent variables) and the endogenous or downstream variables (dependent variables). Correlation analysis also helped identified

the competencies level of all leaders. The second model tested is the leaders execute emotional perceptions and controls and compare the upper leadership group and middle leadership group to investigate which leadership team needs less attention (Hallet & Hoffman, 2014; Lu & Kuo, 2016; Strutton & Tran, 2014). These models proved the null and alternative hypotheses to determine if the leaders were fully engaged in the recognition and prevention of safety accidents.

The selected theories related to the present study provided the concepts and tools of emotional intelligence that every transformational leader must have to create a positive environment for their followers to operate. According to Goleman et al. (2013), this positive environment allows followers to exteriorize their feelings, thus, opening the door of communication to help the transformational leader mitigate their followers' behavior. Goleman et al. (2013) called this phenomenon "resonance."

The Vroom expectancy theory of motivation helped leaders coach their employees to identify occupational hazards in their workplace and aid them in their decision-making process to minimize unnecessary risks (Bahn, 2013). Occupational hazards can lead to workplace accidents that can eventually impact productivity and profits (Bahn, 2013). In most manufactories, not all hazards are well known, and organizations' upper leadership groups depend on their middle leadership groups to have the knowledge and the skills to identify successfully emerging hazards in the workplace (Bahn, 2013).

Adhikari (2015) argued that more critical accidents might occur in the manufactory organization's daily operations, but old safety procedures do not identify them. For example, operating machines, repairing broken equipment, maintaining electrical high-voltage panels, or simply working near high combustion systems and dangerous gasses have a significantly high potential for causing safety hazards. Considering that this old safety procedure continues to generate many safety near-misses, this study successfully examined the leader's emotional traits presence that helps them recognize employees complacent stress behavior that causes harm and injury, loss of life, and disability in the workplace.

Literature Review

Safety Errors in the Workplace

Since the adoption of the Occupational Safety and Health Administration (OSHA) Act of 1970, injuries and fatalities in the workplace, including those from electrical hazards, have been declining. Federal rules, such as the Standards for Electrical Safety in the workplace, continue to prove instrumental in this trend of minimizing injuries and fatalities (US Department of Labor, 2015). Despite real trends from safety prevention audits, errors continue to affect not only new employees but also the experienced senior employees with many years of exposure to electrical or mechanical systems because of complacent behavior that causes injuries or fatalities (Floyd, 2015).

According to Joost's (2013) study, a large percentage of accidents in workplaces happen because of human errors by workers, who under complacency behavior, bend the

rules and take unnecessary risks. Despite heavy investments in many industrial countries developing adequate safety programs that decrease workplace injuries, it appears that there is still room for improvement, even in the most mature organizations (Haber, 2016). Studies of human errors in the workplace suggest that companies should regularly monitor their employees' behavior before incidents turn into serious accidents; however, the capability to avoid human error goes beyond just the organizations' employees (Bahn, 2013). Leaders of the manufacturing industry face serious responsibilities when managing contractor workers in their factories because a contractor's safety violations could have serious ramifications on the organization's reputation and brand (Joost, 2013).

Colm (2014) suggested that leadership safety performance in a workplace can reach a point where it levels out becoming an unsustainable performance plateau and preventing the leaders from carrying on their work to the next step. For many organizations with sophisticated safety programs in place, the performance plateau is a common challenge made of strategies that are often ineffective or short-lived (Colm, 2014). According to Adhikari (2015), accidents are unplanned and uncontrolled events where personal safety errors have a high probability of injuries unless the leaders have the right emotional resources in place to help prevent them. The expectation for maintaining sustainable safety programs in organizations falls with the transformational leaders that drive these organizations (Mathew & Gupta, 2015) -i.e., for leaders to help minimize human errors when recognizing and preventing the stressors that motivate employees to make mistakes in the workplace (Joost, 2013).

Sabet, Aadal, Jamshidi, and Rad, (2013) argued that Heinrich's domino theory had been one of the most widely accepted theories among the accident theories. This theory defines and labels all accidents after five metaphorical dominoes create a chain effect of five factors. The factors are the social environment and ancestry, the fault of a person, unsafe acts or conditions, the actual accident, and the resulting injury (Sabet et al., 2013). According to Adhikari (2015), multiple causation theories state that for an accident to happen, two factors called behavioral and environmental factors must exist. Although the environmental factor is a control factor that involves the workplace atmosphere, the study centered on the behavioral factor concept called the "theory of individual errors" (Adhikari, 2015, p.130). This concept is one that depends on human behavior and may be the one that most likely triggers the domino effect theory, ending in an injury or a fatality (Sabet et al., 2013).

Haber (2016) suggested that estimation results indicated that people made tens of thousands of decisions daily and given the complexity of the system where we live, these decisions are made by individuals' subconscious actions, either following the rules and procedures or violating them. Organizations must be watchful when promoting safety regulations to support on accidents prevention, but all the safety training and emergency drills and evacuations suddenly take second priority, as complacency takes over and employees begin to relax (Joost, 2013). Research on safety behavior by Lu and Kuo (2016) suggested that familiarization with risks can make employees feel comfortable about cutting corners, and soon, employees will begin to deviate from rules and

procedures, increasing the probabilities for an accident to occur; this convenient procedure is called complacency. Complacency in the workplace is perceived as a sense of extreme comfort. When this comfort is coupled with employees under stress, it will ultimately blind them, and the employees will most likely trigger the domino effect that will result in an accident (Lu & Kuo, 2016; Tan, 2016; Williams, 2016).

Being able to identify employees' complacent behavior to prevent safety risks and errors before accidents manifest is fundamental for the reduction of workplace accidents (Haber, 2016). Organizations cannot ignore the role of human error when accidents occur. The transformational leader must take active participation in the prevention of mistakes that produced accidents or fatalities to protect the organization and their employees (Adhikari, 2015).

Sabet et al. (2013) argued that theories and models of construction accidents be developed based on the description of how construction accidents happen. Although several of the other accidents' theories represent accident causation flawlessly, the domino theory masterfully described a simple model that is based on a unique concept of risk (Sabet, Aadal, Jamshidi, & Rad). After accidents take place, root-cause analysis to investigate failures must begin right away to mitigate the reasons why all prior safety procedures and guarding systems failed to prevent the errors (Adhikari, 2015). Unsafe acts and conditions are the immediate causes of accidents and are the central factors that cause injuries. The lack of supervision and accountability on employees' safety performance are significant contributors to the unsafe acts and conditions that lead to

fatalities (Sabet et al., 2013). In this study, research questions were answered, and hypotheses were tested to evaluate the leaders' competencies that may help prevent safety accidents and fatalities (Goleman et al., 2013; Petrides, 2017).

Complacency and the Boredom

There seems to be an upward trend in several industries that list complacency as a contributory cause of major accidents because of the lack of vigilance (Arstad & Aven, 2017). Leaders of different kinds of manufacturing organizations often overlook complacent employees, and when accidents occur, it may be too late for the employee to recover (Ali, 2014). One of the biggest dangers of leadership complacency at the organizational level is that leadership complacency creates blind spots in leaders, which makes them use excessive control of the organizational resources and overlook strategic vulnerabilities of the organization obligations and responsibilities to solve problems appropriately (Arstad & Aven, 2017).

Complacency is a state of mind, which is not necessarily the only influence on safety choices or behaviors, but it has been found to be the cause of at least 50% of the accident investigations in many industries (OSHA, 2017). Complacency has a devastating impact on organizations and endangers their market position, often leading to their demise (Ali, 2014). Ludwig and Frazier (2015) suggested that behavioral extinction is a basic behavioral principle known as complacency in the safety world.

This complacency could be the result associated with complicity, a condition of engagement driven by management behavior. In most manufactories, many tasks such as

audit reviews, preventive maintenance, inspections, and safety inspections may reveal nothing of substance when management does not follow-up on these tasks' corrective actions (Ludwig & Frazier). Although major accidents are seldom the results of one failure, it is often the result of a combination of failures that must be controlled by multiple or independent safety barriers to see if the safety process is being done correctly (Okoh & Haugen, 2014).

Habitual behaviors continue to occur regularly despite complacency or other mental states, and if these habits impact most accidents, then it would be reasonable to assume that habits solve the safety problem. However, not all complacency events result in risks that can be addressed by forming habits (Mathis, 2015). Many safety processes do an excellent job of finding and acting on recognizable hazards, yet, when a leader uses the same employee in the same area repeatedly, they may miss some things, since they find themselves in a state of being weary and restless through lack of interest or bored (Csikszentmihalyi, 2014).

A frequent phenomenon found in many industries is called the boredom influence concept, which particularly affects process leaders' control settings (Cummings, Gao, & Thornburg, 2016). Csikszentmihalyi (2014) describes boredom phenomenon to be the mental state derived from low challenge levels, as compared to individual skill levels, and the lack of intrinsic motivation. As depicted in Figure 2, the boredom influence concept diagram (BID) represents the result of heavy, repetitive continuous tasks that affect employees under complacent mental working conditions.

Boredom becomes even more critical when we add to the boredom condition measurements of employees' anxieties due to family-related issues and work pressures of daily attainments (Cummings et al., 2016). Every organizational employee faces the challenge of adapting and combining work and family roles. The combination of these functions can result in conflicts which will create stressors that burn and depress employees; affecting their concentration and setting them up for failure (Nohe et al., 2015).

Research has shown that boredom is often associated with significant health problems. Boredom has been linked to premature death (specifically, heart disease) and has been identified as a primary reason for increasing the risk of anxiety and other depression symptoms (Cummings et al., 2016). Boredom is a subjective phenomenon unique to everyone that experiences it.

According to Cummings et al. (2016), a person's perception of the task at hand may lead to complacency and cognitive interruption from the job if the task is perceived to be of no importance. The presence of this subjective boredom phenomenon is a sign of an employee disengagement from the task. The lack of emotional resources will prevent leaders from opening the lines of communication and will not allow them to know about their employees' problems (Goleman et al., 2013). In contrast, Armstrong, Atkin-Plunk, and Wells (2015) argued that workplace demands, such as job roles, low pay, shift hours, and lack of promotion contribute to employees' lack of concentration efforts to fulfill their tasks safely.

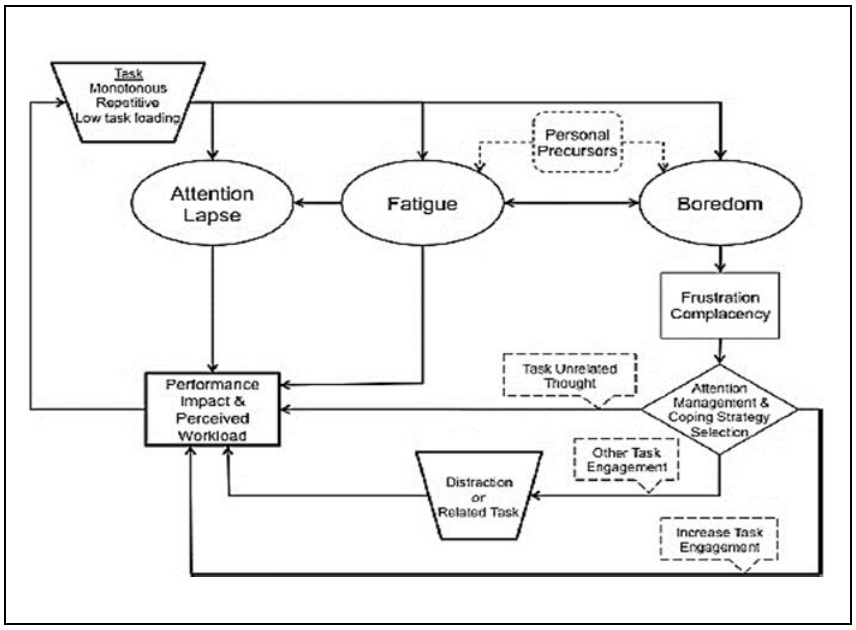

Figure 2. The Boredom Influence Diagram. Adapted from "Boredom in the Workplace: A New Look at an Old Problem," M. Cummings et al., 2016. *Journal of the Human Factors and Ergonomics Society*, p. 281. Copyright 2015. Under

These stressors have adverse effects that are often manifested in employees' performance, job satisfaction, and even family conflicts such as divorce, bankruptcies, and unknown illness (Armstrong et al., 2015). The consequences of workplace pressures and the fear of losing their job will motivate employees to repress their feelings for fear of criticism. Once this implicit stress becomes habitual, they are all but exempt from complacency, distraction, or other common problems (Glavin, 2015).

Most manufactories used root-cause analysis as part of their continuous improvement process to mitigate cases of complacency; however, by not realizing that this analysis is geared towards machines and not for humans, they are contributing to the

complacency dilemma (Mathis, 2015). Pater (2014) suggested that one of the most notorious mistakes that occur when complacency is not recognized involves the failure to overlook when substantial improvements are possible. Instead, leaders settle for status quo or lower to mediocre results when they have the option of implementing and executing the organization's plan (Pater).

Historically, complacent workforces are the product of complacent leaders (Pater, 2014). Arstad (2017) suggested that complacency forces leaders reflect on blind spots, and such reflections give them the direction to further explore the cause of an accident. It is hard to process an accident investigation when evidence indicates a missing blind spot by the leaders (Arstad & Aven, 2017). Just as root-cause mitigates machine errors and corrective actions must be developed to prevent repeatability of equipment malfunction, leaders are accountable to find people "malfunctions" due to errors. Over the years, according to Wiliams (2016), complacency has limited the roles of teams, minimized the focus on prevention efforts, and affected the operation of complicated and critical equipment in the manufacturing industry (p. 881). This study examined leaders of the food and beverage industries emotional traits and abilities that helped them guide their employees to make the right choices and build strong relationships.

Cultures under Stress

Employees' experience and technical training in most manufactury organizations are effectively displayed when it is in demand and when it is done in front of an audience (Hallett & Hoffman 2014). Execution of employee skills would indicate that under

stressful conditions, experienced individuals will direct their resources to complete their superior performance but leave them with insufficient resources to ease the impact of work stressors on their minds (Lin, Ma, Wang & Wang, 2015). Stressors generated inside the workplace produce stress on employees, and that stress affects their attitudes and safety awareness (Nohe et al., 2015). Adhikari (2015) suggested that one of the major reasons for accident occurrence is stress. Demands at work create stress, long work hours, workload demands, supervisory pressures, overwork, deadlines, role stressors, and physical discomfort – all of which have been identified as work factors associated with stress. Stress symptom activity causes a decrease in workers' capabilities (Nohe et al., 2015).

Workplace stressors will be one of the most prominent reasons why unsafe acts occur in workplaces. Operating machinery and tools while working under stress and ignoring safety regulations is risky and dangerous (Lin et al., 2015). According to Adhikari (2015), there are mental impacts of occupational injuries in workplaces, and "Post-Traumatic Stress Disorder" is one of them (p. 128). In today's hectic world, the workplace often seems like an emotional roller coaster, and when stress exceeds the employees' ability to cope with issues, it stops being helpful and starts causing damage to their mind and body. Stress will affect their performance and their health (Glavin 2015). Despite mandatory safety training by the manufacturing industry standards, recordable incidents continue to show a high occurrence of incorrect use of tools, such as operating fork trucks without seat belts or changing machine configurations without following

safety procedures. These are the type of behaviors that cause accidents or possible fatalities (Adhikari, 2015; Lin et al., 2015). As seen in Figure 3, stressors from personal affairs or pressures at the workplace are the sources that affect the employees' behavior, thereby decreasing their capacity for safe work practice.

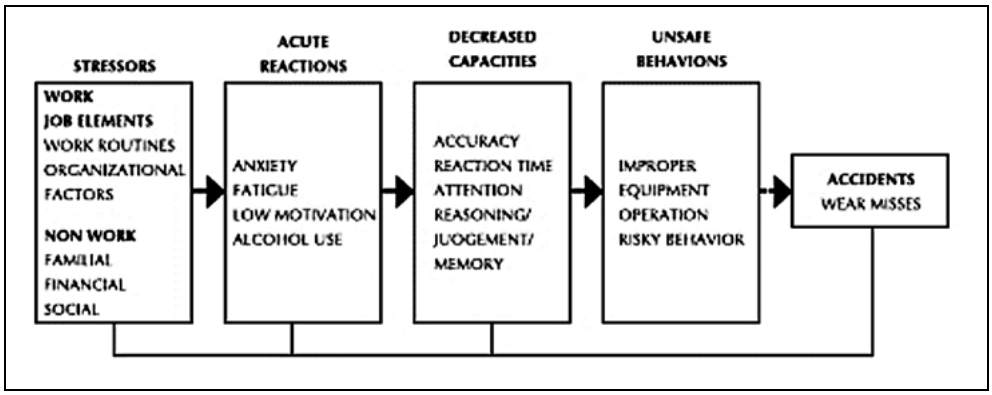

Figure 3. Murphys' Model of Stress and Accidents. Adapted from "Errors and Accidents in the Workplaces," P. Adhikari, 2015. *Journal from EBSCOhost,* p. 129. Copyright 2015 by Sigurnost, Tribhuvan University. Under Permission.

Pantelidou et al. (2017) posited that stress is a "homeostatic, nonspecific defensive response of the organism to challenges" (p.1). As people evolve in life, the body develops adaptive mechanisms for maintaining a steady state and internal balance. This process is called homeostasis, which is known to protect the body against stressors but also disturbs the body's natural defensive systems (Pantelidou et al., 2017). Since stress entails a sense of mental, emotional or physical strain (Strutton & Tran, 2014), the homeostatic mechanisms will pose a challenge. Peoples' nervous systems will then be affected, and their concentration will be interrupted, resulting in a possible unintentional

safety mistake (Pantelidou). To further understand the definitions of stress and stress-related theories, it is necessary to understand stress in transactional terms (Dewe, O'Driscoll, & Cooper, 2012).

Dewe et al. (2012) argued that a transactional nature of stress exist between the individual and the environment where the individual is exposed. The power of the transactional approach implies process, and to understand the nature of that transaction, challenges researchers to explore those cognitive processes that connect the individual to the environment. Dewe et al. suggested that the one that provides this connectivity between the stressful states and emotions is the process of appraisal. The appraisal process triggers a person's emotional response, meaning that stress and emotions must be defined as a single topic. The appraisal process enables individuals to embrace discrete emotion's which withdraw from the troublesome concept of stress but captures the reality of the individuals' emotional experience (Dewe et al., 2012).

Dewe et al. (2012) inferred that theories of stress began with one of the oldest original perspectives on psychological stress, the Lazarus model. Other theoretical models of the stress process were also developed, such as the person-environment fit, the conservation of resources theory, and the job demands-control-support model of work design, to name a few. Each of these theories provides a different perspective for understanding the transaction between individuals and the environment. The job demands-control-support model of work design represents the interactive effects of demands X control which will determine the level of strain on the job or its dynamic.

While all of these theories above have some degree of association with this current study, the theory of job demands-control-support (JDCS) model is the theory that best links to our study because of the emotional resources that leaders provide to control the impact that demands on strain and that creates stress on employees (Dewe et al., 2012).

According to Hwang et al. (2017), job demands in the work environment create psychological tensions among employees. These tensions occur when heavy workloads and demands overwhelm the already stressed employee, causing deterioration in his or her well-being (Hwang & Ramadoss, 2017). Hwang et al. suggested that the boundaries between work and family domains create conflict with the performance of the employee, as they find themselves unable to cope with the conflicting demands of time and energy in both contexts. A study by Hwang et al. inferred that job control was significantly associated with work-family conflicts in female employees. By contrast, high levels of employment support, supervisor assistance, and coworker help were significantly associated with an increase in job satisfaction for both males and females (Hwang & Ramadoss).

Since the turn of the century, dual-earner couples have become very popular as our economy continues to challenge families' budgets to meet physical, social, or organizational expectations (Watanabe et al., 2017). Watanabe et al. (2017) inferred that couples with children struggle when managing the responsibility of coordinating issues between family and work demands. This struggle, in turn, generates an excessive amount of fatigue in both parents. Adding to this issue, the parents' common stressors of

economic hardship, job demands, raising a family and other unexpected pressure will interfere with the overall employee concentration to perform well (Watanabe et al., 2017).

Many employees face the challenge of combining work and family roles which can result in work-family conflicts (Nohe et al., 2015). Armstrong et al. (2015) suggested that a family-work conflict exists when employees' family responsibilities interfere with their work duties, and their roles are mutually incompatible. Nohe et al. (2015) argued that when employees are continuously exposed to these type of demand, no recovery can occur and psychological systems do not go back to a baseline level, thus, this negative load reaction may accumulate and may lead to longer-term negative effects, such as impaired well-being (p. 523). Work-family conflicts generate anxiety in employees who recourse to underlie their condition for fear of losing their job which is one of the most stressful life experiences (Watanabe et al., 2017).

Job loss and unemployment involve many changes striking individuals all at once. These changes impact an individual's sense of purpose and influence psychological distress (Glavin, 2015). Losing a job is a stressful experience and employees adopt poor attitudes that impact their health (Newton et al., 2015). Losing a job can leave the employee feeling upset, depressed, or out of balance, influencing them with anxiety and self-rated poor health (Glavin).

Protecting employees from occupational hazards takes an authentic leadership implementation of safety measures and procedures, and these must be adopted and

utilized by all employees (Nielsen, Eid, Mearns, & Larsson, 2013). Yulk (2012) study suggested that the specific purpose of a leader's task-oriented behavior is to ensure that all resources are used efficiently to achieve their group and organizational goals. A leaders' task-oriented behavior includes proper planning of work-unit activities, defining specific roles and, supervising work-unit operations and participation in work-related issues (Yulk, 2012). Research by Fisher et al. (2016) suggested that before leaders encounter situations with their teams, they must train and observe their employees' behavior and further focus on common signs and symptoms of possible stress (Fischer, Antonakis, & Dietz, 2016).

Observations by Fischer et al. (2016) suggested that if leaders need to raise their employees' performance while raising their engagement level, they must provide stress training to enhance their supporters' skills. Training will help their employees maintain a positive mood towards their job while improving their knowledge and engagement (Fischer, Antonakis, & Dietz). Good is the enemy of great, and to achieve greatness in an organization, leaders must learn to create resonance, which is a reservoir of positivity that frees the best in people and promotes real feelings in those they lead (Goleman et al., 2013). The scope of this present study focuses on both workplace and family domain stress that impact employee performance and that may result in accidents and fatalities. Previous research indicates that leaders of organizations must be trained and prepared to prevent these accidents from happening. The use of emotional intelligence resources will help the leaders of the food and beverage manufactory industry achieve prevention of

continuously reported accidents and fatalities. This study examined the leaders' emotional intelligence resources that prevent them from identifying the common signs and symptoms of possible stress.

Emotional Intelligence and the Primal Leader

For many years, researchers have been trying to understand how peoples' minds are affected when they tried to adapt to the many challenges of life. The significant objective to understand the way people adapt to life changes helped identify a meaningful set of constructs that contribute to their success. These constructs are known as Emotional Intelligence (Petrides, 2017).

Emotional intelligence (EI) is the capacity to recognize feelings and to recognize the feelings of others since such recognition enriches the relationship between leaders and followers. Most organizations consider emotional traits to be significant predictors of good performance (Sony & Mekoth, 2016). When organizations allow their leaders to manage followers with emotions, the opportunity to enhance their employees' relationships creates an excellent trust environment (Goleman et al., 2013). Parker (2014) suggested that EI regulates the emotions that drive peoples' behavior while looking out for the needs of others; thus, when frustration causes employees to become angry, leaders must be able to recognize this behavior and regulate their employees' negative emotions (Parker, 2014).

Over the past two decades, EI has been the subject of significant scholarly debates to establish whether EI is innate or learned. These debates provided the basis for the

design of instruments of different incremental validity and reliability. Researchers must be careful in choosing the right instrument to measure their constructs. A study by Siegling et al. (2016) suggested that trait emotional intelligence is defined as a group of emotional self-perceptions and dispositions that are situated at the lower levels of personalities. These traits are significant to psychological assessment applications, one of which Siegling et al. (2016) referred to as occupational, or which is better defined as personality trades or vocations. These innate vocations are the ones needed by the manufactories' labor force of the manufacturing industry. A different study by Goleman et al. (2013) suggested that these emotional dimensions are learned capabilities that promote a leadership style of superior performance. For many years, different psychology disciplines have been fostering people awareness to pay attention to their emotional responses and to develop an understanding of other peoples' emotions.

According to Petrides (2017), there are several famous models in the EI literature which defines the difference between the ability EI model and the trait EI model. In the 1990s, Salovey and Mayer detailed an ability model based on four branches of emotional capacities and defined EI, such as the ability to accurately perceive, use, understand, and regulate emotions (Webb et al., 2013). In the mid-90s, Daniel Goleman suggested a 4-dimensional ability model based on four components that link to distinct competency dimensions, known as self-awareness, self-management, social awareness, and relationship management. Goleman et al., (2013) introduced a new concept to the leadership literature called the Primal Leadership, which occurs when a leader creates

resonance. Finally, at the end of the 1990s, Reuven Bar-On provided an EQ model, that was competency-based on five specific traits emotional dimensions, intrapersonal, interpersonal, stress management, adaptability, and general mood (Petrides, 2017).

Suvarchala Rani's (2015) study on a model for effective leadership implied that in addition to the leader's gifted personality traits and vocations, leaders need a cognitive understanding of how emotional intelligence will help them develop competencies and abilities that lead to successful performances. The introduction of continuous improvement groups adopted a different set of rules established by lean manufactory techniques. Lean manufactory techniques promoted less autocratic cultures forcing the groups to work as winning teams (Kumar et al., 2017). These proactive programs shifted the rules of total engagement tools designed to push innovation and to win at all cost. Historically, emotional intelligence has gained popularity as a key factor of success in many workplaces of the manufacturing industry. Leaders that display superior levels of EI will help themselves moving forward in their careers while helping their organizations to achieve their goals and objectives (Suvarchala Rani, 2015).

A proven survey instrument named trait emotional intelligence questionnaire-short-form (TEIQUE-SF) was selected for this study. This survey instrument was used to obtain the food and beverage manufacturing leaders' trait levels of emotionality that will make them more effective when performing safety tasks. The TEIQUE-SF survey instrument has a well-proven record of reliability, strong incremental validity, consistency, and accuracy (Petrides, 2017). Other ability instruments showed good

reliability but raised incremental validity concerns as a key emotional intelligence psychological construct (Kong, 2014). The trait emotional intelligence instrument provides the evidence that leaders may read their employers' response to their emotions, thus, helping their workers from making safety errors.

The theory of emotional intelligence (EI) was popularized in the mid-90s by Daniel Goleman and has been recognized as the fundamental strategy to leadership literature (Benson, Fearon, McLaughlin, & Garratt, 2014). The introduction of Goleman's concept known as Primal Leadership represents the new leadership style, which encourages leaders to "prime" real feelings on those they lead. When a primal leader creates a force of positivity, which unleashes the best in people, the primal leader has created what is known as resonance. Primal leadership requires emotional intelligence to coexist and becomes most effective when a leader's resonance takes place (Goleman et al., 2013). When primal leaders create a positive environment of healthy emotional relationship, they provide a positive influence on attitudes and perceptions of others towards safety (Sunindijo & Zou, 2013). Leaders who promote the right kind of flexibility and fairness, positive attitudes, and maintain an emotional balanced are the ones considered successful (Mittal & Sindhu, 2012). To further understand the relationship between attitudes, perceptions, and emotional competencies, it is important to look at how emotional intelligence develops into an effective model for leaders to grow in their careers while achieving success. A study by Goleman et al. (2013) suggested three operating philosophies that drive individual actions: the pragmatic,

intellectual, and humanistic. These philosophies are essential pillars to build a culture of success with a clear understanding of self-management, the desire to understand people, and to foster personal relationships that are meaningful to people's life (Goleman et al., 2013). Manufacturing industry leaders need to have the necessary emotional traits and develop abilities that provide the safest environment for their workers while creating a trustful work environment in the workplace.

Transformational Leaders and EI

Determining the concept of leadership has taken scholars of social disciplines more than a century to define (Eberly et al., 2013). Through the years, one leadership theory that has captivated an enormous amount of attention is the Transformational Leadership theory (Kovjanic, Schuh, Jonas, Van Quaquebeke & Van Dick, 2012). Mathew and Gupta (2015) suggested that transformational leadership is a leadership style that enhances the performance of a group by leaders that change from being a "boss and a critic" to a leader that becomes a "partner and a coach" (p.76). The positive effect of transformational leadership brings important elements required by great leaders to succeed and is demonstrated in the effectiveness of their performance (Mathew & Gupta, 2015).

According to Mathew and Gupta (2015), transformational leaders are constantly undertaking a very dynamic transition that challenges their behavior, since they must change from a leader that represents the boss and the critic to a leader that must become a partner or a coach. This dynamic role requires special skills from leaders that must

promote collective efficacy and team performance to demonstrate what they can do with the people that organizations trust them to lead (Sudha, Shahnawaz & Farhat, 2016). As suggested by Sudha et al. (2016), transformational leaders use intellectual stimulation to challenge their followers' ways of doing things and motivate them to emotionally connect, creating a sense of efficacy to impact their performance (Sudha, Shahnawaz & Farhat).

Today, it is widely accepted that transformational leadership brings about four distinct dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration all of which imply the use of emotional drive (Goh, 2017). Chen Bian and Hou (2014) argued that there exists another type of intelligence known as Emotional Intelligence (EI), which is widely discussed in both psychology and management literature. Many researchers have found that EI and personality traits differ largely regarding definition and measures considering EI as an ability trait (Ackley, 2016; Chen et al., 2014). According to Jadhav et al. (2014), emotional intelligence recognizes and accepts emotions as assets that convey information. When motivated leaders make proper use of these emotions, they make better decisions and are more efficient at obtaining a full commitment from those they lead. Prior EI research studies suggested that the capability of managing emotions is the best way to predict leadership behavior (Chen et al., 2013; Goleman et al., 2013; Mathew & Gupta, 2015).

In contrast, Follesdal and Hagtvet (2013) argued that EI as ability might not be necessary for transformational leadership, as many researchers argued that EI should be

conceptualized and measured as a set of abilities, distinct from personality traits and leader behavior. Follesdal and Hagtvet (2013) suggested that previous researchers encounter the presence of three major limitations that thoroughly assess the relationship between EI ability and transformational leadership. First, the ability measured with the MSCEIT instrument showed low reliability and questionable validity scores. Second, the studies assessing the relationship between EI as ability and transformational leadership had seldom controlled for both personality traits and general mental ability (GMA). Third, studies evaluating the relationship between EI and transformational leadership seldom consider multilevel nature of score from the measure of transformational leadership (Follesdal & Hagtvet, 2013). After statistical tests on the personality factors in the five-factor model of personality (FFM) and the GMA, result scores were questioned, as the findings did not show a convincing relationship of ability and transformational leadership.

Goleman et al. (2013) describe emotional intelligence as the scientific evidence that shows leaders' emotional intelligence skills have a great impact on the effectiveness of an organization goal. The use of a mixed set of constructs from the validated and reliable instrument created by Petrides (2017) proved to be a very effective tool. As can be seen from Figure 4, a conceptual framework for the relationship between transformational leadership and emotional intelligence was developed by Mathew and Gupta (2015). Although the connection between EI and job performance has been proven to exist, Miao et al. (2016) study argued that there are a few leadership issues that still

need to be addressed and suggested that the motivational initiative is one of these matters. Leaders should be motivated to take the initiative of stepping up and emotionally connecting with their employees to prevent them from failing in their safety performance (Chen et al., 2014).

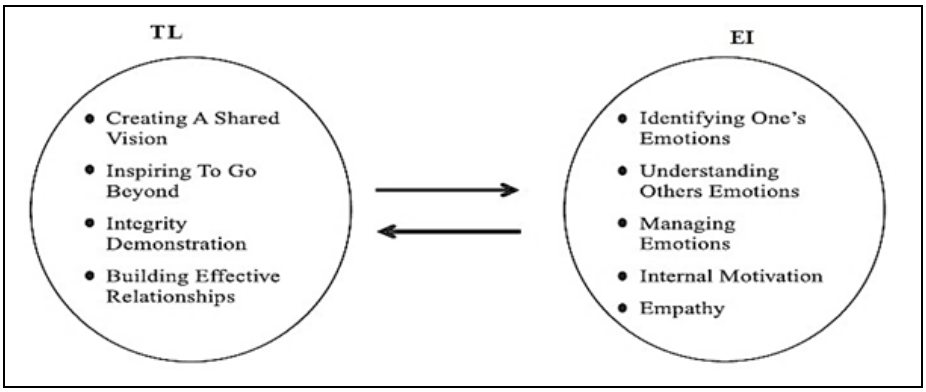

Figure 4. Method used to study the relationship between TL and EI. Adapted from "Transformational Leadership: Emotional Intelligence," Mathew and Gupta 2015. *Journal of Indian Management*. Copyright 2015. SCMS Indian

The relationship between transformational leadership and emotional intelligence suggested innovated ways of performance in the workplace and open doors of opportunities for building workers' perception of their leaders' style as an important factor influencing their safety performance in the workplace (Goh, 2017). EI is the basis for this study which examined the presence of the essential relationships that should exist between leaders' emotional traits and their workers' behaviors. The results of this study established the emotional connection between leaders and workers of the food and

beverage manufactory industry seeking to build stronger relationships to perceive complacent anxiety behavior and prevent safety errors.

Leaders and Emotional Labor

Manufactory employees are frequently exposed to a variety of emotional demands, such as equipment failure causing production downtime, personal conflicts among peers, lack of attainment issues, or even lower volumes and sales, which can create additional stress. Humphrey (2012) suggested that under these circumstances, leaders may resort to emotional labor strategies to help them express to their followers the right emotions in accomplishing any task. Emotional labor is essential to service effectiveness and contributes to the success of leaders that effectively achieved overall performance (Burch, Humphrey, & Batchelor, 2013). Effective leaders are aware of their impact on others and use it to their advantage to have a dramatic impact on their followers' results (Mittal & Sindhu, 2012). Non-effective leaders, on the other hand, become impulsive, erratic, and irrational, experiencing out-of-control emotions that they may end up regretting (Goleman et al., 2013).

Humphrey (2012) posited that leader emotional labor is a specific set of behaviors that can help leaders establish better relationships with their followers; however, there is an adverse psychological effect that contributes to the leaders' and followers' stress and even burnout. Previous empirical research has supported the theory that surface acting would be stressful because it involves a considerable amount of emotional dissonance (Humphrey, 2012). It is important that leaders exercise real leadership when utilizing

emotional labor. Burch et al. (2013) demonstrate that although leaders have been performing emotional labor for a long time, many of them did not know about emotional labor. As leaders become aware of the importance of emotional labor techniques, they need a clear understanding that efficient use of it can improve employee's job satisfaction and commitment to building a relationship of trust. Good leaders are the ones who set the display rules for companies to follow and succeed, but it is through using emotional labor themselves that leaders will achieve their objectives (Burch et al., 2013).

According to Humphrey (2012), leading others to emotional labor requires a specific set of behaviors that can help leaders establish a better leader-member exchange relationship, perform transformational leadership behaviors, and establish an authentic relationship with others - if the leader is perceived, to be honest, and ethically genuine. Researchers have found that performing emotional labor can be difficult and can contribute to stress (Humphrey, 2012). In contrast, performing true emotional labor that is consistent with one's identity may be less stressful and may have positive effects on well-being. A study by Mittal and Sindhu (2012) suggested that a good emotional balance is only achieved when successful leaders demonstrate the right kind of optimistic attitude, excellent flexibility in thoughts, and a quick learning attitude. Most emotionally balanced good leaders who demonstrate the ability to deal with the uncertainty and with the right competencies in place will make the right decision to recognize employees who display stressful emotional dissonance and prevent them from continuing their complacent behavior (Mittal & Sindhu, 2012).

There are many kinds of dissonant leaders who transmit emotional tones that are perceived as negative, and when one comes across someone leading an organization by stirring such negative resonance, one can anticipate troubles ahead (Goleman et al., 2013). Researchers are learning that successful leaders understand themselves, read the emotions of others, determine the emotional needs of those around them, and then regulate them to display the appropriate emotions based on what followers need (Burch et al., 2013). In the "Primal Leadership - Unleashing the Power of Emotional Intelligence book, Goleman et al. (2013) suggested that the fundamental objective of leaders is to "prime" good feelings in those they lead. Being intelligent about emotions and knowing how to use them while leading individuals is vital to leaders' success. Leaders will strengthen their employees' performance when they applied the needed "resonance" that drives superior performance teams. In this study, I investigated the presence of traits and abilities competencies on leaders of the food and beverage manufactory industry and tested the hypotheses difference between two groups of leaders that drive teams' safety awareness and compliance.

Leaders and the Motivation Factor

Parijat and Bagga (2014) conducted a study in expectancy theory that describes motivation as the driving force of human nature and what allows for high achievements and significant accomplishments. There are several theories of motivation that can be divided into two groups: content theories and process theories. Content theories center on the employees' motivational needs. Process theories concentrate on a cognitive process

that motivates a group of employees (Parijat & Bagga). This study focused on Victor Vroom's process theory of motivation to understand what is behind the leaders' efforts in performance when their decision-making is a challenge (Ernst, 2014). Expectancy theory introduces a mathematical algorithm that calculates the leaders' motivational levels that will determine the relationship between their efforts and performance, their relationship between performance and rewards of their work outcomes, and their relationship between the rewards of their work results and their personal goals.

Lazaroiu (2015) research work on motivational and organizational behavior inferred that nearly all managers are oblivious to the emotional atmosphere they set in their workplaces. The attitudes of employees have a tremendous effect on their conduct in the workplace, especially when they feel ignored. Feeling left out or ignored will make employees less engaged in the performance of their tasks and responsibilities simply because of the lack of connectivity with their leaders. According to Lazaroiu (2015), Vroom's process theory of motivation is grounded in four work-setting assumptions. The first assumption is that individuals enter organizations with requirements concerning their demands based on their personal goals, incentives, and previous experiences. Secondly, a person's conduct is a consequence of deliberate performance and rewards based on their performance. The third assumption is that individuals require clear rewards commitment from the organization, and fourth, individuals will select among choices to produce results for them.

There are three relationships based on the above variable. These relationships are known as Expectancy (E), which suggests the probability of the effort leading to an outcome. The second is called Instrumentality (I), which is the perception of an employee of the likelihood that performance will lead to organizational rewards or outcomes such as better salary or bonuses. The third, Valence (V), measures the attractiveness, preference, value, or the linking of the rewards or work outcomes for the employee (Parijat & Bagga, 2014). We understand the connectivity of these variables when we examine what happens when a person sets their sights on gaining promotion. The thought is that their endeavors will provide acceptable performance and expect that their performance will be rewarded, which will be considered positive (valence) (Lazaroiu, 2015). As Lazaroiu (2015) inferred, employees, have personal goals that they would like to achieve in organizations that reward their performance. The relationship between organizational rewards or work outcomes and personal goals is important and can be described as the value the employee gives to the work outcomes. Parijat et al. (2014) concluded that the cornerstone of expectancy theory dwells in the perception and the anticipation of the likely consequences of behaviors.

People aim to predict the possible consequences of their actions. The Expectancy theory will not only emphasize key aspects of management, but it will combine all motivational relationships into one theory of motivation (Parijat & Bagga, 2014). Leaders of the food and beverage manufactory industry may benefit from the expectancy theory as it helps them understand the psychological processes that cause motivation. Ernst

(2014) study on expectancy theory outcomes suggested that Vroom's expectancy theory describes a cognitive model of motivation based on the belief that people actively weight possible results and make decisions based on those perceptions. Vroom's expectancy theory is mathematically represented by:

$$V = \sum_{k=1}^{n} (V_k \text{ x } I_k)$$

Where V is the attractiveness of a task that could lead to outcome k, V_k is the valence of the outcome k, and I_k is the instrumentality of the outcome k. According to Ernst's (2014) study of Vroom's theory of motivation, when the attractiveness is considered, Vroom asserts that a person's motivation is affected by one other factor called "expectancy." According to Ernst (2014), expectancy is "a person's perception of the probability that effort will lead to successful performance" (Ernst, 2014, p. 538). In our study, expectancy is our leaders' beliefs that if they put forth efforts to recognize complacent stress behavior from their employees, they can successfully prevent accidents in the workplace. Investigating the leaders of the food and beverage manufactory industry traits and competencies help organizations to set their expectations higher and help them succeed in their transformational leadership careers. Results indicated similarities in emotional engagement among upper and middle leadership groups. Recommendations and alternatives of deficiencies were giving.

Leaders and Safety Cultures

Building progressive safety cultures in manufactories is a challenge that requires specific behavioral characteristics by their transformational leaders as they form relationships with their subordinates. Goh (2017) proposed that the extensively accepted transformational leadership correlate dimensions of influence, inspirational, creative, and individualized consideration set the foundation for safety cultures. Previous research on leadership styles and workplace safety focus on the "purpose of relationship-oriented leadership" among leaders and subordinates (Clarke, 2013). A culture with an integrated safety philosophy must be aggressively engaged in interpersonal relationships, and this will begin to change the minds of those who have not yet engaged to get onboard the culture wagon (Hedayat & Shahniani, 2017). As suggested by Clarke (2013), relationship-oriented leadership constitutes a process of social exchange with direct reports, where mutual trust is established, and identification among leaders and followers takes place, seeking improved performance but better safety participation, safety compliance, and employee loyalty. Transformational leadership is known to operate with four distinct, but intimately correlated components of leader behavior, which motivates employees to exceed expectations regarding their behavior. The expectation is for transformational leaders to influence and engage their followers by making safety their number one priority in all they do (Clarke, 2013).

Safety culture success is achieved when teams are built to the highest ethical standards. Wells (2015) indicates that ethical decision-making is a process based on

experience and expectations. When leaders make ethical decisions of regulatory compliance, the outcomes from that decision will prove its weight; thus, corporations' responsibility is to develop ethically driven management systems that embrace core organizational beliefs (Wells, 2015). Transformational leaders make a positive impact during the formation of safety cultures by demonstrating their ability to handle themselves and their teams, as well as by injecting enthusiasm and energy in all that they do (Mathew & Gupta, 2015).

Leaders of the manufacturing industry hold critical ethical responsibilities when creating strong safety cultures since they are aware of the differences between the perception of safety climates and the dynamics of the competitive environment that employees face every day. Northouse (2016) proffered that those leaders responsible for building teams possess an enormous amount of energy, drive, dynamism and a great capacity to deal with setbacks. Ali et al. (2016) study suggested that safety cultures have been defined in many ways with different hypothetical constructs. These constructs represent interpretations of different findings which are often global, thus, highly implicit.

Despite the abundance of multiple initiatives, industry today is not able to overcome the problem that all injuries are preventable, and this indicates that current approaches for improving safety cultures are failing to succeed (Ali & Shariff, 2015). A leader's decisions demand ethical and moral conduct, particularly when safety cultures are being developed to set the example and inspire employees to make the right decision

(Northouse, 2016). In this study the leaders' emotionality trait was examined to measure their emotional reactivity to stimulus, thus, responding to the emotions of their followers to stop and correct their complacent behavior.

Behavior-Based Safety

Hedayat and Shahniani (2017) define Behavior-Based Safety (BBS) as the psychological research of human behavior that creates a safety partnership between leaders and followers that continually focuses people's attention and actions on theirs, and others, daily safety behavior. BBS has a particular concern for the safety-orientated behaviors of workers and especially their safety behavior during their continuous improvement process (Hedayat & Shahniani, 2017). Accidents in the manufacturing industries do not happen by coincidence but by unsafe mistakes or neglect due to complacency. Ismail et al. (2012) argued that despite organizations' best efforts to concentrate on mandated participation, construction of safety policies, and intense training, accidents continue to occur. Previous studies revealed that many accidents are the consequences of unsafe conditions, and accidents are the result of the wrong implementation of maintenance procedures, improper use of tools, equipment design, lack of employees' safety training, physical stress because of the work environment, or risk exposure to prolonged cold or heated temperature settings (Ismail et al., 2012).

Recognizing and accepting responsibility for the cause of accidents is vital to define the scope of the organizations' BBS programs while incorporating safety management systems in the direction of health performance and improvements (Ismail et

al., 2012). Damaging to any culture are those individuals in leadership positions who lack the skill, character or accountability to lead by example, making BBS one of the greatest weakness, if not built with the right leaders (Wells, 2015). The key for BBS to succeed and to gain the strength it deserves is not the program itself, but, rather an integrated management process whose foundation dwells in the leaders and their ethical decision-making process (Ismail et al., 2012). In this study, the food and beverage manufactory leaders' competencies were examined as well as their sense of efficacy that will seize opportunities and initiative to promote BBS in their industries.

Summary and Conclusions

An overview of relevant theories and variables of interest were synthesized and evaluated to understand the origins of employees' safety errors, the emotional relationship needs between leaders and followers in recognizing complacent stress behavior and the need to create behavioral-based safety cultures seeking sustainable frameworks to prevent accidents or fatalities. In this chapter, analysis of prior research studies was done to set the constructs of interest as follows:

- Safety errors in the workplace (Sabet et al., 2013),
- Complacency and the boredom (Cummings et al., 2016),
- Cultures under stress (Adhikari, 2015),
- Emotional intelligence and the Primal Leader (Goleman et al., 2013; Petrides, 2017),
- Transformational leadership and EI (Mathew & Gupta, 2015),

- Leaders and emotional labor (Sunindijo & Zou, 2013, p.100),
- Leaders and the motivation factor (Ernst, 2014; Lazaroiu, 2015; Parijat & Bagga, 2014),
- Leaders and the safety cultures (Clarke, 2013; Goh, 2017), and
- Behavior-Based Safety (Ismail et al., 2012).

Although the material reviewed in Chapter 2 recognized the leaders' need of adopting emotional intelligence behaviors that welcomes their followers' trust and build relationships, many food and beverage industry leaders continue to report safety errors that lead to accidents or fatalities. Emotional intelligence behavior gives these leaders the opportunity to perceive, assimilate, understand, and manage their own and others' emotions, (Miao et al., 2016), but the lack of EI will prevent these leaders from perceiving the hidden emotions of employees under job stress (Lu & Kuo, 2016). In this study, I added to the leadership literature an in-depth management prevention attribute based on a strong ethical foundation by analyzing the food and beverage manufactory leaders' emotional personal traits and their cognitive abilities to narrow and close the gap on accidents and fatalities in the workplace.

In Chapter 2, I covered an extensive literature review of accidents caused by errors, disconnection between leaders and followers, relationships between leaders and employees, emotional intelligence, corporate participation, the creation of safety cultures, and the benefits creating behavior-based safety programs to prevent workplace injuries. However, it was unknown, in the leadership literature, if the leaders of the food and

beverage manufactories have or do not have the proper emotional intelligence traits to recognize and prevent employees' underlying complacent emotional stress behavior. This gap in the leadership literature had been narrowed by investigating and understanding the presence of emotional intelligence traits in the leaders of the food and beverage manufactories. In Chapter 3, the discussion and examination of the study details were executed, including the theoretical methods of inquiry, the study threats to validity, ethical standards of conduct, and data analysis procedures.

Chapter 3: Research Method

Introduction

The purpose of this quantitative correlational study was to examine if the leaders of the food and beverage manufactory industry had the proper emotional intelligence traits that recognized employees' underlying complacent emotional stress behavior. In this Chapter, the execution of the strategy that guided this research study was accomplished. Detail description of the survey tool used during the intervention, the data collection steps and data analysis procedures, and the creation of SEM models to test the groups' self-mastery skills were also presented (Hamzah et al., 2012). The proposed models will help leaders develop an effective mindset when making decisions to prevent implicit complacent behavior due to stress (Naderpour et al., 2014).

Research Design and Rationale

Food and beverage manufactory industry leaders display certain behaviors that appear to be critical factors in connecting with their followers. The absence of emotional intelligence skills prevents leaders from establishing relationships that may build their followers' trust and increase the likelihood of not recognizing their followers' complacent behavior (Goleman et al., 2013). Leaders can significantly influence their employees' outcomes by utilizing their innate traits and exercising the power of emotional intelligence resources that makes them eventually primal leaders (Goleman et al., 2013; Petrides, 2017). To increase safety awareness and prevention of accidents among workers, leaders must understand the link between specific EI attributes and

prevention. My rationale for conducting this study was to determine the specific behaviors that seem to provide a more efficient way for leaders to identify employees under stress.

Research Design Identification

Based on the research problem and purpose statement, my selection of which research method to use depended primarily on the research questions being asked. Three main research methods were available to explain the hypotheses that guided this study and answer the research questions. These primary methods of research are: quantitative; qualitative; and mixed methods, a combination of both approaches.

According to Spector et al. (2014), the field of organizational behavior is concerned with the temporal sequence process by which conditions, events, and state of mind unfold. The approach to the study of the process can take two general forms: the variance approach and the process approach. The variance approach is commonly used in quantitative studies and is designed to investigate the relationship between variables (Spector & Meier, 2014). The variance approach is also used to address questions about antecedents or consequences of change in one or more variables (Spector & Meier, 2014). In contrast, the process approach is typical of qualitative studies, where in-depth analysis and observation of individual cases allowing for more accurate mapping of the steps of a process over time (Spector & Meier, 2014).

In this study, the used of the variance approach did allow for the investigation of whether there was a relationship between emotional competency variables and the

presence of a complacent stress behavior that caused an accident. This approach is appropriate because it allows for further examination to determine if a group of variables predicts another variable. A quantitative research method was chosen - as it provides the systematic process needed in which statistical numerical data is used to possibly establish the relationship between the variables (Spector & Meier, 2014). As adapted from Keel's (2013) book, Table 1 indicates the characteristics of the quantitative and qualitative research methods to aid researchers in determining the most appropriate method to use in their study. The quantitative method provides the characteristics needed for this study.

Table 1.

Characteristics of Quantitative and Qualitative Research Methods

Quantitative Research	Qualitative Research
Is considered hard science,	Is consider a soft science
It is objective	It is subjective
The deductive reasoning used to synthesize data	Inductive reasoning using to synthesize data
Focus: concise and narrow	Focus: complex and broad
Test theories	Develops theories
The basis of knowing cause and effect relationship	The basis of knowing-meaning, discovery
The basic element of analysis numbers and statistical	Basic elements of analysis-words, narrative
The single reality that can be measured and generalized	Multiple realities that are continually changing with the individual interpretation

Note. Adapted from "Nursing Research and Evidence-based Practice Ten steps to success," by R. Keel, 2012. *Jones and Bartlett Publishers,* Chapter 3, p. 36. Copyright 2012 by Jones and Bartlett Learning. Under Permission.

Study Variables

The independent variables in this study are the EI traits of leadership competency construct known as well-being, self-control, emotionality, sociability, and independent facet. (Petrides, 2017). The dependent variable is accident prevention. The focus of the latent variables is the leaders' proficiency development status through the practice of clear thinking and the capability of managing anxiety behavior in workers (Petrides, 2017).

Time and Resource Constraints

In this study, time and resources constraints were experienced while surveying the participants. Getting all those involved in a meeting was a challenge, as the number of available participants presence was contingent upon their fluctuating work schedules. Scheduling is a problem that most food and beverage manufactories have as they work rotating schedules around the clock seven days a week. For example, some participants worked three shifts, others worked two shifts, and others performed two-12-hour shifts over the weekends. Coordination with the factories' human resources departments was necessary to request participation in leadership-run meetings to create rapport and to build trust explaining the importance of the study. Despite these issues, the researcher was available for questions from the human resource representatives during and after completion of the survey.

Research Questions and Hypotheses

This quantitative correlational study tested the transformational leadership' emotional intelligence competencies and skills concepts adopted by the food and beverage manufactory industry leaders as well as their knowledge of the cause and effect relationship during their daily operations. Additionally, deductive reasoning to synthesize the available data was completed. Two hypotheses will guide this study. Each hypothesis presented two scenarios, the null and the alternative hypotheses. The following questions and hypotheses guided this study:

Research Question 1: Do food and beverage manufactory leaders have the proper emotional intelligence traits to recognize employees' underlying complacent stress behavior?

$H_0$1*:* Food and beverage manufactory leaders do not have the proper emotional intelligence traits to recognize employee's underlying complacent stress behavior.

H_a1*:* Food and beverage manufactory leaders have the proper emotional intelligence traits to recognize employee's underlying complacent stress behavior.

Research Question 2**:** Do food and beverage manufactory leaders execute emotional perceptions and controls to prevent employees' underlying complacent stress behavior?

$H_0$2*:* Food and beverage manufactory leaders do not execute emotional perceptions and control to prevent employees' underlying complacent stress behavior.

H_a2*:* Food and beverage manufactory leaders execute emotional perceptions and control to prevent employees' underlying complacent stress behavior.

Methodology

Methodology in research studies constitutes the systematic analysis of principles and techniques used in a discipline of study (Arthur Jr. et al., 2014). In general, the methodology is a research strategy that establishes the methods used in the study (Hamm et al., 2013). In this study, a quantitative method of study to analyze the leaders' emotional resources which influence their safety performance and help them perceive employees' underlying emotions under job stress was achieved (Lu & Kuo, 2016).

Population

The population consisted of leaders from the food and beverage manufactory industry. The food and beverage manufactory industry divide their leadership groups as follows: the upper leadership group and the middle leadership group. The upper leadership group consisted of vice-presidents, plant managers, operations managers, maintenance managers, quality managers, financial managers, warehouse managers, and human resources managers. The middle leadership group consisted of department unit leaders, shift unit leaders, floor supervisors, maintenance supervisors, quality supervisors, and utilities and grounds supervisors. The sample will be made up of approximately 140 leaders from three food and beverage manufactories in the Shenandoah Valley region of western Virginia in the United States. This location was chosen because of the following reasons:

- I am very familiar with the safe operations of several food and beverage factories across the United States and particularly the East Coast factories,

- My understanding of many OSHA safety risk assessments done in many factories' equipment, allowed me to build a strong safety management relationship, thus, allowed me to access and survey the proposed leaders.

Sampling and Sampling Procedures

The population for this study came from the leadership groups of the food and beverage manufactory organizations' human resources records. The participants were relevant to this study as they represent the leaders that must drive safety cultures to excellence and promote the creation of Safe Scores Records in their technical categories. Because of the 140-limited number of participants and the defined job descriptions, the implementation of a simple random sampling probability was completed. Simple random sampling gave all participants an equal probability of selection during the design; thus, providing all sample units with the same weight or EPS. Simple random sampling provided all subsets of the frame equal probability and provided for the greatest number of possible samples. This technique needs the population to be very precisely defined.

Power Analysis

Determining sample size requirements for structural equation modeling (SEM) in behavioral science literature is not only challenging but necessary to understand the rules-of-thumb and to consider the size requirements that affect sample size on statistical power, bias, in the parameter estimate, and the overall solution propriety (Bryman & Cramer, 2016). According to Wolf, Harrington, Clark, and Miller (2013), when researchers considered sample size, they usually prioritize sufficient statistical power to

closely assess the true relationships of the data as they used these relationships to reject the null hypothesis when it is false. Sideridis, Simos, Papanicolaou, and Fletcher (2014) suggested that an important issue related to the validity of estimates derived from SEM path analysis pertains to the capacity of the model to identify discrepancies between observed relations and hypothesized relations specified in the model. The issue of getting a sample size is of particular importance as researchers must evaluate the fit of a confirmatory factor analysis model (Sideridis et al., 2014).

Wolf et al. (2013) suggested three major approaches to evaluate sample size requirements when using SEM models: the Satorra and Saris (1985) method, to estimate power based on the Noncentrality parameter; the MacCallum, Browne, and Sugawara (1996) method, which is based on the power on the model to obtain a root mean square error of approximation value that is consistent with good model fit; and the Monte Carlo simulation method, in where association among variables are set by the user based on a priori hypotheses. Wolf et al. (2013) study used Monte Carlo data simulation techniques to evaluate sample size requirements for common applied SEM. Their results disclosed a range of sample size requirements, significant patterns of association between parameters and sample size, and emphasized the limitations of commonly cited rules-of-thumb.

Wolf et al. (2013) demonstrated the proper variability in SEM sample size requirements and highlighted the problem with the one size fits all approach, specifically with sample sizes ranged from 30 cases to 460 cases. The authors recommended sample sizes ranging from 40 to 240 (pgs. 925-926). The sample size requirements decreased

when the number of indicators of a factor increased; at the time, this was an indication of growth information results during solving the simultaneous regression equations (Wolf et al., 2013). Although Wolf et al., did not evaluate the sample size necessary to obtain overall good model fit, Monte Carlo simulations facilitated both, data generation and data analysis of latent variables as opposed to observable variables for large sample sizes.

The results of Wolf et al. (2013) sample sizes during data generation proved that the error of the variables asymmetrical distribution may be consistent and stable with this proposed study provided our proposed model has a minimum sample size of 200 (Cirillo & Barroso, 2012). After comparison of methods of population size calculation, such as Mplus, Optimal Design, and G-Power, the final selection chosen was the G-Power to calculate the minimum sample size because of the limited amounts of leaders available. Neglecting the use of statistical power can affect the probability of rejecting the null hypotheses when false and can have significant and severe consequences (Wolf et al., 2013). Statistical power is the probability of avoiding a Type II error by maximizing (1-beta: 095). Preventing errors may depend on: the chosen lower alpha level (by convention, typically $\alpha = .05$); the magnitude of the effect of interest, and the sample size (Wolf et al., 2013).

Compromise Power Analysis calculations suggested:

F tests - Linear multiple regression: Fixed model, R^2 deviation from zero

Analysis: A priori: Compute the required sample size

Input: Effect size $f^2 = 0.15$

α, error probability = 0.05

Power (*1-β* error probability) = 0.95

Number of predictors = 5

Output: Noncentrality parameter λ = 20.7000000

Critical F = 2.2828562

Numerator *df.* = 5

Denominator *df.* = 132

Total sample size = 140

Actual power = 0.9507643

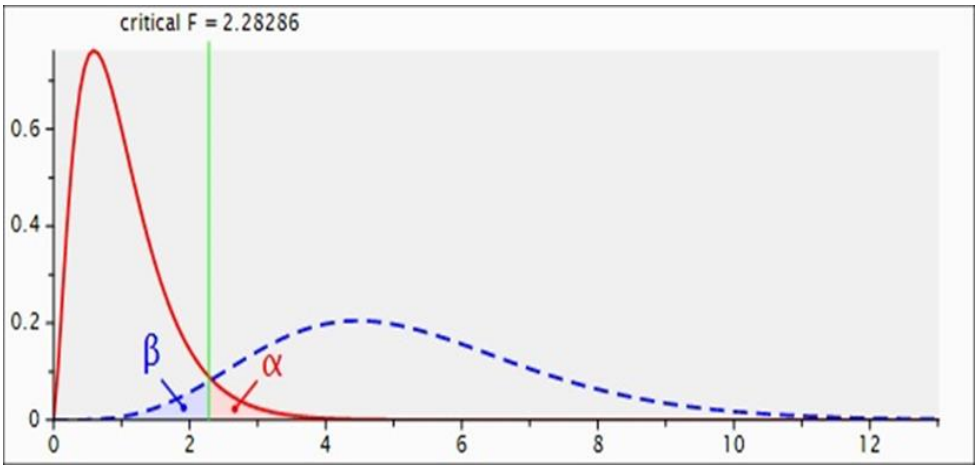

Figure 5. Multiple linear regressions. G-Power Software. Ver. 3.1. Obtained from G*Power: "Statistical Power Analyses for Windows," by H. Heine Universitat Dusseldorf, 2016. Software Rev.3.1.2 by the Microsoft Group.

Data Collection

Data collection took place after the following steps were taken:

1. I obtained the approval of the committee members and the Institutional Review Board (IRB).
2. Obtained permission from the food and beverage manufactory plants.
3. Coordinated participant's consent with the human resources (HR) departmental managers.
4. Obtained permission from HR to invite via e-mail all leaders internally.
5. Signed a privacy act to assure total privacy during data collection.
6. Assured HR all data will be secure on my server for a minimum of 5 years.
7. Assured the HR department that no names would be required or recorded.
8. Filled and signed a confidentiality agreement with all HR groups.
9. Shared the benefits of helping their leaders add to their skill.
10. Discussed all potential psychological, legal, economic, professional, and physical risks with the HR managers.
11. Discussed all efforts to protect the participants' privacy with HR.
12. Discussed conflict of interest issues with HR to prevent policy violations.
13. Provided to HR managers letter of Cooperation and Data Use Agreement.
14. Discussed all risks, burdens, practices, and policies with HR management, Due to the nature of the survey, a meeting to discuss with the safety managers took place to make sure the leaders understand that participation was strictly voluntary.

Instrumentation and Operationalization of Constructs

Measurements of the manufacturing leaders' trait emotional intelligence were achieved by using the Trait Emotional Intelligence Questionnaire, Short Form (TEIQUE-SF). The questionnaire consisted of 30 questions asking the participants for their degree of agreement ranking from *completely disagree* (1) to *completely agree* (7) (Petrides, 2017). Petrides developed the TEIQUE-SF in 2009 (Petrides, 2017). The topic of emotional intelligence has witnessed unprecedented developments in the past decades, and several schools of thought exist that focus on the accuracy of the measurements and its definitions (Benson et al., 2014). Despite arguments that there are separate personality traits from the cognitive ability attributes, leaders of the food and beverage manufactory industry must be measured on their personality traits or habitual patterns of behavior, thoughts, and emotions because of the coaching and relationship building they must exercise to succeed in their careers (Goleman et al. 2013; Petrides, 2017). Measurements from the trait EI methodology were necessary because they are consistent with the subjective nature of emotional experience. Trait EI measures were especially important as leaders in the manufacturing industry must use their judgment, problem-solving, and most importantly, decision-making skills to sense the hidden stress behind complacency behaviors. Leaders' personality traits measurements are important to organizations because they have higher internal consistency, more and better structural stability, and most importantly, their foundations are built on established psychometrics and mathematical models (Petrides, 2017).

Trait EI Instrument Validity and Reliability

Heale and Twycross (2015) define validity in quantitative research as the "extent to which a concept is accurately measured and reliability as the consistency of the measurements obtained from the same instrument" (p. 66). Heale and Twycross used the TEIQUE-SF questionnaire in their study. Prior researchers have revealed excellent reliability and validity results with the short form of the TEIQUE questionnaire (Petrides, 2017). Another good example happens when Benson et al., (2014) conducted a study among school leaders using the TEIQUE-SF. They found that the instrument showed very good reliability, with a global trait EI Cronbach's alpha coefficient measured at 0.882 for the whole sample. The Cronbach's alpha coefficient for each global school trait EI was 0.884 when schools are obtained separately (Benson et al., 2014).

There were four sample domain factors: emotionality, self-control, sociability, and well-being in the validation sample of 1,721 individuals (Benson et al., 2014). In Petrides's (2017) study on EI, the reliability of the TEIQUE questionnaire was measured and showed a strong incremental validity, a big five, a negative effect, and an increased in the coefficient $\alpha = 0.850$. The result is a sign of real growth in reliability. The TEIQUE-SF constructs proved to have the type of assurance needed for this study. Dr. Petrides permitted me to use the context of the TEIQUE-SF constructs in this study.

Data Analysis Plan

In this study, SEM techniques were performed by utilizing Analysis of Moment Structures (AMOS) software to test a set of regression equations simultaneously. Two

models were created based on the scope of the study determining the constructs. Data collection was done using the Trait Emotional Intelligence Questionnaire, Short Form, TEIQUE-SF (Petrides, 2017). After obtained the questionnaire results, answer values were entered into SEM application via SPSS data file. Results featured overall indexes of model fit, parameter estimates, standard errors, and test statistics for each parameter building Model 1. Model 2 tested the self-control and emotionality domains in all leaders. Hypotheses testing for this study were based on a 0.5 level of significance. Both models fit results tested the null and alternative hypotheses and tested their statistical significance including confirmatory factor analysis (CFA), ANOVA, correlation and descriptive estimates, and Chi-Square to find the difference in traits between the upper and middle leadership groups.

SEM Regression Strategies

In this statistical test, SEM models analyzed correlations between the independent variables (exogenous) and the dependent variable (endogenous) as follows:

Research Question 1: Do food and beverage manufactory leaders have the proper emotional intelligence traits to recognize employees' underlying complacent stress behavior?

$H_0$1*:* Food and beverage manufactory leaders do not have the proper emotional intelligence traits to recognize employee's underlying complacent stress behavior.

H_a1*:* Food and beverage manufactory leaders have the proper emotional intelligence traits to recognize employee's underlying complacent stress behavior.

Research Question 1 Data Analysis Plan:

For Research Question 1, I applied SEM to analyze the leaders' well-being, self-control, emotionality, sociability, and independent facets parameters. These parameters measured the high and low estimate scores to determine if there is a correlation between the independent variables and dependable variables named ID fatigue, ID complacency, and ID anxiety. Goleman et al. (2013) suggested that individuals with high scores have a healthy degree of control over their people. In addition to fending off impulses, individuals are good at regulating external pressures and stress. By contrast, individuals with low scores seem to be incapable of managing stress which means they are associated with inflexibility (Petrides, 2017). Model fit proved this measurement during the confirmatory factorial analysis (CFA) and the models had to be modified to achieve the best fit possible.

Measured results were entered into SEM for group Model 1 analysis. SEM analyzed regression weights by looking at the probabilities of the critical ratios of emotional intelligence. The regression weights of traits and the leaders' emotional traits presence to recognize employees' complacency state of stress were determined. These estimates approximated standard weights errors with the poor model fit. CFA was then used to correct the model fit. CFA, ANOVA, and descriptive statistics determined the null hypothesis acceptance and determined that the leaders of the manufacturing industries do not have the appropriate emotional intelligence traits and competencies in place to recognize employee's underlying complacent stress behavior.

Research Question 2**:** Do food and beverage manufactory leaders execute emotional perceptions and controls to prevent employees' underlying complacent stress behavior?

$H_0$2: Food and beverage manufactory leaders do not execute emotional perceptions and control to prevent employees' underlying complacent stress behavior.

H_a2: Food and beverage manufactory leaders execute emotional perceptions and control to prevent employees' underlying complacent stress behavior.

Research Question 2 Data Analysis Plan:

SEM was used to analyze the leaders' self-control and emotionality parameters. Measured scores levels on the two groups: the upper and the middle leadership groups. According to Petrides (2017), groups with high scores on these two parameters believe they have a broad range of emotion-related skills. Such persons can perceive and express emotions and use these abilities to develop and sustain meaningful close relationships with others. People with low scores on this test find it difficult to recognize their internal emotions and to express their feelings to others, which often lead to less satisfying personal relationships (Petrides, 2017). Analyzing and comparing both groups scores helped understand which group lack emotionality and self-control traits to lead effectively. After obtaining the survey answers, the results were entered into SEM to achieve a model fit, seeking estimations of linear regression probabilities and correlations. The original SEM model fit showed poor results so further confirmatory factor analysis (CFA) must be done to achieve the best model fit. These estimates approximated standard weight errors validated the Research Question 2 null hypothesis

and determined that the leaders of the manufacturing industries not execute the self-control and emotionality emotional intelligence traits to recognize employee's underlying complacent stress behavior. A similar test was done with ANOVA and descriptive analysis as well.

SEM Multigroup Analysis

Using SEM, a multigroup analysis was done by both the upper leadership group and the middle leadership group to test standardized estimates and critical ratios for differences between both groups. Chi-squared demonstrated no differences between the upper and middle leadership groups. The comparisons provided information on the level of understanding employees' safety behaviors between the groups and showed the groups' safety priorities were below their safety goals.

Threats to Validity

The validity of a research study is an indication of how meaningful the measures of the survey are (Lineberry, Kreiter, & Bordage, 2013). In this study, several types of validity were used and are described next.

External and Internal Validity

According to Bolarinwa (2017), measurements in social science research require quantification of abstracts, intangibles, and constructs that may not be observable. One of the most important tasks for researchers is to ascertain the validity of their measurement tools. Validity tests are divided into theoretical and empirical constructs that are categorized into two broad components – namely, internal and external validities - and

can be a further test for validity by focusing on several construct validities: convergent, discriminant, known-group, factorial, and hypotheses validities (Bolarinwa, 2017).

The reliability and validity test from the Petrides (2017) TEIQUE-SF questionnaire proved to be good and useful predictive validity helping detect and understand attitudes, job stress, job performance, organizational commitment, and performance in general. Petrides (2017) survey tool displayed the right degree to which the parameters in question, measures what it intended to measure and provided results that both, measurements and procedures, could be replicated providing real evidence of predictive validity and reliability. Heale et al. (2015) suggested that in quantitative research, three types of evidence can be used to demonstrate if a research instrument has construct validity: homogeneity, convergence, and theory evidence (Heale, & Twycross, 2015). TEIQUE-SF had provided good homogeneity validity, construct validity such as convergence validity, discriminant validity, and factorial validity.

Construct Validity

A study by Farh et al. (2012) suggested that construct validity refers to whether one can draw inferences about test scores related to the concept being studied. In this study, a Trait Emotional Intelligence Questionnaire, Short Form (TEIQUE-SF) was utilized to survey and obtain the leaders of the food and beverage manufacturing industry emotional intelligence trait scores (Becker, Rai, Ringle, & Volckner, 2013). Construct validity is the most difficult measure of effectiveness since it does not have a criterion for

comparison but utilizes a hypothetical construct for comparison instead, giving four types of evidence as explained next.

Convergent Validity

According to Bolarinwa (2015), internal validity in research pertains to the accuracy of the obtained measurements and whether these results compare with what it was designed to be measured (Bolarinwa, 2015). Convergent validity indicated that if the same concept is measured in different ways, it will give similar results. Bolarinwa (2015) used self-report versus observation because different measures of the same concept yielded similar results (Bolarinwa, 2015). It is now meaningful to ask if self-rating of trait emotional intelligence correlates with observed ratings and to see if this rating interprets any evidence of convergence as an indication of accuracy. According to Petrides (2017), trait EI does not depend on the existence of a significant correlation between self and another rating. Thus this conceptual validity should not represent a threat to this study (Petrides, 2017). The TEIQUE-SF reliability test-retest gave a good range (0.50-0.82) and gave an acceptable global score of 0.78 in 12 months.

Discriminant Validity

Discriminant validity confirms that one concept is dissimilar from other near-related concepts (Bolarinwa, 2015). In this study, two sources for the construct and two different but closely related concepts were used; they were the personality traits and cognitive ability attributes. Petrides (2017) study on EI concluded that the Trait EI construct measurements provide self and other reports of the discriminant and

incremental validity of the TEIQUE questionnaire. The ability EI constructs measurements provides performance-based reports of small to moderate correlations with verbal IQ from their MSCEIT instruments (Petrides, 2017). This study posits that leaders of the food and beverage manufacturing industry must be assessed and measure not only on their personality traits or habitual patterns of behavior, though, and emotions, but also by their level of mental action or process of acquiring knowledge through thoughts, experience, and sense. The leaders of the food and beverage industries use their judgment, problem-solving, and their decision-making to sense stress hidden behind complacency behaviors. These leaders may bring their personality traits into their organizations, but the skills obtained from their valuable experience learned from other leaders' mistakes, may be significant to perform at the optimal level of accident recognition (Goleman et al., 2013).

Factorial Validity

Factorial validity "is an empirical extension of content validity" because it validates the construct substance with a statistical model called "factor analysis" (Bolarinwa, 2015, p. 198). According to Aluja et al. (2016) study in psychometric properties, a confirmatory factor analysis was applied to the 15 TEIQUE facets. Four factors collectively explained 60% of the variance in the 15 facets. All aspects were well-represented in trait EI factor space (Aluja, Blanch, & Petrides). In this study, a trait EI constructs from this confirmatory factor analysis applied to the TEIQUE facets were applied.

Ethical Procedures

Data collection method and procedures had been done by the research ethics planning worksheet as described in the data collection section of Chapter 3. This procedure has been done to describe the protection of the researcher, the organizations, and the participants of the event by the IRB specifications. Before data collection began, all ethical procedures and requirements, institutional permissions, disclosures, and confidentiality forms will be honored and presented to the manufactories' HR departments. Data was secured in a secure server and guarded by the researcher. Data included participants that refused participation or opted for early withdrawal from the study. Data obtained from previously published books and articles will be assumed to be credible. Issues of confidentiality were not applicable because the authors, reviewers, editors, and publishers made them public domain, leaving no issue with a conflict of interest.

I took the following steps before data collection began:

1. Obtained approval from the committee members and the IRB.
2. Obtained permission from the food and beverage manufactory plant managers.
3. Coordinated participants consent with the HR departmental managers.
4. Obtained permission from HR to invite via e-mail all leaders internally.
5. Signed a privacy act to assure total privacy during data collection.
6. Requested permission to use my server to store data for a minimum of 5 years.
7. Assured the HR department that no names would be required or recorded.

8. Completed and signed a confidentiality agreement with all HR groups.
9. Shared the benefits of helping the leaders add to their skill base.
10. Discussed all potential psychological, legal, economic, professional, and physical risks with the HR managers.
11. Discussed all efforts to protect the participants' privacy with HR managers.
12. Discussed all conflict of interest issues with HR to prevent policy violations.
13. Provided to HR managers letter of Cooperation and Data Use Agreement.
14. Discussed with HR manager all risks, burdens, practices, and policies.

Summary

Chapter 3 contained an explanation of the theoretical method of inquiry and design for this research study. In this study, the examination of the food and beverage manufactory leaders' emotional intelligence traits and skills to understand if the leaders have the required skills to lead employees effectively was performed. The number of participants was 75 individuals from the food and beverage manufactory leadership groups. Data were coded and analyzed with SEM for variables' correlation. All participants were briefed and assured of anonymity (and their collected information) since the data is confidential. Statistical results of regression and multigroup differences from SEM analysis provided evidence of the absence of the leaders' competencies and traits that determine their ability to recognize and prevent employee's injuries or tragedies. Chapter 3 described the literature for the research questions and hypotheses statistical test and strategies using SEM, CFA, ANOVA, descriptive analysis, effect size

computation, assessment of threats of validities, and the limitations encountered. In Chapter 4, I will discuss the data analysis and the study results.

Chapter 4: Results

The purpose of this correlational study was to perform structural equation modeling to test the hypotheses that help explain if leaders of the food and beverage manufacturing industries have the proper emotional intelligence traits that help them recognize and prevent employees' underlying complacent stress behavior (Goleman et al., 2013). SEM is a mostly confirmatory, rather than exploratory technique. Therefore, the study used two special cases of SEM called factor analysis and path analysis to assess goodness of theoretical factor structures for six emotional intelligence concepts namely well-being, self-control, emotionality, sociability, and independent facts.

Once the models' parameters were estimated, the resulting models-implied covariance matrix was compared to an empirical or data-base covariance matrix. If the two matrices were consistent with one another, then the structural equation model can be considered a plausible explanation for relations between measures. The benefit of the alternative using these special cases of SEM was that path analysis contains only observed variables and a more restrictive set of assumptions than SEM. The main difference between the two types of models was that path analysis assumes that all variables were measured without error as suppose than SEM which uses latent variables to account for measurement of error.

The evaluation was done using IBM SPSS Amos 22. The original questionnaire items causing poor fits were excluded from the analysis. Based on regression weights, the average variance extracted improved, giving us SEM models with better measurements to

better fit our path. The final SEM models were able to show significant effects on the leaders' emotional intelligence traits and in their identification of fatigue, complacency, and anxiety. Anxiety is a sustained mental health disorder that can be triggered by stress (De Fazio et al., 2015). Due to the significant impairment in social, occupational, and other important areas of functioning related to stress, recognizing anxiety was also test.

Data Collection

The data collection lasted 10 days. The total amount of selected respondents was scheduled to be approximately 140. However, during the recruitment process, a major setback occurred. One of the companies declined participation in the survey. Their reasoning for withdrawing from the survey was because they entered a hyper-care process status. Hyper-care occurs when manufactories have low-performance issues, and they need time to focus on their equipment reliability and operational performance.

Two additional companies were invited to participate in the survey. The first company had no legal approval while the second declined based on their ability to provide approval from top executives on time to participate. With 70 available participants and based on the results from Wolf et al. (2013) Monte Carlo study, size rules and calculations were made. The study surveying continued by selecting the recommended 10 cases per variable leading to a sample size from 40 to 240 participants. CFA rules specified that models' modifications to fit involved adjusting a specified and estimated model by either freeing parameters that were fixed or fixing parameters that were free. Therefore, I adjusted a few factors, indicators, and loadings of .80 which give a

good model fit and required a minimum sample size of 60 participants. CFA adjustments did not affect the final results or models. The two remaining companies provided written permission for their leaders to participate in the EI research study. Table 2 below depicts the selected respondents.

Table 2.

Total Selected Respondents

Classification	Company 1	Company 2	Company 3
Upper leadership group	7	6	6
Middle leadership group	33	24	24
All groups	40	30	30
Total Respondents	40	30	30

Response Rate of the Sample

Actual Recruitment Rate

Participant recruitment is a major challenge in studies that involved human subjects (Vohs et al., 2012). The identification of eligible participants was made in coordination with the companies' human resources support. As requested by the Institutional Review Board (IRB), no specific information about employees was requested from HR. Information was collected from 70 respondents, 40 from a beverage and 30 from food manufacturing companies and there were no exempts or withdrawing by any shift members. The rate of response was two to three meeting acceptance per day in the lapse of four weeks as many respondents accepted the invitation via Outlook, and some expressed their eagerness for participation. The participation rates were related to

the leaders' schedules and availability as well as the years of experience and safety participation which helped in the accuracy of the collected data. Table 3 depicts the participants by groups of leadership participation.

Table 3.

Selected Participants by years in their companies

Classification	Company 1	Company 2	Years 1-20	Years 21-30	Years 30-45
Upper leadership group	7	6	4	2	7
Middle leadership group	33	24	13	29	15
Total Respondents	40	30	17	31	22

Note. The level of experience was higher than 70% of the total respondents (53/70)

Table 4 depicts the participants by groups of leadership participation.

Table 4.

Selected Participants by their safety participation

Classification	Company 1	Company 2	Reported 1-3 cases	Reported 4-5 cases	Reported 5-7 cases
Upper leadership group	7	6	2	9	2
Middle leadership group	33	24	16	33	8
Total Respondents	40	30	18	42	10

Note. The level of safety awareness was higher of 74% of the total respondent (52/70)

Response Rate

The response rate, also known as completion rate or return rate, is the number of people who answered the survey divided by the number of people in the sample

(AAPOR, 2015). It is usually expressed in the form of a percentage, and it was calculated at 100%. No discrepancies in the data collection were encounter in misalignment with Chapter 3. The sample population was well represented as the industries are very similar in context except for construction industries where the most fatalities are encountered.

Main Research Questions

Two research questions led this quantitative correlational study to examine the relationship between the leaders of the food and beverage manufacturing industries emotional intelligence and their competency recognizing workers under stressful behavior. Leaders responded to identify workers under fatigue, complacency, and anxiety. The first question examined five elements of the emotional intelligence domain known as well-being, self-control, emotionality, sociability, and independent facts, with the participation of all 70 leaders from 2 companies. Depicted in Figure 6.

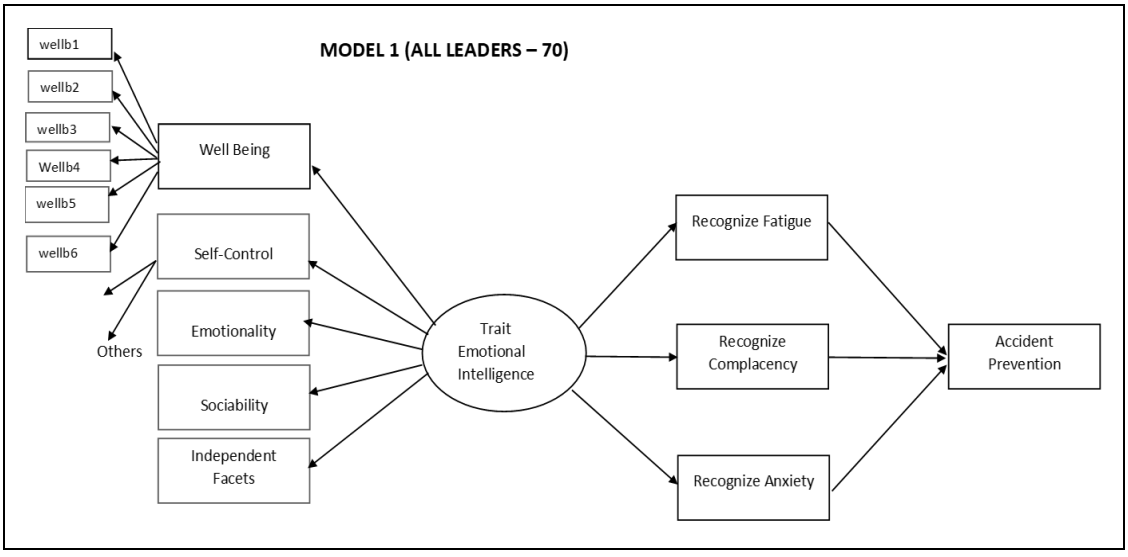

Figure 6. Model 1

Research Question 1

Research Question 1: Do food and beverage manufactory leaders have the proper emotional intelligence traits to recognize employees' underlying complacent stress behavior?

Hypotheses

$H_0$1*:* Food and beverage manufactory leaders do not have the proper emotional intelligence traits to recognize employee's underlying complacent stress behavior.

H_a1*:* Food and beverage manufactory leaders have the proper emotional intelligence traits to recognize employee's underlying complacent stress behavior.

The second question has two elements of the emotional intelligence domain known as with the participation of all participants and with 13 upper leader's participants and 57 middle leader's participants from both companies. Depicted in Figure 7.

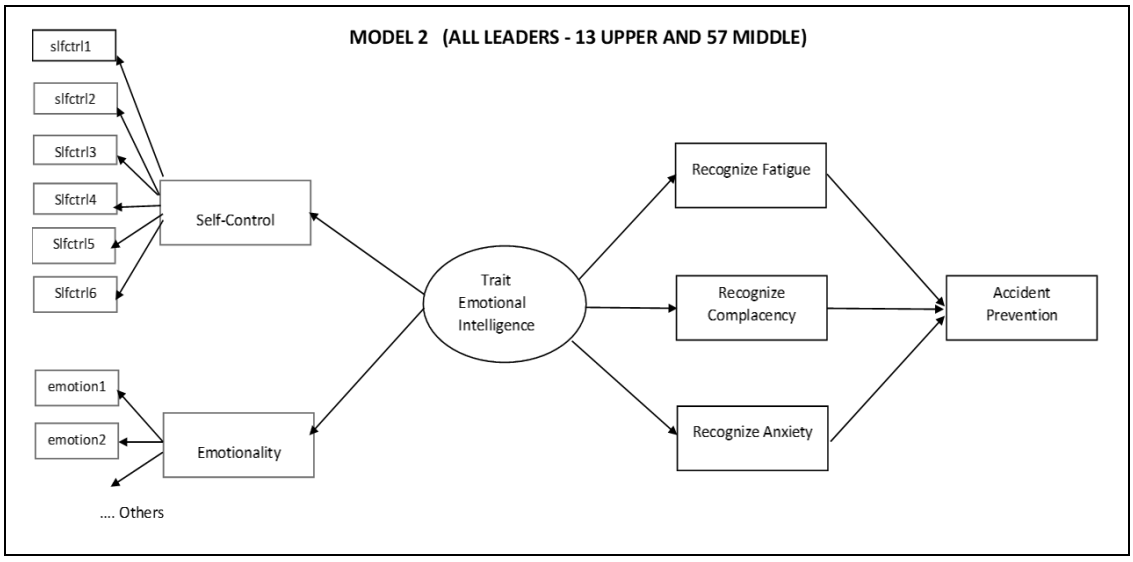

Figure 7. Model 2

Research Question 2

Research Question 2**:** Do food and beverage manufactory leaders execute emotional perceptions and controls to prevent employees' underlying complacent stress behavior?

Hypotheses

$H_0$2: Food and beverage manufactory leaders do not execute emotional perceptions and control to prevent employees' underlying complacent stress behavior.

H_a2: Food and beverage manufactory leaders execute emotional perceptions and control to prevent employees' underlying complacent stress behavior.

Models Development and Results

The SEM models used in this study are measurement sub-models which define the relationships between observed and unobserved variables. These sub-models provide the link between the scores obtained in this study known as the observed indicator variables and the underlying constructs they are designed to measure the unobserved latent variables (Ackley, 2016). The measurement sub-models represent the confirmatory factor analysis (CFA) which specifies the pattern by which each measure loads on a particular factor.

Hypotheses 1 Testing

The relationship among variables was tested via SEM modeling conducted in AMOS 21. The measured Model 1 was used to prepare a structural model. The model was tested for goodness-of-fit to ensure it was well specified to estimate the relationships

hypothesized using SEM. The structural model was initially specified as shown in Figure 9 and then re-specified as shown in Figure 8. Goodness-of-fit indices are in Table 5.

Table 5.

Final Model Regression Weights

Variables			Estimate	S.E.	C.R.	P
Wellbeing	<-	Emotional Trait	.498	.140	3.549	***
emotional	<-	Emotional Trait	1.029	.177	5.830	***
self-control	<-	Emotional Trait	1.092	.135	8.090	***
independent facet	<-	Emotional Trait	1.241	.171	7.250	***
sociability	<-	Emotional Trait	.400	.138	2.896	.004
wellbeing3	<-	wellbeing	1.000			
wellbeing4	<-	wellbeing	.817	.229	3.565	***
wellbeing5	<-	wellbeing	.733	.244	3.005	.003
emotion2	<-	emotional	1.000			
emotion3	<-	emotional	.889	.195	4.564	***
emotion4	<-	emotional	.637	.156	4.076	***
emotion8	<-	emotional	1.011	.202	5.006	***
slfctrl1	<-	self-control	1.000			
slfctrl2	<-	self-control	.736	.141	5.200	***
slfctrl4	<-	self-control	.356	.101	3.531	***
indepfac2	<-	independent facet	1.000			
indepfac3	<-	independent facet	.887	.146	6.074	***
indepfac4	<-	independent facet	.266	.121	2.188	.029
social2	<-	sociability	1.451	.454	3.196	.001
social4	<-	sociability	1.149	.358	3.206	.001
social1	<-	sociability	1.000			
wellb6	<-	wellbeing	.758	.212	3.580	***
ID fatigue	<-	Emotional Trait	-.274	.119	-2.302	.021
ID complacency	<-	Emotional Trait	-.277	.116	-2.382	.017
ID anxiety	<-	Emotional Trait	-.159	.122	-1.306	.192

*** The Probability of getting critical ratios > 3.5 in absolute values and less than 0.001. Regression weights for traits in the prediction of the variables which are significantly different from zero at the 0.001 level (two-tailed). Approximately correct for large samples under suitable assumptions.

The construction of this model was the first step in using SEM to test the null hypotheses. Table 5 results suggested that the overall effect of emotional trait intelligence had estimates that showed a significant negative effect on IDs fatigue, complacency, and anxiety. However, these estimate results indicated that with an increase in emotional trait intelligence there would be a significant decrease in ID fatigue and ID complacency but not in ID anxiety (-1.306). These estimate results in Table 5 indicated that the correlation between ID fatigue and emotional trade has a *p*-value of .021, which means that a 97.9% confidence interval would have its lower boundary at zero and may not be rejected. In other words, the probability of getting a critical ratio (CR) as large as -2.302 in absolute value is .021. Therefore, the regression weight for Emotional Trait in the prediction of ID fatigue is significantly different from zero at the 0.05 level (two-tailed).

Also, the correlation between ID complacency and emotional trade has an estimate of -.277 and a probability of getting a CR as large as -2.382 in absolute value has a *p*-value of .017. In other words, the regression weight for Emotional Trait in the prediction of ID complacency is also significantly different from zero at the 0.05 level (two-tailed) and may not be rejected as well. Finally, the probability of getting a critical ratio result as large as -1.306 in absolute value is .192. The regression weight for Emotional-Trait in the prediction of ID_anxiety is not significantly different from zero at the 0.05 level (two-tailed). Therefore, the null hypothesis here should not be rejected while the null hypotheses were rejected for the IDs fatigue and complacency. These results gave an almost correct model fit, but not the exact fit. The reason for the model to

be acceptable is the no anticipation of reduced sample participants from 100 to 70. As denoted in Table 9, the root means square error of approximation (RMSEA) is .093 indicated that the null hypothesis has a population no greater than 0.05 or < .05. The RMSEA values of 0.5 or less indicate a "close fit." It is assuming that this close fit result also supported the null hypotheses and rejected the alternative hypothesis HA2.

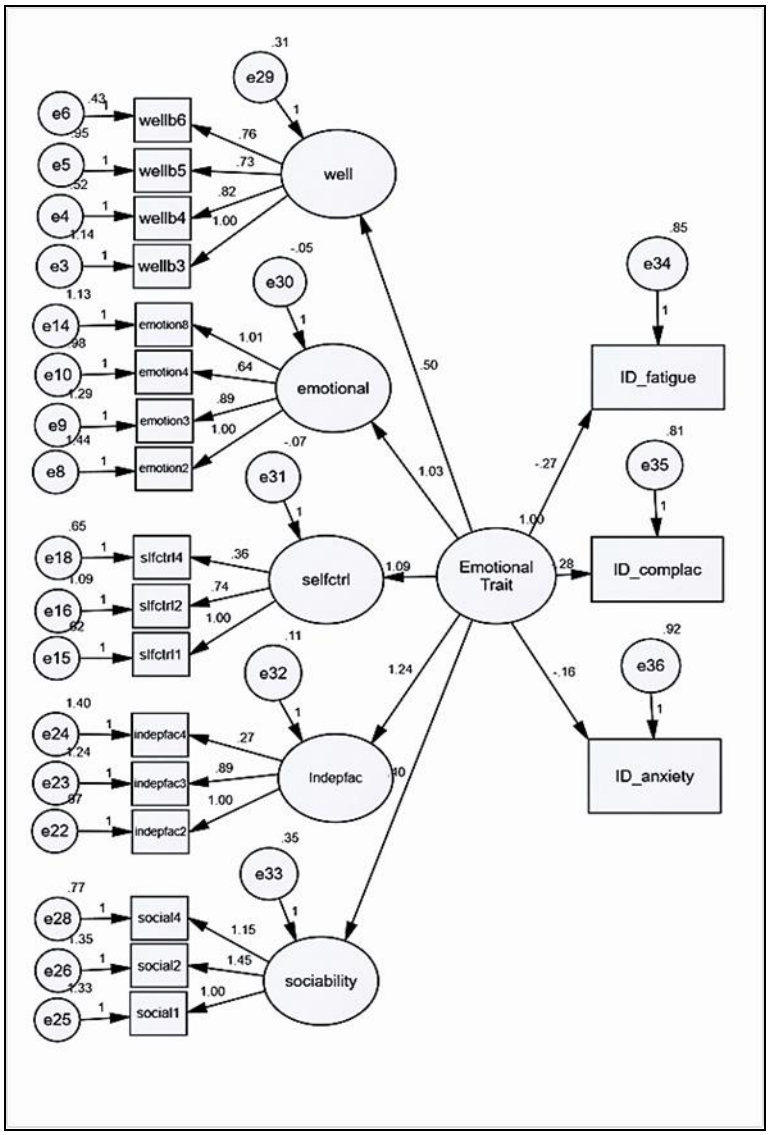

Figure 8. Final SEM Model 1.

Model 1 Regression Analysis

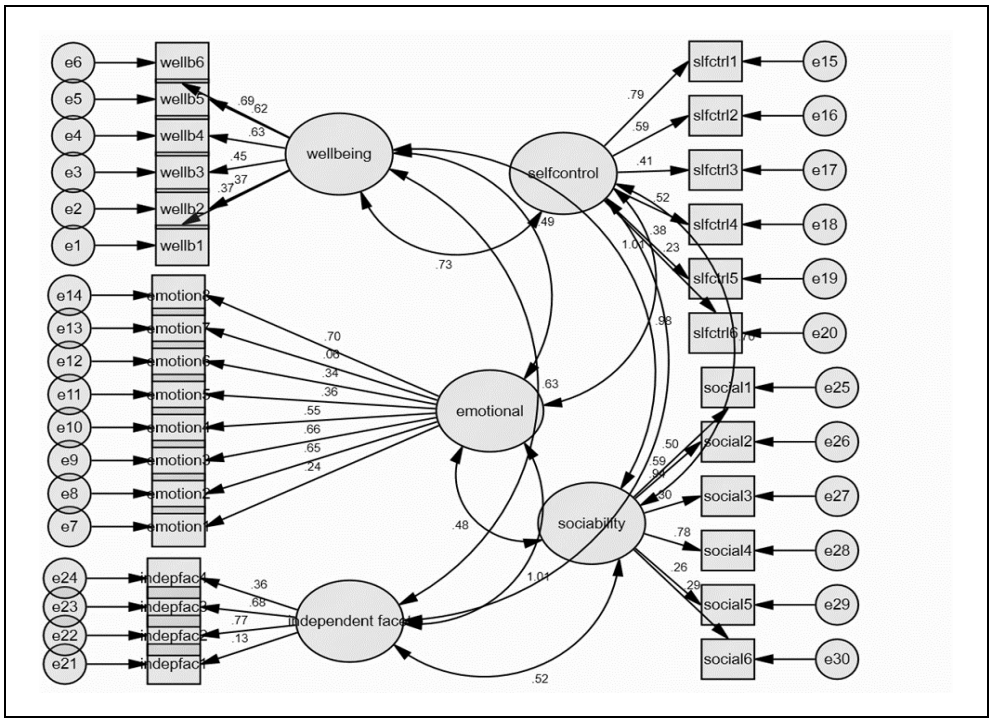

Figure 9. Original Regression Model.

Construct Validity

The hypothesized model was tested using this structural equation modeling. The constructs were known as well-being, emotionality, self-control, sociability, and independent facet. The criteria to recognize accident prevention measurements were ID fatigue, ID complacency, and ID anxiety. All the observed variables which loaded onto the five corresponding constructs (Table 6) were initially included in the model as exogenous variables. The model was developed using confirmatory factor analysis (CFA) in SPSS AMOS (Figure 9 above). The construct validity was assessed using the average variance extracted (AVE) and composite reliability (CR) statistics of Table 6. The

Standardized Regression results suggest that the factor loadings were mostly less than 0.7 giving a lower AVE and a threshold of 0.5. The model did not fit well. Some schools of thought believe that if we delete items which have loadings of less than 0.7, we could achieve our goal of fitting the model. Table 6 depicts Model 1 Regression Weights.

Table 6.

Standardized Regression Weights

Variable	Standardized Estimate	P-Value	Average Variance Extracted (AVE)	Composite Reliability (CR)
Emotion1 <- Emotionality	0.244	Regressed	0.244	0.677
Emotion2 <- Emotionality	0.646	0.057		
Emotion3 <- Emotionality	0.657	0.056		
Emotion4 <- Emotionality	0.552	0.063		
Emotion5 <- Emotionality	0.359	0.096		
Emotion6 <- Emotionality	0.343	0.101		
Emotion7 <- Emotionality	0.061	0.639		
Emotion8 <- Emotionality	0.700	0.054		
Selfcontrol1 <- Self-control	0.792	Regressed	0.269	0.661
Selfcontrol2 <- Self-control	0.591	<0.001		
Selfcontrol3 <- Self-control	0.414	<0.001		
Selfcontrol4 <- Self-control	0.520	<0.001		
Selfcontrol5 <- Self-control	0.376	0.002		
Selfcontrol6 <- Self-control	0.234	0.060		
Wellb1 <- Wellbeing	0.367	Regressed	0.289	0.697
Wellb2 <- Wellbeing	0.372	0.029		
Wellb3 <- Wellbeing	0.447	0.016		
Wellb4 <- Wellbeing	0.627	0.006		
Wellb5 <- Wellbeing	0.622	0.006		
Wellb6 <- Wellbeing	0.694	0.005		

(*table continues*)				
Variable	Standardized Estimate	P-Value	Average Variance Extracted (AVE)	Composite Reliability (CR)
Indepfac1<-Independent facet	0.135	Regressed	0.298	0.572
Indepfac2<-Independent facet	0.768	0.288		
Indepfac3<-Independent facet	0.676	0.290		
Indepfac4<-Independent facet	0.357	0.314		
Social1 <- Sociability	0.502	Regressed	0.242	0.621
Social2 <- Sociability	0.590	<0.001		
Social3 <- Sociability	0.302	0.033		
Social4 <- Sociability	0.780	<0.001		
Social5 <- Sociability	0.264	0.057		

Confirmatory Factor Analysis

As shown in Table 7 the goodness of fit for the CFA model 1 was assess. A widely used of measurements known as CMIN/DF; Comparative Fit Index (CFI); Normed fit index (NFI); Incremental fit index (IFI); The Tucker-Lewis Index (TLI); Relative fit index (RFI); and Root Mean Square Error of Approximation (RMSEA).

Table 7.

Model Fit Summary (CFA)

	CMIN/Df	GFI	CFI	TLI	RMSEA	RMR
Ratio	1.992	0.534	0.513	0.463	0.120	0.237

All items having standardized regression estimates less than 0.4 were deleted. Statistical significance and model optimization results in this model showed not a good fit.

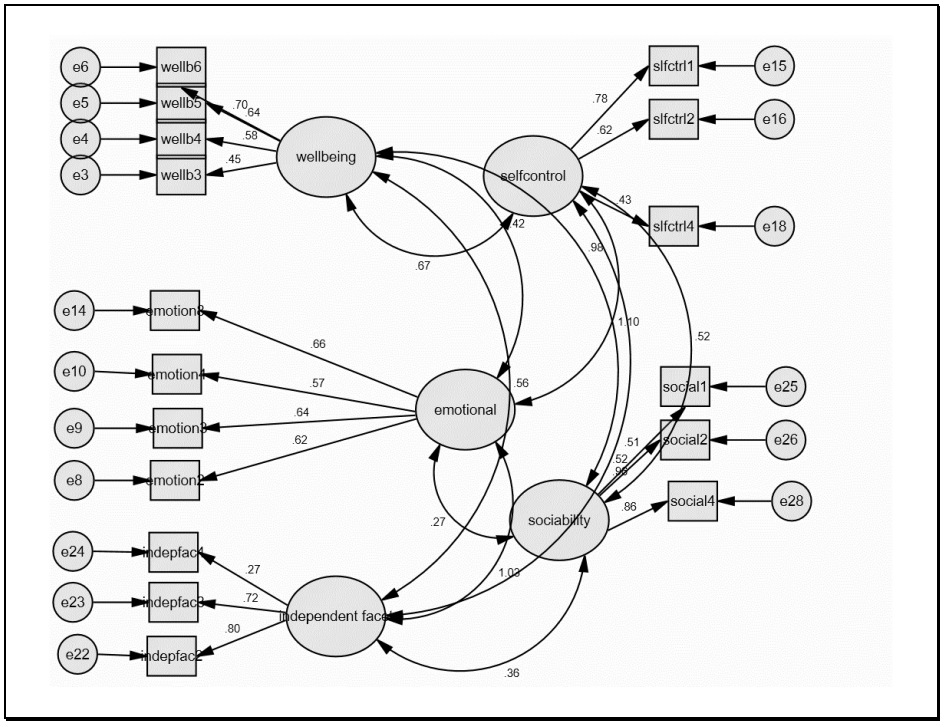

Figure 10. Confirmatory Factor Analysis

Therefore, additional questions were deleted to make the model values in the acceptable range and thus, obtained a better model fit.

Table 8.
Standardized Regression Weights (After Item Deletion)

Variable	Standardized Estimate	P-Value	Average Variance Extracted (AVE)	Composite Reliability (CR)
Emotion2 <- Emotionality	0.619	<0.05	0.390	0.718
Emotion3 <- Emotionality	0.640			
Emotion4 <- Emotionality	0.575			
Emotion8 <- Emotionality	0.661			
Selfcontrol1 <- Self-control	0.777	<0.05	0.390	0.646
Selfcontrol2 <- Self-control	0.615			
Selfcontrol6 <- Self-control	0.434			

(*table continues*)				
Variable	Standardized Estimate	P-Value	Average Variance Extracted (AVE)	Composite Reliability (CR)
Wellb3 <- Wellbeing	0.452	<0.05	0.360	0.687
Wellb4 <- Wellbeing	0.580			
Wellb5 <- Wellbeing	0.636			
Wellb6 <- Wellbeing	0.704			
Indepfac2 <- Indep. facet	0.798	<0.05	0.407	0.641
Indepfac3 <- Indep. facet	0.716			
Indepfac4 <- Indep. facet	0.267			
Social1 <- Sociability	0.508	<0.05	0.426	0.676
Social2 <- Sociability	0.524			
Social4 <- Sociability	0.864			

Table 9.

Model 1 Fit Summary (CFA)

	CMIN/Df	GFI	CFI	TLI	RMSEA	RMR
Ratio	1.592	0.775	0.857	0.810	0.093	0.215

As shown in Table 9, the final SEM for Model 1 have loadings less than 0.7. All the items having Standardized Regression Estimates less than 0.4 were deleted, two of well-being, four of emotionality, one from the independent fact, three from self-control, and 3 of from sociability. All groups preserved their minimum of 3 variables as require by SEM rules. The benefit of using CFA allowed me to determine whether items of the constructs aimed to measure those constructs well and with a minimum percent of error.

Model 1 - Multiple Regression Analysis

Fatigue

Table 10

Model Summary

Multiple R	R Square	Adjusted R Square	Apparent Prediction Error
.577	.333	.220	.667
Dependent Variable: Fatigue Predictors: Well-Being Self-Control Emotionality Sociability Independent-Facet			

In Table 10 the fatigue model has the same number of predictors as the complacency of Table 13 and the anxiety model of Table 16; however, the Adjusted R Squared .220 is higher than both. The adjusted R- squared is a modified version of R-square that has been adjusted for the number of predictors in the model. The predictive R-squared .677 indicates how well a regression model predicts responses for new observations. This statistic results helped determine when the model fits the original data but is less capable of providing valid predictions for new observations. The benefit here is that help me avoid overfilling the model.

Table 11

ANOVA – The F-Test

	Sum of Squares	df	Mean Square	F	Sig.
Regression	23.316	10	2.332	0.947	.005
Residual	46.684	59	.791		
Total	70.000	69			
Dependent Variable: Fatigue Predictors: Well-Being Self-Control Emotionality Sociability Independent-Facet					

Analysis of variance is used here to test whether there are any statistically significant differences in the survey results helping in the rejection or acceptance of the null hypothesis — tables 11, 14, and 17 shown the F ratio values which are the ratios of two mean square values. The F-Test indicates that if the null hypothesis is true, the expectation of the F ratio is to be close to 1 most of the time. Results of the three models (Fatigue, Complacency, and Anxiety) shown F-Statistic or F-test near to 1 (.947, .902, and . 942). Thus, accepting the null hypothesis and rejecting the alternative hypothesis.

Table 12

Correlations and Tolerance

	Correlations			Importance	Tolerance	
	Zero-Order	Partial	Part		After Transformation	Before Transformation
Well-Being	-.374	-.272	-.231	.336	.594	.493
Self-Control	-.101	.385	.341	-.151	.466	.371
Emotionality	-.382	-.200	-.167	.263	.528	.446
Sociality	-.311	-.146	-.120	.143	.614	.527
Independent-Facet	-.361	-.314	-.270	.408	.515	.463
Dependent Variable: Fatigue						

Some regression test required that there be a linear correlation between the dependent and independent variables. Correlation results are shown in Table 12 above indicating a poor correlation between construct results and recognition of the 3 models shown in Tables 12, 15, and 18. Tolerance results indicate the improvements after the CFA model was complete.

Complacency

Table 13

Model Summary

Multiple R	R Square	Adjusted R Square	Apparent Prediction Error
.522	.272	.149	.728
Dependent Variable: Complacency Predictors: Well-Being Self-Control Emotionality Sociability Independent-Facet			

Table 14

ANOVA – The F-Test

	Sum of Squares	df	Mean Square	F	Sig.
Regression	19.067	10	1.907	0.902	.029
Residual	50.933	59	.863		
Total	70.000	69			
Dependent Variable: Complacency Predictors: Well-Being Self-Control Emotionality Sociability Independent-Facet					

Table 15

Correlations and Tolerance

	Correlations			Importance	Tolerance	
	Zero-Order	Partial	Part		After Transformation	Before Transformation
Well-Being	-.272	-.134	-.115	.154	.555	.493
Self-Control	-.290	-.173	-.150	.248	.412	.371
Emotionality	-.194	.168	.145	-.168	.378	.446
Sociability	.067	.302	.270	.077	.733	.527
Independent-Facet	-.408	-.352	-.320	.689	.484	.463
Dependent Variable: Complacency						

Table 16

Model Summary

Multiple R	R Square	Adjusted R Square	Apparent Prediction Error
.481	.231	.130	.769
Dependent Variable: Anxiety Predictors: Well-Being Self-Control Emotionality Sociability Independent-Facet			

Table 17

ANOVA – The F-Test

	Sum of Squares	df	Mean Square	F	Sig.
Regression	16.188	8	2.024	0.942	.032
Residual	53.812	61	.882		
Total	70.000	69			
Dependent Variable: Anxiety Predictors: Well-Being Self-Control Emotionality Sociability Independent-Facet					

Table 18

Correlations and Tolerance

	Correlations			Importance	Tolerance	
	Zero-Order	Partial	Part		After Transformation	Before Transformation
Well-Being	-.324	-.307	-.283	.468	.715	.493
Self-Control	-.320	-.243	-.220	.540	.318	.371
Emotionality	-.211	.145	.129	-.212	.307	.446
Sociability	-.255	-.157	-.139	.186	.686	.527
Independent-Facet	.014	.261	.237	.017	.749	.463
Dependent Variable: Anxiety						

Descriptive Statistics

Data for Model 1 was collected from 70 participants who answer 30 questions, in a 7-point Likert survey. The questions were distributed as follows: six questions related

to well-being, six questions related to self-control, eight questions related to emotionality, six questions to sociability, and four were included about independent facets. Descriptive statistics results and their normal distribution histograms are displayed in Table 19.

Table 19.

Model 1- Descriptive Statistic Results

	N	Minimum	Maximum	Mean	Std. Deviation
Well-Being	70	4.50	7.00	6.0286	.64454
Self-Control	70	3.83	7.00	5.1976	.75570
Emotionality	70	3.50	7.00	5.2625	.79404
Sociability	70	3.33	7.00	5.2833	.81371
Independent-Facet	70	3.50	7.00	5.6714	.89133

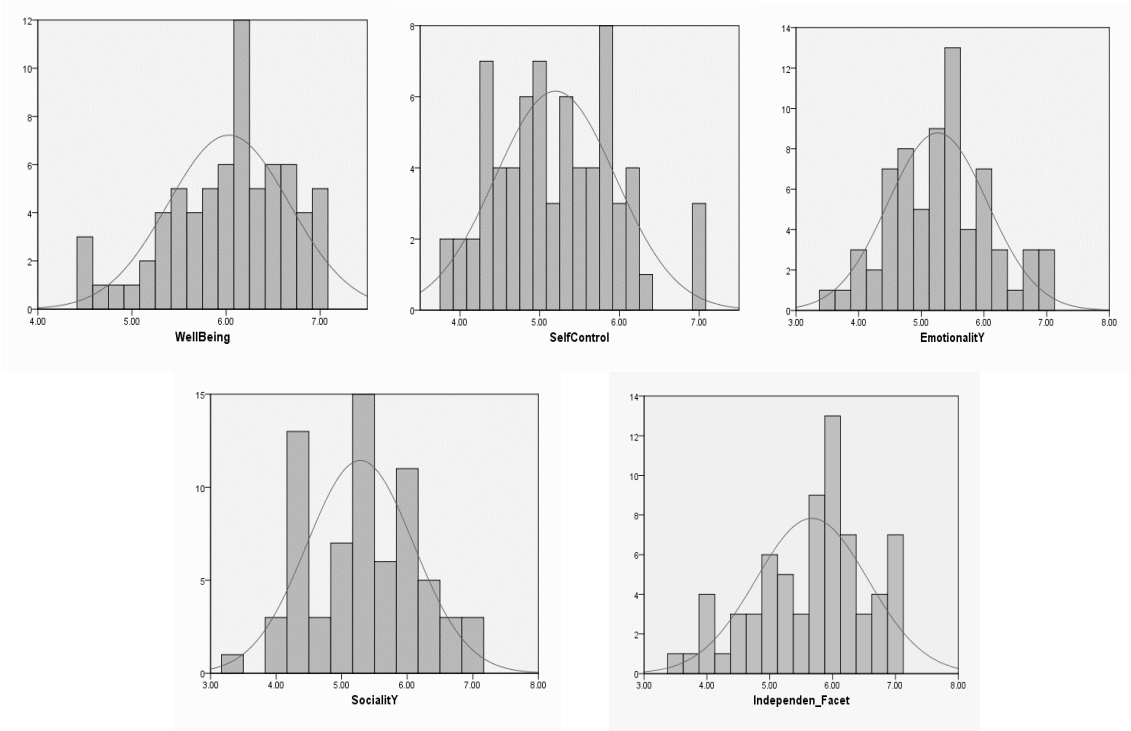

Figure 11. Histogram with Normal Distribution for Well-Being Self-Control, Emotionality, Sociability, and Independent-Facet.

The mean scores of the EI statements were all above 6. Table 19 shows the mean scores slightly greater than 6.0 in all the well-being questionnaire results, suggesting that leaders agreed with all the statements that show optimism or higher self-steam than the other EI traits. The next significant score was self-control which shows a mean score of 5.19. This result suggests that leaders may have low control of their emotion becoming incapable of withstanding pressure and regulating stress on others. Emotionality 5.26 and Sociability 5.28 mean scores suggest that the leaders are somehow ineffective in recognizing their workers' feelings and have poor social skills. Independent facets mean result was 5.67. The result was the second larger mean value indicating that they are flexible in adapting to new conditions and somehow driven to defeat adversity.

Hypotheses 2 Testing

The relationship among variables was tested via SEM modeling. Model 2 showed regression weights that suggest that self-control and emotionality dimensions of emotional intelligence have negative estimates on fatigue, complacency and anxiety identification. The construction of this second model was also the first step in using SEM to test the null hypotheses. Therefore, Table 20 shown fatigue as the probability of getting a critical ratio as large as -.321 in absolute value is $p = .748$. The regression weight fo**r** Emotional-Trait in the prediction of ID fatigue is not significantly different from zero at the 0.05 level (two-tailed) and should not be rejected; complacency estimate shows the probability of getting a critical ratio as large as -.155 and an absolute value of $p = .877$. Here, the regression weight for Emotional Trait in the prediction of ID

complacency is also not significantly different from zero at the 0.05 level (two-tailed) and also should not be rejected.

Finally, the probability of getting a critical ratio as large as -.613 and an absolute value of p=.540 for Emotional Trait in the prediction of ID anxiety is not significantly different from zero at the 0.05 level (two-tailed) and should not be rejected as well. The p-value shows a value greater than 0.05 suggesting that there is no effect of emotional traits in the leadership groups failing to predict identification of anxiety. Results from the data analysis suggested that the null hypothesis of research question 2 should be accepted and the alternative hypothesis rejected. Consequently, the food and beverage manufactory leaders do not execute emotional perceptions or controls to prevent employees' underlying complacent stress behavior. Table 20 results displayed negative regression weights suggesting that emotional traits had a negative impact on ID fatigue, ID complacency, and ID anxiety.

Table 20.

Model 2 Regression Weights

Variables			Estimate	S.E.	C.R.	P
ID fatigue	<-	Emotional Trait	-.151	.471	-.321	.748
ID complacency	<-	Emotional Trait	-.071	.461	-.155	.877
ID anxiety	<-	Emotional Trait	-.264	.431	-.613	.540

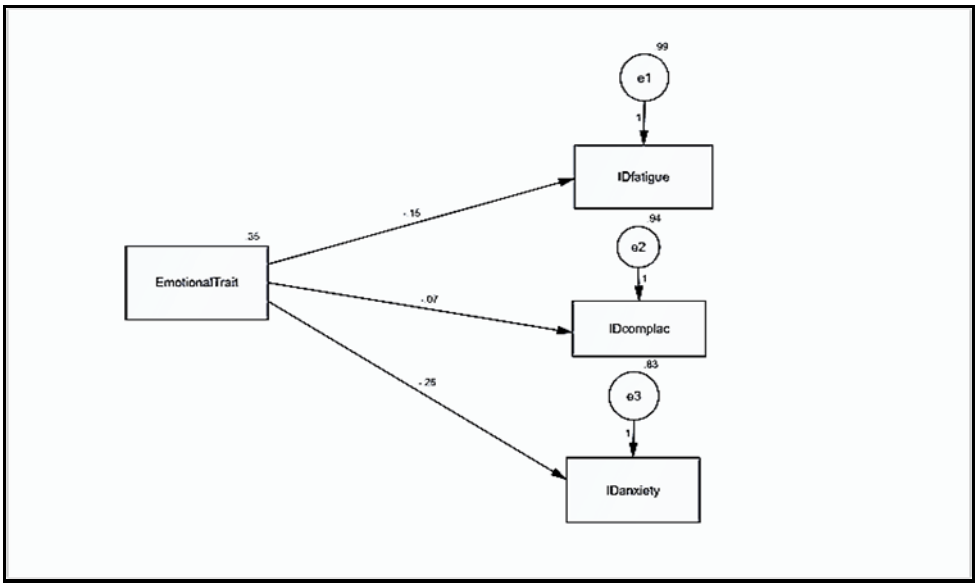

Figure 12. SEM Model 2

Construct Validity

In testing the leaders in both traits, separation of the middle leadership group from the upper leadership group was done to understand if there was a difference between the leaders that lead personally during daily operations versus the ones that have less participation in operations. The data were first analyzed using confirmatory factor analysis (CFA) to make sure the model will fit in SEM and to be able to test the hypotheses 2. The components were further examined for construct reliability (CR) and convergence validity. Convergence validity was measured by computing the average variance extracted (AVE). It was hypothesized that the leaders of the food and beverage manufacturing industries execute or do not execute emotional perceptions and control to prevent employees' underlying complacent stress behavior. Results display in Table 21.

Model 2 Regression Analysis

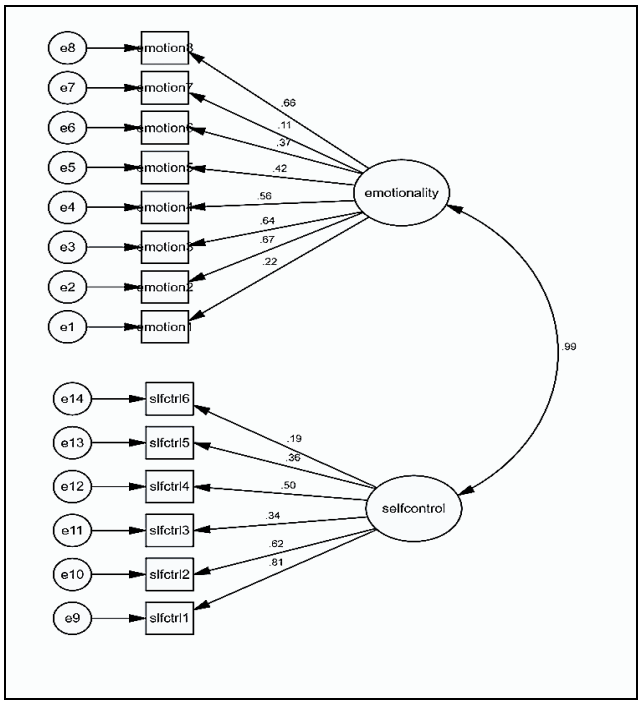

Figure 13. Original Regression Model

Confirmatory Factor Analysis

As shown in Table 21, the value of Standardized Estimates is less than 0.7, and most of the P-values in CFA are insignificant. The Average Variance Extracted (AVE) of variable emotionality and self-control is 0.248 and 0.263 respectively. The values are much less than recommended by Fornell and Larker, (1981). The point to ponder is as per the composition of the formula of AVE its value can only be greater than 0.5 when the standardized factor loadings of all the items are greater than 0.7. Thus, we can say that the value of AVE is proportional to the standardized factor loadings of construct items. According to a different school of thoughts, the value of CR is in the acceptable range,

the model fit is in an acceptable range, and all the items load significantly on their construct than there is no need to delete any other item. The CFA model, however, shows that the values of CFI, GFI and TLI are not that good, so we need to delete items to make Model 2 an acceptable fit to the data. After deleting items less than 0.4 the new CFA model is shown:

Table 21.

Standardized Regression Weights

Variable	Standardized Estimate	P-Value	Average Variance Extracted (AVE)	Composite Reliability (CR)
Emotion1<- Emotionality	0.219	Regressed	0.248	0.689
Emotion2 <- Emotionality	0.675	0.094		
Emotion3 <- Emotionality	0.639	0.096		
Emotion4 <- Emotionality	0.562	0.101		
Emotion5 <- Emotionality	0.415	0.121		
Emotion6 <- Emotionality	0.368	0.133		
Emotion7 <- Emotionality	0.107	0.454		
Emotion8 <- Emotionality	0.663	0.094		
Selfcontrol1 <- Self-control	0.811	Regressed	0.263	0.644
Selfcontrol2 <- Self-control	0.618	<0.001		
Selfcontrol3 <- Self-control	0.341	0.07		
Selfcontrol4 <- Self-control	0.502	<0.001		
Selfcontrol5 <- Self-control	0.363	0.004		
Selfcontrol6 <- Self-control	0.193	0.136		

Table 22.

Model 2 Fit Summary (CFA)

	CMIN/Df.	GFI	CFI	TLI	RMSEA	RMR
Ratio	1.827	0.785	0.723	0.772	0.109	0.194

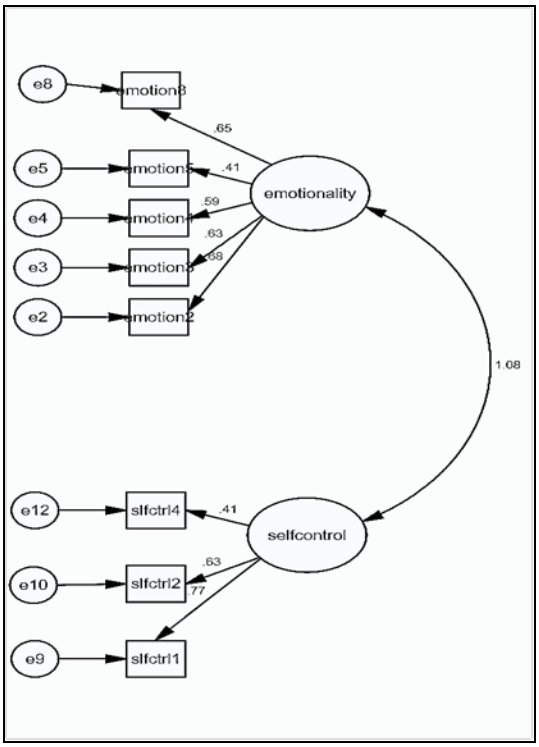

Figure 14. Confirmatory Factor Analysis

Table 23.

Standardized Regression Weights (After Item Deletion < 0.4)

Variable	Standardized Estimate	P-Value	AVE	CR
Emotion2 <- Emotionality	0.678	<0.05	0.359	0.732
Emotion3 <- Emotionality	0.631			
Emotion4 <- Emotionality	0.595			
Emotion5 <- Emotionality	0.410			
Emotion8 <- Emotionality	0.646			
Selfcontrol1 <- Self-control	0.769	<0.05	0.385	0.639
Selfcontrol2 <- Self-control	0.632			
Selfcontrol4 <- Self-control	0.405			

Table 24.

Model 2 Fit CFA

		CMIN/Df	GFI	CFI	TLI	RMSEA	RMR
Ratio		1.044	0.936	0.994	0.992	0.025	0.093

All the ratios suggest the model is a good fit. Hence, one can neglect the low AVE values. With all ratios suggesting a good fit, the analysis proceeded to develop SEM Models to prove the relationship between Emotional Intelligence Traits from the leaders and the kind of impact they have identifying fatigue, complacency, and anxiety. Using emotionality and independent self-control variables only and building two additional SEM models to make a comparison between the upper leadership and middle leadership groups and their impact on safety errors recognition.

Model 2 – Multiple Regression Analysis

Fatigue

Table 25

Model Summary

Multiple R	R Square	Adjusted R Square	Apparent Prediction Error
.408	.167	.102	.833
Dependent Variable: Identify Fatigue Predictors: Self-Control Emotionality			

Table 26

ANOVA – The F-Test

	Sum of Squares	df	Mean Square	F	Sig.
Regression	11.674	5	2.335	.962	.036
Residual	58.326	64	.911		
Total	70.000	69			
Dependent Variable: Identify Fatigue Predictors: Self-Control Emotionality					

Tables 26, 29, and 32 show the F ratio values which are the ratios of two mean square values. The F-Test indicates that if the null hypothesis is true, the expectation of the F ratio is to be close to 1 most of the time. Results of the 3 models (Fatigue, Complacency, and Anxiety) shown F-Statistic or F-test near to 1 (.962, .963, and . 950). Thus, based on the results of the F-Test, the acceptance of the null hypothesis and the rejection of the alternative hypothesis was determining. Some regression test required that there be a linear correlation between the dependent and independent variables. Correlation results are shown in Table 27 below.

Table 27

Correlations and Tolerance

	Correlations			Importance	Tolerance	
	Zero-Order	Partial	Part		After Transformation	Before Transformation
Self-Control	-.106	.135	.124	-.094	.707	.533
Emotionality	-.389	-.397	-.394	1.094	.707	.533
Dependent Variable: Identify Fatigue						

Table 28

Model Summary

Multiple R	R Square	Adjusted R Square	Apparent Prediction Error
.364	.133	.093	.867
Dependent Variable: Identify Complacency Predictors: Self-Control Emotionality			

Table 29

ANOVA – The F-Test

	Sum of Squares	df	Mean Square	F	Sig.
Regression	9.282	3	3.094	.963	.024
Residual	60.718	66	.920		
Total	70.000	69			
Dependent Variable: Identify Complacency Predictors: Self-Control Emotionality					

Table 30

Correlations and Tolerance

	Correlations				Tolerance	
	Zero-Order	Partial	Part	Importance	After Transformation	Before Transformation
Self-Control	-.288	-.246	-.236	.524	.957	.533
Emotionality	-.277	-.232	-.223	.476	.957	.533
Dependent Variable: Identify Complacency						

Table 31

Model Summary

Multiple R	R Square	Adjusted R Square	Apparent Prediction Error
.365	.133	.080	.867
Dependent Variable: Identify Anxiety Predictors: Self-Control Emotionality			

Table 32

ANOVA – The F-Test

	Sum of Squares	df	Mean Square	F	Sig.
Regression	9.333	4	2.333	.950	.051
Residual	60.667	65	.933		
Total	70.000	69			
Dependent Variable: Identify Anxiety Predictors: Self-Control Emotionality					

Table 33

Correlations and Tolerance

	Correlations			Importance	Tolerance	
	Zero-Order	Partial	Part		After Transformation	Before Transformation
Self-Control	-.355	-.311	-.305	1.189	.465	.533
Emotionality	-.200	.093	.087	-.190	.465	.533
Dependent Variable: Identify Anxiety						

Descriptive Statistics

Descriptive Statistics for Model 2 are presented in Table 34. This model consisted of two constructs named emotional perceptions and controls to prevent employees' underlying complacent stress behavior. Data consisted of all 70 participants responding to

14 questions, 8 in emotionality and 6 in self-control. Descriptive statistics during the development of Model 2 suggested mean values slightly above 5.0 in the questionnaire results. As shown in Table 34 self-control construct shows a mean of 5.19 and an emotionality construct mean of 5.26. Normal distribution graphs indicate that the majority of the respondents' perceptions concentrate in the lower self-control statements indicating low capability to control their emotions and missing the opportunity to manage stress in others. The respondents' emotionality construct shows a better distribution indicating a better chance to understand their own and others' feelings and a chance to create relationships perhaps but not to a greater extent. Model 2 questions were designed to test their emotional impulse control and stress management. Normal distribution of self-control and emotionality are shown in Figure 15.

Table 34

Model 2 – Descriptive Statistic Results

	N	Minimum	Maximum	Mean	Std. Deviation
Self-Control	70	3.83	7.00	5.1976	.75570
Emotionality	70	3.50	7.00	5.2625	.79404

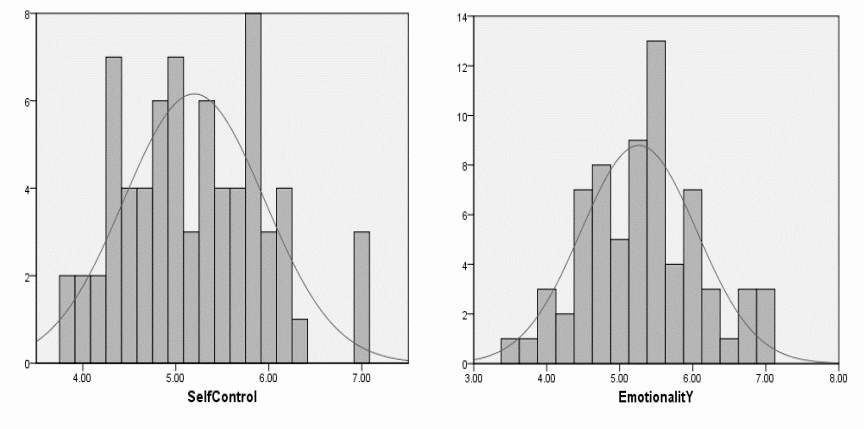

Figure 15 Histogram Normal Distribution of Self-Control and Emotionality

SEM Group Model Comparison

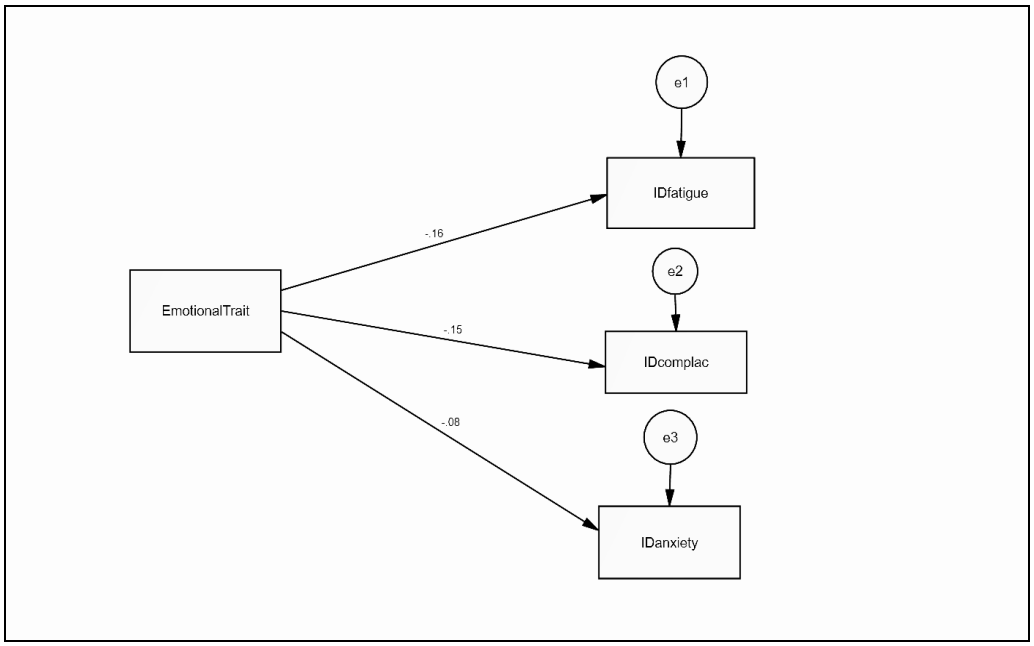

Figure 16. Upper Leadership Group SEM

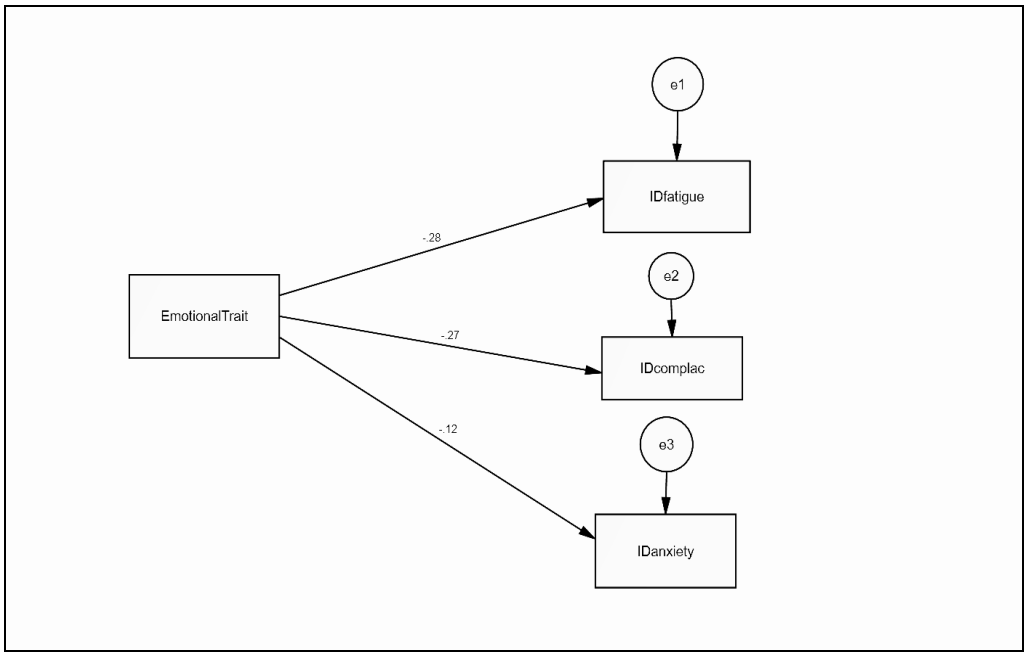

Figure 17. Middle Leadership Group SEM

Chi-Square Multigroup Analysis

Chi-Square tests were applied to the final weights; the model suggests that there is no significant difference between the groups in predicting the specify paths, concluding that the emotional traits of self-control and emotionality are similar in both groups when predicting fatigue, complacency, and most important anxiety.

Table 35

Assuming Model Unconstrained to be correct 1

Model	DF	CMIN	P	NFI Delta-1	IFI Delta-2	RFI rho-1	TLI rho2
Structural weights	3	.362	.048	.008	.010	-.496	-.686

The *p*-value greater than .05 in Table 35 indicates that the model shows little to no difference between the two groups (upper leadership and middle leadership). Multigroup analysis chi-square significance was performed to understand if both groups influence the same way or different. Checking chi-square values were obtained to see whether the results produced by the two groups were related or not related.

Table 36

Assuming Model Unconstrained to be correct 2

Model	DF	CMIN	P	NFI Delta-1	IFI Delta-2	RFI rho-1	TLI rho2
Structural weights	1	.074	.785	.002	.002	-.214	-.297

In this scenario, Table 35.1 shows the *p*-value is .785 which indicates that there is no difference between upper leadership and middle leadership groups while gauging the impact of their emotional traits on people's ID fatigue.

Table 37

Assuming Model Unconstrained to be correct 3

Model	DF	CMIN	P	NFI Delta-1	IFI Delta-2	RFI rho-1	TLI rho2
Structural weights	1	.175	.676	.004	.005	-.210	-.291

After constraining the path from emotional trait to ID complacency, the chi-square difference test will show that there is no significant difference of the groups (upper leadership and middle leadership) while measuring the impact of the emotional trait on ID complacency.

Table 38

Assuming Model Unconstrained to be correct 4

Model	DF	CMIN	P	NFI Delta-1	IFI Delta-2	RFI rho-1	TLI rho2
Structural weights	1	.113	.380	.003	.003	-.213	-.294

After constraining the path from emotional trait to ID anxiety the *p*-value in Table 35.3 shows 0.380, indicating that there is no significant difference between upper and middle leadership groups in predicting the specified path. Thus, emotional traits of emotionality and self-control for the upper and middle leadership groups are not different predicting fatigue, complacency, and anxiety.

Main Findings of the Study

SEM is a largely confirmatory, rather than exploratory technique which is used in this study to determine if the models fit rather than suitable (Sideridis et al., 2014). A good-fitting model is one that is reasonably consistent with the data. The major reason for computing a fit index is that chi-square needs to show if it is statistically significant (Sideridis et al., 2014). Thus, the main findings of the study were as follows:

- All dimensions of Emotional Intelligence had a significant impact on the leaders Emotional Intelligence traits.
- Emotional Intelligence traits results showed how leaders' competencies might impact the recognition of fatigue, complacency, and anxiety.
- As emotional trait intelligence increased, there was a significant decrease in fatigue and complacency but not in anxiety.
- Results of all leadership groups surveying demonstrated that leaders' ability to recognize anxiety or stress behavior is not being exercised.
- The leaders' answers on self-control and emotionality dimensions had a negative effect on fatigue, complacency and anxiety identification.
- There was no significant difference between upper and middle leadership groups in predicting the specified path. Both groups are found not to be able to predict anxiety behavior.

Summary

The findings of this correlational study on leaders of the food and beverage manufacturing industries emotional traits were presented. The results to derive unbiased estimates for the relations between latent constructs were also presented. SEM modeling was divided into two parts, the measurement model in where it related the measured variables to the latent variables, and the structural model where latent variables relate to one another. Statistically, the models were evaluated by comparing two variance-covariance matrices. SEM was used to analyze the observed variables of fatigue, complacency, and anxiety with a more restrictive set of assumptions than CFA because it assumed that all variables were measured without errors while SEM used the latent variables to count for measurement error. Chi-Square tests found no difference between the middle and upper leadership groups recognizing fatigue, complacency, or anxiety to help to prevent accidents. The important findings were discussed in Chapter 5.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this quantitative correlational study was to explore the relationship among the leaders of the food and beverage manufactory industries and their ability to recognize employees' underlying stress behavior to prevent safety errors. Data were collected from two food and beverage manufactures located in the West Shenandoah Valley in the state of Virginia. In all, 140 copies of questionnaires were returned, resulting in a 100% return rate. A special case of SEM named Confirmatory Factor Analysis (CFA) was used to test two theoretical models.

The data results suggest that emotional intelligence had an acceptable moderate relationship with the leaders of the food and beverage manufactures but not enough for them to recognize employees under hidden stress or anxiety. Generally, using CFA, the determination whether the items of the constructs aimed to measure the models were done right, and with a minimum percent of error. Multigroup-analysis to assess the group's differences was used to test the models of the upper and middle leadership groups to determine if the independent variables influence significantly on the dependent variable. Also, multigroup-analysis Chi-Square was used to examine and determine if both groups emotional intelligence results had positive relationships among them. Finally, Chi-Square tests were done to validate the comparison of both groups EI once again and to find significant differences between the upper and middle leadership groups. The main findings and practical interpretations of this study will be described next.

Interpretation of the Findings

Two conceptual frameworks were analyzed using structural equation models to understand the patterns of correlation/covariance among a set of variables and to help explain as much of their variance as possible with the model specified. Traditional statistical methods normally utilize one statistical test to determine the significance of the analysis. However, structural equation modeling relies on several statistical tests to determine the adequacy of model fit to the data. Although the absence of one organization reduced the participant's size, CFA adjustments to model fit gave SEM acceptable results to test the hypothesis. The size adjustments had no impact on the final models' results. The findings confirmed the significant impact that emotional intelligence traits in members of the food and beverage manufacturing industries exist but in a small scale and the overall effect of emotional trait intelligence had a poor significant effect on the identification of fatigue, complacency, and especially anxiety (p-value < 0.005).

Ratio analysis was executed to determine model fit. As depicted in Tables 7, 9, 13, and 15, the incremental measure of fit name the Comparative Fit Index (CFI) and the incremental index of the fit name the Tucker-Lewis index (TLI) depend on the average size of the correlations in the data. If the average correlation between variables is not high, then the TLI will not be very high. Thus, if the dataset has weak correlations, such was the case here, an incremental fit index may not be very informative. The rule of thumb then led me to examine the Root-Mean-Square Error of Approximation (RMSEA) as a supplementary statistic to determine fit. Results indicated that an increase in

emotional intelligence trait values might significantly decrease identifying fatigue and complacency but no in anxiety. Adjustments from the original model suggest that all leaders of the food and beverage manufactories EI traits have a weak impact on accidental preventions and may not be able to recognize workers under stress behavior. Safety performance in a workplace can reach a point where it levels out becoming an unsustainable performance plateau which prevents leaders from carrying on their work to the next level (Colm, 2014). The familiarization with the everyday work process makes workers take unnecessary risks. Soon after that, workers begin bending procedures and rules and begin taking shortcuts as they become complacent until a safety error happens (Lu & Kuo, 2016). From our literature review, we learned that one of the major setbacks for workers is the misuse of their expertise and knowledge, becoming complacent and capable of hiding their anxieties and fatigues.

The recognition of complacency is of importance for leaders to identify workers short-cuts, unsafe behaviors, and prevent injuries before a fatality occurs. The first results of this SEM model indicated during path analysis a weak model fit. Standardized Regression Weights suggested that the factor loadings were mostly less than 0.7 giving a lower average variance extracted (AVE) with a threshold of 0.5. Although this is a standard CFA practice, the questions removed with low weight values indicated the absence of emotional traits which can help identify stress or anxiety. Finally, SEM Model 1 fit was acceptable after confirmatory factor analysis (CFA) took place. These results indicated that only 43% of trait answers showed acceptable correlation. The results

indicated poor significance in the prevention of safety errors in leaders of both companies.

With SEM Model 2, Table 11 descriptive statistics results showed means and standard deviations close values. These close results could be an indication of similarities in the answer patterns of both groups' emotionality and self-control traits. Although descriptive statistic results indicated no much differences between both groups trait deviations, the results indicated no significance p-values in neither group. It was not until the CFA was run to showed poor values of CFI, GFI, and TLI (Tables 13 and 15) indicating poor model fit. Thus, deletions of questions took place to make the model fit the data in question. This failure could be attributed to several circumstances. First, we learned from our literature review that historically, complacent workers are the product of complacent leaders (Pater, 2014) which may be incapable of increasing their level of self-emotion to become clear about their own and other peoples' feelings, thus, incapable of creating a relationship with their workers. Second, the equal amount of self-emotional control indicated that either group might not be capable of withstanding pressure to regulate their own or others stress. Third, neither group may be capable of communicating their feelings to others failing to identify other peoples' feelings. The poor relationship results suggested that both leadership groups (upper and middle) self-control and emotionality have the same impact on accidental preventions concluding that leaders from both groups may not be able to recognize workers under stress or anxiety

behavior as well. Model 2 SEM showed a moderately acceptable fit. The results indicated that all the leaders had poor significance in the prevention of safety errors in both groups.

As we learned from expectancy theory, leaders' motivational levels are determining by the relationship between their efforts and their performances, their relationship between performances and rewards of their work outcomes, and their relationship between the rewards of their work results and their personal goals (Lazaroiu, 2015). According to Ernst (2014), expectancy is "a person's perception of the probability that effort will lead to successful performance" (Ernst, 2014, p. 538). In our study, expectancy is our leaders' beliefs that if they put forth efforts to recognize complacent stress behavior from their employees, they can successfully prevent accidents in the workplace. The leader's results indicate that there may be a very low motivational factor at both levels of management. These results could be an indication of an uncertain economy or the current conditions of these companies demand and supply issues. The Chi-Square testing proved that there were no differences in the power of leadership self-mastery skills (Hamzah, Othman, Rashid, Besir, & Hashim, 2012). This test demonstrated about the same level of mindset in both groups when making decisions to prevent implicit complacent behavior due to stress (Hamzah et al., 2012; Naderpour, Lu, & Zhang, 2014).

Limitations of the Study

Limitations are incidents that are out of the researcher's control, and they are potential weaknesses for any study (Simon & Goes, 2013). Like most studies, this study

also had some limitations despite how well it was conducted and constructed. These limitations included the reduction of available participants from 140 to 70 because one company were not able to participate due to internal problems. Additionally, results of the CFA models were limited as the group size was reduced. Model 1 had an acceptable range to fit but after deletion of low weights was done. Thus, making the sample smaller and limiting the group's relationship with the EI traits. Using a sample size higher is important as the model gets a better chance to find better relationships among leaders and EI and as researchers evaluate a confirmatory factor analysis model that fits (Sideridis et al., 2014). Another possible limitation found in this study was the organizational settings in the middle leadership group of one company. This organization had few lower-tier leaders acting as middle managers because some supervisors were trained and were substitute during surveying. Thus, the lower-tier leaders had to redefine their roles and responsibilities by covering for their supervisors. It is assumed that these temporary leaders had enough supervisory training to answer the survey properly.

Recommendations

According to Trejo (2014), individuals with high EI competencies could develop positive emotions that help in to establish good employee relationships. Thus, reducing the complacent behavior environment in organizations and influencing the way in which individuals interact within their teams, correcting employee behavior, changing their attitudes, and particularly recognizing their behavior to maintain a safe environment. These study findings provided the following recommendations:

- Future research should investigate larger samples of participants. Larger samples will help to increase the chances of better relationship results in providing a better confirmatory factor analysis fit to the model (Sideridis et al., 2014).
- Emotional intelligence dimensions are known to impact the leaders' emotional intelligence traits significantly. Thus, it is recommended that companies begin identifying their leaders' competencies strength and weakness and develop a plan for improvement.
- Emotional intelligence traits are essential for the recognition of fatigue, complacency, and anxiety behavior. It is recommended that the companies' safety programs revamp their leader's training to recognize fatigue, complacency, and stress to help them make decisions in the prevention of safety accidents.
- It is also recommended that companies add to their leaders' development program emotional intelligence safety expectations to prevent accidents. Leaders must be yearly grade on their safety scores to make sure they are exercising their EI skills.
- It is recommended that the companies' safety program emphasize self-control and emotionality traits to help leaders establishing relationships with their workers. These relationships will open the doors of communication that could prevent unnecessary safety errors.
- It is recommended that companies stress the adoption and practice of these EI traits at all levels. Special attention should be with the middle leadership group since they are the last line of contact with employees.

- It is recommended that companies help themselves by boosting their new prospective employees by providing psychometric tests during their hiring process. Psychometric tests will help companies understand future employees' level of emotional traits that will payback when facing safety issues,
- Finally, safety is all our responsibility. Thus, we recommend incentive programs to reward success. Rewards will increase the leaders' motivational level of expectation and improve their safety performance within their unit leadership group.

Leaders' objective to improve the performance of their employees must build relationships to begin leading by example; This relationship will establish their performance (Yulk, 2012) and will create a positive environment that will bring out the best in the people they lead (Goleman, Boyatzis, & McKee, 2013). These recommendations should be considered for implementation to help leaders of the food and beverage manufacturing industries recognizing their workers' behaviors when fatigue is present, when short-cuts are made, and when complacent behavior is noticed.

Implications for Positive Social Change

I examined the presence of emotional intelligence competencies in leaders of two food and beverage manufacturing industries located in the West Shenandoah Valley of Virginia. Emotional Intelligence influences team dynamics, allowing important changes in team transformations, helping leaders in building relationships and offering them the

ability to increase the safety awareness of their teams (Trejo, 2014). The Department of Labor indicates that the biggest amounts of fatalities today are occurring in industries such as construction, mining, and electrical services (OSHA, 2017). Thus, one of the implications for future study is to examine leaders in other industries across the United States to evaluate their safety awareness. Further studies could expand the purpose of evaluation, the level of understanding and the research knowledge to similar industries across the world. The effects of adding emotional intelligence competencies in leaders of other industries may potentially contribute to social change helping other industries protecting their employees from getting hurt, promoting strong safety cultures, maintaining a positive impact on families and workers and thereby, increasing community resilience.

Conclusions

The purpose of this quantitative correlational study was to examine if the leaders of the food and beverage manufactory had the proper emotional intelligence traits to recognize employees' underlying complacent stress behavior. CFA analysis and sample size adjustments had no impacts on the final models' results. After final SEM models achieved a reasonable fit, hypothesis test took place and found disappointing results. These results indicated that the leaders of the food and beverage manufacturing do not have the appropriate emotional measures which are significant to recognize employees' underlying complacent behavior. Also, provided standardized regression weights with paths showing different results for upper and middle leadership groups. Thus, concluding

that the EI for both upper and middle leadership groups have the same impact on accidental preventions. These findings may be of great significance to the food and beverage manufacturing industries where injuries and fatality errors continue to be high. Hidden fatigue, stress, and complacent behaviors continue to add injuries and fatalities to the American workforce and impacting our society. Consequently, by adopting emotional intelligence competencies, the leaders of the food and beverage manufacturing industries may positively impact the safety awareness in their respective organizations and help in the reduction of safety injuries and fatalities in their workplaces and communities.

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Appendix A: TEIQUE-SF *

Instructions: Please answer each statement below by putting a circle around the number that best reflects your degree of agreement or disagreement with that statement. Work quickly and try to answer as accurately as possible. There are no rights or wrong answers. There are seven possible responses to each statement ranging from 'Completely Disagree' (number 1) to 'Completely Agree' (number 7).

1 . . . . . 2 . . . . . 3 . . . . . 4 . . . . . 5 . . . . . 6 7
Completely Disagree **Completely Agree**

1. Expressing my emotions with words is not a problem for me.	1	2	3	4	5	6	7
2. I often find it difficult to see things from another person's viewpoint.	1	2	3	4	5	6	7
3. On the whole, I'm a highly motivated person.	1	2	3	4	5	6	7
4. I usually find it difficult to regulate my emotions.	1	2	3	4	5	6	7
5. I generally don't find life enjoyable.	1	2	3	4	5	6	7
6. I can deal effectively with people.	1	2	3	4	5	6	7
7. I tend to change my mind frequently.	1	2	3	4	5	6	7
8. Many times, I can't figure out what emotion I'm feeling.	1	2	3	4	5	6	7
9. I feel that I have a number of good qualities.	1	2	3	4	5	6	7
10. I often find it difficult to stand up for my rights.	1	2	3	4	5	6	7
11. I'm usually able to influence the way other people feel.	1	2	3	4	5	6	7
12. On the whole, I have a gloomy perspective on most things.	1	2	3	4	5	6	7
13. Those close to me often complain that I don't treat them right.	1	2	3	4	5	6	7
14. I often find it difficult to adjust my life according to the circumstances.	1	2	3	4	5	6	7
15. On the whole, I'm able to deal with stress.	1	2	3	4	5	6	7
16. I often find it difficult to show my affection to those close to me.	1	2	3	4	5	6	7
17. I'm normally able to "get into someone's shoes" and experience their emotions.	1	2	3	4	5	6	7
18. I normally find it difficult to keep myself motivated.	1	2	3	4	5	6	7
19. I'm usually able to find ways to control my emotions when I want to.	1	2	3	4	5	6	7
20. On the whole, I'm pleased with my life.	1	2	3	4	5	6	7
21. I would describe myself as a good negotiator.	1	2	3	4	5	6	7
22. I tend to get involved in things I later wish I could get out of.	1	2	3	4	5	6	7
23. I often pause and think about my feelings.	1	2	3	4	5	6	7
24. I believe I'm full of personal strengths.	1	2	3	4	5	6	7
25. I tend to "back down" even if I know I'm right.	1	2	3	4	5	6	7
26. I don't seem to have any power at all over other people's feelings.	1	2	3	4	5	6	7
27. I generally believe that things will work out fine in my life.	1	2	3	4	5	6	7
28. I find it difficult to bond well even with those close to me.	1	2	3	4	5	6	7
29. Generally, I'm able to adapt to new environments.	1	2	3	4	5	6	7
30. Others admire me for being relaxed.	1	2	3	4	5	6	7

Instructions: Please complete de following questions:

Is English your native language?

Yes ○ No ○

Are you upper or middle management?

_____

Have you ever participated in:

- ○ Accidents Root-Cause Analysis
- ○ Accidents Near-Missed
- ○ Accidents Recordable
- ○ Accidents ending on fatality
- ○ Accidents ending on injury
- ○ Arc Flash Training
- ○ LOTO training

Can you identify an individual with fatigue?

Yes ○ No ○ Sometimes ○

Can you recognize complacent behavior?

Yes ○ No ○ Sometimes ○

Years of exercising your assignment:

- ○ 1 to 5
- ○ 6 to 10
- ○ 11 to 20
- ○ 21 to 25
- ○ 26 to 30
- ○ 31 to 35
- ○ 36 and over

Can you tell when an individual is anxious at work?

Yes ○ No ○ Sometimes ○

NOTE:

Questionnaire and collective data files will be stored in a safe cage for five years. At the end of the five years, the questionnaire will be shred and destroy. Also, all collected data files will be deleted from the researcher server. Deletion will be done in front of a witness, documented in a signed letter, and stored in the researcher server for future audits.

Appendix B: Information on Quantitative Study

Research Purpose: Obtain information about Manufactory Industry Leaders' Emotional Intelligence Traits and Abilities resources. This information may add to the leadership literature for leaders to understand what is expected of them to prevent hidden stress and complacency behavior from employees and avoid injuries and fatalities in the workplace

Duration of Participation: up to 1 hour

Procedures: The study will use the Emotional Intelligence Trait Questionnaire, Short Form to survey leaders in the Manufacturing Industry. The collected information (data) will be entered AMOS where SEM will have two models. The first model will be for linear regression studies and a second model to test the EI level resource of two groups, the upper management leadership group, and the middle management leadership group. The study will provide recommendations to leadership literature to enhance the knowledge and the prevention of accidents in the workplace.

Voluntary Nature of the Study: This study was made as a requirement to obtain a doctoral degree in Management and Technology. Although the participation of the leaders is authorized and approved by their plant management groups, the leaders' participation still is voluntary.

Risks:

- The presence and participation of all leaders because Summer is known for most people to going on vacation, holidays, and leave-of-absence.
- The validity of current safety records from companies to reaffirm our data.

Benefits:

- Add to leadership literature for leaders to learn and improve their competencies in their workplaces.
- Help prevent safety errors and accidents that come from safety mistakes in the manufacturing industries.
- Add social awareness to impact communities and organizations to become accidents-free environments.

Compensation: None

Confidentiality: All measurement to maintain confidentiality has been made through our learning institution — the IRB Approval # 04-23-18-0019691.

Voluntary Participation: Participation is voluntary and under the permission of the food and beverage manufacturing industry HR management groups.

Appendix C: Permissions

Figure 2.

The Boredom Influence Diagram (BID). Adapted from Boredom in the Workplace. Cummings, M., Gao, F., & Thornburg, (2016). Boredom in the workplace. A new look at an old problem. *Human Factors and Ergonomics Society.* Vol. 58, No.2, pp. 279-300. DOI: 10.1177/0018720815609503.

Request authorization to Dr. Cummings on May 16, 2017

From: "Pineda, Ricardo" < >
Date: Tuesday, May 16, 2017, at 11:38 AM
To: Dr. Mary Cummings
Subject: Requesting Authorization

Dear Dr. Cummings,

I am a Ph.D. candidate at Walden University writing a dissertation name: Leadership Competencies Recognizing and Anticipating Stress Related Complacent Behavior in Manufacturing Industries. I found your article: "Boredom in the Workplace: A new look at an old problem" (2016) very helpful to describe tasks that are perceived as being boring and repetitive. Your explanation of the difference between task load and workload lines up with my explanation of leadership work assignments overlooking at the safety risk they exposed employees of the manufactory industry. I would like to include your diagram and literature, to reinforce my literature review. Please let me know if I could use it.

Thank you very much.

Regards,

Ricardo Pineda• Ph.D. Candidate
Walden University •
School of Management and Technology •
100 S Washington Ave #900 • Minneapolis • MN • 55401

Authorization by Dr. Cummings on May 16, 2017

From: Missy Cummings, Ph.D. []
Sent: Tuesday, May 16, 2017, 12:15 PM
To: "Pineda, Ricardo" < >
Subject: Re: Requesting Authorization
Importance: High

Rick,

As long as you cite the paper, sure, you can use the figure.

Missy Cummings

Figure 3.

Murphys' Model of Stress and Accidents. Adapted from Errors and accidents in the workplace. Adhikari, P. (2015) Errors and accidents in the workplace. *Sigurnost. University Campus, Tribhuvan University* 57 (2) 127-137. ISSN: 0350-6886 EBSCOhost. URL: http://hrcak.srce.hr/file/206833.

Request authorization to Dr. Adhikari, P. on May 16, 2017

From: "Pineda, Ricardo" < >
Date: Tuesday, May 16, 2017, at 11:39 AM
To: Dr. Adhikari, P.
Subject: Requesting Authorization

Dear Dr., Adhikari,

I am a Ph.D. candidate at Walden University writing a dissertation name: Leadership Competencies Recognizing and Anticipating Stress Related Complacent Behavior in Manufacturing Industries. I found your article: "Errors and Accidents in the Workplaces" (2015) very helpful when describing the relationship between stressors and accidents. Your Figure 1 on page 129 describes the nature of these stressors and lines up with my explanation of the manufactory industry leadership competencies not being able to recognize the non-work stressors. I would like to include your Figure 1 in my research to reinforce my Literature Review. Please let me know if I could use it.

Thank you very much,

Regards,

Ricardo Pineda• Ph.D. Candidate
Walden University •
School of Management and Technology •
100 S Washington Ave #900 • Minneapolis • MN • 55401

Authorization by Dr. Adhikari, P. on May 16, 2017

From: Dr. Adhikari, P.
Date: Tuesday, May 16, 2017, at 10:11 PM
To: "Pineda, Ricardo" < >
Subject: Requesting Authorization

Hi.

You may use it. Good luck with your Ph.D.!

Best regards,

Pralhad Adhikari

Figure 4.

Emotional Intelligence and Transformational Leadership Conceptual Framework. Adapted from Transformational Leadership: Emotional Intelligence.
Mathew, M., & Gupta, K (2015). Transformational leadership: emotional intelligence. *SCMS Journal of Indian Management.* URL: http://search.proquest.com/openview/2ec4e0510c6e55b65d9f071d0f1473af/1?pq-origsite=gscholar&cbl=546310.

Request authorization to Dr. Molly John on May 16, 2017

From: "Pineda, Ricardo" < >
Date: Tuesday, May 16, 2017, at 11:52 AM
To: Dr. Molly John

Subject: Requesting Authorization

Dear Dr. John,

I am a Ph.D. candidate at Walden University writing a dissertation name: Leadership Competencies Recognizing and Anticipating Stress Related Complacent Behavior in Manufacturing Industries. I found your article: “Transformational Leadership: Emotional Intelligence” (2015) very helpful when describing the relationship between Transformational Leadership and Emotional Intelligence. Your Conceptual Framework on page 79 describes this relationship and lines up with my explanation of the manufactory industry leadership lack of emotional resources and not being able to recognize employees under the complacent state. I would like to include your Conceptual Framework figure in my research to reinforce my Literature Review. Please let me know if I could use it.

Thank you very much,

Regards,

Ricardo Pineda• Ph.D. Candidate
Walden University •
School of Management and Technology •
100 S Washington Ave #900 • Minneapolis • MN • 55401

Authorization by Dr. Molly John on May 16, 2017

From: Dr. Molly John
Date: Tuesday, May 16, 2017, at 9:22 PM
To: "Pineda, Ricardo" < >
Subject: Requesting Authorization
Dear Mr. Pineda,

It is a privilege when other researchers cite my work. You can use it in your research work. I am sure you will include the details of my authorship in your work. I am still a research scholar of Jain University as mentioned in the paper and God willing, I will be submitting my final thesis by the end of the month, so I cannot be addressed as Dr. yet :)

All the best for your research.

Regards
Molly
Molly John
Training Consultant
Mobile: +91 9916777747

On Tue, May 16, 2017, at 9:22 PM

Request authorization from Dr. K. Petrides. The use of the TEIQUE-SF on February 17, 2017

From: Pineda, Ricardo []
Sent: Friday, February 17, 2017 20:30
To: Dr. K. V. Petrides
Cc: Ricardo Pineda < >
Subject: Donation and Permission
Importance: High

Hello,

I am working on obtaining a doctoral degree, and I need to use your TEIQUE-SF. How much of a donation would be in American dollars to donate 29.99 pounds? Would you accept dollars from an American Bank (Wells Fargo)? Also, I need to present evidence of compliance with the copyright holder's terms of usage and written permission to reproduce your instrument in my dissertation to my dissertation committee. Would you please help me obtained these documents? Thank you.

Regards,
Ricardo Pineda• Ph.D. Candidate
Walden University •
School of Management and Technology •
100 S Washington Ave #900 • Minneapolis • MN • 55401

Authorization by Dr. K. V. Petrides on February 18, 2017

-------- Original Message --------
From: "Petrides, Konstantinos" < >

Date: 02/18/2017 8:35 AM (GMT-05:00)
To: "Pineda, Ricardo" < >
Cc: Ricardo Pineda < >
Subject: RE: Donation

Dear Ricardo,

Thank you for your email and query. With respect to the donation, it is not compulsory, and we can only accept via PayPal, which can process US dollars. The exact amount is also up to you.

We do not provide formal permission letters due to lack of time, but you are welcome to refer interested parties to our FAQ (http://www.psychometriclab.com/Home/Default/18) and also use this email for confirmation purposes.

Finally, you can reproduce the instrument, however, WITHOUT its scoring key and including the notification below prominently.

I hope this helps,
Dino

K V Petrides
London Psychometric Laboratory (UCL)
www.psychometriclab.com

Request authorization to Dr. Daniel Goleman. For the use of the 4-Dimensional Model on June 26, 2017

From: Pineda, Ricardo []
Sent: Mon, June 26, 2017, 11:56 AM
To: Liz Solomon
Cc: Ricardo Pineda < >
Subject: Permission
Importance: High

Good Morning Liz,

I am a Ph.D. candidate at Walden University writing a dissertation name: Leadership Competencies Recognizing and Anticipating Stress Related Complacent Behavior in Manufacturing Industries. I am using two of Dr. Goleman's' books (Primal Leadership and Leading with Emotional Intelligence) and numerous articles to promote his ideas and to build an instrument to test the presence of emotional intelligence competencies using Dr. Goleman's constructs. I would like to ask his permission to use his 4-Dimensional Model construct domains to help to build my instrument and to assess leaders from the manufactory industry. Would you please ask him or maybe provide me his email so I can ask him for his permission?

Thanks in advance,

Regards,

Ricardo Pineda• Ph.D. Candidate
Walden University •
School of Management and Technology •
100 S Washington Ave #900 • Minneapolis • MN • 55401

Authorization by Dr. Daniel Goleman' Assistant on June 27, 2018

From: Liz Solomon []
Sent: Tuesday, June 27, 2017, 12:02 PM
To: Pineda, Ricardo
Subject: Re: Permission

Hi, Ricardo,

You do not need formal permission to use the 4 Dimension Model.
Best of luck with your continued work and research!

Sincerely,
Liz

Elizabeth Solomon
Assistant to Daniel Goleman