

**THE MODERATING ROLE OF EMOTIONAL INTELLIGENCE ON THE
RELATIONSHIP BETWEEN TRANSFORMATIONAL LEADERSHIP AND
WORK ENGAGEMENT**

by

Stefan J. Ochalski

TERRY WALKER, PhD, Faculty Mentor and Chair

JAMES KROLIK, PhD, Committee Member

TOMIKA GREER, PhD, Committee Member

Barbara Butts Williams, PhD, Dean, School of Business and Technology

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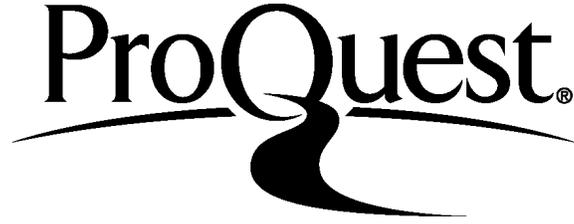
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Abstract

Through multiple linear regression, this study investigated relationships between leaders' transformational leadership, leaders' emotional intelligence, employees' age, employees' gender, and employees' duration of employment in current position, and employees' work engagement, in pharmaceutical organizations in the United States. The study also investigated the moderating role leaders' emotional intelligence has on the relationship between leaders' transformational leadership and employees' work engagement. Results indicated a significantly predictive regression model where employees' gender and leaders' transformational leadership were found to be significant predictors of employees' work engagement. Furthermore, the subscales of transformational leadership accounted for 44% more of the variation in employees' work engagement than the demographic variables alone. However, only leaders' inspirational motivation stood out as a significant predictor of employees' work engagement. With respect to leaders' emotional intelligence, the subscales of emotional intelligence accounted for 39% more of the variation in employees' work engagement than the demographic variables alone. Only emotional reasoning and emotional management of others scores stood apart as the only leaders' emotional intelligence subscales that predicted employees' work engagement. Finally, leaders' emotional intelligence was not able to significantly moderate the relationship between leaders' transformational leadership and employees' work engagement as the interaction term did not provide significant predictive ability beyond what was accounted for by transformational leadership alone.

Dedication

This dissertation is dedicated to my wife, Laura, and my children, Natalia and Alex. You have been part of this journey from the beginning, encouraging me to stay the course even though the experience has been long, challenging, and, at times, frustrating. Nevertheless, you kept me focused on the end goal, celebrating with me each passed milestone. You were the best cheering section that anyone could ever want and this accomplishment is as much about you as it is about me.

Natalia and Alex, as you continue on your own scholarly journey, I hope that I have been an example and inspiration to you that there is no goal that is unachievable, as long as you put your heart, mind, and soul into the effort. Your own experiences may be difficult and you may be tempted to give up. Remember that setbacks last only as long as you let them but the feelings of accomplishment and pride will last forever.

I also dedicate this dissertation to the researchers that came before me and researchers that will come after me. The pioneers introduced me to the fascinating topics of transformational leadership, emotional intelligence, and work engagement and the promise that these areas hold in social sciences, while future scholars, without a doubt will build and further expand the collective knowledge regarding these topics. I hope that this study added to that knowledge and perhaps will become a jumping point for future exploration.

Lastly, I dedicate this dissertation to my parents who, from a very young age, instilled in me the value of education. Dad, I know you are smiling from above.

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CHAPTER 1. INTRODUCTION

Introduction to the Problem

Recent evidence suggests that globally 60% to 80% of employees are not engaged in their jobs (Aon Hewitt, 2014; Blessing White, 2013; Ghadi, Fernando, and Caputi, 2013). The lack of work engagement has a significant impact on organizational productivity. Gallup (2013) and Pati and Kumar (2011) estimated that employees who are disengaged, cost the United States economy between 300 billion dollars to 550 billion dollars each year in lost productivity. On the other hand, work engagement is associated with employees exhibiting positive emotions at work, better health, positively affecting their work environment, and being able to transfer their positive engagement to others (Bakker, 2011). From a practitioner perspective, Aon Hewitt (2014) posited that each incremental percentage attributed to employee engagement translates into an incremental increase of 0.6% in company sales. Additionally, organizations with higher levels of employee work engagement report reduced employee turnover, greater employee productivity, and better overall financial returns compared to organizations with low employee work engagement (Baumruk, 2006). Several researchers (Shuck & Herd, 2012; Wallace & Trinkka, 2009) suggested leadership plays a role in affecting work engagement yet Aon Hewitt (2014) found that there is a lack in promoting the importance of work engagement by organizational leaders. Bakker, Albrecht, and Leiter (2011) and

Ghadi et al. (2013) suggested transformational leadership has a direct and positive influence on work engagement. However, Bakker (2011) posited that the current data regarding leadership does not fully explain “how leaders influence their followers’ engagement and the mechanisms that explain this influence” (p. 268).

Consequently, a consideration in affecting employee engagement, especially in the context of leadership, is determining whether and to what degree emotional intelligence affects work engagement and the role emotional intelligence plays on the relationship between transformational leadership and work engagement. Emphasizing this shortcoming, Shuck and Herd (2012) stated “for a leader to accurately diagnose which leadership behaviors align with a follower’s needs and motivation processes, emotional intelligence skills are critical” (p. 166). Taken together, however, transformational leadership, emotional intelligence, and work engagement have not been examined within the same study. As such, there was a glaring gap in the literature on the relationships between leaders’ transformational leadership and emotional intelligence and employees’ work engagement.

The reasons for investigating the relationships between leaders’ transformational leadership, leaders’ emotional intelligence, and employees’ work engagement specifically in the pharmaceutical industry in United States were twofold. First, there was the need from a research perspective to study three important theoretical concepts in a single study and address the aforementioned research gap. The second reason was the researcher’s employment within the pharmaceutical industry and the desire to contribute learning to an industry that is generally under-represented in the scholarly literature.

Background of the Study

A gap in the literature has been identified on the relationships between leaders' transformational leadership, leaders' emotional intelligence, and employees' work engagement, especially in the context of pharmaceutical organizations. However, evidence of dyadic investigations of relationships between transformational leadership and work engagement, emotional intelligence and work engagement, and transformational leadership and emotional intelligence exist and served as the foundations for this research.

Aryee, Walumbwa, Zhou, and Hartnell (2012) posited that transformational leaders are able to elicit employee work engagement due to their ability to align the organizational vision with employees' work related desires. This positive relationship is due to the leader's ability to create an environment that fosters employee's vision of himself or herself within the organization. Similarly, Kovjanic, Schuh, and Jonas (2013) established that transformational leaders positively affect employee work engagement by inducing employees' needs for competence, relatedness, and autonomy. The importance of daily practice of transformational leadership behaviors in positively affecting work engagement was also shown by Breevaart, Bakker, Hetland, et al. (2014). Nevertheless, these studies called for additional investigations to determine possible circumstances that may further insights into the association of transformational leadership and work engagement. Consequently, emotional intelligence has been conceptualized as a necessary leadership skill that may also play a role in affecting work engagement (Shuck & Herd, 2012).

Emotional intelligence represents the notion of how individuals are able to assess their own emotions and emotions of others (Batool, 2013). Scholarly discourse and interest in emotional intelligence has grown in popularity particularly since the 1995 publication of Daniel Goleman's book titled *Emotional Intelligence: Why It Can Matter More Than IQ*. In addition to Goleman, his contemporaries include Salovey, Mayer, and Bar-On. Collectively, these scholars developed emotional intelligence measurements based on three distinct models: performance based, trait based, and behavior based (Palmer, 2007). The connection between emotional intelligence and leadership, particularly in the context of the importance of emotional intelligence to organizational leadership, is of equal interest to scholars and practitioners.

The utility of emotional intelligence hinges on the desire to understand what motivates individuals, how individuals relate to each other, and how relationships are built in the workplace. Emotional intelligence plays a central role in the leadership process since a leader's emotional state can affect how followers perceive a leader (George, 2000). Because of this, a follower's perception of their leader can be a factor in determining whether the employee is engaged and committed to their organization (Parimalam & Mahadevan, 2012). High employee organizational commitment results in various outcomes including an enriched employee morale and improved organizational performance (Shuck & Herd, 2012). Lastly, although limited research exists on the relationship between emotional intelligence and work engagement, a few studies demonstrated a positive and significant, albeit weak to moderate, relationship between these two constructs.

Webb (2013) demonstrated that managers who exhibit emotional intelligence behaviors related to self-control and sociability are more likely to positively affect their employees' satisfaction with their workplace and increase their employees' commitment to the organization. Ravichandran, Arasu, and Kumar (2011) established that a leader's emotional intelligence positively, although at a moderate level, affects employee work engagement. Similarly, Thor (2013) determined that individuals who exhibit high emotional intelligence are more engaged in their work than individuals whose emotional intelligence scores are lower. Findings from these studies suggested that emotional intelligence, while an important factor in positively affecting work engagement, on its own may not be a strong predictor of work engagement and other factors need to be considered.

Collectively, empirical evidence points to positive relationships between transformational leadership, emotional intelligence, and work engagement, albeit in dyadic associations. However, the literature review did not reveal prior research evaluating the relationship between all three constructs in a single study. This gap in the literature represented an opportunity that the current study aimed to address. In addition, the study investigated the role in how employees' age, employees' gender, and employees' duration of employment in current position affected their work engagement.

Statement of the Problem

There is a gap in the literature on the relationships between leaders' transformational leadership, leaders' emotional intelligence, and employees' work engagement in pharmaceutical organizations in the United States. In addition, the study investigated whether employees' age, employees' gender, and employees' duration of

employment in current position affect employees' work engagement in pharmaceutical organizations in the United States. Finally, this study also sought to understand the moderating role of leaders' emotional intelligence on the relationship between leaders' transformational leadership and employees' work engagement.

Purpose of the Study

The literature review has not revealed a simultaneous investigation of transformational leadership, work engagement, and emotional intelligence. As such, the overarching purpose of this study was to determine what relationships exist between leaders' transformational leadership, leaders' emotional intelligence, and employees' work engagement in pharmaceutical organizations in the United States. In addition, the study investigated whether employees' age, employees' gender, and employees' duration of employment in current position contribute to their work engagement in pharmaceutical organizations in the United States. The study also aimed to corroborate earlier scholarly findings on the relationships between transformational leadership, emotional intelligence, and work engagement albeit specifically in the pharmaceutical industry in the United States.

Rationale

Although literature exists regarding relationships between transformational leadership and employee work engagement, emotional intelligence and employee work engagement, and transformational leadership and emotional intelligence, this study offered an opportunity to investigate the relationships between the three constructs of transformational leadership, emotional intelligence, and employee work engagement in a single study. Given the scholarly and practitioner interest in understanding work

engagement from the perspective of transformational leadership and emotional intelligence, this research was built on the works of Burns (1978), Bass (1985), Goleman (1995), and Schaufeli, Salanova, González-Romá, & Bakker (2002).

The evolution of leadership has moved from traditionally authoritarian and hierarchal approaches to the modern day interpretation of leadership concerned with the integration of personal characteristics into a leader's successful management style. The connection between emotional intelligence and leadership, particularly in the context of its importance to organizational leadership, is of interest to both scholars and practitioners. The utility of emotional intelligence hinges on the desire to understand what motivates individuals, how individuals relate to each other, and how relationships are established in the workplace. Individuals who are able to express these attributes have higher emotional intelligence scores and in turn are better leaders (O'Boyle, Humphrey, Pollack, Hawyer, & Story, 2011). Pharmaceutical organizations in the United States were selected as the population for this investigation since the researcher is employed in the industry and previous investigations of the aforementioned constructs are virtually nonexistent in this industry.

Research Questions

Given the lack of empirical data on the relationships between transformational leadership, emotional intelligence, and work engagement, particularly in the pharmaceutical industry in the United States, as well as the role age, gender, and duration of employment in current position may play in affecting work engagement, this study aimed to address the following research questions:

Omnibus Research Question 1 (RQ1)

What is the relationship between employees' work engagement and employees' perceptions of leaders' transformational leadership, employees' perceptions of leaders' emotional intelligence, employees' age, employees' gender, and employees' duration of employment in current position in pharmaceutical organizations in the United States?

Research Subquestion 1 (RSQ1)

How do employees' age, employees' gender, and employees' duration of employment in current position affect the relationship between their own work engagement and their perceptions of their leaders' transformational leadership?

Research Subquestion 2 (RSQ2)

How do employees' age, employees' gender, and employees' duration of employment in current position affect the relationship between their own work engagement and their perceptions of their leaders' emotional intelligence?

Research Subquestion 3 (RSQ3)

To what degree does a leader's emotional intelligence moderate the relationship between their transformational leadership, as assessed by their employees, and employees' work engagement in pharmaceutical organizations in the United States?

Significance of the Study

The study contributed knowledge to the organization and management fields by analyzing the relationships between leaders' transformational leadership and emotional intelligence, as well as the role age, gender, and duration of employment in current position play in affecting work engagement in pharmaceutical organizations in the United States. The importance of the study for scholars was that the generated data provided

empirical evidence on the relationships between leaders' transformational leadership, emotional intelligence, and employees' work engagement. On the other hand, the significance of the study for practitioners was that the generated research may guide hiring and training practices within pharmaceutical organizations to elicit highest levels of employee work engagement.

Definition of Terms

To establish a baseline context for this study the following definitions were applied.

Age was a numerical expression indicating how old an individual was at the time of the study.

Duration of employment referred to the time an individual has been in their current position.

Emotional intelligence was defined as an individual's ability to recognize the functioning of emotions in their own lives and in the lives of others, and for managing those emotions in themselves and their dealings with others (Goleman, 1995).

Employee was defined as an individual working in the pharmaceutical industry in the United States who has an immediate supervisor.

Gender referred to identifying an individual as a man or woman.

Leader was defined as an individual who directly supervises and has oversight of direct reports.

Pharmaceutical organizations were defined as companies engaged in research, development, manufacturing, and marketing of prescription, over-the-counter, and device products used to mitigate, treat, or manage various diseases in patients. Pharmaceutical

organizations in the United States directly support approximately 810,000 jobs and inject almost \$800 billion into the United States economy on an annual basis (PhRMA, 2015).

Transformational leadership was originally defined by political theorist James Burns in 1978 in contrast to transactional leadership. Transactional leadership involves a transaction between leaders and followers, an arrangement wherein subordinates follow leaders in exchange for monetary remuneration or organizational advancement (Burns, 1978). In contrast, transformational leaders lead through charismatic, motivational, and inspirational strategies (Warrick, 2011).

United States was defined as the contiguous 48 states, Alaska, Hawaii, and the District of Columbia.

Work engagement was defined as a construct that refers to how workers psychologically connect with their work (Bakker et al., 2011). Work engagement is an experience of work as fulfilling and positive, an experience characterized by dedication, vigor, and absorption (Bakker et al., 2011). Work engagement has been linked to positive outcomes associated with self-assessment and accomplishment, including self-appreciation, self-recognition, and an increased sense of success (Bakker et al., 2011).

Assumptions and Limitations

Assumptions

A number of assumptions were made in the design and conduct of this study. These assumptions are broken down into theoretical, topical, and methodological assumptions, as described below.

Theoretical assumptions. As transactional and laissez faire leadership styles were not investigated in this study the theoretical assumption includes the supposition

that transformational leadership is a leadership style exhibited by leaders in the pharmaceutical industry in the United States. The second theoretical consideration assumed there would be a relationship between the construct variables of transformational leadership, emotional intelligence, and work engagement even though the literature review did not identify a relationship between all three constructs when investigated simultaneously.

Topical assumptions. The key topical assumption was that the theories of transformational leadership and emotional intelligence affect employee engagement in pharmaceutical organizations in the United States, a population where limited research on leadership exists.

Methodological assumptions. A key methodological assumption was that by utilizing quantitative methodology researcher bias was minimized (Creswell, 2009). Another assumption was that the collection of quantifiable data could be analyzed to examine the relationships between transformational leadership, emotional intelligence, and employee engagement, as well as age, gender, and duration of employment in current position, and that this was best accomplished through the implementation of Likert scale instruments in an electronic internet based survey. Additionally, a methodological assumption in the conduct of survey research was that the study participants would truthfully report their perceptions of their leader's transformational leadership and emotional intelligence levels and their own levels of work engagement. Furthermore, another assumption was concerned with the study sample as representative of the pharmaceutical industry population in the United States.

This research relied on a third-party vendor, SurveyMonkey[®], to identify qualified participants through the company's proprietary pharmaceutical and healthcare database, SurveyMonkey Audience (SurveyMonkey, 2015). As such, an assumption was that the proprietary database would contain sufficient number of participants employed in the pharmaceutical industry in the United States who would truthfully answer the research questions. Finally, an assumption was made that the collected data would not violate the assumptions required for the conduct of multiple linear regression analysis.

Limitations

Critics of quantitative research (Sale, Lohfeld, & Brazil, 2002) suggested that one of the primary challenges in conducting quantitative research is the focus on hypothesis testing based on a distillation of the research question into several predetermined variables, which are purported to represent reality. This deconstruction suggests a narrow approach to investigating the research question and creates an opportunity for potentially missing a broader research inquiry. Therefore, the overarching implication was that an evaluation of a research problem through a narrow lens creates a superficial dataset not necessarily representative of a wider population.

Instrument validity and reliability were also potential limitations in quantitative research. Instrument validity and reliability are discussed in Chapter 3 in detail. This study employed three validated instruments: the Multifactor Leadership Questionnaire (MLQ 5X-Short; Avolio & Bass, 2004), the Genos Emotional Intelligence Inventory (Gignac, 2010b), and the Utrecht Work Engagement Scale (UWES; Schaufeli & Bakker, 2003) to measure transformational leadership, emotional intelligence, and work engagement, respectively.

Nonetheless, the instruments used to test the research hypotheses may lack sufficient detail or responders may not understand the instruments the same way as the researcher does (Rattray & Jones, 2007). Additionally, survey instruments may lack sufficient response choices to a statement they are aiming to address. Furthermore, predetermined response choices do not necessarily reflect how study participants really feel about a specific topic but may actually be just a representation of the closest match (Collins, 2003).

Another limitation related to the conduct of this study was that the survey instruments were self-reported by the study participants. Conway and Lance (2010) posited that self-reporting might lead to bias. In choosing between self-assessment or rater measurements, consideration needs to be given to social desirability bias when self-responders can be accused of faking responses (Antonakis, Ashkanasy, & Dasborough, 2009; Holtgraves, 2004).

An additional limitation of the study was the utilization of SurveyMonkey's proprietary database of participants employed in the pharmaceutical and healthcare industries. As the database of participants was comprised of pharmaceutical and healthcare employees, it was not clear what proportion of participants were specifically employed in the pharmaceutical industry versus those employed in healthcare disciplines. As such, estimating an accurate return rate that would fulfill the minimum required sample size for this study was a challenge. To mitigate this limitation, the researcher contracted with SurveyMonkey to obtain at least 150 completed responses from participants who were only employed in the pharmaceutical industry.

Lastly, a limitation of this study focused on only those participants who were employed full time in the pharmaceutical industry in the United States and had a direct supervisor at the time they responded to the survey. As such, conclusions made from this research can only be generalized to a population of employees working in the pharmaceutical industry in the United States and who have a supervisor. Findings from this study cannot be extended to all employees in the pharmaceutical industry.

Nature of the Study

From a quantitative perspective, the philosophical assumptions in identifying a research problem are grounded in a method of inquiry facilitated by an objective view that relationships between variables can be studied based on theoretical assumptions (Creswell, 2009). According to Onwuegbuzie and Leech (2005), quantitative research has been the mainstream investigational approach for over 100 years and is rooted in social and behavioral science based on an approach aimed at addressing research questions through empirical methods. This is consistent with the notion that a positivist philosophy, anchored on an objective, measurable, and fixed reality, drives quantitative methodology. As such, quantitative research methodology is appropriate when the intent of the inquiry is to explore the relationship between study variables, quantified for adaptation in statistical analyses, with the intent to generalize the findings to a broader population (Chen, 2011).

Quantitative research methodologies include experimental, quasi-experimental, and non-experimental designs. When considering quantitative research and the most appropriate study design, it is important to evaluate potential challenges and limitations associated with quantitative research to ensure that the selected strategy aligns with the

overall research goal. The strength of evaluating a research problem by quantitative methodology is the proposition that only quantitative research evaluates, in an objective and systematic way, a relationship between the variables in question. The foundation of quantitative research further suggests that the purpose of empirical research is appropriate to examine a relationship between variables. To illustrate the design of the study, Figure 1 represents the conceptual framework for the study schema in addressing the research questions through a nonexperimental quantitative approach.

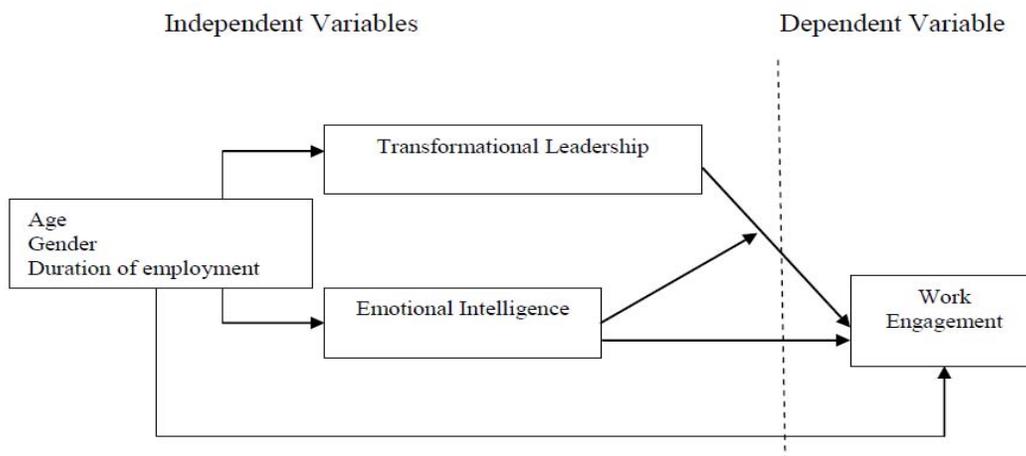


Figure 1. Conceptual framework for study design.

Organization of the Remainder of the Study

The remainder of the dissertation is organized into four additional chapters. Chapter 2 summarizes the existing literature regarding transformational leadership, emotional intelligence, and work engagement, as well as key concepts for this study including, the pharmaceutical industry, and the role age, gender, and duration of employment may play in affecting work engagement. Chapter 3 explains the selection and design of the research methodology and choice of instruments, in addition to data

handling and associated assumptions for the selected methodology. Chapter 4 provides a detailed account of the findings of the study and explains any challenges associated with the conduct of the study. Finally, Chapter 5 discusses the implications from the study for practitioners and scholars, as well as, offers suggestions for future studies investigating transformational leadership, emotional intelligence, and work engagement.

CHAPTER 2. LITERATURE REVIEW

In a now classic work entitled *Leadership*, John McGregor Burns (1978) revolutionized the study of leadership by introducing the concept of transforming, or transformational leadership, which shifted the focus from the leader's actions to affect the leader's behavior on followers. Inspired by Burns, Bass developed a model of transformational leadership that could be practiced across organizational contexts, taught and learned, and evaluated (Bass, 1999; Bass & Riggio, 2006).

For nearly four decades, transformational leadership has dominated the leadership literature. However, a recent research trend has emerged that involves investigating the role of emotional intelligence in leaders' behavior, with evidence pointing to a relationship between transformational leadership and emotional intelligence (Bin Sayeed & Shanker, 2009; Clarke, 2010; Lopez-Zafra, Garcia-Retamero, & Martos, 2012; Quader, 2011; Wang & Huang, 2009). Popular interest in emotional intelligence arose from the publication of Goleman's (1995) book *Emotional Intelligence: Why It Can Matter More Than IQ*. However, the concept of noncognitive intelligence is not a novel idea. Kaufman and Kaufman (2001) traced the idea that emotional intelligence is a facet of general intelligence to Binet's work in the late 19th century on the interactions between children's emotions and their intellect. Additionally, Wechsler (1943, 1950) introduced the concept of nonintellective factors in general intelligence in the mid-20th century. Notwithstanding these early approaches in defining emotional intelligence, the interest in

emotional intelligence was largely dormant until the 1990s, when various models of emotional intelligence began to appear in the scholarly literature, making it possible to move beyond theory and empirically examine emotional intelligence (Bar-On, 2006; Cherniss, Extein, Goleman, & Weissberg, 2006; Gignac, 2010a; Mayer, Salovey, & Caruso, 2004; Walter, Cole, & Humphrey, 2011; Ybarra, Kross, Sanchez-Burks, 2014; Zeidner, Roberts, & Matthews, 2008).

Even though the examination of emotional intelligence has yielded positive outcomes, the topic of emotional intelligence has also drawn skeptics, although the primary complaint is not that emotional intelligence is invalid or insignificant, but rather that its impact has been exaggerated (Walter et al., 2011; Ybarra et al., 2014; Zeidner et al., 2008). Moreover, the plethora of conceptualizations and assessments of emotional intelligence complicate efforts to discern its precise nature and effects. If Goleman is credited with popularizing emotional intelligence he is also criticized for embellishing its influence on life outcomes. Broad generalizations aside, much of Goleman's work focuses on the role of emotional intelligence in effective leadership (Goleman, 1995, 1998, 2011, 2014). Notably, elements of emotional intelligence are intrinsic to the dimensions of transformational leadership (Bass & Riggio, 2006; Bass & Steidlmeier, 1999) and overlap with interpersonal competencies (Clarke, 2010). Further illustrating this association, Boyatzis (2011) proposed a model of managerial and leadership competencies that encompasses emotional, social, and cognitive competencies. In addition to the investigations of the relationships between transformational leadership and emotional intelligence, transformational leadership has also been studied in other contexts.

A substantial body of research documented a relationship between transformational leadership and positive work outcomes (Bass & Riggio, 2006). What is missing from the equation, however, is knowledge of the underlying processes that motivate employees of transformational leaders to strive for superior work performance, invest effort into their organizations, and display creative thinking. As such, a line of research has emerged examining work engagement as a mediator in a dynamic relationship between transformational leadership and various positive work outcomes (Aryee et al., 2012; Breevaart, Bakker, Demerouti, Sleebos, & Maduro, 2014; Buckman, LePine, Crawford, & Rich, 2012; Kovjanic et al., 2013). One unique study focused on followership, or follower characteristics in relation to transformational leadership with work engagement as the outcome (Zhu, Avolio, & Walumbwa, 2009).

In general, interest in the concept of work engagement arose from Kahn's (1990) research into the psychological conditions that influence employees' engagement—or disengagement—from work, which produced a theoretical model of work engagement. Further investigation of work engagement also grew out of recognition that negative outcomes predominated in psychological research (Bakker, Schaufeli, Leiter, & Taris, 2008). A substantial body of research is devoted to burnout, a widespread phenomenon marked by exhaustion and cynicism. Engagement was conceived as the “positive antipode of burnout” (Schaufeli & Bakker, 2004, p. 294). Taken together, broad support exists for continued investigations of transformational leadership, especially in the context of emotional intelligence and work engagement.

In more than 25 years of research involving organizations in 10 countries and virtually all sectors of business and industry, Kouzes and Posner (2007) found that the

most preferred qualities of a leader are consistent with the attributes of a transformational leader. Especially in view of the sheer diversity of the organizations the findings are remarkably consistent. Nevertheless, variations exist in the cultures of organizations in different sectors as well as in organizations within the same sector. Few researchers have focused on pharmaceutical organizations, despite the position of pharmaceuticals as a powerful growth industry. Moreover, Breevaart, Bakker, Hetland, et al. (2014) observed that there are few studies of leader behaviors and engagement. Consequently, there is a gap in the literature on leadership in the pharmaceutical industry and no prior study has examined the relationships between leaders' transformational leadership, leaders' emotional intelligence, employees' age, employees' gender, employees' duration of employment in current position, and employees' work engagement in pharmaceutical firms in the United States. The following sections will present a case for studying transformational leadership, emotional intelligence, and work engagement in pharmaceutical organizations, followed by discussions of the theoretical frameworks driving this study and the empirical literature on transformational leadership, emotional intelligence, and work engagement.

Pharmaceutical Organizations

Pharmaceutical organizations are engaged in research, development, manufacturing, and marketing of prescription, over-the-counter, and device products used to mitigate, treat, or manage various diseases in patients. Pharmaceutical organizations in the United States directly support approximately 810,000 jobs and inject almost \$800 billion into the United States economy on an annual basis (PhRMA, 2015). Noting that pharmaceutical companies invest heavily, in terms of financial and human resources, in

sales and marketing efforts of their major products, Willink (2009) argued that the industry is characterized by “many great managers and far too few great leaders” (p. 120). In distinguishing between leadership and management, Willink (2009) is essentially demarcating transformational and transactional leadership, respectively. Framing leadership as “the foundation of an organization,” encompassing leaders and followers, his definition of leadership involves “shared sense of trust, commitment, imagination, and risk-taking” (Willink, 2009, p. 120). These are qualities displayed by excellent transformational leaders and the quality they seek to stimulate in their followers (Bass & Riggio, 2006; Kouzes & Posner, 2007). According to Willink (2009), vision and empowerment are paramount in the successful launching of pharmaceutical products and brands, and not coincidentally, they are essential attributes of a transformational leader.

Willink (2009) envisioned a model of leadership for the pharmaceutical industry based on Bass and Steidlmeier’s (1999) portrayal of authentic transformational leadership, whereby “transactional leadership rests upon transformational foundations and transformational leadership is enlivened and guided by an inner ethical core” (p. 191). Bass consistently maintained that the most effective leadership is both transformational and transactional, but both must be authentic (Bass & Riggio, 2006; Bass & Steidlmeier, 1999). Fairness is essential to effective transactional contingent reward leadership and integrity is intrinsic to transformational leadership.

Willink (2009) outlined four steps for pharmaceutical sales and marketing managers to navigate to become transformational leaders. These involve: gaining the trust of others to enlist them in striving toward a shared vision, or more directly, building a team based on vision and trust, exhibiting strong commitment to the vision and the

team, unleashing imagination and creativity, and taking personal and professional risks on behalf of the team. These steps embody the characteristics of transformational leadership, which can be learned and developed (Bass & Riggio, 2006). In Willink's (2009) experience in the pharmaceutical industry, transformational sales and marketing managers are scarce. Willink (2009) pointed out that "product launches and life cycles are highly complex and more critical than ever to the success of an organization" (p. 121). Theoretically, a dynamic and highly competitive industry would be advantaged by transformational leadership in virtually all areas of operation (Bass, 1999; Bass & Riggio, 2006).

On the other hand, the general application of emotional intelligence to leadership lies in the notion that due to globalization, the overall approach to management and leadership has evolved. The evolution of leadership has moved from traditionally authoritarian and hierarchal approaches to the modern day interpretation of leadership concerned with the integration of personal characteristics into a leader's successful management style. The connection between emotional intelligence and leadership, particularly in the context of its importance to organizational leadership, is of interest to both scholars and practitioners. The utility of emotional intelligence hinges on the desire to understand what motivates individuals, how individuals relate to each other, and how relationships are built in the workplace. Individuals who are able to express these attributes have higher emotional intelligence scores and in turn are better leaders (O'Boyle et al., 2011).

In the cutting-edge areas of biotechnology and life sciences, many firms are still in the startup stage. According to Honeysett and Metheny (2012), in this industry

segment it is important to match leadership talent with the growth stage of the company. Emotional intelligence is an essential attribute of Honeysett and Metheny's (2012) vision of a leader who can successfully grow and develop a young biotechnology firm. According to the authors, beyond having sharp business acumen, exceptional leaders "act with a keen sense of self-awareness" (Honeysett & Metheny, 2012, p. 563). Moreover, they possess "high emotional intelligence, great interpersonal skills and the ability to bring it all together with a compelling vision that unites teams in striving for a common goal" (Honeysett & Metheny, 2012, p. 563).

In essence the image of excellent leadership described by Honeysett and Metheny (2012) parallels the model outlined by Willink (2009). The main distinction is that Honeysett and Metheny (2012) directly reference emotional competencies such as interpersonal skills, intrapersonal skills, and self-regulation skills. Honeysett and Metheny (2012) explicitly described emotional intelligence as the cornerstone for establishing trust and rapport. In Bass's model, trust and rapport evolve from the actions of an authentic transformational leader (Bass & Riggio, 2006; Bass & Steidlmeier, 1999). Willink (2009) and Honeysett and Metheny (2012) are both aware that their industry is replete with highly competent managers, but the dynamic, rapidly shifting environment in which they operate requires, respectively, transformational leaders and emotionally intelligent leaders. Consequently, this study will fill a gap in research by examining transformational leadership and emotional intelligence in pharmaceutical organizations.

Transformational Leadership

Burns (1978) was the first theorist to associate leadership with transformation. According to Burns (1978) a leader must have a strong moral compass, which transforms

the experience of leader and follower alike. Transformational leaders inspire their followers so that “the result of transforming leadership is a relationship of mutual stimulation and elevation that converts followers into leaders and may convert leaders into moral agents” (Burns, 1978, p. 4).

Marked by turbulence, globalization, and unrelenting competition and change, the business environment of the 1980s was no longer conducive to transactional leadership, which aims at maintaining a stable status quo. The unpredictable landscape demanded a more dynamic model of leadership. Building on Burns’ (1978) conception of transformational leadership, Bass (1985) expanded Burns’ (1978) work and developed a model of leadership formally known as the full range leadership model, encompassing transformational and transactional leadership, and laissez faire, which is virtually no leadership. Bass’s model of leadership is uniquely suited to the management of large, complex organizations in a changing world (Bass, 1999; Bass & Riggio, 2006).

As such, Bernard Bass’s name is virtually synonymous with transformational leadership. However, Bass emphasized that leadership is never exclusively transformational or transactional (Bass, 1999; Bass & Riggio, 2006). Bass (1999) viewed transformational leadership as an extension of transactional leadership where transactional leadership built on social exchange forms a foundation for transformational leadership. Burns’ (1978) idea of transforming leadership is based on Maslow’s uniquely human need for self-actualization (Bass, 1999). Transactional leadership is concerned with fulfilling the lower needs on Maslow’s hierarchy. Transformational leadership strives to advance both leader and follower through the higher order needs on a path to self-realization. This is further emphasized by Shuck and Herd (2012), who posited that

transactional leadership conveys and clarifies expectations whereas transformational leadership heightens followers' focus on higher order outcomes, such as believing in the organization's vision.

Dimensions of Transformational Leadership

Transformational leadership is made up of four dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass & Riggio, 2006). Idealized influence, also referred to as charisma, is defined by leadership behaviors that stimulate followers to admire and respect the leader. Leadership by example epitomizes the concept of idealized influence. These characteristics refer to the “charismatic role modelling behavior of transformational leaders” (Eisenbeiß & Boerner, 2010, p 366). Through idealized influence a leader projects an image that followers try to imitate. The leader becomes a role model to his or her followers. According to Reuvers, van Engen, Vinkenburg, and Wilson-Evered (2008) trust, respect, and high moral and ethical values are essential components of idealized influence. Burns' (1978) idea of a transforming leader as having strong moral character is embodied by idealized influence. Idealized influence is divided into two facets: the actual behaviors exhibited by the leader and the behaviors ascribed to the leader by followers and others (Bass & Riggio, 2006).

Inspirational motivation refers to the ability to articulate a convincing organizational vision that motivates others to strive toward achieving personal and group goals (Bass & Riggio, 2006). Optimism and enthusiasm are qualities that underpin inspirational motivation. Passion is an essential quality of an inspirational leader (Kouzes & Posner, 2007). A transformational leader is able to articulate and present an

inspirational vision for the future through passion, and belief in the organization (Reuvers et al., 2008). Presenting an inspirational vision projects the leader's own beliefs for a better future. Followers, in turn, are more apt to respond to the leader's motivational propositions when their own beliefs and visions are aligned with that of the leader. Intellectual stimulation involves the ability to solicit ideas, opinions, and input from followers (Bass & Riggio, 2006). A leader proficient in intellectual stimulation is capable of creating an environment open for followers to express and experiment with new ideas and approaches in an attempt to solve problems. In exercising individualized consideration the leader is sensitive to each individual's unique needs for professional growth and work place recognition and is able to create development opportunities tailored for each individual's abilities and aspirations. Mentoring and coaching are leader behaviors that reflect individualized consideration.

Measures of Transformational Leadership

Various measures have been put forth to assess transformational leadership, including Transformational Leadership Behaviour Inventory (Podsakoff, MacKenzie, Moorman and Fetter, 1990), Leader Assessment Inventory (Burke, 1991), Transformational Leadership Questionnaire (Alimo-Metcalfe & Alban-Metcalfe, 2001), Global Transformational Leadership scale (Carless, Wearing & Mann, 2000), Follower Belief Questionnaire and the Attributes of Leader Behaviour Questionnaire (Behling & McFillan, as cited in The transformational leadership report, 2007), CK scale (Conger & Kanungo, 1988), and Leadership Practices Inventory (Posner & Kouzes, 1988). However, the MLQ remains at the forefront of measuring transformational leadership because this leadership style has been studied in numerous contexts and is applicable in

any organizational setting (Kirkbride, 2006). The MLQ “is usually administered to subordinates who rate how frequently their leader uses each type of behavior” (Yukl, 1999, p. 286). The MLQ is based on a 5-point Likert scale and assesses the frequency of leadership behaviors. The MLQ has undergone numerous psychometric analyses since its inception, leading to several refinements (Avolio, Bass, & Jung, 1999; Bass & Riggio, 2006).

The original MLQ contained seven leadership dimensions: “charisma, inspirational, intellectual stimulation, individualized consideration, contingent reward, management by exception and laissez-faire leadership” (Avolio et al, 1999, p. 441). Although Bass did not regard charismatic and inspirational leadership as identical, psychometrically, they were often indistinguishable, thus they were synthesized into the single dimension of idealized influence. On the other hand, management by exception was divided into two leadership styles: active management by exception and passive management by exception. Furthermore, the idealized influence dimension of transformational leadership was subdivided into behaviors displayed by the leader and behaviors attributed to the leader.

The full range model represents a continuum of leader behaviors from active to passive. Factor analysis of the MLQ disclosed a striking association between transactional contingent reward leadership and transformational individualized consideration. As a result, Avolio et al. (1999) proposed that, “transactional contingent reward leadership may be the basis for structuring developmental expectations as well as building trust, because of a consistent honouring of ‘contracts’ over time” (p. 458). According to Bass and Riggio (2006), contingent reward can be transactional and

transformational. A material reward such as a cash bonus represents transactional contingent reward, while a psychological reward such as praise constitutes transformational contingent reward.

The current version of the MLQ (MLQ 5X-Short) includes 45 items accounting for transactional, transformational, and laissez-faire leadership. The instrument is well-established and validated and has been used in a various organizational settings, populations, and cultures. The utility of the MLQ is paramount in establishing the leadership values and behaviors and has been correlated with numerous individual and organizational outcomes, including performance, creativity, and work engagement (Bono & Judge, 2003; Howell & Avolio, 1993; Jung, Chow, & Wu, 2003).

Transformational leadership is measured based on 20 statements assessing transformational leadership from the overall 45 statements that make up the MLQ. A generated score for the level of transformational leadership is the average numerical score of all 20 statements. A higher score indicates more transformational leadership behaviors (Avolio & Bass, 2004).

Emotional Intelligence

In a broad sense, emotional intelligence describes a multidimensional approach that defines a person's ability to manage emotions and competencies (Akerjordet & Severinsson, 2009). Salovey and Mayer may have been the first authors to use the term emotional intelligence in the scholarly literature. In two articles published in 1990, they elaborated the theoretical and empirical constructs underlying their conception of emotional intelligence (Mayer et al., 2004). The term had not previously appeared in the scholarly literature. Much of the interest in emotional intelligence is due to the apparent

reality that some individuals with what seems to be average intelligence are highly successful in life while others with high IQs succumb to mundane stressors. Zeidner et al. (2008) framed emotional intelligence within the context of a legacy of scientific research on social competencies and abilities. This theme is central to Goleman's (1995) theory of emotional intelligence and intuitively possesses mass appeal. Daniel Goleman (1995) is generally given credit for promoting the concept of emotional intelligence. However, claims made by Goleman and others that emotional intelligence supersedes all other factors in predicting "major life outcomes at levels virtually unheard of in psychological science" have been heavily criticized on the grounds that they are irresponsible and misleading, and "do a disservice to the field" (Mayer, Salovey, & Caruso, 2004, p. 206). A decade after Mayer et al. (2004) made that assertion, critics still argue that the emotional intelligence construct needs to be refined and its precise influence on behavior and outcomes must be scrutinized more carefully (Ybarra et al., 2014).

Historical Background

Wechsler (1943, 1950) figures most prominently in historical discussions of emotional intelligence. In a paper presented in 1943, Wechsler pointed out that individuals with identical IQs can differ tremendously on measures of global functioning, including criteria for judging IQ. Wechsler called attention to non-intellective factors, which encompass all "affective and conative abilities" which have any influence at all on global behavior (Wechsler, 1943, p. 103). Wechsler argued that along with intellect, these non-intellective factors play a significant role in determining intelligent behavior.

Furthermore, he asserted that intelligence could not be fully captured by tests unless they included some measures of non-intellective factors.

Wechsler (1950) further expounded on non-intellective influences on intelligence, invoking the psychologist, E.L. Thorndyke, who claimed that there are three types of intelligence: abstract, social, and practical. Wechsler (1950) noted that even with numerous available intelligence tests, there always remains a substantial degree of variation that cannot be explained. In fact, he argued, “one need not be afraid or ashamed to acknowledge impulse, instinct, and temperament as basic factors in general intelligence” (Wechsler, 1950, p. 83). Wechsler (1950) maintained that “general intelligence cannot be equated with intellectual ability, but must be regarded as a manifestation of the personality as a whole” (p. 83).

Almost 30 years later, addressing a conference of the American Psychological Association (APA), Wechsler reiterated his position that factor analysis of his IQ tests did not account for all the variations in intelligence, along with his belief that the residual variance could be explained by non-intellective factors (Kaufman & Kaufman, 2001). In 1981, a Level of Aspiration test was standardized to be included in the Wechsler Adult Intelligence Test-Revised (WAIS-R). However, the test did not succeed in measuring striving, confidence, and emotional response to the experiment as Wechsler envisioned and the assessment was dropped from the battery of intelligence tests. Wechsler died that same year, distressed over failing to realize his vision of an encompassing measurement of intelligence. According to Kaufman and Kaufman (2001), Wechsler would have undoubtedly praised the development of subsequent emotional intelligence as well as the

work of other contemporary theorists and researchers who recognized the significance of emotional intelligence in general human intelligence.

Contemporary Models of Emotional Intelligence

Performance, trait, or behavior attributes are the primary framework for the contemporary models of emotional intelligence. The most recognized performance or ability-based model is the Mayer-Salovey-Caruso model (Cherniss, 2010). The underlying principle of this model is its approach in measuring emotional intelligence as it relates to an individual's ability to perceive their emotions, assimilate emotional experiences, understand and interpret emotions, and regulate emotions (Mayer, Caruso, & Salovey, 1999). On the other hand, the Bar-On model represents a trait-based assessment of emotional intelligence.

The Bar-On model incorporates a wide range of assessment factors that vary from empathy to problem solving. Specifically, the model assesses intrapersonal skills, interpersonal skills, stress management, adaptability, and general mood (Bar-On, 2006). This noncognitive model contains elements that attempt to address why certain individuals express higher levels of psychological well-being and are able to cope with life's pressures better than others are. Due to the variety of measures in the model, Hunt and Fitzgerald (2013) characterized the Bar-On model as one that combines emotional and personality features. Goleman (1995) influenced the last major model of emotional intelligence.

Based on the research of Boyatzis and Goleman (Boyatzis & Sala, 2004) the emotional and social competence inventory (ESCI) model attempts to address emotional intelligence that manifests itself through social and emotional experiences. This model

contains an emotional component, which according to Anbarasan and Nikhil (2010) is different from the other models in that this model suggests emotional intelligence is a learned trait based on experiences, rather than regarded solely as an inherent personality or ability trait. In addition to these three models, often regarded as the gold standards of measuring emotional intelligence, many other models have proliferated in the literature.

Measures of Emotional Intelligence

The four-branch ability model assessed by the MSCEIT is probably the most extensively used measure of emotional intelligence. The MSCEIT is based on the Mayer-Salovey-Caruso ability model that divides emotional intelligence into four areas or branches representing the ability to: (a) perceive emotions, (b) use ability to facilitate thinking, (c) understand emotions, and (d) manage emotions (Mayer et al., 2004). The model is hierarchical and the four branches reflect the degree to which the ability is integrated into the person's psychological structure.

The Bar-On model of social-emotional intelligence is based on “a cross-section of interrelated emotional and social competencies, skills, and facilitators that impact intelligence behavior” and govern self-understanding, self-expression, understanding and relating to others, and coping with everyday demands (Bar-On, 2006, p. 14). The assessment tool derived from the model, the EQ-i is designed to capture five key attributes: (a) recognizing, comprehending, and expressing emotions and feelings, (b) understanding how others feel and relating to others, (c) managing and controlling emotions, (d) managing change, adapting, and solving personal and interpersonal problems, and (e) motivation and optimism.

The EQ-i is comprised of five scales and 15 dimensions (Bar-On, 2006). The scales are: (a) intrapersonal (self-regard, emotional self-awareness, assertiveness, independence, and self-actualization), (b) interpersonal (empathy, social responsibility, and interpersonal relationship), (c) stress management (stress tolerance, impulse control), (d) adaptability (reality testing, flexibility, problem solving), and (e) general mood (optimism, happiness). According to Bar-On (2006), the model can be adapted across a wide variety of settings including home and family contexts as well as the occupational and educational settings that are the focus of most research on emotional intelligence. The applicability of the EQ-i to informal settings is primarily due to its ability to predict the quality of interpersonal relationships.

The Boyatzis and Goleman model “consists of a number of specific competencies organized into four basic ‘clusters’: self-awareness, self-management, social awareness, and relationship management” (Cherniss, 2010, p. 112). This model utilizes the emotional competence inventory (ECI) and the emotional and social competence inventory (ESCI) as measures of emotional intelligence.

Alternative Models of Emotional Intelligence

The three principal models of emotional intelligence have also been a source of controversy in the field. The fundamental criticisms center on a lack of agreement between the models and the specific attributes they measure (Cherniss, 2010). At the core of the confusion are the models’ theoretical constructs based on performance, trait, or behavior. These observed discrepancies motivated others to develop alternative models of assessing emotional intelligence perceived to be in greater alignment with the core definitions of emotional intelligence described earlier. There are numerous

alternative models assessing emotional intelligence but predominantly include the Wong and Law (2002) Emotional Intelligence Scale, the Work Group Emotional Intelligence Profile (Jordan, Ashkanasy, Härtel, & Hooper, 2002), the Schutte Self-Report Emotional Intelligence Test (Schutte et al., 1998), and the Genos Emotional Intelligence Inventory model (Palmer, Gignac, Ekermans, & Stough, 2008) used in this study.

According to Joseph and Newman (2010), despite the increasing popularity of emotional intelligence in the management literature, as well as its practical application by human-resource professionals as a tool for hiring and training employees, there are substantial gaps in several theoretical areas. These include “the relative roles of emotion perception, emotion understanding, and emotion regulation facets in explaining job performance” (Joseph & Newman, 2010, p. 54), conceptual overlap between emotional intelligence and cognitive intelligence and the Big Five personality traits, and the application of the emotional intelligence label to different conceptualizations such as the ability model and the mixed model. To address these issues, Joseph and Newman (2010) designed and tested a theoretical model integrating these factors based on a series of meta-analyses. Drawing on 21 meta-analytic correlations from published research studies they added 66 additional meta-analyses.

The result was a cascading or progressive model expanding on the components of the ability model of emotional intelligence (Joseph & Newman, 2010). Emotion perception is deemed prerequisite for emotion understanding, which is the predecessor for emotion regulation and job performance. These elements of the cascading model are considered reflective of selective aspects of “conscientiousness, cognitive ability, and neuroticism, respectively” (Joseph & Newman, 2010, p. 54). Emotional intelligence

measures derived from the mixed models were presumed to account for variations in job performance beyond the effects of cognitive ability and personality. These relationships were empirically confirmed through the meta-analyses, though some inconsistencies emerged for the ability model of emotional intelligence in relation to job characteristics. Specifically, the impact of emotional intelligence was dependent on whether the job was high or low in “demands for emotional labor”, defined as “the process of regulating both feelings and expressions for organizational goals” (Grandey, as cited in Joseph & Newman, 2010, p. 69).

Joseph and Newman (2010) found the mixed model of emotional intelligence to have greater potential than the ability model for predicting job performance across different situational contexts, though from a theoretical standpoint they view the mixed model as being very underdeveloped. Race and gender were also examined in the meta-analyses, with varying results depending upon the methodologies used. The scarcity of research on race precluded drawing any conclusions. In contrast, there is a substantial amount of research on emotional intelligence and gender, usually favoring women (Joseph & Newman, 2010; Lopez-Zafra et al., 2012; Quader, 2011). However, evidence suggests it is not biological sex per se, but rather gender role orientation that influences emotional intelligence and its relationship to factors such as job performance and transformational leadership (Lopez-Zafra et al., 2012).

On the other hand, Chopra and Kanji (2010) are critical of the dominant models of emotional intelligence, claiming that they are not sufficiently “holistic and comprehensive” (Chopra & Kanji, 2010, p. 997) in conceptualizing and evaluating emotional intelligence. In their view, emotional intelligence is multidimensional,

encompassing inherent talents, learned capabilities, relationship management skills, and socioeconomic factors that endow the individual with enough intelligence “to effectively pick up their own and others’ emotional activities in order to adjust in every situation” (p. 977). Their broad conceptualization of emotional intelligence integrates intrapersonal intelligence, interpersonal intelligence, performance factors, and social capital.

According to the Kanji-Chopra emotional intelligence model (KCEI), the psychosocial system involves a complex interplay of self-emotional skills, intrapersonal development skills, management excellence, and socioeconomic factors. Together, these dimensions create an emotional intelligence index.

Chopra and Kanji (2010) tested the statistical validity of the KCEI in research involving 250 participants. In terms of the components of the psychosocial system, close to two-thirds (63%) of the participants felt they had the flexibility and adaptability to deal with a changing environment and roughly 60% agreed that “self-knowledge, self-awareness, and self-regard” are important elements of the overall psychosocial system (Chopra & Kanji, 2010, p. 996). Overall, they rated themselves high in self-knowledge and self-awareness, emotional self-management, self-discipline, and self-control, along with creativity and problem solving. Other strong points included cognitive intelligence, reflective learning, and conscientiousness. At the same time, the participants showed weaknesses in managing relations and emotions of others as well as on assertiveness, purposefulness, resilience, self-actualization, and body intelligence. In relation to managerial excellence, Chopra and Kanji (2010) noted participants scored high on “diversity skills and capabilities to motivate, influence and inspire other people” (p. 1000), but low on objectivity, team building, and assuming a change agent role. On the

socioeconomic dimension of emotional intelligence, the participants scored high on “individual social capital, social networking, social responsibility, social awareness and understanding of social problems, economic awareness, good communication skills and abilities to get involved in other peoples’ business along with uncertainty regarding bigger social concerns and trustworthiness” (Chopra & Kanji, 2010, p. 1000). Empathy was a major weak spot where the managers displayed limited capabilities for empathy.

Chopra and Kanji (2010) described the overall emotional intelligence index as “reasonably moderate” (p. 1000). They placed high value on emotional intelligence as a predictor of human behavior and performance and regard the KCEI as a valuable tool for understanding why some individuals possess more emotional intelligence than others, as well as for targeting specific aspects of emotional intelligence for improvement.

The assessment measure of emotional intelligence selected for this study is the Genos Emotional Intelligence Inventory, which captures a seven-factor model of emotional intelligence (Gignac, 2010a). The comprehensive assessment contains 70 items specifically relevant to emotional intelligence in the workplace environment; however, for this study the Genos Emotional Intelligence Inventory-concise was selected. The Genos Emotional Intelligence Inventory-concise scale is designed to measure an overall emotional intelligence score as well as the seven emotional intelligence subscales based on 31 items.

The MSCEIT and the Bar-On EQ-i respectively represent ability models and mixed models of emotional intelligence (Gignac, 2010a). Proponents of ability models argue that they are superior to mixed models because they do not rely on self-rated emotional intelligence and are not subject to social desirability influences. The rationale

is that ability models capture the highest level of emotional intelligence an individual displays at a given time thus some authors refer to them as maximal performance measures. In contrast, mixed models have been somewhat denigrated as typical performance measures. However, Gignac (2010a) argued that typical performance may be more relevant to everyday workplace interactions. Addressing the issue of whether typical emotional intelligence performance could be evaluated without the use of a task-based measurement tool, the use of self- and rater-assessments was proposed as a valid alternative to task performance.

The scales of both Genos Emotional Intelligence Inventory self- and rater-assessments are designed to capture seven interrelated aspects of emotional intelligence: (a) emotional self-awareness, (b) emotional expression, (c) emotional awareness of others, (d) emotional reasoning, (e) emotional self-management, (f) emotional management of others, and (g) emotional self-control (Gignac, 2010a). The results of the psychometric analyses confirmed the validity of the seven-factor model. According to Gignac (2010a), the Genos Emotional Intelligence Inventory has one unique advantage over other emotional intelligence assessment tools in that it distinguishes emotional self-control from emotional self-management. Emotional self-control reflects an immediate reaction to intense emotional stimuli, while emotional self-management involves a more proactive of strategic effort to facilitate the development of a particular mood state.

Over the last 15 years models of emotional intelligence have become increasingly complex and sophisticated. Critics argue that there are still many issues that must be resolved for better insight into the influence of emotional intelligence on behavior (Walter et al., 2011; Ybarra et al., 2014). Ybarra et al. (2014) outlined three principles

that warrant greater investigation. The first principle relates to deliberate and automatic processes for dealing with emotionally relevant information. Principle two focuses on the role of motivation in emotional intelligence. The third principle entails recognition that context matters in quantifying emotional intelligence. These three principles may guide future research on emotional intelligence. Walter et al. (2011) called for more research into the role of emotional intelligence in leadership, which is discussed in the next section.

Leadership and Emotional Intelligence

Competencies

Goleman (1998, 2004) delineated five components of emotional intelligence that are directly relevant to the workplace. These are: self-awareness, denoting the ability to recognize and understand one's mood drives and their effects on others; self-regulation, the ability to control or redirect disruptive impulses and moods; motivation, denoting a passion for work driven by desire for intrinsic rewards, along with a predisposition to pursue goals with energy and vigor; empathy, denoting the ability to understand other people's emotions; and social skill, defined by managing relationships and building networks as well as an ability to find a common understanding and establish alignment.

In contrast to much of the criticism surrounding Goleman's publicizing of emotional intelligence, Goleman has consistently stressed that intellect and technical skill are indeed important elements of effective leadership; however, a model of leadership competencies is not complete without the inclusion of emotional intelligence (Cherniss et al., 2006; Goleman, 1998, 2004). Goleman (2011, 2014) has since distilled the five original components of emotional intelligence into four components specific to

leadership: self-awareness, self-management, social awareness, and relationship management.

Boyatzis (2011) incorporated Goleman's (1995, 2011) emotional and social competencies into a holistic model of personality for guiding leadership development. Boyatzis's (2011) competency model is based on the empirical evidence demonstrating that social, emotional, and cognitive intelligence are all relevant to managerial and leadership effectiveness and thus should be included in a comprehensive model. Walter et al. (2011) envisioned a similar role for emotional intelligence in leadership training and development. Ironically, Walter et al. (2011) concluded their review of emotional intelligence by stating that despite conflicting views on the definition and measurement of emotional intelligence, and amidst ongoing debate over its construct validity, research studies almost consistently find significant relationships between leadership qualities, behavior, and effectiveness.

Transformational Leadership and Emotional Intelligence

Lindebaum and Cartwright (2010) demarcated three major streams of research examining the relationship between emotional intelligence and transformational leadership. The first stream consists of studies that gain information on trait emotional intelligence and transformational leadership from the same source via self-reported assessments. Studies within the second research stream investigated trait emotional intelligence and transformational leadership from the perspectives of different raters. The third research stream encompasses studies employing ability-based measures of emotional intelligence and gathering information on transformational leadership from a different source.

The strongest associations between emotional intelligence and transformational leadership emerge in the studies utilizing a single source for ratings of trait emotional intelligence and transformational leadership. According to Lindebaum and Cartwright (2010) this raises the issue of common method variance (CMV), which occurs “when the measurement technique introduces systematic variance into the measure” (p. 1322). This phenomenon potentially compromises the validity of empirical findings. Lindebaum and Cartwright (2010) argued that the association between trait emotional intelligence and transformational leadership may be especially susceptible to the effects of CMV because emotion is inherently embedded in each one. A stronger essential relationship between traits increases the probability of method effects.

In order to avoid the potential pitfall of CMV, Lindebaum and Cartwright (2010) used multi-rater assessment, collecting data from project managers, their team members, and line managers. As part of a larger study of emotional intelligence, transformational leadership, and their implications for the British construction industry, the sample included data from 55 project managers (all male), 62 line managers, and 110 team members (two from each team). The instruments utilized were the Transformational Leadership Questionnaire (TLQ) and the Wong and Law Emotional Intelligence Scale (WLEIS), a self-reported assessment of trait emotional intelligence. While noting that the TLQ was developed for examining leadership in the public sector, Lindebaum and Cartwright (2010) considered the TLQ more suitable for the U.K. construction industry than the MLQ, which they regard as too “US-centered” despite the fact that the MLQ has been used in international research virtually since its inception (Bass, 1999).

In interpreting their results, Lindebaum and Cartwright (2010) observed that superficially, the correlational and multiple linear regression analyses yielded significant associations between ratings of trait emotional intelligence and transformational leadership. However, sharper scrutiny showed that these significant correlations consistently came from same-source ratings. The results were far less consistent for non-same source ratings. When the raw data were randomized so that the ratings for emotional intelligence and transformational leadership were not necessarily from the same source the significance dissipated. Lindebaum and Cartwright (2010) raised the question of whether the lack of relationship they observed between emotional intelligence and transformational leadership might have been a reflection of the culture of the U.K. construction industry.

Clarke's (2010) research was also conducted with project managers in the U.K., spanning a wide range of arts, business, and industry sectors. For his study, conducted with 67 project managers with an average age of 39.6 years, Clarke (2010) investigated the association between emotional intelligence, competencies vital to project managers, and transformational leadership with importance placed on the connection between emotional intelligence and teamwork skills. The MSCEIT and the MLQ were utilized to assess emotional intelligence and transformational leadership, respectively. The results of this study showed a strong association between emotional intelligence, project manager competencies of attentiveness, teamwork, and conflict management, and transformational leadership dimensions of idealized influence and individualized consideration. With regard to the latter associations, the transformational leadership

constructs of idealized influence and individualized consideration were significantly associated with the ability to use emotions in facilitating thinking (Clarke, 2010).

Clarke (2010) was surprised to find no significant links between any of the independent variables and the project manager's communication skills. Higher emotional intelligence is thought to facilitate better communication effectiveness (Jorfi & Jorfi, 2012). Clarke (2010) proposed that the instrument used for assessing project manager competence was not designed to capture nuances of communication related to emotional intelligence or empathy. Despite this, the study confirmed a relationship between the project managers' emotional intelligence and transformational leadership after controlling for personality and cognitive ability. In contrast to emotional intelligence, cognitive ability had no significant association with teamwork or conflict management, which supports Goleman's (1995, 1998, 2011, 2014) contention that emotional intelligence is more important to leadership than cognitive intelligence.

In another study, Bin Sayeed and Shanker (2009) investigated the relationship between emotional intelligence and transformational leadership among 137 upper level (21%) and midlevel (79%) managers of organizations in Western India. Emotional intelligence was assessed with a detailed questionnaire that synthesized elements of the Goleman, Bar-On, and Meyer, Salovey and Caruso models created for the study. The MLQ provided the framework for an expanded questionnaire assessing transformational leadership styles. From 50 items designed to capture transformational leadership the researchers derived six transformational leadership styles labeled Resolute and Empowering Style, Nurturant Task Focused Style, Visionary Style, Futuristic Style, Unconventional and Innovative Style, and Achievement Focused Style.

In descending order, the emotional intelligence elements of “problem solving focus, self-acceptance, empathy, self-awareness, and self-confidence” were strongly linked with Futuristic, Nurturant Task Focused, and Unconventional and Innovative leadership styles (Bin Sayeed & Shanker, 2009, p. 605). Only a limited relationship emerged between emotional intelligence and the other transformational leadership styles. In terms of intensity, however, emotional intelligence had the strongest impact “on Nurturant Task Focused Style (60.2%), followed by Resolute and Empowering Style (53.2%), and Futuristic Style (35.42%)” (Bin Sayeed & Shanker, 2009, p. 606). Managers with low levels of emotional intelligence tended to rely on power tactics rather than transformational leader behaviors.

The six leadership styles added a unique perspective to the literature on EI and transformational leadership. Resolute and Empowering leaders are strong, determined, willing to take risks, and grant their followers a substantial degree of autonomy to enable them to maximize their potential (Bin Sayeed & Shanker, 2009). Nurturant Task Focused leadership can be viewed as a synthesis of intellectual stimulation, individualized consideration, and transactional contingent reward leadership. Visionary style embodies inspirational motivation. Futuristic leaders have a big picture and are usually change agents. Also, change agents, Unconventional, and Innovative leaders practice intellectual stimulation by encouraging growth and creativity in their followers. Achievement focused leaders are “intuitive and high achievers” who tend to ignore hierarchical boundaries (p. 602). Characteristics and behaviors that facilitate work engagement in followers are implicit in all six transformational leadership styles.

Suri and Prasad (2011) focused on self-awareness in an exploration of the relationship between emotional intelligence and transformational leadership among managers in the information technology (IT) industry. Self-awareness was based on Goleman's conceptualization of self-awareness as composed of emotional awareness, self-assessment, and self-confidence. Transformational leadership was proposed to begin with awareness, first of one's own thoughts and then of how these thoughts influence actions. With heightened awareness the individual comes to understand the factors that motivate others and how they translate into actions. Awareness is viewed as a precursor to authentic and inspirational leadership, ultimately inspiring followers to become leaders themselves. Indeed, self-knowledge is an integral part of authentic transformational leadership (Bass & Steidlmeier, 1999).

A total of 130 junior, middle, and senior managers employed by four large multinational software firms participated in the study (Suri & Prasad, 2011). Self-awareness was assessed with a questionnaire designed for the study and transformational leadership was assessed with the TLQ. The findings confirmed a significant relationship between self-awareness and transformational leadership ($r = .443, p < .01$). Moreover, increases in self-awareness translated into increases in transformational leadership. A third analysis showed that transformational leadership was strongly related to the individual's position in the organizational hierarchy. Specifically, higher level executives scored higher on transformational leadership.

Two factors could account for the relationship between managerial status and transformational leadership. Higher level managers are likely to have more opportunities to perform as transformational leaders while lower level managers have less discretion

and more responsibility for carrying out routine managerial tasks (Suri & Prasad, 2011). Another explanation is that managers may develop a more transformational leadership style as they gain more experience in dealing with challenging situations, making decisions, and dealing with multiple stakeholder groups (Suri & Prasad, 2011). Still another explanation may be that managers who display transformational leader behaviors are promoted more readily. All these explanations are speculative and none is mutually exclusive.

Another study by Arunima, Ajeya, Sengupta, Mariamma, and Tripathi (2014) investigated the relationships between perceptions of leaders' emotional intelligence and transformational and transactional leadership styles as assessed by doctors, nurses, and paramedical professionals in India. Convenience sampling of healthcare professionals was used to collect 330 responses. Spearman's correlation was performed to evaluate the relationship between transformational leadership and emotional intelligence. Transformational leadership was assessed by the MLQ, while emotional intelligence was assessed by the Assessing Emotions Scale.

Results of this study demonstrated a moderate correlation ($r = .310$) between emotional intelligence and transformational leadership style and a weak correlation ($r = .123$) between emotional intelligence and transactional leadership style. Additionally, positive correlations were shown between emotional intelligence and all four domains of transformational leadership. Regression analysis revealed that the two domains of idealized influence (attributed and behavior), and inspirational motivation specifically accounted for the relationship between transformational leadership and emotional intelligence.

Transformational Leadership, Emotional Intelligence, and Teamwork

Wang and Huang (2009) investigated the antecedents of transformational leadership to group cohesiveness expecting emotional intelligence to be a precursor of transformational leadership, and transformational leadership would enhance cohesiveness. Their study was based on the notion that more emotionally intelligent leaders would exhibit greater transformational leadership behaviors. In this context, leaders high in emotional intelligence are perceived as more aware of their followers' emotions and are able to regulate and manage their own and their followers' sentiments, by inspiring group members to achieve shared goals.

The participants were 51 leaders and 252 of their subordinates employed by small to mid-sized textile firms in Taiwan (Wang & Huang, 2009). The leaders and their employees were 82.4% and 45.8% male, respectively. On average, the leaders were 45.2 years old and had been with the company close to 13 years, while the employees' tenure averaged 7.6 years, with an average age of 34.6 years. A 16-item self-report scale developed by Wong and Law (2002) was used to measure emotional intelligence, the MLQ was used to assess transformational leadership, and an eight item scale captured group cohesiveness. The findings confirmed a relationship between transformational leadership and emotional intelligence, as well as a positive association between transformational leadership and group cohesiveness. Transformational leadership was the mechanism that connected emotional intelligence and group cohesion. Emotional intelligence and the control variables of leader's age, gender, and tenure explained approximately one-quarter (26.4%) of the variation in transformational leadership.

In another study, Yuan, Hsu, Shieh, and Li (2012) examined leaders' influence on their followers' development of emotional intelligence. The study investigated the influence of transformational leadership on followers' development of emotional intelligence, job performance, and OCB. Data were gathered at three points (three months apart) from Research and Development departments of a large IT organization. With attrition occurring over the 6-month study period, the sample consisted of 342 employees. Transformational leadership was assessed through items derived from the MLQ. Law, Wong, and Song's model of emotional intelligence served as the framework for examining emotional intelligence. Supervisors completed two brief surveys examining task performance and OCB, respectively. Confirmatory factor analysis and latent growth model were used to test the theoretical model guiding the study.

A striking pattern emerged from the data analysis. Transformational leadership behavior at the start of the study spurred increases in emotional intelligence, which stimulated increases in task performance and OCB over time (Yuan et al., 2012). Transformational leadership behavior initiated the reactions that led to superior task performance and OCB. At the same time, the model suggested that emotional intelligence is the driving force in the increases in task performance and OCB. Transformational leadership was the catalyst for emotional intelligence and behavior change in both studies of transformational leadership, emotional intelligence, and teamwork (Wang & Huang, 2009; Yuan et al., 2012). Other studies evaluating transformational leadership and OCB found similar conclusions (Babcock-Roberson & Strickland, 2010; Goodwin, Whittington, Murray, & Nichols, 2011).

Leadership, Emotional Intelligence, and Gender

The rise in prominence of transformational leadership coincided with the increasing presence of women in organization management. A popular channel of research arose from the presupposition that women would espouse a more transformational leadership style than men. Although findings are inconsistent, the overall body of research does support the idea that women tend to display more of a transformational leadership style (Bass & Riggio, 2006). Emotional intelligence added another dimension to the research on gender and transformational leadership.

Lopez-Zafra et al. (2012) examined the relationship between emotional intelligence, transformational leadership, and gender in a study involving 162 male and 269 female university students. The students' respective disciplines and their perceptions of the various disciplines were also analyzed. The instruments used to assess emotional intelligence and transformational leadership, respectively, were the Salovey model and the MLQ. A gender role questionnaire was derived from Bem's Sex Role Inventory (BSRI).

Emotional clarity, denoting the ability to assess one's own emotions and mood and emotional repair (emotion regulation) exhibited the strongest relationship to transformational leadership, and along with expressive (feminine) attributes, these two aspects of emotional intelligence predicted transformational leadership (Lopez-Zafra et al., 2012). The findings also revealed an intriguing connection between expressiveness and transactional leadership by means of contingent reward leadership (Lopez-Zafra et al., 2012). Women outperformed men on transactional leadership, and individuals higher in expressive qualities were more predisposed to practice contingent reward leadership.

Theoretically, this finding should not be surprising given the association between transactional contingent reward leadership and transformational individualized consideration (Avolio et al., 1999; Bass & Riggio, 2006).

The detailed model derived from the analyses revealed several important relationships between emotional intelligence, transformational leadership, and gender role (Lopez-Zafra et al., 2012). Emotion regulation was the key contributor to all four dimensions of transformational leadership. Emotional clarity was significantly linked with inspirational motivation, charisma, and intellectual stimulation, and expressiveness was connected with inspirational motivation and individualized consideration: the transformational leader behaviors most closely related to interpersonal relationships. Men and women majoring in a female-dominated or gender neutral discipline (such as psychology and economics) scored higher on emotional attention and expressiveness than those in a masculine-congenial discipline (such as engineering sciences), while respondents in a gender-neutral or masculine-congenial disciplines scored higher on emotional repair.

Quader (2011) found a strong association between certain facets of emotional intelligence and transactional leadership in the investigation of emotional intelligence, leadership style, and gender. The participants were 51 managers and their employees primarily employed in banking and construction sectors, though some respondents were employed in sales, sports, catering, and residential housekeeping. A leadership styles questionnaire encompassed the full range of transformational and transactional leadership styles. An emotional intelligence questionnaire consisting of 45 items examined Interpersonal and Intrapersonal intelligence, with Self-Awareness, Managing Emotions,

and Self-Motivation under the Intrapersonal heading and Relating Well and Emotional Mentoring under Interpersonal. The Bar-On model provided the overall framework.

No gender differences were found in the managers' preferences for transformational or transactional leadership (Quader, 2011). The most striking finding was the stronger connection of emotional intelligence to transactional leadership than transformational leadership. The most powerful association to emerge was between transactional leadership and self-motivation, with emotional mentoring, and self-awareness all strongly connected with transactional leadership. The only gender effect was that female managers outscored their male counterparts on the two interpersonal dimensions, relating well and emotional mentoring.

The relationships between transaction leadership and emotional intelligence observed by Quader (2011) and Lopez-Zafra et al. (2012) may not be surprising in view of the fact that most studies involving emotional intelligence focus only on transformational leadership. In essence, relationships between emotional intelligence and transactional leadership are not found simply because they were not examined. As discussed before, effective leadership entails a synthesis of transformational and transactional leader behaviors (Bass & Riggio, 2006).

Work Engagement

Based on the premise that individuals invest varying degrees of their physical, mental, and emotional selves in their work roles, Kahn (1990) utilized grounded theory methods to develop the classic theory that continues to guide research on work engagement. Drawing from several conceptual frameworks, Kahn (1990) deduced three psychological conditions affecting engagement: "meaningfulness, safety, and

availability” (p. 718). Psychological meaningfulness implies that the effort invested in work makes one feel useful, worthwhile and valuable. Meaningfulness is a pivotal factor in intrinsic motivation (Deci & Ryan, 2008). The importance of task characteristics in creating a sense of meaningfulness is embedded in Hackman and Oldham’s model, delineating meaningful tasks as tasks that are challenging, clearly demarcated, varied, creative, and carry some degree of autonomy (Kahn, 1990). Work roles that enhance one’s self-concept and rewarding interpersonal relationships are additional contributors to a sense that the work is meaningful.

Psychological safety denotes a sense that one can display and exercise “one’s self without fear of negative consequences to self-image, status, or career” (Kahn, 1990, p. 708). Interpersonal relationships built on trust enhance perceptions of safety.

Psychological safety can be more difficult to achieve in the context of group dynamics. Management style is an important influence on psychological safety and authentic transformational leadership creates an environment where employees feel free to express themselves and take risks (Bass & Riggio, 2006; Bass & Steidlmeier, 1999).

Organizational norms exert an additional influence on perceptions of safety (Kahn, 1990).

Psychological availability is defined as “the sense of having the physical, emotional, or psychological resources to personally engage at a particular moment” (Kahn, 1990, p. 714). In addition to physical and emotional energy, sense of security and the person’s life outside the workplace also contribute to psychological availability. In Kahn’s (1990) research, preoccupation with non-work matters interfered with psychological availability. In reviewing the literature on daily changes in work

engagement, Bakker (2014) discovered a reciprocal relationship between daily work engagement and recovery from work. Specifically, “on the days employees recover well, they feel more engaged; and engagement during the day is predictive of subsequent recovery” (Bakker, 2014, p. 233).

Bakker, Schaufeli, Leiter, and Taris (2008) credited Kahn (1990) with being a pioneer in the theoretical development of work engagement. However, defining work engagement in the literature has been somewhat disjointed in that the phenomenon of engagement is defined as either employee engagement (Harter, Schmidt, & Hayes, 2002) or work engagement (Schaufeli & Bakker, 2010). Schaufeli and Bakker (2010) proposed that work engagement defines the relationship an individual has with their work, while employee engagement is concerned with the relationship an employee has with their organization. Noting the discrepancy of defining engagement, Bakker et al. (2008) invoked the definition proposed by Schaufeli and Bakker (2004), which is possibly the most extensively used definition of work engagement. Work engagement is “a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption (Schaufeli & Bakker, 2004, p. 295). According to Schaufeli et al. (2002), engagement denotes “a persistent and pervasive affective–cognitive state that is not focused on any particular object, event, individual, or behavior” (p. 74). Vigor is marked by “high levels of energy and mental resilience while working” (Schaufeli et al., 2002, p. 74), desire to invest energy into work, and persistence when confronted with challenges. Dedication is defined by a “sense of significance, enthusiasm, inspiration, pride, and challenge” (Schaufeli et al., 2002, p. 74). According to Schaufeli and Bakker (2004),

vigor and dedication are antithetical to exhaustion and cynicism, respectively.

Absorption implies fully and happily immersing oneself in one's work.

Measuring Work Engagement

Composed of the three dimensions of vigor, dedication, and absorption, work engagement is most commonly assessed with the Utrecht Work Engagement Scale (UWES), a valid, reliable, and extensively utilized measure of occupational well-being (Seppälä et al., 2009). When originally designed, the UWES contained 24 items. However, after a psychometric evaluation, seven items were eliminated, and 17 remained: six items for vigor, five items for dedication, and six items for absorption (Schaufeli et al., 2002). The UWES-17 was further reduced to the UWES-9, which is a 9-item questionnaire alternative which measures the three dimensions of engagement (vigor, dedication, and absorption) and was developed to aid researchers without unnecessarily burdening study participants (Schaufeli, Bakker, & Salanova, 2006). Both UWES versions are currently in use. In addition, the study of work engagement has recently been expanded to include the construct of team work engagement (Costa, Passos, & Bakker, 2014).

Work Engagement and Burnout

Work engagement is affected by the presence or absence of job demands and job resources (Schaufeli & Bakker, 2004). Job resources encompass the physical, psychological, social, and organizational elements of the job that stimulate personal growth and development, contribute the pursuit of important goals, and counteract job demands. Burnout occurs when job demands surpass job resources. The combined effects of job demands and job resources are operationalized in the job demand-resources

(JD-R) model. Schaufeli and Bakker (2004) added work engagement to the model in a study exploring engagement and burnout as distinct and opposite entities.

Using structural equation modeling, the proposed model was tested to analyze data from four separate respondent samples. As Schaufeli and Bakker (2004), predicted, engagement and burnout were negatively related and were preceded by different factors. Burnout was primarily predicted by job demands, with some contribution by the absence of job resources, while engagement was predicted entirely by the available job resources.

Subsequent studies further explored the connection between burnout and engagement (Demerouti, Mostert, & Bakker, 2010; Gonzalez-Roma, Schaufeli, Bakker, & Lloret, 2006). Gonzalez-Roma et al. (2006) found additional evidence for the distinction between burnout and engagement. Burnout and engagement emerged as opposite poles of two distinct dimensions labeled energy and identification. Demerouti et al. (2010) extended this line of research. In a study involving 528 South African construction industries, and utilizing the UWES, the Maslach Burnout Inventory-General (MBI-G), and the Oldenburg Burnout Inventory, Demerouti et al. (2010) found mixed results. That is, the identification dimensions of burnout (cynicism and disengagement) and work engagement (dedication) appeared to be opposites, but the energy dimensions, exhaustion versus vigor, appeared to be distinct but highly related. The findings also supported patterns of relationships between burnout and work engagement, antecedents such as job pressures and autonomy, and the outcomes of organizational commitment and psychological health (Demerouti et al., 2010). Finally, whereas burnout is described by exhaustion, cynicism, and ineffectiveness (Schaufeli, Taris, & Van Rhenen, 2008) work engagement builds on Kahn's (1990) definition by describing work engagement in the

context of an individual's enthusiasm towards work (Harter et al., 2002), expressing positive opinion about work (Hewitt, 2004), achieving a high motivational state at work (Mount, Harter, Witt, & Barrick, 2004), and expressing high levels of commitment towards an organization (Robinson, Perryman, & Hayday, 2004).

Theoretically, emotional intelligence and transformational leadership should both be facilitators of engagement and protectors against burnout. However, while there are channels of research examining emotional intelligence and transformational leadership and transformational leadership and work engagement, respectively there seems to be no previous research combining transformational leadership, emotional intelligence, and work engagement. A study by Schaufeli, Bakker, and Van Rhenen (2009) applying the JD-R model to a longitudinal study of managers and executives at a Dutch telecommunications firm that underwent radical restructuring suggests that emotional intelligence would make a valuable contribution. The managers' work involved managing redundancy programs designed to minimize the negative impact of downsizing. Part of their work involved coaching the survivors and dealing with issues of fairness related to downsizing. This was quite challenging for the managers, who had to practice social leadership, but had typically been promoted for their technical expertise. The findings suggested that managers who experienced high levels of burnout probably left the organization. One could infer that managers high in emotional intelligence, especially if they had transformational superiors, might not have succumbed to burnout. Although that assumption is speculative, exploration of the relationship between emotional intelligence, transformational leadership and burnout would serve as a

complement to research on emotional intelligence, transformational leadership, and engagement.

Teamwork Engagement

In view of the increasing reliance on teamwork, the concept of team work engagement emerged in the literature and is especially pertinent. Costa et al. (2014) observed that most research on work engagement is focused at the individual level. However, this perspective fails to capture the dynamics that arise when people work together in groups. The researchers explored the question of whether team work engagement (TWE) can be viewed as a construct that is qualitatively distinct from work engagement at the level of the individual.

Costa et al. (2014) drew on research demonstrating that people who work together display similar patterns of mood, which may reflect emotional contagion. Working together, team members observed firsthand how their colleagues were feeling based on nonverbal signals as well as overt expressions of how they felt toward their work. Based on these observations, team work engagement was defined as “a shared positive, fulfilling, motivational emergent state of work-related well-being” (Costa et al., 2014, p. 35).

To examine the validity of the TWE construct, Costa et al. (2014) conducted two studies encompassing an array of variables, as well as analyzing whether TWE is distinct from individual team members’ levels of work engagement. The first study involved 226 members of 55 teams. The teams varied in composition, including undergraduate and graduate students working on end of term projects, working students, and full-time employees. The only stipulation was that all team members participate. The sample was

not representative of the adult workforce in that roughly-three quarters of the participants were female and 60% were under the age of 25 years. Nonetheless, the results supported the validity of the TWE construct independent of individual level work engagement and demonstrated that TWE is more than the aggregated results of individual work engagement.

The second study consisted of participants in the Global Management Challenge (GMC), a management simulation in which participants managed a virtual company and made a variety of managerial decisions (Costa et al., 2014). In contrast to the first sample, two-thirds of the GMC participants were male and the average age was 28.8 years. The results of this study bolstered a proposed single-factor structure of TWE. The combined results of the studies confirm that individual- and team-level work engagement scales measure two different constructs. Work teams are a prominent focus of studies exploring the interaction of transformational leadership and emotional intelligence (Clarke, 2010; Wang & Huang, 2009; Yuan et al., 2012). The TWE construct adds a promising new dimension to examining transformational leadership, emotional intelligence, and work engagement.

Transformational Leadership and Work Engagement

Buckman et al. (2012) developed a model of transformational leadership for understanding the relationship between transformational leadership and performance that integrated elements of Kahn's (1990) model of work engagement. The researchers proposed that transformational leadership motivates performance by stimulating followers' engagement through the mechanisms of meaningfulness, psychological safety, and availability. They noted that the motivational effects of meaningfulness have often

been a focus of study. However, Buckman et al. (2012) found that all three components of Kahn's (1990) model played a prominent role in promoting employees' engagement, which in turn translated into superior work performance.

Babcock-Roberson and Strickland (2010) drew on an earlier study by Strickland, which found an association between charismatic leadership and employees' work engagement to explore the relationship between charismatic leadership, work engagement, and organizational citizenship behaviors (OCB). Their conception of charismatic leadership is derived from Bass's model of transformational leadership. Displaying behaviors that employees admire and strive to emulate is an essential facet of idealized influence or charisma (Bass & Riggio, 2006). Babcock-Roberson and Strickland (2010) chose to focus on charisma because their main point of inquiry was "whether charisma can be transmitted between leader and follower and how this might relate to subsequent discretionary behavior" (p. 314). In Strickland's earlier research, employees of charismatic leaders perceived their work as highly meaningful and empowering, which enhanced motivation and work engagement.

The participants were 102 university students, ranging in age from 17 to 60 years, whose employment duration ranged from six months to 13 years (Babcock-Roberson & Strickland, 2010). Charismatic leadership was assessed with the idealized influence subscales of the MLQ (Bass & Riggio, 2006). Work engagement was measured with the Utrecht Work Engagement Scale (Schaufeli & Bakker, 2004). The Organizational Citizenship Behavior Scale was used to capture OCB (Babcock-Roberson & Strickland, 2010).

As Babcock-Roberson and Strickland (2010) anticipated, charismatic leadership was strongly linked with work engagement ($r = .40, p < .01$). By extension, work engagement was associated with OCB. The analysis revealed that work engagement acted as a mediator in the relationship between charismatic leadership and OCB, which supported the researchers' assumption that under the supervision of a charismatic leader, employees are more engaged in their work, which motivates them to engage in more discretionary work behaviors.

Babcock-Roberson and Strickland (2010) acknowledged that a sample composed of undergraduate psychology students cannot be construed as representative of the global adult workforce. Moreover, most of their participants were between the ages of 18 and 25 and thus had limited work histories. Nonetheless, the findings are consistent with the overall body of research connecting transformational leadership with heightened motivation and ethical work behavior (Bass & Riggio, 2006).

Trust

The concept of authentic leadership grew out of Bass and Steidlmeier's (1999) observations of authentic transformational leadership (Avolio, Walumbwa, & Weber, 2009). Authentic leadership has been conceptualized in different ways, but four factors typically appear in the literature as characteristic of authentic leadership: balanced processing of information, internalized moral perspective, relational transparency, and self-awareness. Wang and Hsieh (2013) used this conception in their definition of authentic leadership in their study of the relationship between authentic leadership, trust, and employee engagement. The participants were employees of major manufacturing and service firms in Taiwan. Managers of 37 companies agreed to participate, along with

386 employees. The overall sample contained slightly more men and women and represented a diverse group in terms of age, education, tenure, and organizational department and status.

Authentic leadership was assessed with a 16-item scale developed by Walumbwa and colleagues (Avolio et al., 2009). An 11-item scale captured trust, and engagement was assessed via an adapted version of the UWES (Wang & Hsieh, 2009). The findings demonstrated a relationship between authentic leadership and employees' trust.

However, only one aspect of authentic leadership, consistency between a leader's words and actions, that was strongly linked with employee trust. Consistency between words and actions, or leadership by example, is embodied by idealized influence (Bass & Riggio, 2006). No significant connection was found between the leader's moral perceptions and trust (Wang & Hsieh, 2009). Despite this, both moral perceptions and consistency motivated work engagement.

Goodwin et al. (2011) observed that no other theory of leadership has incited as much discussion of trust as transformational leadership. In their research with managers and subordinates drawn from a wide range of industries, organizations, and departments, trust fully mediated the associations between transformational leadership behavior and affective commitment, OCB and performance. Thus trust was a powerful albeit indirect influence on employee outcomes.

Liu, Siu, and Shi (2010) investigated the mediating role of trust in the leader, along with self-efficacy in the relationship between transformational leadership and employees' well-being. In terms of well-being, the researchers focused on "positive affective well-being (job satisfaction), negative affective well-being (perceived work

stress), and physiological well-being (stress symptoms)” (Liu et al., 2010, p. 457).

Derived from Bandura’s (1997) social cognitive theory, self-efficacy is one of the most extensively studied concepts in organizational, health, and educational psychology. The sample consisted of individuals attending stress management workshops in Beijing and Hong Kong. As a result, the sample was highly diverse, with participants employed in a wide variety of public and private sector organizations.

The scale used to measure transformational leadership was an adaptation of Bass’s conceptualization of transformational leadership designed for Chinese audiences (Liu et al., 2010). Self-efficacy was assessed with the General Self-Efficacy Scale developed by Schwarzer and colleagues. Trust in the leader was assessed with items from five scales adapted for this study. Results of the study indicated that transformational leadership was related to all the examined variables: job satisfaction, perceived work stress and stress symptoms, trust in the leader, and self-efficacy. In addition,

trust in the leader and self-efficacy were related to the three aspects of employee well-being and fully mediated the influence of TL [transformational leadership] on perceived work stress and stress symptoms, except in the case of job satisfaction, where mediation was partial. (Liu et al., 2010, pp. 469-470)

The latter finding suggested that transformational leadership had direct and indirect effects on job satisfaction.

Self-efficacy emerged as the mediator between transformational leadership and employees’ psychological well-being in Nielsen and Munir’s (2009) research involving Danish human services public sector employees. Self-efficacy captures the need for

competency or self-mastery, which has been related to work engagement (Kovjanic et al., 2013). High self-efficacy can effectively protect against burnout (Bandura, 1997). If burnout and engagement are indeed distinct, self-efficacy may not necessarily predict engagement, but is associated with energy and effort in challenging circumstances and willingness to persist in a chosen endeavor. As the two studies illustrated, transformational leaders enhance their followers' sense of self-efficacy (Nielsen & Munir, 2009; Liu et al., 2010).

Followership

Avolio et al. (2009) viewed the lack of attention to follower characteristics as a curious omission in leadership theory and research. Zhu et al. (2009) addressed this issue in a study involving 140 senior managers drawn from various industries in South Africa, who evaluated their respective top executives' transformational leadership, their own work engagement, and their own follower attributes. More respondents (62%) were employed in private sector firms, with the remaining respondents recruited from government or public organizations. The sample was overwhelmingly male (75% of the senior managers and 89% of the leaders). Transformational leadership was assessed with 20 items from the MLQ. For work engagement, the scale used was the 12-item Gallup Workplace Audit. Follower characteristics were captured by a 4-item scale in which the followers appraised themselves and the leaders rated their followers on the extent they were independent thinkers, willing to take risks, active learners, and innovative.

As Zhu et al. (2009) expected, positive follower characteristics and transformational leadership were both positively linked with the followers' individual levels of work engagement. More significant, according to the researchers, was the

finding that these follower attributes moderated the association between transformational leadership and work engagement. An interesting though not unexpected finding was that when the leaders perceived their followers' less favorable than the managers assessed themselves, work engagement was lower. Self- and other-ratings of transformational leadership often reveal discrepancies between the perceptions of leaders and followers (Bass & Riggio, 2006). This study demonstrated a parallel effect for followership, which in turn, affected work outcomes (Zhu et al., 2009). According to Zhu et al. (2009), their findings support the claims of a number of leadership theorists and researchers that follower characteristics should play a more prominent role in leadership studies (Avolio et al., 2009).

Need Satisfaction and Psychological Well-being

Kovjanic et al. (2013) sought to integrate and expand on the existing research on transformational leadership, self-determination, and work engagement. According to the researchers, the four dimensions of idealized influence, inspirational motivation, individualized consideration, and intellectual stimulation relate to behaviors that address the essential human needs for competence, belonging, and autonomy, which underlie Deci and Ryan's (2008) self-determination theory (SDT). Bass (1999) made the connection between transformational leadership and higher order human needs in relating Burns' conception of transformational leadership to Maslow's needs for esteem, personal growth, and self-actualization.

SDT is closely aligned with intrinsic motivation (Deci & Ryan, 2008). Kovjanic et al. (2013) proposed a multidimensional model in which transformational leaders positively influence followers' needs for competence, relatedness, and autonomy. To test

the model, Kovjanic et al. (2013) conducted an online survey aimed at recruiting a diverse group of respondents. The 190 respondents were asked to imagine they were members of an R&D project team at a paper manufacturing firm. According to script, the project leader, portrayed by vignettes as either transformational or non-transformational, requested the team members generate an unlimited number of concepts regarding the future use of paper. The respondents had four minutes to complete the task, though they had the option of ending the task earlier.

The assessment tools included 19 items from the MLQ, a needs satisfaction scale, 9-item version of the UWES, and three measures of performance: quality of ideas, quantity of ideas, and persistence on the task (Kovjanic et al., 2013). Structural Equation Modeling was utilized to analyze all the proposed relationships. The findings confirmed that transformational leadership fostered “satisfaction of the needs for competence, relatedness, and autonomy, with competence and relatedness needs satisfaction subsequently predicting followers’ work engagement” (Kovjanic et al., 2013, p. 550). Competence and belonging were associated with work engagement, which elicited superior performance on all three performance measures. In addition to illuminating aspects of the relationship between transformational leadership and performance, given that the task involved generating ideas, the findings added to research examining the connection between transformational leadership and creativity.

Breevaart, Bakker, Demerouti, et al. (2014) also drew on Deci and Ryan’s self-determination theory in their exploration of transformational leadership, job resources, need fulfillment, and work performance. The sample consisted of 162 pairs composed of one leader and one employee who completed an online survey. The largest group of

respondents were employed in health care (40.1%), followed by business services (11.7%). In a departure from most studies, transformational leadership was assessed with the Transformational Leadership Inventory (TLI), which covers the four dimensions of articulating vision, high performance expectations, individual support, and intellection stimulation. Job resources were assessed with the scales for autonomy, feedback, and opportunities for development designed by Bakker and colleagues and work engagement with the UWES. This study also included assessment of need for leadership. Individualized consideration is based on the premise that individuals vary in their needs for support and guidance (Bass & Riggio, 2006).

Transformational leaders exerted a direct positive impact on the work environment. That is, employees who viewed their leaders as more transformational perceived a richer and more stimulating work environment, which served to fulfill basic needs (Breevaart, Bakker, Demerouti, et al., 2014). Need fulfillment in turn, led to a more engaged, energetic state, which allowed the employees to devote more effort to performing their work. According to the researchers, their study also contributed to knowledge of followership (Avolio et al., 2009; Zhu et al., 2009).

Tsai, Chen, and Cheng (2009) investigated the role employees' positive moods may play as a potential mediator in the relationship between transformational leadership and OCB. Leaders' influence on their employees' moods may occur through the mechanism of emotional contagion, defined as a predilection "to mimic another person's emotional experience or expression" (Hatfield, Cacioppo, & Rapson, as cited in Tsai et al., 2009, p. 208) and as a result to experience or express those same emotions. Emotional contagion is a proposed factor in team work engagement (Costa et al., 2014).

Some authors have proposed that transformational leaders may use their emotions to elicit similar feelings in their audience (Tsai et al., 2009). One can conjecture that more emotionally intelligent transformational leaders would be more adept at accomplishing this.

Tsai et al. (2009) conducted their research with insurance sales agents, who often work independent of a leader's supervision but in close contact with colleagues. Tsai et al. (2009) proposed that transformational leaders might work to instill core values that guide employees' behavior even in the absence of direct supervision. Based on the existing research, transformational leaders were presumed to inspire employees to strive beyond minimum benchmark goals and engage in OCB (Babcock-Roberson & Strickland, 2010).

The participants were 282 sales insurance sales agents, with at least six months tenure (Tsai et al., 2009). Women comprised the majority of the sales agents and leaders. A total of 20 items were adapted from the MLQ, in conjunction with an assessment of positive moods (happy, pleased, joyful, and enjoyment), and surveys of task performance and OCB. The findings supported the assumption that transformational leadership could indirectly boost employees' task performance and OCB by means of positive moods.

According to Tsai et al. (2009) prior research in this area focused on leader-member exchange (LMX), which is based on close interactions between an employee and direct supervisor. However, their research demonstrated that positive moods could occupy the same role in the relationship as LMX. Tsai et al. (2009) proposed for example, that trust could play an important role in the association between

transformational leadership and employee outcomes. Trust also emerged as a factor in the study by Abraham (2012) involving employees of an insurance firm.

Studies consistently find a positive relationship between transformational leadership and job satisfaction (Bass & Riggio, 2006). Building on Kahn's (1990) theory, Abraham (2012) proposed that job satisfaction acts as an antecedent to work engagement. The study involved a purposive sample of 30 employees of an insurance firm. Employee engagement was assessed with the Gallup Workplace Audit and job satisfaction was captured by a questionnaire designed for the study. The findings revealed a discrepancy between job satisfaction and work engagement. That is, job satisfaction was high but work engagement was no more than moderate. One reason for this disparity might be that the most important motivation factor was the benefits package the firm provided, which was generous but tied to performance goals. Deci and Ryan (2008) suggested that in some cases, extrinsic rewards can dampen intrinsic motivation, especially when the reward negated some element of volition.

Fair treatment by the organization was strongly linked with trust in leaders and with engagement (Abraham, 2012). The ability to inspire trust in followers is embedded in the description of transformational leadership (Bass & Riggio, 2006; Bass & Steidlmeier, 1999). At the same time, fairness and trust are also produced by effective contingent reward leadership. The powerful impact of the benefit package on job satisfaction suggests that the managers made use of contingent reward leadership. Nonetheless, perceptions of trust and fairness both translated into higher levels of engagement.

Consistent with Kahn's (1990) theory and the job demand-resource model (Schaufeli & Bakker, 2004), the employees felt that coworker support was always available, particularly in times of crisis, and supportive coworkers fostered a sense of belonging, which had a significant impact on engagement (Abraham, 2012). Recognition from the leader, which the employees viewed as a sign of trust, had a similar positive impact on engagement. Recognizing achievements is an essential quality of successful transformational leaders (Bass & Riggio, 2006; Kouzes & Posner, 2007). Teamwork among peers was another significant influence on engagement (Abraham, 2012). In contrast to most teamwork research, which focuses on project teams and work environments that make extensive use of work teams, Abraham (2012) noted that most of the time, the employees of the insurance firm worked independently but when teams were formed all members were eager to work together toward collective goals. In this case, the social and interactive nature of teamwork may have been a welcome change from individual work as well as a contributor to the employees' sense of belonging. Training, long-term welfare, and salary had no significant effects on engagement.

Overall, job satisfaction had a moderate impact on engagement. According to Abraham (2012) the findings bolstered the need for supportive leaders who recognize and appreciate the work of their subordinates and provide them with guidance. In other words, the employees would be more engaged by leaders who display individualized consideration (Bass & Riggio, 2006). Abraham (2012) noted that most of the employees were middle-aged and might have felt their career was at a plateau. She suggested that they would benefit from training specifically geared to advance their careers, which would fall under the transformational leader behavior of intellectual stimulation.

Although the sample was small, the findings are largely congruent with the overall body of research on job satisfaction and engagement.

In a study by Salanova, Lorente, Chambel, and Martínez (2011) transformational leadership positively correlated with work engagement and played a role in positively affecting extra-role performance through the mediating role of work engagement. Data was collected in a large Portuguese hospital to examine if staff nurses' self-efficacy and work engagement mediated the relationship between supervisors' transformational leadership and staff nurses' extra-role performance. Transformational leadership was assessed by the MLQ while the UWES was employed to study absorption and dedication as a proxy for work engagement. The study participants included 280 of supervisor-subordinate questionnaire pairs. Women represented 79% of the sample, while men comprised 21% of the sample. The mean age of all participants (supervisors and employees) was 34 years.

Structural Equation Modeling was used to carry out the analysis. Results revealed that transformational leadership positively and significantly correlated with work engagement ($r = .17, p < .001$). In addition, transformational leadership and self-efficacy were fully mediated through work engagement on their influence on extra-role performance (Salanova et al., 2011). These findings are important in that they support previous research on the ability of transformational leaders to elicit employee performance beyond what they originally may have expected to do (Aryee et al., 2012; Kovjanic et al., 2013). In addition, the importance of this finding is that by positively affecting employees' work engagement through transformational leadership,

organizations can also benefit by employees performing beyond their formal job requirements.

Empowering Leadership

Tuckey, Bakker, and Dollard (2012) explored the influence of empowering leadership at the group level in a sample of volunteer firefighters and their captains. Tuckey et al. (2012) differentiated empowering leadership from transformational leadership by defining empowering leadership as “more narrowly focused, targeting the development of follower self-leadership capabilities” (p. 17). Tuckey et al. (2012) acknowledged that transformational and empowering leaders may both mentor and coach their followers but emphasized that in each case those behaviors are meant for a different purpose. Noting that empowerment is often conceptualized as a motivational construct, Tuckey et al. (2012) proposed that empowering leaders help their followers meet essential needs for self-determination and control. According to their model, empowering leadership at the group level should promote individual work engagement by means of intrinsic and extrinsic motivational processes.

The sample was drawn from a random sample of 150 crews from the South Australian Country Fire Service (Tuckey et al., 2012). Each brigade has one elected captain. The participants were 540 volunteer firefighters from 68 firefighting brigades and the 68 crew captains. The sample was overwhelmingly male (85.7%, and all brigade captains), with a similar mean age (44-46 years) for the firefighters and their captains. Empowering leadership was measured by a scale adapted for use with the fire brigades. Cognitive demands and resources were captured by the Demand-Induced Strain Questionnaire (DISQ), and the UWES was used to measure work engagement.

Tuckey et al. (2012) conducted their research with the specific aim of enhancing engagement by exploring the motivational potential of empowering leadership. The findings demonstrated that empowering leaders directly spurred work engagement in their followers. Furthermore, empowering leadership served to optimize work conditions for motivation, in particular by its positive effects on job resources and job demands, and to bolster the positive impact of favorable working conditions. The findings highlighted the synergistic effects of empowering leadership, challenge, and resources on work engagement.

Temporal Patterns

A key point of interest for Bakker et al. (2008) and Bakker (2014) was examining temporal variations in work engagement, which can fluctuate from day to day. Breevaart, Bakker, Hetland, et al. (2014) explored the relationship of daily transformational and transactional leadership to employees' work engagement. The study only examined active leadership styles, namely transformational leadership, contingent reward, and active management by exception. Few studies focused on passive leadership styles. However, passive leadership has been found to have detrimental effects on employees' psychological well-being by its negative impact on followers' trust in the leader (Kelloway, Turner, Barling, & Loughlin, 2012). In contrast, leadership that inspires trust enhances employees' psychological well-being (Abraham, 2012; Tsai et al., 2009; Wang & Hsieh, 2013).

Breevaart, Bakker, Hetland, et al. (2014) conducted their research with 61 naval cadets from a Norwegian Military University College. They were asked to maintain a daily diary, which contained survey questions. During six days of their 40 days at sea,

the cadets went ashore and were free to enjoy their days off. The cadets represented eight teams. Most teams had multiple leaders because leadership development was part of the training. The cadets practiced leadership by exercising transformational and transactional leadership behaviors. This allowed the researchers to examine the effects of changes in leadership style and behavior from day to day. In addition to the MLQ, diary questionnaires included measures of day-level job resources (autonomy and social support) and day-level work engagement.

After controlling for transactional leadership, the findings demonstrated that transformational leadership positively affected followers' work engagement on a daily basis ($r = .15, p < .001$). Breevaart, Bakker, Hetland, et al. (2014) also observed positive effects for transactional contingent reward after controlling for active management by exception, which had no relation to work engagement. Active management by exception can be effective in some cases if used prudently but is usually ineffective (Bass & Riggio, 2006). Consistent with Bass's theory that transformational leadership influences outcomes above and beyond the effects of transactional leadership, transformational leadership accounted for additional variations in work engagement beyond transactional leadership (Breevaart, Bakker, Hetland, et al., 2014).

Daily autonomy emerged as a promising mechanism for understanding how leaders influence their followers' work engagement on a day to day basis (Breevaart, Bakker, Hetland, et al., 2014). Transformational leadership and transactional contingent reward both exerted a positive impact on daily autonomy, which translated into work engagement. In contrast, active management by exception undermined autonomy, and by extension depressed work engagement. Transformational leadership and contingent

reward leadership also enhanced social support, though there was only a minimal association “between contingent reward and social support and between social support and work engagement” (Breevaart, Bakker, Hetland, et al., 2014, p. 150).

In view of the fact that the participants were cadets who were involved in leadership training and development, feedback from the study was used to improve their leadership skills. Breevaart, Bakker, Hetland, et al. (2014) asserted that this technique should be used more extensively because many leaders are unaware of the effects of their leadership style on their followers. Implicitly, that assertion also suggests that leaders would benefit from training and feedback regarding their emotional intelligence (Boyatzis, 2011; Goleman, 2011, 2014).

Building on his initial idea to study temporal changes in work engagement (Bakker et al., 2008), Bakker and Bal (2010) examined how job resources influence engagement and performance on a weekly basis. One important aspect of their research, that was not addressed, was whether the experience of more week-specific resources would result in greater week-specific work engagement and performance during the weeks they were present. According to Bakker and Bal (2010), this perspective might illuminate why even engaged employees have weeks where their performance declines.

The study focused on teachers, who draw support from several job specific resources such as support from colleagues, recognition from students, and feedback from the principal (Bakker & Bal, 2010). However, these supports may vary at different times, affecting engagement, which in turn, influences performance. Bakker and Bal (2010) theorized that weekly work engagement would mediate the association “between week-levels of (a) autonomy, (b) social support, (c) performance feedback, (d) supervisory

coaching, (e) learning opportunities, and weekly performance” (Bakker & Bal, 2010, p. 193). The predominantly female (91%) participants were 54 novice teachers who had just begun teaching primary school. They were recruited from colleges of education in the Netherlands, and continued their training as they began work in the classroom.

The findings supported the notion that weekly job resources would influence the new teachers’ work engagement and performance (Bakker & Bal, 2010). From the perspective of leadership, it is noteworthy that the most significant influences were autonomy, interactions with the principal, and opportunities for development. Performance feedback, supervisory coaching, opportunities to learn new things, and opportunities for personal and professional growth and development all made significant contributions to the teachers’ work engagement and motivation. These interactions between the principal and the teachers reflect the transformational leadership dimensions of intellectual stimulation and idealized influence (Bass & Riggio, 2006). While opportunities for development may be motivational at any career stage, they are probably especially valuable for novices like the Dutch teachers who are just beginning their careers.

Creativity and Innovation

Innovation in product development and marketing is critical to the success if not the survival of pharmaceutical firms (Honeysett & Metheny, 2012; Willink, 2009). Theoretically, leaders who are higher in emotional intelligence should be more attuned to their followers’ creative abilities (Castro, Gomes, & de Sousa, 2012). Encouragement for innovation and creativity is central to the description of intellectual stimulation (Bass

& Riggio, 2006). One way that transformational leadership promotes creativity may be through its impact on work engagement (Aryee et al., 2012).

Emotional intelligence. Castro et al. (2012) explored the relationship between leaders' emotional intelligence and creativity in their followers in a study of employees of a large medical center. Creativity referred to the creation of a new, useful, and valuable product, service, idea, procedure or process. The rationale underlying the study was that creativity is influenced by both environmental and individual factors and leaders are in a position to encourage or stifle their followers' creative potential. The participants were seven leaders and 66 followers from one administrative team and various nursing and health care units. Leaders and followers were both primarily females. The scales utilized for the study captured creative performance, climate for creativity, and emotional intelligence.

The findings confirmed an association between the leaders' emotional intelligence and their employees' creativity at both group and individual levels. Castro et al. (2012) conceded that breaking down emotional intelligence into its constituent parts considerably diluted the connection between creativity and emotional intelligence. Nonetheless, self-encouragement and understanding of one's own emotions were directly linked with creativity. The power of this relationship even amidst organizational factors that constrained creativity underscored the significance of these particular aspects of emotional intelligence. Overall, the findings supported the association between leaders' emotional intelligence and followers' creativity but also revealed how environmental factors affect that relationship. Extrapolating from these findings it seems probable that more emotionally intelligent managers would have superior capacity for developing the

creative potential of their employees but situational factors could influence the nature and strength of that relationship.

Transformational leadership. Aryee et al. (2012) proposed a model for elucidating the relationship between transformational leadership and innovation at work. According to the model, the effect of transformational leadership on followers' psychological states stimulates work engagement, which promotes innovative behavior, which in turn, is related to task performance. The relationship between work engagement and innovation is strongest in the presence of a high leader member exchange (LMX) relationship. LMX is based on the quality of the relationship between an employee and his or her direct supervisor. According to Bass (1999), LMX evolves in stages "in which trust, loyalty, and respect develop" (p. 14). In the initial stage, LMX is transactional, becoming transformational at the highest stage.

The participants were 193 employees of a large telecommunications firm located in China (Aryee et al., 2012). Slightly more than half the respondents were male (52%), although men comprised a higher proportion of supervisors (58%). The employees were relatively young, with an average age of 28.3 years for the subordinates and 35.8 years for the supervisors. The subordinates averaged less than five years and the supervisors less than 10 years with the firm. Transformational leadership was assessed with the MLQ, and work engagement with 15 items of the 17-item UWES. Meaningfulness of work and responsibility for work outcomes, both proposed to be influenced by transformational leadership, were derived from Hackman and Oldham's Job Diagnostic Survey. A 6-item scale captured innovative behavior, and additional measures assessed task performance and LMX.

The findings supported the model proposed by Aryee et al. (2012) that transformational leadership enhanced employees' perceptions of work as meaningful and responsibility for work outcomes, which drove innovation. These processes mediated the connection between transformational leadership and task performance. Additionally, LMX moderated the positive association between the employees' work engagement and innovative behavior. Aryee et al. (2012) proposed that work engagement may be the missing element of the connection between transformational leadership and innovation, which often eludes explanation. They suggested that, "vigor, dedication, and absorption may be critical elements through which followers are motivated to develop and explore unconventional options to find novel solutions" (p. 19).

LMX, as described by Aryee et al. (2012), clearly reflects Bass's (1999) conception of transformational LMX. That is, LMX that encourages innovation and creativity is characterized by "trust, openness, and communication," creating a safe milieu for employees to take risks, explore uncharted solutions and champion novel ideas" (p. 20). The relationship between transformational leadership and work outcomes is intensified when LMX is high.

Emotional Intelligence and Work Engagement

Organizational Commitment and Work Relationships

Aghdasi, Kiamanesh, and Ebrahim (2011) defined organizational commitment as the level of engagement and connectedness that an employee has with their company. The affirmative relationship can be a result of leaders' high emotional intelligence. A leader, who for example possesses a high degree of self-awareness or adaptability, is able to align their personal views with the guiding principles of their organization's strategy

and can project a positive attitude to their employees. With an establishment of this connection, that leader becomes part of the fabric of the operating principles of the organization, at which time the leader's performance is highly focused on the success of the company. Because of this, the alignment with work relationships becomes apparent.

Present day leaders have an obligation to determine the needs of followers in such a way that encourages higher organizational performance. A perceptive leader is able to develop individuals and teams by engaging in meaningful relationships with followers (Chang, Sy, & Choi, 2011). The significance of this position is that organizational leaders need to acknowledge that a successful execution of any strategy will require high level performance from all involved. The catalyst between a well-designed strategy and organizational performance is execution of the strategy, which hinges on a leader's ability to recognize the relationships within their organization and their impact on employee work engagement. Consequently, positive relationships between emotional intelligence and work engagement are of paramount importance.

Relationship with Work Engagement

Webb (2013) used Structural Equation Modeling to investigate the relationship between leaders' emotional intelligence and the levels of worker satisfaction and commitment in various industries, including healthcare. Convenience sampling was used and 249 respondents participated in the study with most (38%) being in their 30s and predominantly female (82%). The Trait Emotional Intelligence Questionnaire – Short Form instrument was used to assess leader emotional intelligence, while satisfaction with the organization was measured using items from the Michigan Organizational Assessment Questionnaire and the Minnesota Satisfaction Questionnaire (MSQ).

Commitment to the organization was measured using items from Meyer and Allen's Organizational Commitment Questionnaire. The emotional intelligence constructs of wellbeing and sociability were most practiced by leaders, while emotionality and self-control were observed to a lesser degree. There was no apparent difference in the expression of emotional intelligence constructs when gender, age, industry, or types of employment were considered. Interestingly, only the emotional intelligence construct of leader's sociability significantly correlated with employees satisfaction with the organization ($r = .347, p < 0.001$). On the other hand, the emotional intelligence constructs of leader's self-control ($r = .155, p < 0.005$) and sociability ($r = .166, p < .002$) significantly correlated with employees commitment to the organization. Both variables (self-control and sociability) accounted for almost 20% of the total level of worker commitment to the organization ($R^2 = 0.193$). However, linear regression analysis indicated that the leader's overall emotional intelligence influences worker commitment to the leader to a greater degree than worker commitment to the organization (Webb, 2013). Finally, the study showed that employees who are satisfied with the leader are satisfied with the company to a greater degree than committed to the company. This implies that, at least in this study, the leaders may not be effectively using the right emotional intelligence constructs to elicit full employee commitment to the organization.

Ravichandran et al. (2011) conducted a study in the IT profession in India investigating the relationship between emotional intelligence and work engagement. Relying on purposive sampling, 119 employees participated in the study. Through self-assessment, emotional intelligence was measured by the 33-item Schutte Self-Report Inventory, while work engagement was measured by the 9-item version of the UWES.

Majority of study participants (42.9%) were between the ages of 18 – 24 years old and most participants were male (79.8%). There was a moderate but significant positive correlation between the overall emotional intelligence score and overall work engagement score ($r = .377, p < .01$). This finding corroborates the conclusions made by Webb (2013) that emotional intelligence only moderately correlated with work engagement. This suggests that emotional intelligence alone does not account for eliciting high work engagement. Interestingly, in a *post-hoc* analysis, duration of employment played a role in strengthening the relationship between emotional intelligence and work engagement. This relationship became stronger and significant ($p < .05$) as duration of employment increased from 1 year to 2 years to more than 3 years. However, only five emotional intelligence factors were responsible for explaining the variability, albeit weakly ($R^2 = .347$) in work engagement. This finding again suggests that there are likely other variables that enhance work engagement.

Finally, Thor (2013) conducted a web based study of members in the American Society for Quality using the 33-item Assessing Emotions Scale to measure emotional intelligence, and the 17-item UWES to measure work engagement in over 5,000 individuals, including individuals employed in healthcare and medical device industries. Most respondents were male (61%) and most respondents ranged in age from 46 to 55 years old. Through correlation analysis a moderate statistically significant relationship was found between emotional intelligence and work engagement ($r = .416, p < .001$). In addition, regression analysis results demonstrated that emotional intelligence was able to predict 17.3% of the variability in work engagement. The subconstruct of emotional intelligence related to the ability to manage emotions, explained 22.6% of the variance in

work engagement (Thor, 2013). These findings establish two important conclusions. First, as in previous research, although a significant positive relationship between emotional intelligence and work engagement exists; emotional intelligence alone does not fully explain the variability in work engagement. Second, based on this study individuals who are able to control their emotions at work are more engaged in their jobs. Since emotions can be positive or negative, having the ability to control negative emotions minimizes their negative influence on work engagement. On the other hand, perhaps controlling positive emotions allows for the positive mood to be distributed over time rather than expanded instantly.

Conclusion

The concept of work engagement grew out of Kahn's (1990) theoretical work and has since become a popular topic in research, assessed with the UWES (Schaufeli & Bakker, 2004). Work engagement may be one of the few topics that appears in organizational management and positive psychology literature. A growing numbers of studies are examining the relationship between transformational leadership and work engagement. Interest in this topic arose from awareness that studies consistently find that transformational leadership has a positive impact on work outcomes but the mechanisms by which this occurs are not clear (Aryee et al., 2012; Breevaart, Bakker, Demerouti, et al., 2014; Buckman et al., 2012; Kovjanic et al., 2013; Zhu et al., 2009). Work engagement was proposed as the mediator in the association between transformational leadership and work outcomes. The studies consistently confirmed that assumption. Furthermore, transformational and transactional contingent reward leadership were also

linked with work engagement on a day to day basis (Breevaart, Bakker, Hetland, et al., 2014).

Another popular line of research examined the relationship between transformational leadership and emotional intelligence (Bin Sayeed & Shanker, 2009; Clarke, 2010; Lopez-Zafra et al., 2012; Quader, 2011; Wang & Huang, 2009). Goleman's (2011, 2014) recent work is focused on emotional competencies needed for effective leadership. Elements of emotional intelligence are implicit if not explicit in the conceptualization of transformational leadership (Bass & Riggio, 2006). The combined effects of emotional intelligence and idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration may be especially powerful for promoting followers' work engagement.

Lastly, research in the area of emotional intelligence and work engagement is growing. Recent studies by Ravichandran et al. (2011), Thor (2013), and Webb (2013) confirmed there is a significant and positive relationship, albeit weak to moderate, between emotional intelligence and work engagement. These findings suggest that emotional intelligence on its own may not be able to fully explain the variability in work engagement. As such, when assessing employee work engagement factors other than emotional intelligence may have to be considered. However, no prior study has simultaneously investigated transformational leadership, work engagement, and emotional intelligence. Nevertheless, given that each incremental percentage attributed to employee engagement translates into an incremental increase of 0.6% in company sales (Aon Hewitt, 2014) even relatively minor improvements in work engagement can have a positive and significant impact on organizational performance.

CHAPTER 3. METHODOLOGY

The purpose of this study was to contribute to knowledge and solve the research problem regarding relationships between the dependent variable, employees' work engagement and the independent variables of leaders' transformational leadership, leaders' emotional intelligence, employees' age, employees' gender, and employees' duration of employment in current position, in pharmaceutical organizations in the United States. This study employed a cross-sectional, quantitative, nonexperimental, survey design that utilized multiple linear regression to test for relationships between variables. A moderation analysis based on the Baron and Kenny (1986) methodology was also conducted to examine the influence of the interaction of emotional intelligence and transformational leadership on work engagement. The survey was conducted by SurveyMonkey, an online survey hosting company utilizing validated survey instruments.

Research Questions and Hypotheses

This study investigated four research questions studying the relationships between leaders' transformational leadership and emotional intelligence, and employees' work engagement, as well as employees' age, gender, and duration of employment in current position.

Research Questions

Omnibus Research Question 1 (RQ1). What is the relationship between employees' work engagement and employees' perceptions of leaders' transformational leadership, employees' perceptions of leaders' emotional intelligence, employees' age, employees' gender, and employees' duration of employment in current position in pharmaceutical organizations in the United States?

Research Subquestion 1 (RSQ1). How do employees' age, employees' gender, and employees' duration of employment in current position affect the relationship between their own work engagement and their perceptions of their leaders' transformational leadership?

Research Subquestion 2 (RSQ2). How do employees' age, employees' gender, and employees' duration of employment in current position affect the relationship between their own work engagement and their perceptions of their leaders' emotional intelligence?

Research Subquestion 3 (RSQ3). To what degree does a leader's emotional intelligence moderate the relationship between their transformational leadership, as assessed by their employees, and employees' work engagement in pharmaceutical organizations in the United States?

Research Hypotheses

Based on the research questions, the following null and alternate hypotheses were proposed for each research question.

Omnibus Research Question 1 (RQ1) Hypotheses. The Omnibus Research Question 1 Null and Alternative Hypotheses using descriptive notation were

H₀: There is not a statistically significant relationship between employees' work engagement (dependent variable) and employees' age, employees' gender, employees' duration of employment in their current position, employees' perceptions of leaders' transformational leadership, and employees' perceptions of leaders' emotional intelligence (independent variables) in pharmaceutical organizations in the United States.

H_A: There is a statistically significant relationship between employees' work engagement (dependent variable) and employees' age, employees' gender, employees' duration of employment in their current position, employees' perceptions of leaders' transformational leadership, and employees' perceptions of leaders' emotional intelligence (independent variables) in pharmaceutical organizations in the United States.

The Omnibus Research Question 1 Null and Alternative Hypotheses using statistical notation were

H₀: $\beta_i = 0$

H_A: At least one $\beta_i \neq 0$

for $i = 1, \dots, 5$ and in which: (a) β_1 is the regression coefficient for the independent variable employees' age, (b) β_2 is the regression coefficient for the independent variable employees' gender, (c) β_3 is the regression coefficient for the independent variable employees' duration of employment in current position, (d) β_4 is the regression coefficient for the independent variable employees' perceptions of leaders' transformational leadership score, and (e) β_5 is the regression coefficient for the independent variable employees' perceptions of leaders' emotional intelligence score.

Research Subquestion 1 (RSQ1) Hypotheses. The Research Subquestion 1 Null and Alternative Hypotheses using descriptive notation were

H₀: There is not a statistically significant relationship between employees' work engagement (dependent variable) and leaders' transformational leadership (idealized influence [attributed], idealized influence [behaviors], inspirational motivation, intellectual stimulation, and individualized consideration; independent variables) when controlling for employees' age, employees' gender, and employees' duration of employment in their current position (covariate variables) in pharmaceutical organizations in the United States.

H_A: There is a statistically significant relationship between employees' work engagement (dependent variable) and leaders' transformational leadership (idealized influence [attributed], idealized influence [behaviors], inspirational motivation, intellectual stimulation, and individualized consideration; independent variables) when controlling for employees' age, employees' gender, and employees' duration of employment in their current position (covariate variables), in pharmaceutical organizations in the United States.

The Research Subquestion 1 Null and Alternative Hypotheses using statistical notation were

H₀: $\beta_i = 0$

H_A: At least one $\beta_i \neq 0$

for $i = 1, \dots, 8$ and in which: (a) β_1 is the regression coefficient for the independent variable employees' age, (b) β_2 is the regression coefficient for the independent variable employees' gender, (c) β_3 is the regression coefficient for the independent variable

employees' duration of employment in current position, (d) β_4 is the regression coefficient for the independent variable employees' perceptions of leaders' idealized influence (attributed) score, (e) β_5 is the regression coefficient for the independent variable employees' perceptions of leaders' idealized influence (behaviors) score, (f) β_6 is the regression coefficient for the independent variable employees' perceptions of leaders' inspirational motivation score, (g) β_7 is the regression coefficient for the independent variable employees' perceptions of leaders' intellectual stimulation score, and (h) β_8 is the regression coefficient for the independent variable employees' perceptions of leaders' individualized consideration score.

Research Subquestion 2 (RSQ2) Hypotheses. The Research Subquestion 2 Null and Alternative Hypotheses using descriptive notation were

H₀: There is not a statistically significant relationship between employees' work engagement (dependent variable) and leaders' emotional intelligence (emotional self-awareness, emotional expression, emotional awareness of others, emotional reasoning, emotional self-management, emotional management of others, emotional self-control; dependent variables) when controlling for employees' age, employees' gender, and employees' duration of employment in current position (covariate variables), in pharmaceutical organizations in the United States.

H_A: There is a statistically significant relationship between employees' work engagement (dependent variable) and leaders' emotional intelligence (emotional self-awareness, emotional expression, emotional awareness of others, emotional reasoning, emotional self-management, emotional management of others, emotional self-control; dependent variables) when controlling for employees' age, employees'

gender, and employees' duration of employment in current position (covariate variables), in pharmaceutical organizations in the United States.

The Research Subquestion 2 Null and Alternative Hypotheses using statistical notation were

$$H_0: \beta_i = 0$$

$$H_A: \text{At least one } \beta_i \neq 0$$

for $i = 1, \dots, 10$ and in which: (a) β_1 is the regression coefficient for the independent variable employees' age, (b) β_2 is the regression coefficient for the independent variable employees' gender, (c) β_3 is the regression coefficient for the independent variable employees' duration of employment in current position, (d) β_4 is the regression coefficient for the independent variable employees' perceptions of leaders' emotional self-awareness score, (e) β_5 is the regression coefficient for the independent variable employees' perceptions of leaders' emotional expression score, (f) β_6 is the regression coefficient for the independent variable employees' perceptions of leaders' emotional awareness of others score., (g) β_7 is the regression coefficient for the independent variable employees' perceptions of leaders' emotional reasoning score., (h) β_8 is the regression coefficient for the independent variable employees' perceptions of leaders' emotional self-management score, (i) β_9 is the regression coefficient for the independent variable employees' perceptions of leaders' emotional management of others score, and (j) β_{10} is the regression coefficient for the independent variable employees' perceptions of leaders' emotional self-control score.

Research Subquestion 3 (RSQ3) Hypotheses. The Research Subquestion 3 Null and Alternative Hypotheses using descriptive notation were

H₀: Relationship between employees' work engagement (dependent variable) and leaders' transformational leadership (independent variable) is not statistically significantly moderated by leaders' emotional intelligence (moderator variable), in pharmaceutical organizations in the United States.

H_A: Relationship between employees' work engagement (dependent variable) and leaders' transformational leadership (independent variable) is statistically significantly moderated by leaders' emotional intelligence (moderator variable), in pharmaceutical organizations in the United States.

The Research Subquestion 3 Null and Alternative Hypotheses using statistical notation were

H₀: $\beta_i = 0$

H_A: At least one $\beta_i \neq 0$

for $i = 1, \dots, 3$ and in which: (a) β_1 is the regression coefficient for the independent variable employees' perceptions of leaders' transformational leadership score, (b) β_2 is the regression coefficient for the independent variable employees' perceptions of leaders' emotional intelligence score, and (c) β_3 is the regression coefficient for the interaction term between the independent variable employees' perceptions of leaders' transformational leadership score and the independent variable employees' perceptions of leaders' emotional intelligence score.

Research Design

This study employed a cross-sectional, quantitative, nonexperimental, survey design that utilized multiple linear regression to test for relationships between employees' work engagement and leaders' transformational leadership, leaders' emotional

intelligence, employees' age, employees' gender, and employees' duration of employment in current position, in pharmaceutical organizations in the United States.

Creswell (2009) posited that drawing inferences from a sample representative of a population from which the sample is drawn from can be accomplished through a quantitative study utilizing survey methodology. Creswell (2009) also suggested a quantitative approach is anchored in a post-positivist worldview driven by developing knowledge using predetermined approaches that employ statistical methodologies to yield data to support or refute the proposed hypotheses. Generally, quantitative research methodology arises from a post-positivist epistemological view of reality that suggests objective reality exists as a solid and measurable state, independent of external factors including human involvement or interpretation (Creswell, 2009). In terms of methodology, a post-positivist view addresses two critical assumptions. The first assumption is that phenomena can be measured and second, that “causes probably determine effects or outcomes” (Creswell, 2009, p. 7).

Population, Sample Frame, Sampling

Population

The target population for this study was comprised of employees working in pharmaceutical organizations in the United States. According to SelectUSA (2015) the website of the United States Department of Commerce, as of 2012 there were over 810,000 people working in the pharmaceutical industry in the United States.

Sample Frame

SurveyMonkey was contracted by the researcher to recruit study participants specifically employed in the pharmaceutical industry in the United States. The sample

frame was employees working in the pharmaceutical industry in the United States who were members of the SurveyMonkey Pharmaceutical and Healthcare Audience (SurveyMonkey, 2015).

Sample Size

The minimum sample size using G*Power version 3.1.9.2 (Faul, Erdfelder, Lang, & Buchner, 2007) was calculated based on each of the specific analyses, and the most stringent was used as a baseline requirement. Thus, if this most stringent requirement was met, each of the remaining analyses' requirements was met as well. The multiple linear regression with the largest number of predictor variables was found in Research Subquestion 2. As such, Research Subquestion 2 was found to have the most stringent sample size requirement, and was used as a baseline. Research Subquestion 2 investigated the relationships of the subconstructs of leaders' emotional intelligence, as well as employees' age, employees' gender, and employees' duration of employment in current position, on the dependent variable, employees' work engagement. Thus, the sample size analysis was conducted using 10 independent, or predictor variables. Based on *F* tests for multiple linear regression via a fixed mode, R^2 deviation from zero, with a medium effect size of .15 (Cohen, 1992), a power level of .80, and 10 predictor variables the minimum calculated sample size was 118 participants. This sample size also ensured with 95% confidence that any results did not occur due to random chance alone. The power analysis calculation parameters are shown in Table 1, while the central and noncentral distribution plot for the power calculation is shown in Figure 2.

Table 1. *Power Analysis Calculation Parameters*

Power Analysis Calculation Parameters		
	Parameter	Value
Input parameter	Effect size f^2	0.15
	α err probability	0.05
	Power (1- β err probability)	0.80
	Number of predictors	10
Output parameter	Noncentrality parameter λ	17.70
	Critical F	1.92
	Numerator df	10
	Denominator df	107
	Total sample size	118
	Actual power	0.80

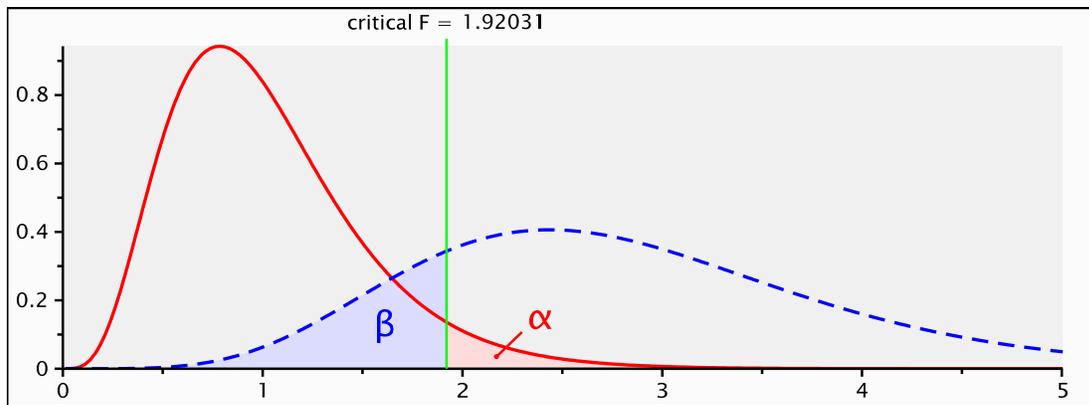


Figure 2. Central and noncentral distribution plot.

The calculated minimum sample size for this study was also consistent with the methodology recommended by Tabachnick and Fidell (2013) using the sampling formula, $N \geq 50 + 8m$, in which m = the number of predictor variables. Since the most stringent analysis in this study was based on 10 predictor variables (subconstructs of emotional intelligence, employees' age, employees' gender, and employees' duration of employment in current position) the minimum sample size necessary to achieve statistical power of .80 was 130.

To perform a regression analysis on individual predictors, Green (1991) recommended a minimum sample size of 104, plus the total number of predictor variables. Accordingly, the minimum sample of 114 participants would be needed with 10 predictor variables. As such, the calculated minimum sample size of 118 was in line with Green's (1991) and Tabachnick and Fidell's (2013) recommendations.

Sampling Plan

According to Passmore and Baker (2005), the goal of a sampling strategy is to ensure that the obtained sample statistics accurately represent population parameters while operating within budget and resource constraints. The sampling strategy for this study was random sampling.

A simple random sample provides an equal chance of all participants to participate in the study (Patten, 2012). SurveyMonkey obtains specific audiences from over 30 million unique respondents who take surveys on behalf of researchers and customers (SurveyMonkey, 2015). SurveyMonkey was contracted for this study to identify an appropriate sample frame of individuals employed in the pharmaceutical and healthcare industries in the United States. SurveyMonkey emailed the study link to a random sample of participants until the minimum contracted sample size of at least 150 completed responses from participants employed in the pharmaceutical industry in the United States was obtained.

Units of analysis. The units of analysis in this study were individuals employed within pharmaceutical organizations in the United States. Type of collected study data for each hypothesis and level of measurement are shown in Table 2.

Table 2. *Type of Collected Data and Level of Measurement*

Hypothesis	Dependent Variable Name & (Level of Measurement)	Independent Variables and Level of Measurement (Including moderating variable)
RQ1	Work Engagement (Interval)	<ul style="list-style-type: none"> • Transformational Leadership (Interval) • Emotional Intelligence (Interval) • Gender (Nominal) • Age (Nominal) • Duration of employment in current position (Nominal)
RSQ1	Work Engagement (Interval)	<ul style="list-style-type: none"> • Transformational Leadership as measured by <ul style="list-style-type: none"> • Idealized influence [attributed] (Interval) • Idealized influence [behaviors] (Interval) • Inspirational motivation (Interval) • Intellectual stimulation (Interval) • Individualized consideration (Interval) • Gender (Nominal) • Age (Nominal) • Duration of employment in current position (Nominal)
RSQ2	Work Engagement (Interval)	<ul style="list-style-type: none"> • Emotional Intelligence as measured by <ul style="list-style-type: none"> • Emotional self-awareness (Interval) • Emotional expression (Interval) • Emotional awareness of others (Interval) • Emotional reasoning (Interval) • Emotional self-management (Interval) • Emotional management of others (Interval) • Emotional self-control (Interval) • Gender (Nominal) • Age (Nominal) • Duration of employment in current position (Nominal)
RSQ3	Work Engagement (Interval)	<ul style="list-style-type: none"> • Transformational Leadership Composite Score (Interval) • Emotional Intelligence Composite Score (Interval) • Interaction term for Emotional Intelligence and Transformational Leadership (Interval)

Setting

SurveyMonkey provided a web-based setting for the conduct of the survey by soliciting study participants through a specific SurveyMonkey Audience representative of pharmaceutical and healthcare employees in the United States (SurveyMonkey, 2015). Greenlaw and Brown-Welty (2009) stated that web-based surveys allow for the expeditious collection of data from large sample groups, at a reasonable cost. In addition,

Reitz and Anderson (2013) opined that due to more individuals possessing online access, internet surveys allow greater opportunities to reach increasingly larger populations.

This study was conducted to measure relationships between leaders' transformational leadership and leaders' emotional intelligence, as assessed by employees, and employees' age, employees' gender, employees' duration of employment in current position, and employees' work engagement in pharmaceutical organizations in the United States. Based on the target population for this study and the use of technology by pharmaceutical employees, the sample in this study was expected to be familiar with internet based surveys and had access to the internet. Therefore, the setting selected for this study was appropriate.

Instrumentation/Measures

The study employed three validated rater and self-reported survey instruments. The Multifactor Leadership Questionnaire (MLQ 5X-Short), the Genos Emotional Intelligence Inventory-concise (rater), and the Utrecht Work Engagement Scale (UWES-17), measured transformational leadership, emotional intelligence, and work engagement, respectively. The selected instruments were not modified for the purpose of this study.

Transformational Leadership

The MLQ was developed by Avolio and Bass (2004) to assess the full range leadership model representing a continuum of leader behaviors from active to passive. The MLQ remains at the forefront of measuring transformational leadership because the instrument has been studied in numerous contexts and is applicable in any organizational setting (Kirkbride, 2006). The MLQ is a 45 statement, Likert scale based instrument used in determining the degree of transformational, transactional, or laissez faire

leadership (Avolio & Bass, 2004). Since this research was concerned with the level of transformational leadership, only 20 statements, representing five transformational leadership subconstructs of idealized influence (attributed), idealized influence (behaviors), inspirational motivation, intellectual stimulation, individual consideration, were used in this study. For each of the 20 statements, the study participants evaluated their immediate supervisor's transformational leadership behaviors using a 5-point Likert scale with the following ratings: 0 = *Not at all*, 1 = *Once on a while*, 2 = *Sometimes*, 3 = *Fairly often*, or 4 = *Frequently, if not always*.

Emotional Intelligence

Participants evaluated their immediate supervisor's emotional intelligence using the Genos Emotional Intelligence Inventory-concise (rater) questionnaire. The Genos Emotional Intelligence Inventory is a relatively new instrument used to assess emotional intelligence; however, promising validity for the test has been shown by the conduct of a robust multifactor statistical analysis (Gignac, 2010a). The Genos Emotional Intelligence Inventory captures a seven-factor model of trait-related emotional intelligence in workplace behavior that measures emotional self-awareness, emotional expression, emotional awareness of others, emotional reasoning, emotional self-management, emotional management of others, and emotional self-control (Gignac, 2010a).

The comprehensive assessment contains 70 items specifically relevant to measuring the frequency of emotional intelligence behaviors in the workplace environment; however, for this study the Genos Emotional Intelligence Inventory-concise (rater) scale was selected. Genos Emotional Intelligence Inventory-concise (rater) scale

is designed to measure an overall emotional intelligence score as well as the seven emotional intelligence subscales based on 31 items. The main difference between the Genos Emotional Intelligence Inventory-concise (rater) version and the Genos Emotional Intelligence Inventory (full version) is that the concise version is only appropriate for research purposes and not commercial applications due to its' subscale score reliability levels that are only appropriate for research (Gignac, 2010a). The instrument measures the frequency with which an individual displays emotionally intelligent behaviors across the seven dimensions and is scored based on a 5-point Likert scale, with the following ratings: 1 = *Almost Never*, 2 = *Seldom*, 3 = *Sometimes*, 4 = *Usually*, or 5 = *Almost Always*.

Work Engagement

Work engagement is an experience of work found on the opposite end of the work experience continuum from burnout, and is characterized by the factors measured by the Utrecht Work Engagement Scale (UWES): dedication, vigor, and absorption. This study used the 17-question Likert scale instrument (Bakker et al., 2011). Dedication refers to work experience that workers view as significant and meaningful and worth pursuing; vigor refers to viewing work experience as stimulating and energizing and as something to which workers are inclined to allocate time and energy to; absorption refers to work experience that is captivating and which workers are fully concentrated on (Bakker et al., 2011). The instrument measures the frequency with which an individual agrees about how they feel at work across the three factors and is scored based on a 7-point Likert scale, with the following ratings: 0 = *Never*, 1 = *A few times a year or less*, 2 = *Once a*

month or less, 3 = A few times a month, 4 = Once a week, 5 = A few times a week, or 6 = Every day.

Validity and Reliability

Validity describes the extent to which the study measurement actually measures the intended study concept (Roberts, Priest, & Traynor, 2006). Internal and external validity further defines validity. Internal validity ensures that the study data correctly address and answer the research questions, while external validity refers to the extent the data can correctly generalize to the wider population (Steckler & McLeroy, 2008). Confounding variables can affect internal validity and according to Russ-Eft and Hoover (2005) testing of confounding variables should be explored. To address this concern, employees' age, employees' gender, and employees' duration of time in current position, were also examined for their effect on work engagement. To support external validity, a sampling strategy that included participants from various pharmaceutical industries and geographies was implemented in this study to ensure that study results are generalizable to a broader population.

Reliability indicates the consistency of the study measurements between different people, as well as at different times (Roberts et al., 2006). Reliability describes to what extent a particular test or survey questionnaire will produce similar outcomes in different situations, provided that nothing else has changed. Typically, estimates of Cronbach's $\alpha = .70$ are considered minimally acceptable for good reliability (Peterson, 1994), although levels closer to .80 have been recommended as a more accurate reflection of reliability (Clark & Watson, 1995).

Transformational leadership. According to Avolio and Bass (2004), the factors that comprise transformational leadership intercorrelations have an overall Cronbach's α ranging from .64 to .71. Reliability coefficients for the intercorrelations among total scores of the MLQ (transformational, transactional, and laissez faire) in the United States (self and rater reported) ranged from 0.69 to 0.83 (Avolio & Bass, 2004). This has been established from analyses conducted in the United States based on over 27,000 responders. .

Table 3 shows the overall reliabilities for the five subscales of transformational leadership behaviors, as well as the reliabilities when the rater form was used by respondents who were at a work level lower than the person being rated. This was the case in this study since participants had to rate the transformational leadership behaviors of their immediate supervisor.

Table 3. *Reliability of MLQ (5X-Short) Transformational Leadership Subscales*

MLQ (5X-Short) Subscales	MLQ (5X-Short) Transformational Leadership Subscales Overall Reliability	MLQ (5X-Short) Raters at Lower Work Level Reliability
Idealized Influence (Attributed)	.75	.77
Idealized Influence (Behaviors)	.70	.70
Inspirational Motivation	.83	.83
Intellectual Stimulation	.75	.75
Individual Consideration	.77	.80

Note. Adopted from "MLQ: Multifactor Leadership Questionnaire," by B. J. Avolio and B. M. Bass, 2004. Manual and Sample Set (3rd ed.), pp. 73-75. Copyright 2004 Bernard Bass and Bruce Avolio.

In addition, Antonakis, Avolio, and Sivasubramaniam (2003) conducted a study to evaluate the validity of the MLQ and determined that the nine-factor model provided strong and consistent representation of the MLQ instrument and its underlying theory.

Additionally, Antonakis et al. (2003) determined that gender does not play a role in discriminating between items of the MLQ instrument and leadership constructs.

Emotional intelligence. The internal reliability for the full Genos Emotional Intelligence Inventory scale was estimated at .96 (Gignac, 2010b). Cronbach's α values for each of the subconstructs of the Genos Emotional Intelligence scale are shown in Table 4. In addition, the Genos Emotional Intelligence Inventory scale has excellent *face validity*, thus the scale measures the concept the instrument is intended to measure.

Furthermore, a series of rigorous factor analyses were performed on the Genos Emotional Intelligence Inventory using self-reported and rater-reported data. The thorough analysis involved 4,775 individual self-reports and 6,848 rater reports from an international respondent sample. Results of the factorial analysis revealed that the seven-factor model is considered an acceptable well-fitting model regardless of its use in self-reporting or rater reporting (Palmer, Stough, Harmer, & Gignac, 2009).

Table 4. *Reliability of the Genos Emotional Intelligence Subscales*

Genos Emotional Intelligence Subscales	Genos Emotional Intelligence Subscales Overall Reliability
Emotional self-awareness	.81
Emotional expression	.77
Emotional awareness of others	.85
Emotional reasoning	.71
Emotional self-management	.77
Emotional management of others	.85
Emotional self-control	.78

Note. Adopted from "Genos Emotional Intelligence Inventory Technical Manual," by G.E. Gignac, 2010. Technical Manual (2nd ed.), p. 45. Copyright 2010 Genos Pty Ltd.

Furthermore, the Genos Emotional Intelligence Inventory represented stable levels of reliability over time. Based on a test-retest, the Genos Emotional Intelligence Inventory Cronbach's α correlations were .83 and .72, at the 2-month and 8-month time

periods, respectively (Gignac, 2010b). The reliability of the Genos Emotional Intelligence Inventory survey consistently produced high reliability coefficients ($> .90$) in various demographics and geographies (Gignac, 2010b). This indicates that irrespective of the populations tested or participants' physical location, responses to survey questions correlate highly with established norms.

Work engagement. The reliability of the overall UWES-17 scale is between a Cronbach's α of .88 and .95, with the reliability of each of the three subconstructs shown in Table 5.

Table 5. *Reliability of the Utrecht Work Engagement (UWES-17) Subscales*

UWES-17 Subscale	UWES-17 Subscales Overall Reliability
Absorption	.83
Dedication	.89
Vigor	.82

Note. Adopted from "Utrecht Work Engagement Scale technical manual," by G.E. Gignac, 2010. Preliminary Manual (2nd ed.), p. 26. Copyright 2003 Occupational Health Psychology Unit, Utrecht University.

Test-retest of the instrument was also assessed in a setting of Norwegian and Australian paramedics ($N = 563$) and Salvation Army officers ($N = 293$), respectively. The stability coefficients were .72 and .63, respectively, at a 1-year interval (Schaufeli & Bakker, 2003). Furthermore, Seppälä et al. (2009) provided strong evidence for the tool's validity in discerning work engagement compared to burnout. Overall, the Utrecht Work Engagement Scale produced high reliability coefficients when accounting for internal consistency and test-retest reliability (Schaufeli & Bakker, 2003).

Based on these findings, the historical consistencies of the selected instruments were supported and were appropriate for this study.

Data Collection

The data collection overview is presented in Figure 3. The survey collection began on April 28, 2015 and concluded on May 12, 2015 after 157 responses were obtained. The data collection procedure encompassed study participants receiving a screening question, Capella University's Institutional Review Board (IRB) informed consent form, a demographic questionnaire, and survey questions, assessing leaders' transformational leadership and emotional intelligence, and participants' work engagement.

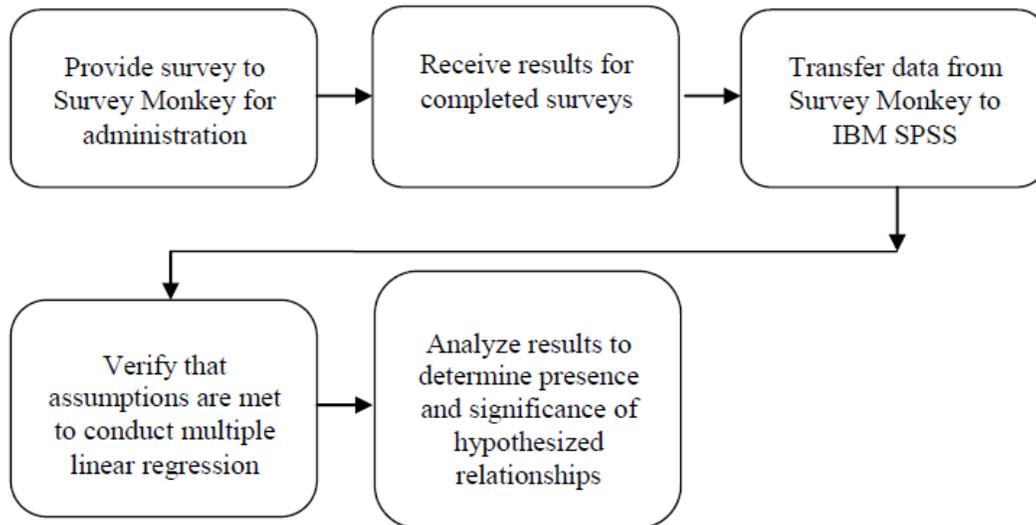


Figure 3. Data collection overview.

Screening Question

The screening question asked whether the participant was 18 years and older, worked full time in the pharmaceutical industry in the United States, and at the time of the survey had an immediate supervisor. The informed consent asked participants if based on the information they read, they *Agree* or *Disagree* to participate in the study. If

participants disagreed they were taken to a *Thank you* page and informed that they could not participate in the study. If participants answered *No* to the screening question or *Disagreed* with the informed consent form, they were programmatically not permitted to go back into the survey to modify their answers. On the other hand, to remain in the study participants had to answer *Yes* to the screening question and *Agree* with the informed consent form. If these two conditions were satisfied the participants proceeded to answer demographic questions and questions regarding their perceptions of their immediate supervisor's transformational leadership and emotional intelligence, and their own work engagement.

Demographic Questions

The demographic questions collected data including participants gender, age, time in current position, pharmaceutical industry sector where employed, department or functional area where employed, and highest educational level attained. Each of the demographic statements required the participant to select from a pre-specified selection.

Survey Questions

Upon completing the demographic questions, study participants provided information regarding their perceptions of their immediate supervisor's transformational leadership and emotional intelligence, and their own level of work engagement. This part of the survey encompassed 68, Likert scale questions: 20 related to transformational leadership, 31 related to emotional intelligence, and 17 related to work engagement.

Study Conduct

Participation in this study was voluntary and participants could withdraw from the study at any time. If participants did not withdraw from the survey they were required to

answer every question. This was also part of the contract with SurveyMonkey that only fully completed responses would be provided to the researcher. This arrangement ensured that an analyzable dataset would be obtained and minimized issues with missing data. In addition, the survey was designed that only one instance of survey participation per computer was permitted. This prevented participants from providing multiple responses. The survey was closed when 157 responses were obtained. Survey data in SPSS format was transferred from the SurveyMonkey portal to the researcher's external hard drive for analysis.

Data Analysis

Following entry to SPSS Version 22.0, demographic variables were coded and scores were calculated for the five subscales of transformational leadership, the three subscales of work engagement, and the seven subscales of emotional intelligence. Some questions supporting the seven subscales of emotional intelligence needed to be reverse coded prior to calculating the scale scores. The scales of transformational leadership and emotional intelligence were calculated as the mean of the constituent items. The scales of work engagement were calculated as the sum of the constituent items. After calculating the subscales of each score, a composite was created for each variable using the same calculation method as the corresponding subscales.

Assumptions for Multiple Linear Regression Analysis

Prior to conducting the multiple linear regression analyses, study data was evaluated to determine if any assumptions were violated.

No significant outliers. Detection of outliers was conducted through casewise diagnostics in SPSS and evaluation of histograms.

Data normality. Data normality was evaluated by an assessment of the skewness and kurtosis scores, an evaluation of the absolute z-scores for skewness and kurtosis, the Kolmogorov-Smirnov test, and the Shapiro-Wilk test.

Independence of errors (residuals). Independence of errors was assessed using the Durbin-Watson test. The Durbin-Watson test is used to detect possible autocorrelation, which can be problematic when conducting multiple linear regression.

A linear relationship between the variables. A linear relationship between the predictor variables and the outcome variable was assessed by plotting and examining the residual scatterplots.

Homoscedasticity of residuals. Homoscedasticity of residuals was assessed by examining the residual scatterplots and Levene's test for homogeneity of variance.

No multicollinearity. Multicollinearity was assessed by the inspection of the variance inflation factor (VIF) values.

Normal distribution of errors. Normal distribution of errors (residuals) was assessed by numerical and graphical methods. Numerically, data was evaluated for skewness and kurtosis, and by the Kolmogorov-Smirnov test and the Shapiro-Wilk test. Graphical evaluation of data was carried out by an analysis of histograms and P-P plots.

Support for Multiple Linear Regression Analysis

Multiple linear regression provides information on the role an independent variable has in explaining the variance in the dependent variable while simultaneously controlling for the effects of other independent variables. According to West, Aiken, Cham, and Liu (2013) multiple linear regression analysis is appropriate when research is concerned with measuring a relationship between different variables, or when the goal of

research is to determine the importance of the independent variables in affecting or contributing to the dependent variable beyond other independent variables in the model.

Multiple linear regression was also carried out to determine the moderating role of emotional intelligence on the relationship between transformational leadership and employee work engagement. Baron and Kenny (1986) stated that multiple linear regression is an appropriate way to determine moderating effects when both the independent and dependent variables are continuous in nature. Because emotional intelligence, work engagement, and transformational leadership were measures based on continuous scores, multiple linear regression analysis is appropriate (Howell, 2010).

Multiple Linear Regression Methodology

Omnibus Research Question 1 (RQ1). Standard multiple linear regression (the enter method) was conducted to examine the relationship between employees' work engagement and employees' perceptions of leaders' transformational leadership, employees' perceptions of leaders' emotional intelligence, employees' age, employees' gender, and employees' duration of employment in current position in pharmaceutical organizations in the United States?. The enter method enters all independent variables (predictors) simultaneously into the model. Unless theory sufficiently supports the method of entry, the standard multiple linear regression is the appropriate method of entry. Individual predictor variables were assessed further using *t* tests

Research Subquestion 1 (RSQ1). For Research Subquestion 1, multiple linear regression was conducted to first examine the effect of the control variables alone (employees' age, employees' gender, and employees' duration of employment in current position) on employees' work engagement. The second step examined how much more

leaders' transformational leadership contributed to employees' work engagement in pharmaceutical organizations in the United States beyond what the control variables showed by entering the dimensions of transformational leadership (idealized influence [attributed], idealized influence [behaviors], inspirational motivation, intellectual stimulation, and individualized consideration) into the model. Individual predictor variables were assessed further using *t* tests. Employees' age, employees' gender, and employees' duration of employment in current position were considered covariates. According to Field (2013) covariates are those variables that are not designated as variables of primary research interest but instead can potentially have an effect on the dependent variable.

Research Subquestion 2 (RSQ2). For Research Subquestion 2, multiple linear regression was conducted to first examine the effect of the control variables alone (employees' age, employees' gender, and employees' duration of employment in current position) on employees' work engagement. The second step examined how much more leaders' emotional intelligence contributed to employees' work engagement beyond what the control variables showed by entering the dimensions of emotional intelligence (emotional self-awareness, emotional expression, emotional awareness of others, emotional reasoning, emotional self-management, emotional management of others, and emotional self-control) into the model. Individual predictor variables were assessed further using *t* tests. As in Research Subquestion 1, employees' age, employees' gender, and employees' duration of employment in current position were considered covariates.

Research Subquestion 3 (RSQ3). To examine Research Subquestion 3, a Baron and Kenny (1986) approach to moderation analysis was conducted. This approach used

multiple linear regression to examine the influence of the interaction of employees' perceptions of leaders' emotional intelligence and employees' perceptions of leaders' transformational leadership on employees' work engagement. According to Baron and Kenny (1986) and Preacher, Rucker, and Hayes (2007) a moderating variable can be quantitative and affects the strength and or direction of the relationship between a predictor and dependent variable.

Ethical Considerations

Although increasing in popularity, use of electronic surveys in research raises ethical considerations (Brownlow & O'Dell, 2002). According to Patten (2012) there are a number of considerations that need to be taken into account when conducting research, including protecting participants from physical and psychological harm, protecting participant's privacy and confidentiality, and providing participants with a clear purpose for the study. With this in mind, the following considerations were accounted for in the conduct of ethical research for this study.

The study did not enroll participants from vulnerable populations and was not conducted at the researcher's company. Utilizing SurveyMonkey as a third-party administrator of the study minimized researcher bias in identifying with the sample and enhanced privacy of study participants, as SurveyMonkey was able to blind participant identifiers and collect study data in a password-protected environment, after obtaining participants' agreement with Capella University's Institutional Review Board (IRB) approved informed consent. As such, the researcher had no direct or indirect influence over the survey administration or contact with any participants. In addition, no personal information was requested, and survey responses were securely stored on

SurveyMonkey's encrypted and secure server. SurveyMonkey implements security measures to restrict internal and external access to all channels going to the secure data server. SurveyMonkey privacy also adheres to the Health Insurance Portability and Accountability Act (HIPAA) to enable HIPAA compliance of health related information (SurveyMonkey, 2015). Based on the safeguards implemented in the conduct of the study, any potential risk or harm to the participants was minimal.

Once sufficient responses were obtained the survey was closed and survey data in IBM SPSS format (IBM SPSS Statistics for Windows) was transferred from SurveyMonkey's portal to the researcher's external hard drive for analysis. Study-related materials were securely protected from uses other than the intended research by a password-protected access to an external hard drive at the researcher's home. Data will be stored electronically on a removable hard drive for the duration of seven years after study completion and then the removable hard drive will be physically destroyed.

CHAPTER 4. RESULTS

Introduction

This study employed a cross-sectional, quantitative, nonexperimental, survey design that utilized multiple linear regression to test for relationships between variables. A moderation analysis based on the Baron and Kenny (1986) methodology was also conducted to examine the influence of the interaction of emotional intelligence and transformational leadership on work engagement. Survey administration was carried out by SurveyMonkey (SurveyMonkey, 2015), utilizing validated survey instruments. Upon completion of the survey, the analyzable dataset represented 157 fully completed survey responses. The raw data was transferred to IBM SPSS 22.0 statistical software for analysis (IBM SPSS Statistics for Windows).

Preparation for Data Analyses and Evaluation

Scoring

Following entry to IBM SPSS Version 22.0 statistical software (IBM SPSS Statistics for Windows), scores were calculated for the composite and subscale scores for transformational leadership, work engagement, and emotional intelligence. Some of the questions in the emotional intelligence survey supporting the seven subscales of emotional intelligence are negatively, and needed to be reverse coded prior to calculating the scale scores. The reason for this conversion was that the emotional intelligence score

is a summation score, where a higher numerical value indicates a greater frequency of an individual exhibiting emotional intelligence behaviors at work.

The scales of transformational leadership and work engagement were calculated as the mean of the constituent items (Avolio & Bass, 2004; Schaufeli & Bakker, 2003). The scale of emotional intelligence was calculated as the sum of the constituent items. The reason emotional intelligence is calculated as a summary score instead of a mean score is because it allows an equal weight assignment for each of the Genos Emotional Intelligence Inventory subscales and when used in a professional setting it permits benchmarking against a percentile ranking (Gignac, 2010b). After calculating the score for each subscale, a composite score was created for each of the variables using the same calculation method as the corresponding subscales. Thus, a composite mean score for transformational leadership could range from 0 to 4. A higher score indicates a greater expression of transformational leadership. Composite work engagement mean score could range from 0 to 6. A higher score corresponds with a greater degree of engagement at work. Finally, a composite emotional intelligence sum score could range from 31 to 155. Again, a higher score indicates a greater frequency of exhibiting emotional intelligence behaviors at work. The spread and central tendency of the scores observed in this study for the scale variables is shown in Table 6.

Table 6. Means and Standard Deviations for Three Composite Measures of Interest and Constituent Subscales

Variable Measures	Minimum	Maximum	<i>M</i>	<i>SD</i>
Transformational Leadership	0	4	2.62	0.86
Idealized Influence (Attributed)	0	4	2.70	0.89
Idealized Influence (Behaviors)	0	4	2.59	0.89
Inspirational Motivation	0	4	2.73	0.93
Intellectual Stimulation	0	4	2.51	0.89
Individualized Consideration	0	4	2.56	0.95
Emotional Intelligence	55	152	107.64	20.85
Emotional self-awareness	6	20	13.80	3.01
Emotional expression	9	25	17.31	3.46
Emotional awareness of others	4	20	13.85	3.11
Emotional reasoning	5	25	17.45	4.59
Emotional self-management	7	25	17.18	3.53
Emotional management of others	6	20	13.96	3.17
Emotional self-control	6	20	14.10	3.16
Work Engagement	0.41	6	4.40	1.10
Vigor	0.50	6	4.55	1.13
Dedication	0.40	6	4.57	1.28
Absorption	0.33	6	4.09	1.13

Note. *N* = 157.

Work engagement. In this study, using the UWES-17, participants reported a mean overall work engagement score of 4.40 (*SD* = 1.10) based on the subconstructs of absorption, dedication, and vigor. The mean score indicates that in this study, participants perceived themselves as engaged in their work at least once a week but less than a few times a week. These scores were comparable to average normative scores (Schaufeli, & Bakker, 2003).

Transformational leadership. The overall impression of leaders by their subordinates is that leaders exhibit transformational leadership behaviors a little more than sometimes (*M* = 2.62, *SD* = 0.86). The individual subconstructs of transformational leadership (idealized influence [attributed], idealized influence [behaviors], inspirational

motivation, intellectual stimulation, and individual consideration scores obtained in this study are very similar to the normative ranges for the MLQ 5X-Short (Avolio & Bass, 2004).

Emotional intelligence. For an assessment of emotional intelligence using the Genos Emotional Intelligence Inventory-concise (rater), the raw scores are typically converted into percentile scores (Gignac, 2010b). However, according to Gignac (2010b) for statistical analysis purposes conversion into percentiles is not appropriate. In this study, the score of the overall emotional intelligence construct was lower ($M = 107.64$, $SD = 20.85$) compared to the normative score for the composite emotional intelligence scale ($M = 121.86$, $SD = 13.84$; Gignac, 2010b). The values for the seven constituent scores of emotional intelligence were also lower in this study compared to the normative dataset.

Demographic Characteristics

Demographic questions related to respondents' personal and organizational characteristics were included in the survey to obtain a better understanding of the sample. In addition, two personal characteristics (age and gender) and one organizational characteristic (duration of employment in current position) were utilized in the analyses used to investigate the Omnibus Research Question 1, as well as Research Subquestion 1 and Research Subquestion 2. The variables age, gender, and duration of employment in current position were categorized as nominal variables, as these variables were assigned group names, rather than absolute values. As such, analysis of the spread, central tendency, kurtosis, skewness, and normality were ignored for the variables of age, gender, and duration of employment in current position.

Individual Characteristics

To better understand the individual characteristics of the study participants, questions related to their age, gender, and highest educational level attained were collected. The frequencies and percentages for the individual characteristics of age, gender, and level of education are summarized in Table 7 and frequencies are shown in Figure 4, Figure 5, and Figure 6, respectively.

Table 7. *Frequencies and Percentages for Individual Characteristics*

Variable	Frequency	Percent (%)
Age (Years)		
18 - 30 years	37	24
31 - 40 years	48	31
41 - 50 years	39	25
51 - 60 years	31	20
61 - 70 years	2	1
71 or older	0	0
Gender		
Male	74	47
Female	83	53
Highest Educational Level		
Associate's Degree	36	23
Bachelor's Degree	55	35
Master's Degree	21	13
Doctorate Degree	11	7
Other (e.g., Professional degree)	10	6
No Degree	24	15

Note. N = 157.

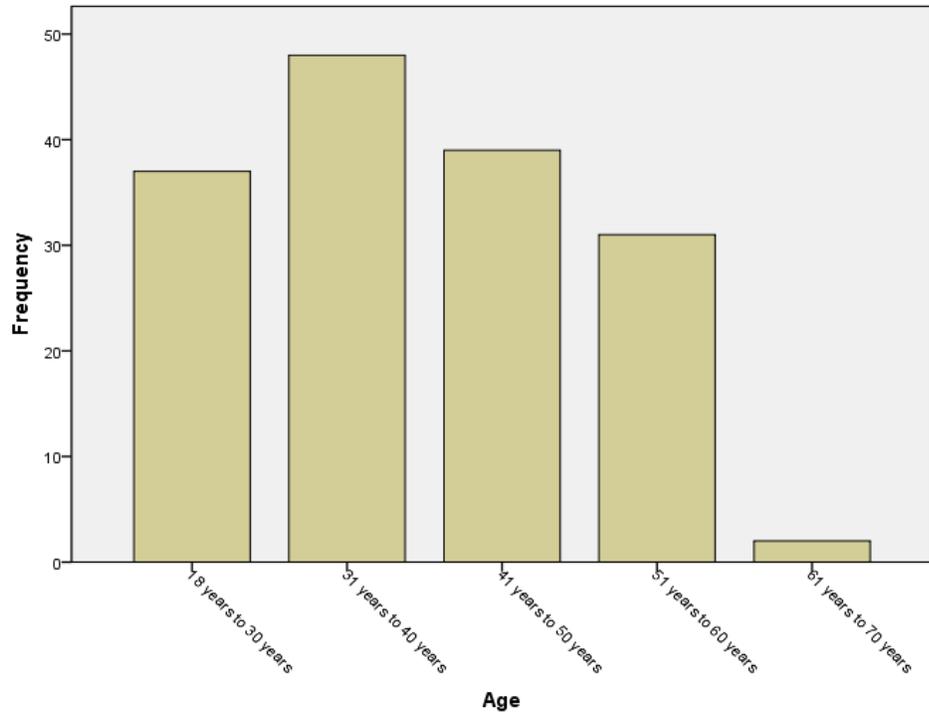


Figure 4. Participants' age.

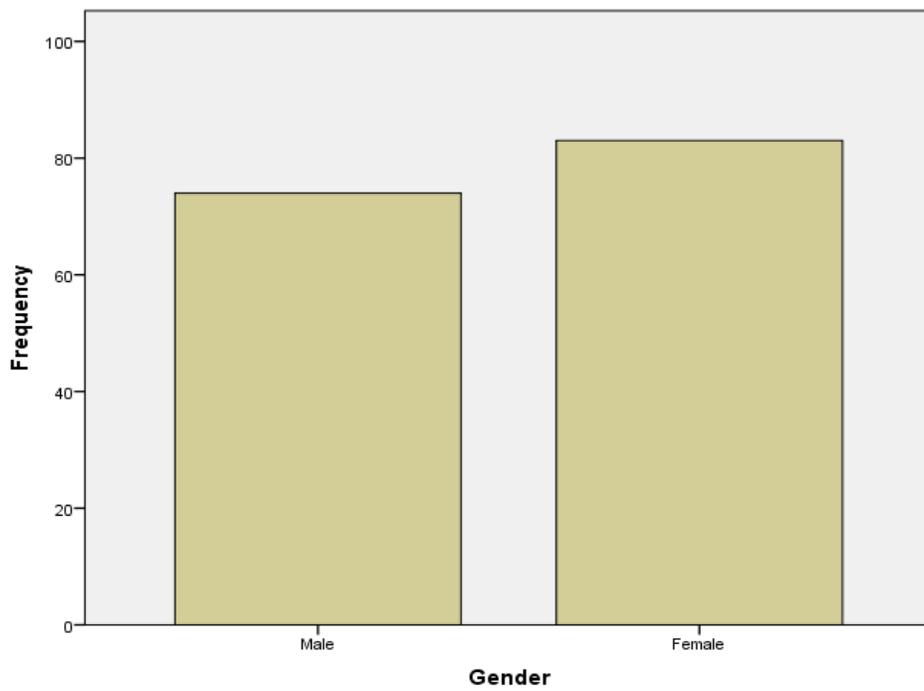


Figure 5. Participants' gender.

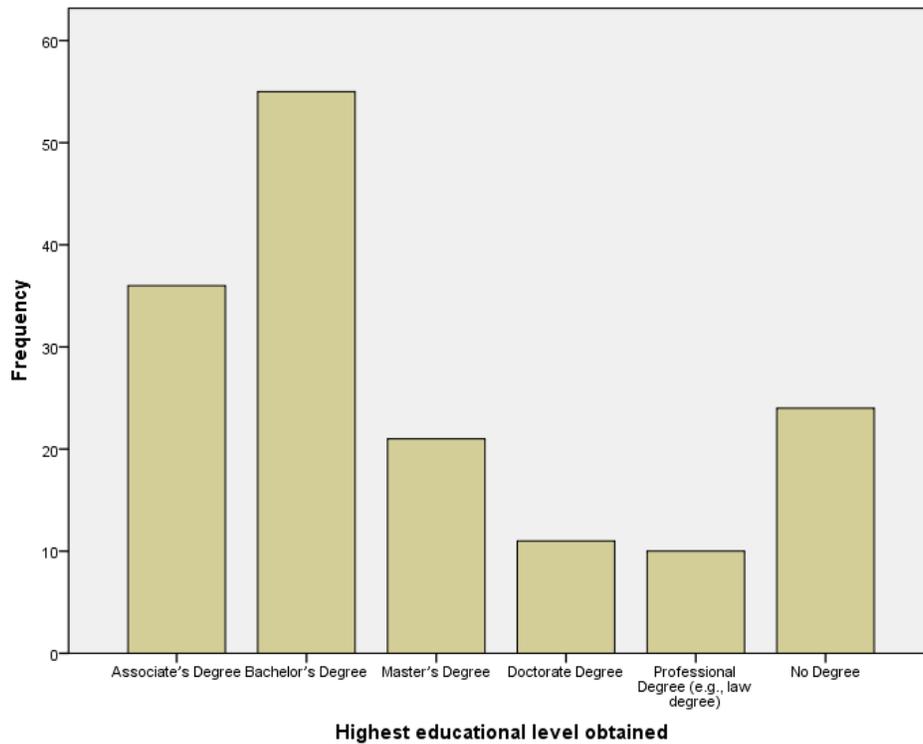


Figure 6. Highest educational level obtained.

Organizational Characteristics

To better understand the organizational characteristics of the study participants, questions related to the pharmaceutical industry sector where participants were employed, the department or functional area where they worked, years in current position, and geographic location were collected. The frequencies and percentages for organizational characteristics are shown in Table 8 and frequencies are shown in Figure 7, Figure 8, Figure 9, and Figure 10.

Table 8. *Frequencies and Percentages for Organizational Characteristics*

Variable	Frequency	Percent (%)
Pharmaceutical Industry Sector		
Prescription	81	52
Consumer	27	17
Medical Devices	49	31
Department or Functional Area		
Research and Development	43	27
Manufacturing	17	11
Administrative	42	27
Other	55	35
Time in Current Position (Years)		
< 1	19	12
1 to < 3	40	25
3 to < 5	28	18
5 to < 10	30	19
10 to < 15	25	16
>15	15	10
Geographic location		
New England	14	9
Middle Atlantic	24	15
East North Central	31	20
West North Central	14	9
South Atlantic	15	10
East South Central	15	10
West South Central	14	9
Mountain	5	3
Pacific	23	15

Note. N = 157.

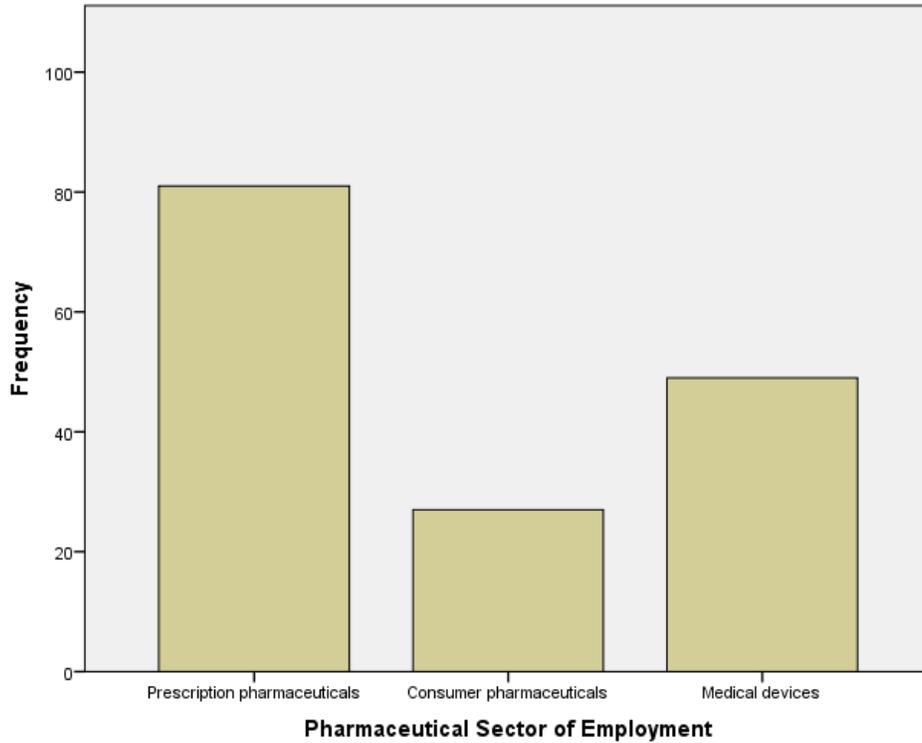


Figure 7. Pharmaceutical industry sector of employment.

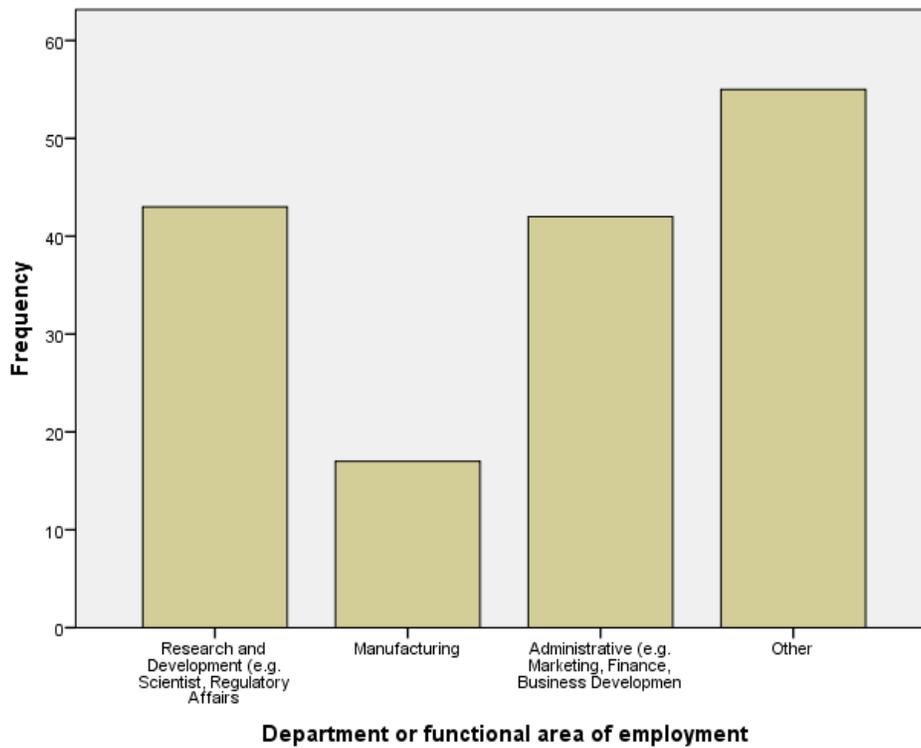


Figure 8. Department or functional area of employment.

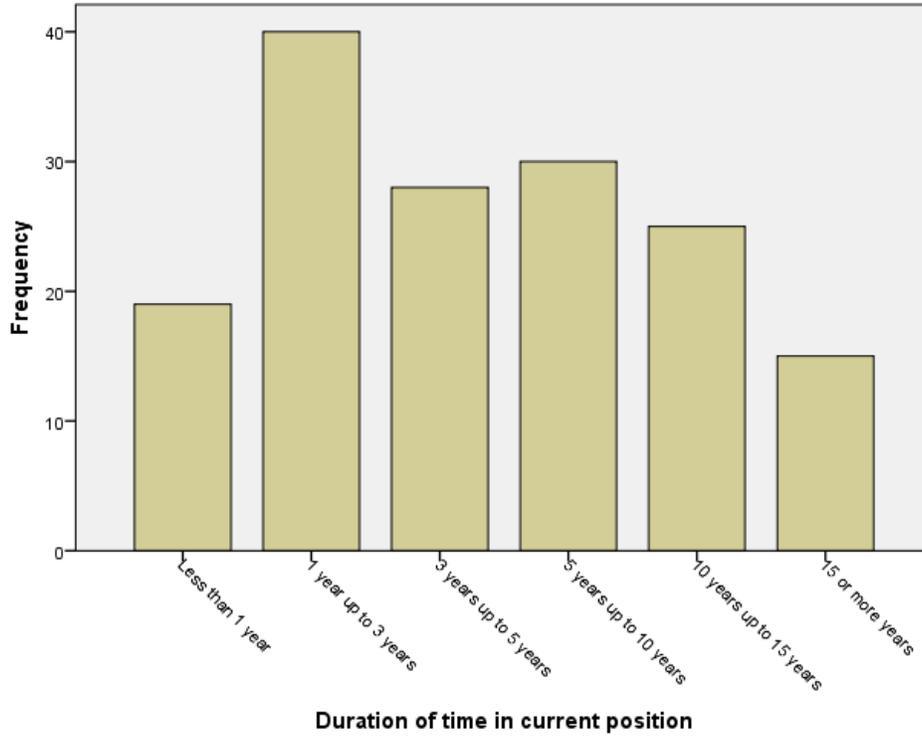


Figure 9. Time in current position.

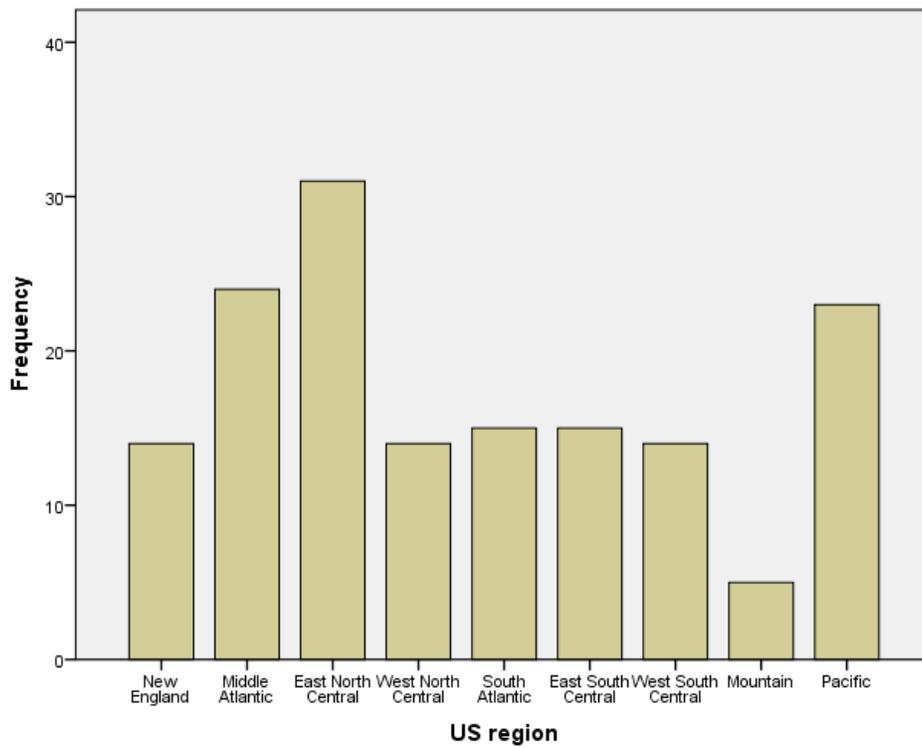


Figure 10. Participants' geographic location.

Preanalysis Data Evaluation

Reliability

Prior to the multiple linear regression analyses the scale variables for transformational leadership, emotional intelligence, and work engagement were examined to determine the consistency of Cronbach's α values obtained in this study compared to findings reported in the scholarly literature. Results are presented in Table 9. All obtained Cronbach's α values for the composite scales are above .80, indicating a high level of internal consistency for all measures and are in line with findings reported in the literature. The subscales for work engagement and transformational leadership also have good internal consistency, with most Cronbach's α values above .80 (except absorption: Cronbach's α .76). It is noteworthy, that Cronbach's α values for the subscales of emotional intelligence (except emotional reasoning) were .60 or greater but below .70. This finding may not be entirely surprising given that emotional intelligence was measured by the Genos Emotional Intelligence Inventory-concise scale. Palmer et al. (2009) observed that lower Cronbach's α values are expected for the concise version due to a reduced number of questions supporting each subscale compared to the full survey (4 or 5 questions versus 10 questions). Nevertheless, Cronbach's α values below .70 put into question the internal consistency of the subscales (except for emotional reasoning) in the context of this study.

Table 9. *Cronbach's Coefficients of Reliability for Composite and Subscale Variables*

Composite Scale and Subscales	Cronbach's α	
	Study statistic	Literature reference ^{a, b, c}
Work engagement	.94	.93
Absorption	.76	.83
Dedication	.90	.89
Vigor	.89	.82
Transformational leadership	.97	.95 ^d
Idealized influence (Attributed)	.88	.77
Idealized influence (Behaviors)	.85	.70
Inspirational motivation	.92	.83
Intellectual stimulation	.85	.75
Individual consideration	.87	.80
Emotional intelligence	.92	.93
Emotional self-awareness	.60	.75
Emotional expression	.57	.72
Emotional awareness of others	.61	.74
Emotional reasoning	.90	.72
Emotional self-management	.62	.74
Emotional management of others	.63	.74
Emotional self-control	.64	.71

^a Schaufeli and Bakker (2003). ^b Avolio and Bass (2004). ^c Gignac (2010b). ^d Eisenbeiß and Boerner (2010).

Multiple Linear Regression Assumptions

As a parametric statistical test, multiple linear regression assumes that the dataset needs to meet: (a) no significant outliers, (b) data normality, (c) independence of errors, (d) linear relationship between the variables, (e) homoscedasticity of residuals, (f) multicollinearity, and (g) normal distribution of errors (Field, 2013; Tabachnick & Fidell, 2013). Outliers and data normality were evaluated for the entire data set, while, independence of errors, linear relationship between the variables, homoscedasticity of residuals, multicollinearity, and normal distribution of errors are presented under the results presentation for each of the research questions, since these assumptions for

multiple regression were dependent on the specific dataset analyzed for each research question.

Outliers

Prior to conducting the multiple linear regression analyses, the data was checked for outliers through graphical and numerical methods. Evaluation of the stem-and-leaf plots, and boxplots for the scale variables of transformational leadership, emotional intelligence, and work engagement revealed one outlier for the transformational leadership composite scale and three outliers for the work engagement composite scale. The data was evaluated further for univariate outliers by calculation of standardized z -scores for each of the scale variables. According to Tabachnick and Fidell (2013), a standardized z -score above or below 3.29 may indicate the presence of an outlier. From the previously identified outliers, only two of the three identified outliers on the work engagement scale exceeded the lower limit z -score value of -3.29 . Upon evaluation of the raw data for the two outliers, although the scores for the overall scale and constituent scales of work engagement were low, the cases were retained in the analyzable data set as they constituted legitimate responses in the context of multiple linear regression assumptions discussed in subsequent sections.

Data Normality

Skewness and kurtosis scores for the scale variables of transformational leadership, emotional intelligence, and work engagement are presented in Table 10. Chan (2003) recommended that skewness and kurtosis scores in excess of one are indicators of nonnormality. Although none of the skewness and kurtosis values obtained for the scale variables failed the assumption recommended by Chan (2003), the data was

not considered entirely normal due to deviations from zero values. Therefore, the data was analyzed further to test for normality.

Table 10. *Skewness and Kurtosis for Transformational Leadership, Emotional Intelligence, and Work Engagement Scores*

Variable	Skewness	SE	Kurtosis	SE
Transformational Leadership	-0.443	0.194	0.095	0.385
Emotional Intelligence	0.295	0.194	-0.551	0.385
Work Engagement	-0.929	0.194	0.983	0.385

Note. $N = 157$.

Kim (2013) proposed that for samples between 50 and 300, the null hypothesis that there is no difference between the studied sample and a normal sample should be rejected if the absolute z -scores are over 3.29 at an α level of .05. Consequently, only the skewness score for work engagement did not meet this condition. However, Tabachnick and Fidell (2013) stated that in multiple linear regression analysis, more important in the evaluation of substantial departure from normality is the screening of residuals. If the residual plot looks normal, screening of individual variables is not warranted (Tabachnick & Fidell, 2013). In this study, the analyses of residual normality were not violated and are discussed further under each research question.

Normality of the data was also assessed by the Kolmogorov-Smirnov test and the Shapiro-Wilk test, shown in Table 11. Based on the Kolmogorov-Smirnov test, transformational leadership was the only variable normally distributed, while the Shapiro-Wilk test indicated that none of the scale variables were normally distributed. Nevertheless, these results need to be interpreted with caution, as D'Agostino, Belanger, and D'Agostino (1990) advised that the Shapiro-Wilk test is best used for samples $n < 50$.

Furthermore, Ghasemi and Zahediasl (2012) posited that issues with normality should not be a concern for studies with a sample size larger than 40. Moreover, Field (2013) opined that both tests can be significant for unimportant effects or when the sample size is small, they will lack sufficient power to identify violations. In addition, Field (2013) further recommended that an evaluation of normality should also be determined via graphical assessments.

Table 11. *Tests of Normality for Scale Variables*

Variable	Tests of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Transformational Leadership	.065	157	.200 ^b	.971	157	.002
Work Engagement	.119	157	.000	.931	157	.000
Emotional Intelligence	.110	157	.000	.968	157	.001

Note. N = 157.

^aLilliefors Significance Correction. ^bThis is a lower bound of the true significance.

Multiple Linear Regression Analyses and Results

Omnibus Research Question 1

The Omnibus Research Question 1 investigated the relationship between employees' work engagement and employees' perceptions of leaders' transformational leadership, employees' perceptions of leaders' emotional intelligence, employees' age, employees' gender, and employees' duration of employment in current position in pharmaceutical organizations in the United States.

To examine the Omnibus Research Question 1, a multiple linear regression analysis was conducted with employees' age, employees' gender, and employees' duration of employment in current position, leaders' emotional intelligence, and leaders' transformational leadership as predictor variables.

Assumptions for multiple linear regression. In addition to an evaluation of skewness and kurtosis, discussed earlier, normality was visually assessed using a normal P-P plot (Figure 11). There was no major deviation from a hypothetical normal line, indicating that the assumption was met (Tabachnick & Fidell, 2013). In addition, the histogram of standardized residuals shown in Figure 12 indicated that the data contained approximately normally distributed errors. Next, homoscedasticity and linearity were visually assessed using a standardized residuals scatterplot (Figure 13). This plot did not deviate greatly from a random and rectangular distribution, suggesting that assumptions for homoscedasticity and linearity were met as well (Stevens, 2009).

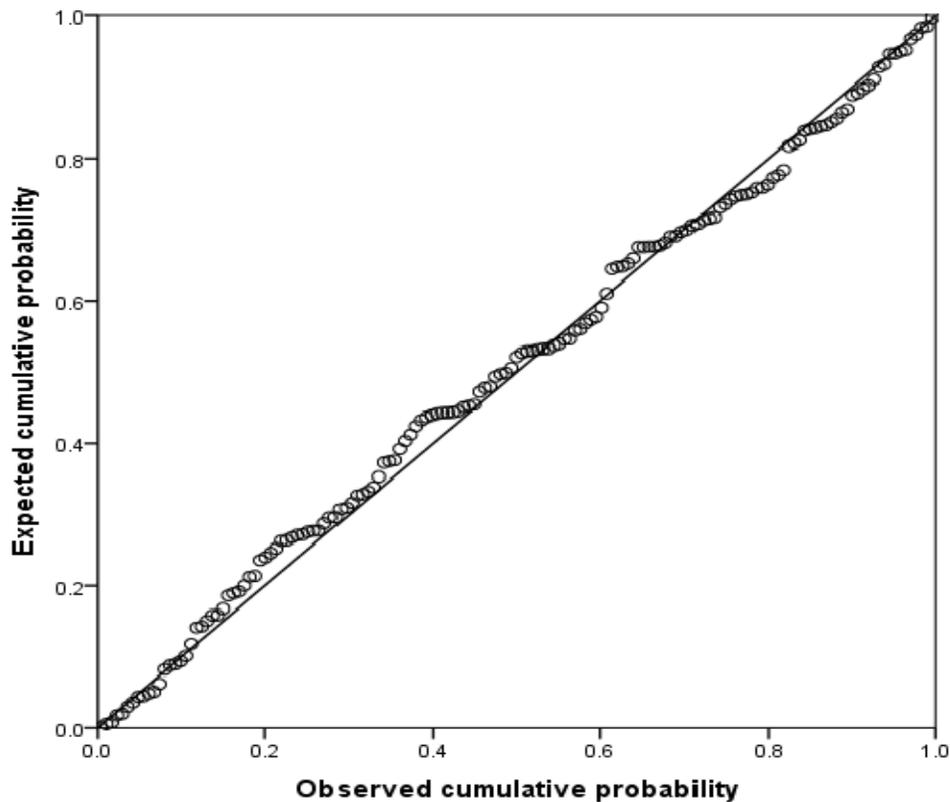


Figure 11. Normal P-P plot to assess normality for omnibus research question 1.

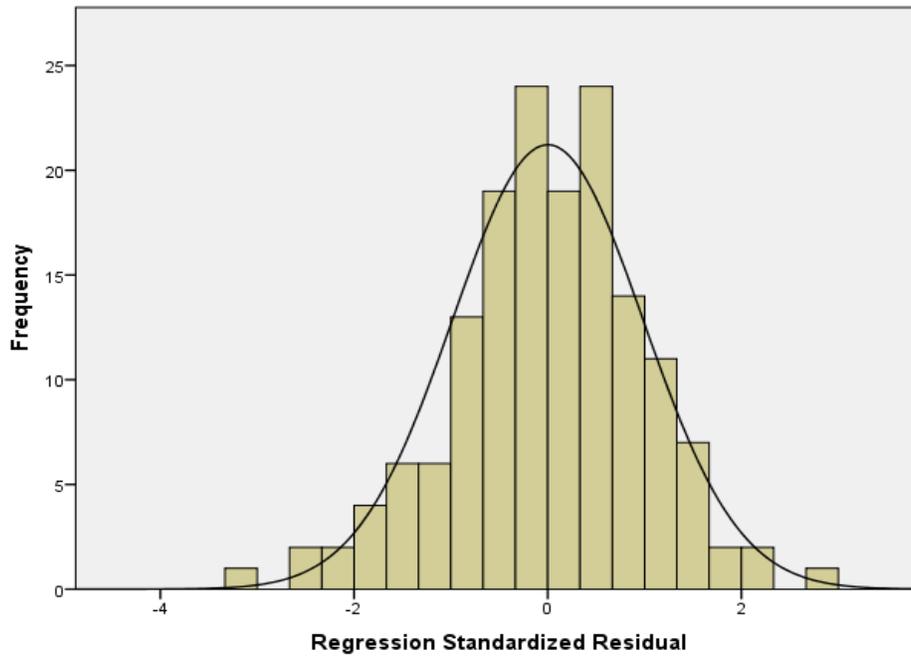


Figure 12. Histogram plot of multivariate normality distribution for omnibus research question 1.

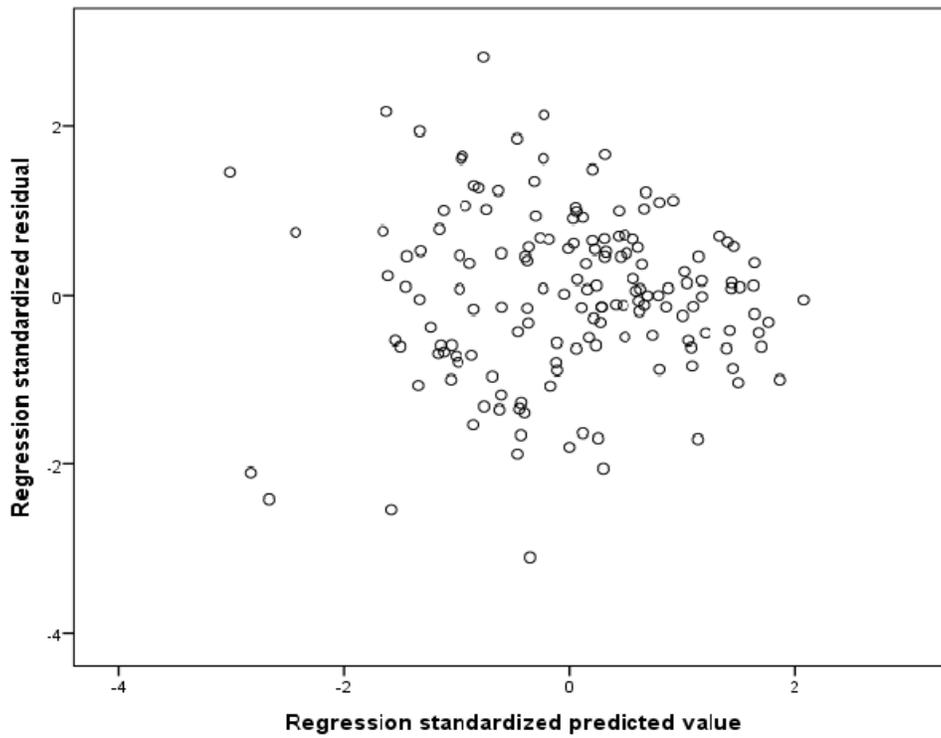


Figure 13. Standardized residual plot to assess homoscedasticity for omnibus research question 1.

Levene's test for homogeneity of variance was conducted for the demographic predictor categorical variables and confirmed that the variances in work engagement were not statistically different between groups based on age, gender, or duration of employment in current position. If significance at $p < .05$ was reached then variances between groups would have been considered significantly different violating the assumption for homogeneity of variance. Levene's test statistics for age, gender, and duration of employment in current position on work engagement are shown in Table 12.

Table 12. *Levene's Test Results for Demographic Variables*

Variable	Levene's statistic	df 1	df 2	p
Age	0.54	4	152	.707
Gender	2.19	1	155	.141
Duration of employment in current position	1.49	5	151	.196

To determine whether issues of multicollinearity may arise, variance inflation factors (VIFs) were examined. None of the VIFs for the set of predictor variables in the analysis approached 10, indicating that they were not too closely related to be used in the same model. Finally, independence of errors was assessed by the Durbin-Watson test. In this analysis, the Durbin-Watson statistic was 2.13. Values between 0 and 4 are acceptable, and values near 2 indicate that the residuals are uncorrelated (Field, 2013).

Results. Results of the multiple linear regression indicated a significantly predictive regression model ($F(5, 151) = 32.05, p < .001, R^2 = .52$). These results suggest that the null hypothesis can be rejected in favor of the alternative hypothesis. The multiple linear regression model summary is shown in Table 13.

Table 13. *Multiple Linear Regression Model Summary for Omnibus Research Question 1*

Model	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	Std. Error of the Estimate	Change Statistics				
					<i>R</i> ² Change	<i>F</i> Change	<i>df</i> 1	<i>df</i> 2	Sig. <i>F</i> Change
1	.718 ^a	.515	.499	.78000	.515	32.049	5	151	.000

Note. Dependent Variable: Work engagement. ^a Predictors: (Constant), age, gender, duration in current position, transformational leadership (composite), emotional intelligence (composite)

The individual predictor variables were assessed further using *t* tests. Both gender ($t = 2.52, p = .013$) and transformational leadership scores ($t = 7.58, p < .001$) were found to be significant predictors of work engagement. Emotional intelligence approached significance, but did not provide any predictive ability beyond what was explained by the demographic variables and the composite transformational leadership score ($t = 1.85, p = .066$).

Examination of the unstandardized *B* values indicated that females had work engagement scores that were naturally 0.32 points higher than those of males. For transformational leadership, after holding emotional intelligence and the set of covariates constant, a single point increase in the transformational leadership score corresponded with a 0.76 point increase in work engagement. Results of the analysis are presented in Table 14.

Table 14. *Results of Work Engagement Regressed on Gender, Age, Years in Current Position, Transformational Leadership and Emotional Intelligence*

Predictor Variables	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Gender	0.32	0.13	.14	2.52	.013
Age	0.10	0.07	.10	1.46	.146
Years in current position	-0.01	0.05	-.02	-0.25	.800
Emotional Intelligence	0.01	0.00	.14	1.85	.066
Transformational Leadership	0.76	0.10	.59	7.58	< .001

Note. *N* = 157.

Research Subquestion 1 (RSQ1)

Assumptions for multiple linear regression. To examine Research Subquestion 1, a multiple linear regression analysis was conducted with the subscales of leaders' transformational leadership (idealized influence [attributed], idealized influence [behaviors], inspirational motivation, intellectual stimulation, and individualized consideration) as predictor variables, employees' work engagement as the outcome variable, and employees' age, employees' gender, and employees' duration of employment in current position as covariates. The analysis was conducted in two steps to examine the effect of leaders' transformational leadership in predicting employees' work engagement beyond what was predicted by the set of covariates. Prior to analysis, the assumptions for multiple linear regression were addressed for the final model. In addition to an evaluation of skewness and kurtosis, discussed earlier, multivariate normality was visually assessed using a normal P-P plot first (Figure 14). There was no major deviation from a hypothetical normal line, indicating that the assumption was met (Tabachnick & Fidell, 2013). In addition, the histogram of standardized residuals shown in Figure 15 indicated that the data contained approximately normally distributed errors. Next, homoscedasticity and linearity were visually and statistically assessed using a standardized residuals scatterplot (Figure 16) and conducting Levene's test for the demographic variables to assess homogeneity of variance. The residuals scatterplot did not deviate greatly from a random and rectangular distribution, suggesting that assumptions for homoscedasticity and linearity were met as well (Stevens, 2009). Levene's test statistics for age, gender, and duration of employment in current position were presented in Table 12.

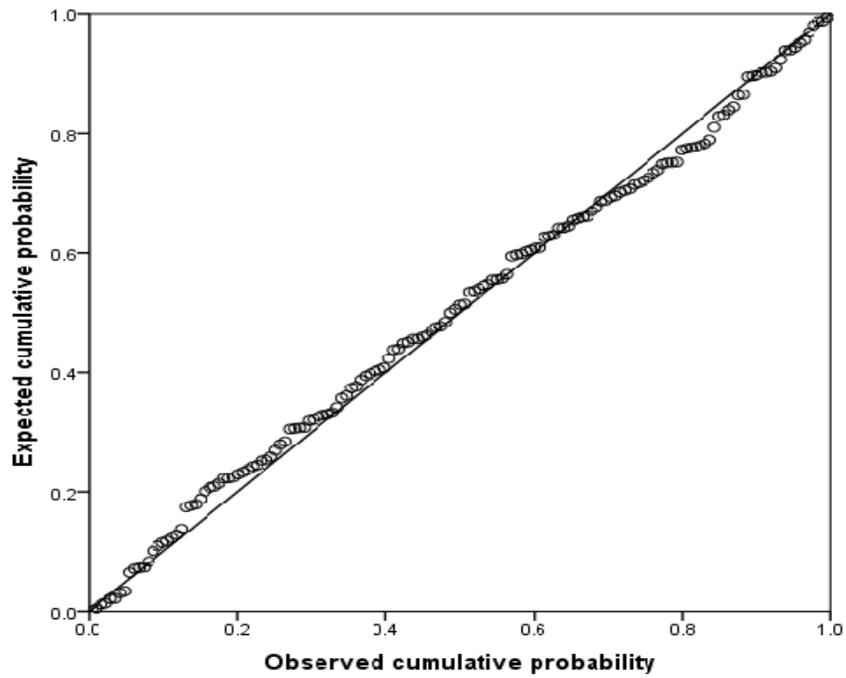


Figure 14. Normal P-P plot to assess normality for research subquestion 1.

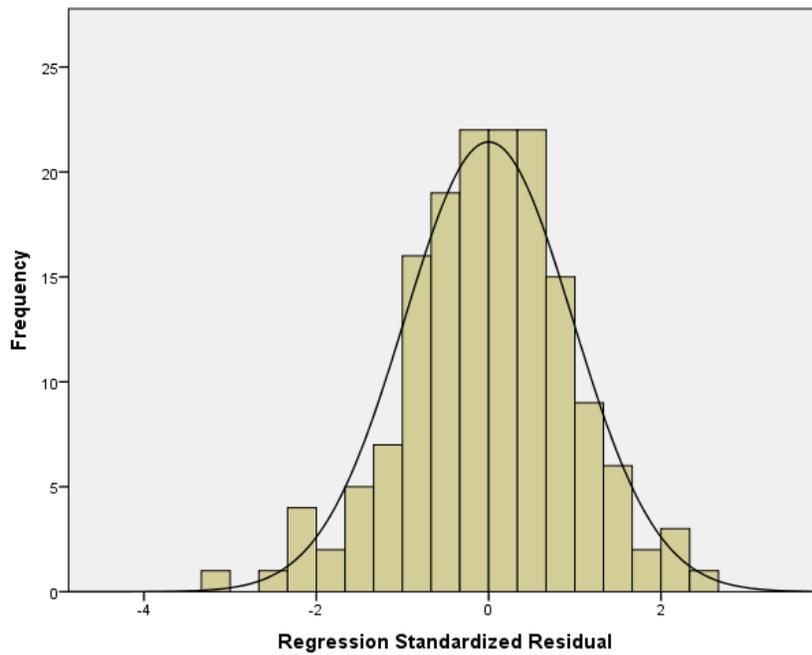


Figure 15. Histogram plot of multivariate normality distribution for research subquestion 1.

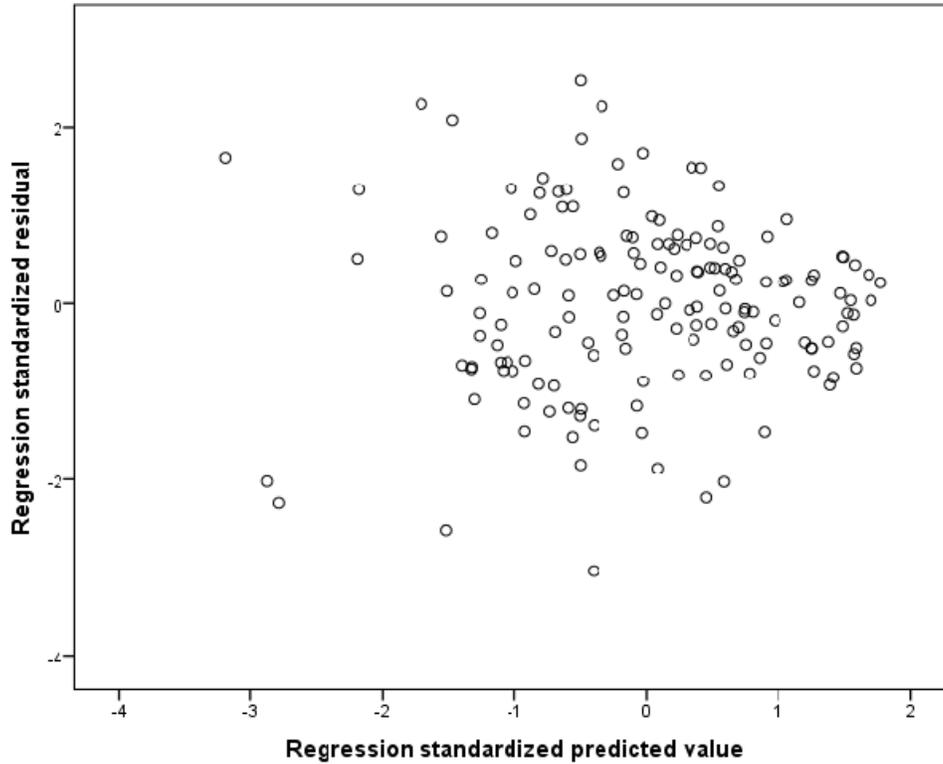


Figure 16. Standardized residual plot to assess homoscedasticity for research subquestion 1.

To determine whether issues of multicollinearity may arise, variance inflation factors (VIFs) were examined. None of the VIFs for the set of predictor variables in the analysis approached 10, indicating that they were not too closely related to be used in the same model. Finally, independence of errors was assessed by the Durbin-Watson test. In this analysis, the Durbin-Watson statistic was 2.09. Values between 0 and 4 are acceptable, and values near 2 indicate that the residuals are uncorrelated (Field, 2013).

Results. Results of this analysis indicated a significantly predictive regression model in the final step ($F(8, 148) = 19.99, p < .001, R^2 = .52$). The multiple linear regression model summary is shown in Table 15.

Table 15. *Multiple Linear Regression Model Summary for Research Subquestion 1*

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate	Change Statistics				
					R ² Change	F Change	df 1	df 2	Sig. F Change
1	.274 ^a	.075	.057	1.07002	.075	4.130	3	153	.008
2	.721 ^b	.519	.493	.78421	.444	27.369	5	148	.000

Note. Dependent Variable: Work engagement. ^aPredictors: (Constant), age, gender, duration in current position.

^bPredictors: (Constant), age, gender, duration in current position, idealized influence [attributed], idealized influence [behaviors], inspirational motivation, intellectual stimulation, and individualized consideration.

When compared to the model with only covariates included ($F(3, 153) = 4.13, p = .008, R^2 = .08$), the subscales of transformational leadership accounted for (ΔR^2) 44% more of the variation in work engagement than the covariates alone. These results suggest that the null hypothesis can be rejected in favor of the alternative hypothesis. The individual predictor variables were assessed further using t tests. As in the omnibus analysis, gender was a significant predictor of work engagement ($t = 2.56, p = .011$). Females had work engagement scores that were naturally 0.33 points higher than those of males. In addition, the inspirational motivation score stood apart as the only transformational leadership subscale which predicted work engagement beyond what was accounted for by the other subscales ($t = 2.52, p = .013$). Examination of the unstandardized B value indicated that after holding the covariates and remaining subscales of transformational leadership constant, a single point increase in inspirational motivation scores corresponded with a 0.42 point increase in work engagement. Results of the analysis are presented in Table 16.

Table 16. *Results of Work Engagement Regressed on Transformational Leadership Subscales (Controlling for Gender, Age, and Years in Current Position)*

Predictor Variables	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Step 1					
Gender	0.47	0.17	0.21	2.72	.007
Age	-0.03	0.09	-0.03	-0.34	.735
Years in current position	0.13	0.07	0.18	1.93	.055
Step 2					
Gender	0.33	0.13	0.15	2.56	.011
Age	0.08	0.07	0.08	1.10	.275
Years in current position	0.00	0.05	0.00	0.06	.949
Idealized Influence (Attributed)	0.27	0.20	0.22	1.31	.192
Idealized Influence (Behaviors)	0.12	0.20	0.10	0.61	.541
Inspirational Motivation	0.42	0.17	0.35	2.52	.013
Intellectual Stimulation	-0.01	0.16	-0.01	-0.07	.943
Individualized Consideration	0.07	0.17	0.06	0.43	.666

Note. *N* = 157.

Research Subquestion 2 (RSQ2)

Assumptions for multiple linear regression. To examine Research Subquestion 2, a multiple linear regression was conducted with the subscales of leaders' emotional intelligence (emotional self-awareness, emotional expression, emotional awareness of others, emotional reasoning, emotional self-management, emotional management of others, emotional self-control) as predictor variables, employees' work engagement as the outcome variable, and employees' age, employees' gender, and employees' duration of employment in current position as covariates. The analysis was conducted in two steps to examine the effect of leaders' emotional intelligence in predicting employees' work engagement beyond what was predicted by the set of covariates. Prior to analysis, the assumptions for multiple linear regression were addressed for the final model. In addition to an evaluation of skewness and kurtosis, discussed earlier, normality was visually assessed using a normal P-P plot first (Figure 17). There was no major deviation

from a hypothetical normal line, indicating that the assumption was met (Tabachnick & Fidell, 2013). In addition, the histogram of standardized residuals shown in Figure 18 indicated that the data contained approximately normally distributed errors. Next, homoscedasticity and linearity were visually assessed using a standardized residuals scatterplot (Figure 19) and conducting Levene's test for the demographic variables to assess homogeneity of variance. This plot did not deviate greatly from a random and rectangular distribution, suggesting that assumptions for homoscedasticity and linearity were met as well (Stevens, 2009).

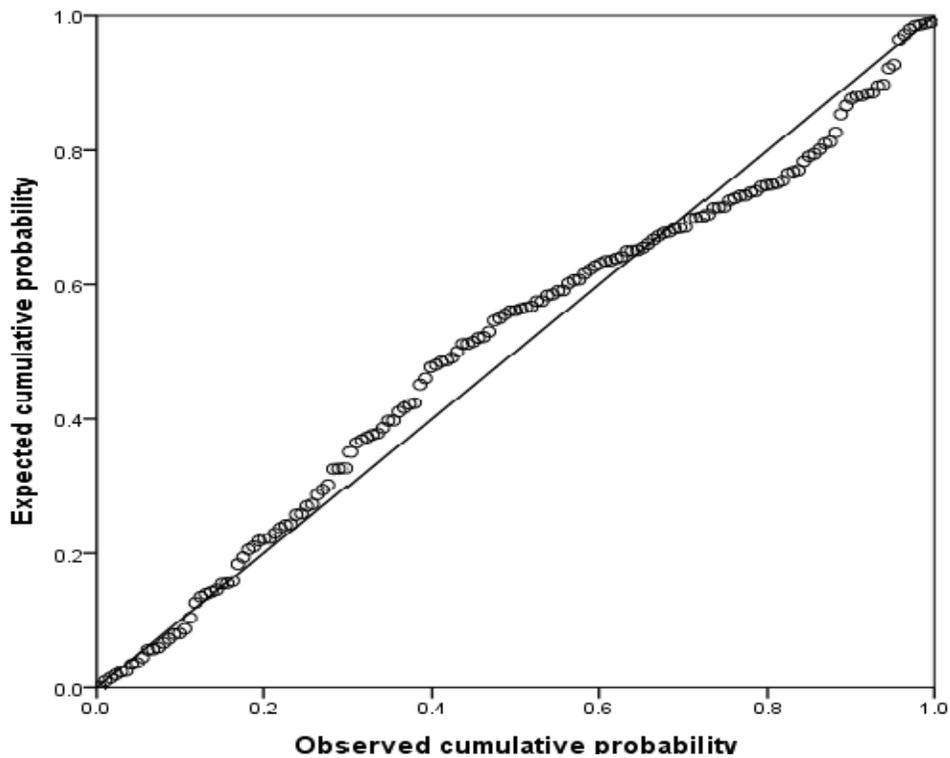


Figure 17. Normal P-P plot to assess normality for research subquestion 2.

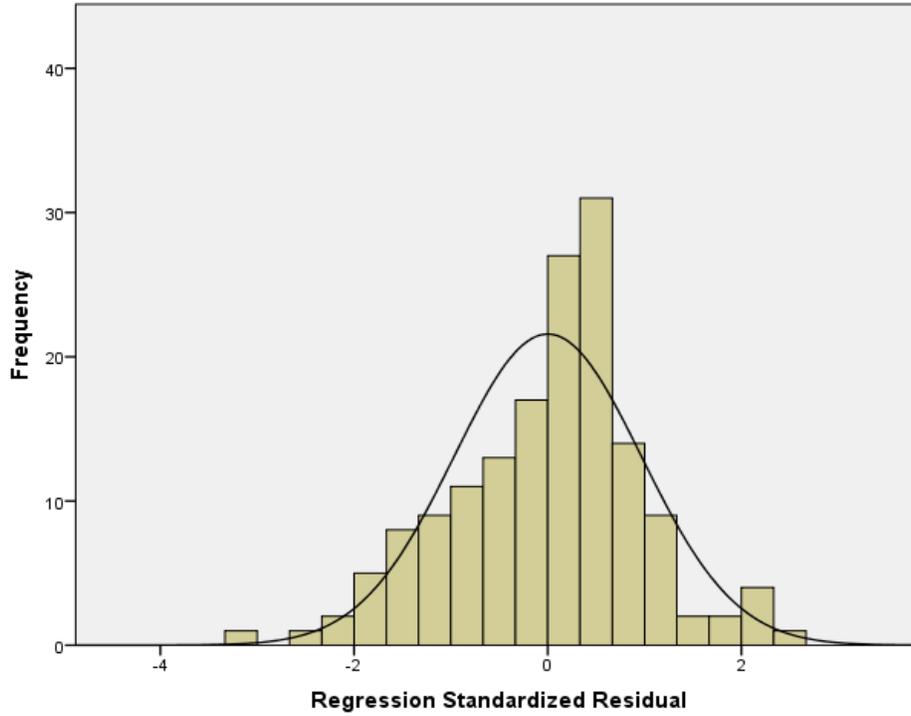


Figure 18. Histogram plot of multivariate normality distribution for research subquestion 2.

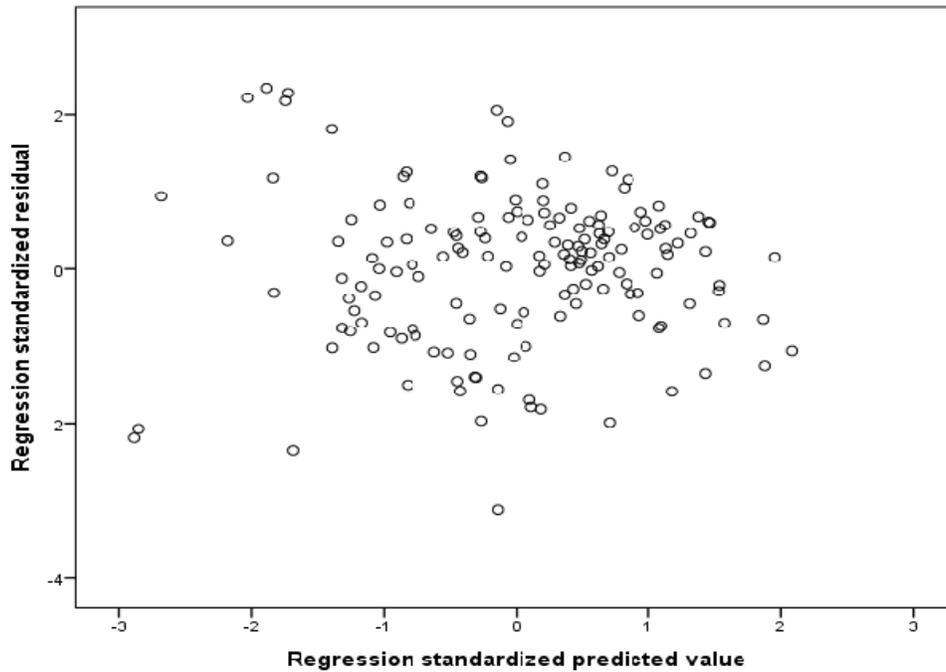


Figure 19. Standardized residual plot to assess homoscedasticity for research subquestion 2.

Levene's test statistics for age, gender, and duration of employment in current position were presented in Table 12. To determine whether issues of multicollinearity may arise, variance inflation factors (VIFs) were examined. None of the VIFs for the set of predictor variables in the analysis approached 10, indicating that they were not too closely related to be used in the same model.

Finally, independence of errors was assessed by the Durbin-Watson test. In this analysis, the Durbin-Watson statistic was 2.25. Values between 0 and 4 are acceptable, and values near 2 indicate that the residuals are uncorrelated (Field, 2013).

Results. Results of this analysis indicated a significantly predictive regression model in the final step ($F(10, 146) = 12.73, p < .001, R^2 = .47$). The multiple linear regression model summary is shown in Table 17.

Table 17. *Multiple Linear Regression Model Summary for Research Subquestion 2*

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate	Change Statistics				
					R ² Change	F Change	df1	df2	Sig. F Change
1	.274 ^a	.075	.057	1.07002	.075	4.130	3	153	.008
2	.682 ^b	.466	.429	.83245	.391	15.256	7	146	.000

Note. Dependent Variable: Work engagement. ^a Predictors: (Constant), age, gender, duration in current position. ^b Predictors: (Constant), age, gender, duration in current position, emotional self-awareness, emotional expression, emotional awareness of others, emotional reasoning, emotional self-management, emotional management of others, emotional self-control.

When compared to the model with only covariates included ($F(3, 153) = 4.13, p = .008, R^2 = .08$), the subscales of emotional intelligence accounted for (ΔR^2) 39% more of the variation in work engagement than the covariates alone. This suggests that the null hypothesis can be rejected in favor of the alternative hypothesis. The individual predictor variables were assessed further using *t* tests. Again, as in the first omnibus analysis,

gender was a significant predictor ($t = 2.88, p = .005$). Females had work engagement scores that were naturally 0.39 points higher than those of males. In addition, emotional reasoning ($t = 6.05, p < .001$) and emotional management of others ($t = 2.24, p = .027$) scores stood apart as the only emotional intelligence subscales that predicted work engagement beyond what was accounted for by the other remaining subscales.

Examination of the unstandardized B value indicated that after holding the covariates and remaining subscales of emotional intelligence constant, a single point increase in emotional reasoning scores corresponded with a 0.13 point increase in work engagement. Similarly, a single unit increase in the emotional management of others scale corresponded with an increase in work engagement of 0.10 units. Results of the analysis are presented in Table 18.

Table 18. *Results of Work Engagement Regressed on Emotional Intelligence's Subscales (Controlling for Gender, Age, and Years in Current Position)*

Predictor Variables	B	SE	β	t	p
Step 1					
Gender	0.47	0.17	0.21	2.72	.007
Age	-0.03	0.09	-0.03	-0.34	.735
Years in current position	0.13	0.07	0.18	1.93	.055
Step 2					
Gender	0.39	0.14	0.18	2.88	.005
Age	0.07	0.07	0.06	0.90	.372
Years in current position	0.03	0.05	0.04	0.56	.579
Emotional self-awareness	-0.04	0.04	-0.10	-0.81	.422
Emotional expression	-0.04	0.04	-0.12	-0.94	.347
Emotional awareness of others	-0.09	0.05	-0.26	-1.95	.053
Emotional reasoning	0.13	0.02	0.56	6.05	< .001
Emotional self-management	0.05	0.04	0.15	1.17	.246
Emotional management of others	0.10	0.04	0.28	2.24	.027
Emotional self-control	0.05	0.04	0.15	1.45	.149

Note. $N=157$.

Research Subquestion 3 (RSQ3)

To answer Research Subquestion 3, a moderation analysis was conducted using Baron and Kenny's (1986) approach. To perform this analysis, a two-step multiple linear regression was conducted with leaders' transformational leadership (composite score) predicting employees' work engagement in the first step, and an interaction term between leaders' transformational leadership (composite score) and leaders' emotional intelligence (composite score) added to the model in Step 2. To create an interaction term, leaders' emotional intelligence scores were centered to a mean of zero by subtracting the mean from each participant's score. This centered emotional intelligence score was then multiplied with leaders' transformational leadership scores and the resultant score was entered into the equation in Step 2. Using the Baron and Kenny (1986) approach, if the interaction term is significant in the final model, then moderation is supported and the moderator can be said to significantly affect the relationship between the independent and dependent variable.

Prior to analysis, the assumptions for multiple linear regression were addressed for the final model. In addition to an evaluation of skewness and kurtosis, discussed earlier, normality was visually assessed using a normal P-P plot first (Figure 20). There was no major deviation from a hypothetical normal line, indicating that the assumption was met (Tabachnick & Fidell, 2013). In addition, the histogram of standardized residuals shown in Figure 21 indicated that the data contained approximately normally distributed errors.

Next, homoscedasticity and linearity were visually assessed using a standardized residuals scatterplot (Figure 22). This plot did not deviate greatly from a random and

rectangular distribution, suggesting that assumptions for homoscedasticity and linearity were met as well (Stevens, 2009).

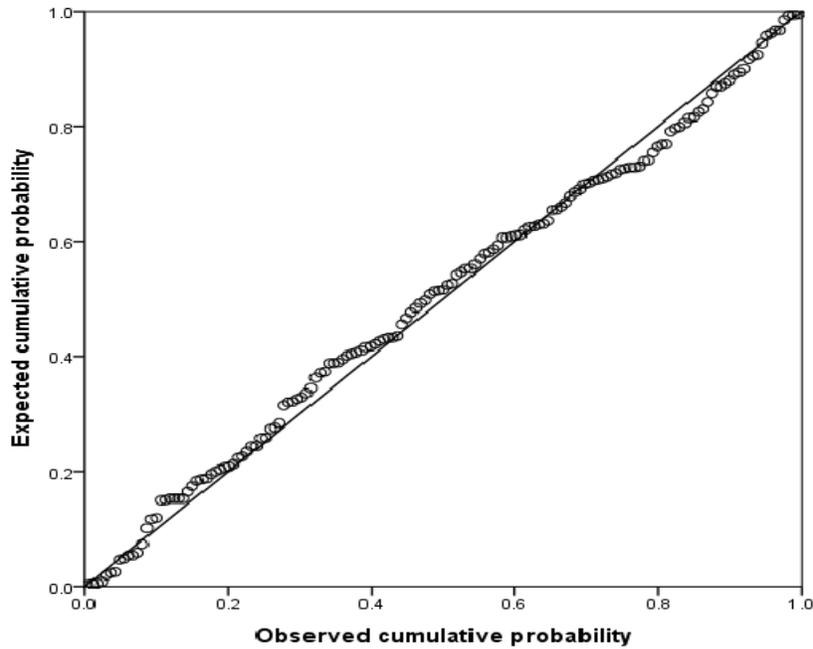


Figure 20. Normal P-P plot to assess normality for research subquestion 3.

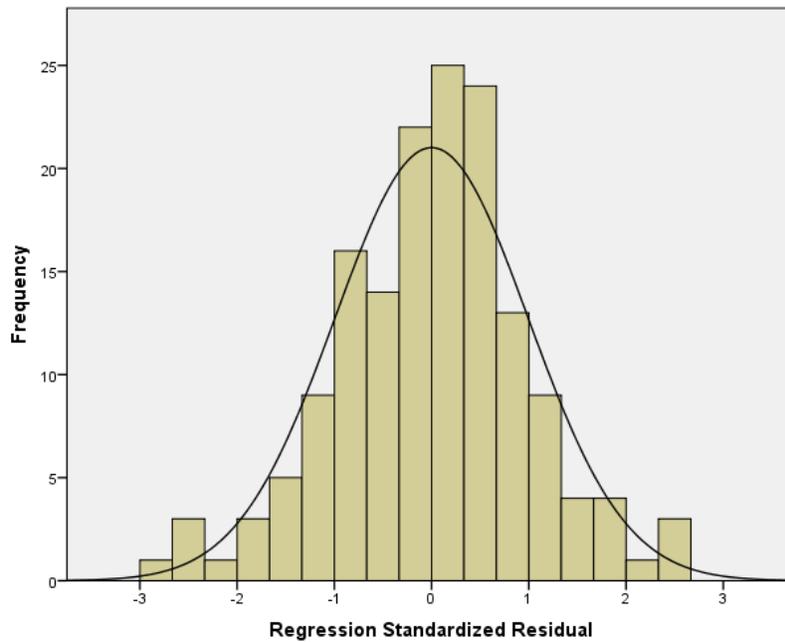


Figure 21. Histogram plot of multivariate normality distribution for research subquestion 3.

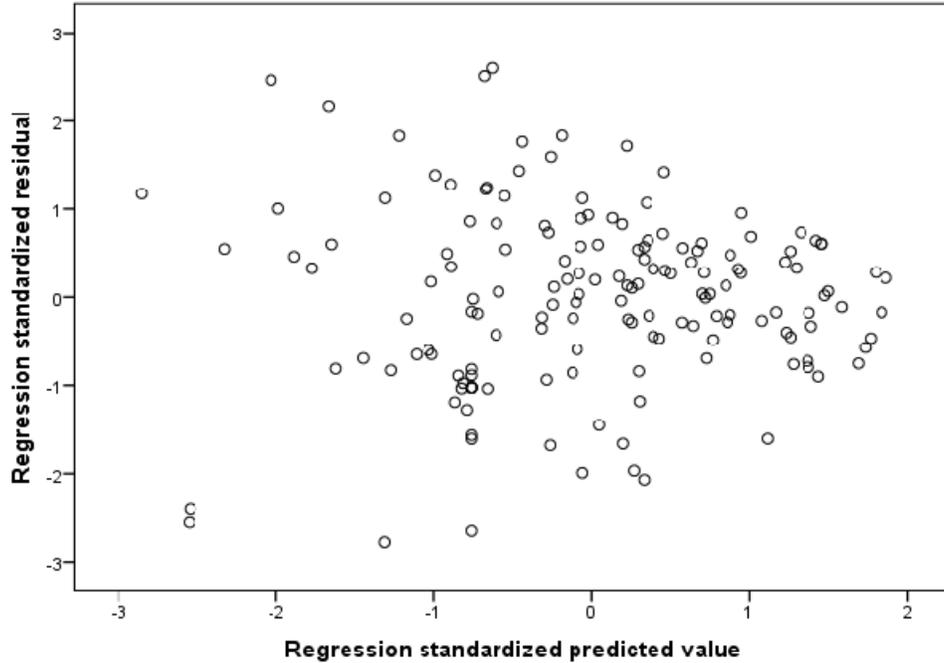


Figure 22. Standardized residual plot to assess homoscedasticity for research subquestion 3.

Finally, independence of errors was assessed by the Durbin-Watson test. In this analysis, the Durbin-Watson statistic was 2.00. Values between 0 and 4 are acceptable, and values near 2 indicate that the residuals are uncorrelated (Field, 2013).

Results. Results of the Baron and Kenny (1986) moderation analysis did not support leaders' emotional intelligence as a significant moderator to the relationship between leaders' transformational leadership and employees' work engagement. The multiple linear regression model summary is shown in Table 19.

Table 19. *Multiple Linear Regression Model Summary for Research Subquestion 3*

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate	Change Statistics				
					R ² Change	F Change	df1	df2	Sig. F Change
1	.688 ^a	.473	.470	.80218	.473	139.275	1	155	.000
2	.694 ^b	.481	.475	.79866	.008	2.367	1	154	.126

Note. Dependent Variable: Work Engagement. ^a Predictors: (Constant), transformational leadership. ^b Predictors: (Constant), transformational leadership, transformational leadership x emotional intelligence.

Though both steps of the regression were significant (Step 1: $F(1, 155) = 139.28$, $p < .001$, $R^2 = .47$; Step 2: $F(2, 154) = 71.44$, $p < .001$, $R^2 = .48$), the interaction term in Step 2 did not provide significant predictive ability beyond what was accounted for by transformational leadership alone ($t = 1.54$, $p = .126$). As such, the null hypothesis could not be rejected and moderation could not be supported. Results of moderation analysis can be found in Table 20.

Table 20. *Results of Baron and Kenny Moderation Analysis*

Predictor Variables	B	SE	β	t	p
Step 1					
Transformational Leadership	0.89	0.08	.69	11.80	< .001
Step 2					
Transformational Leadership	0.81	0.09	.63	9.05	< .001
Transformational Leadership*Emotional Intelligence	0.03	0.02	.11	1.54	.126

Note. N = 157.

Conclusion

This study investigated the relationships between leaders' transformational leadership, and leaders' emotional intelligence, and employees' work engagement, as well as the role employees' age, employees' gender, and employees' duration of employment in current position may play in affecting work engagement in the pharmaceutical industry in the United States. SurveyMonkey provided a web-based setting for the conduct of the survey by soliciting study participants through a specific

SurveyMonkey Audience representative of pharmaceutical and healthcare employees in the United States (SurveyMonkey, 2015).

The sample frame was employees working in the pharmaceutical industry in the United States who were members of the SurveyMonkey Pharmaceutical and Healthcare Audience.

SurveyMonkey identified an appropriate sample frame of individuals employed in the pharmaceutical and healthcare industries in the United States and emailed the study link to a random sample of participants until the minimum contracted sample size of 150 participants employed in the pharmaceutical industry in the United States was obtained. In total, 1,214 responses were obtained. Of these, 157 were fully complete, constituting the analyzable dataset. Assumptions for multiple linear regression analysis were evaluated through numerical and graphical approaches, and no major violations were identified.

This study was designed to address an omnibus research question and three research subquestions. To examine the omnibus research question and the research subquestions, a series of four analyses were conducted. For the Omnibus Research Question 1, standard multiple linear regression was conducted, while for Research Subquestions 1 and 2, hierarchal multiple linear regressions were conducted. Research Subquestion 3 was examined using the Baron and Kenny (1986) method of moderation analysis.

The Omnibus Research Question 1 inquired about the relationships between employees' work engagement and leaders' transformational leadership, leaders' emotional intelligence, employees' age, employees' gender, and employees' duration of

employment in current position, in pharmaceutical organizations in the United States. Results of this analysis indicated a significantly predictive regression model suggesting that the null hypothesis can be rejected in favor of the alternative. However, only employees' gender and leaders' transformational leadership were found to be significant predictors of employees' work engagement. Emotional intelligence approached significance, but did not provide any predictive ability beyond what was explained by the covariates and transformational leadership scores. Examination of the unstandardized *B* values indicated that females had work engagement scores that were naturally 0.32 points higher than those of males. For transformational leadership, after holding emotional intelligence and the set of covariates constant, a single point increase in the transformational leadership score corresponded with a 0.76 point increase in work engagement.

Research Subquestion 1 inquired whether employees' age, employees' gender, and employees' duration of employment in current position affect the relationship between their own work engagement and their perceptions of their leaders' transformational leadership in pharmaceutical organizations in the United States. Results of the multiple linear regression analysis indicated a significantly predictive regression model in the final step suggesting that the null hypothesis can be rejected in favor of the alternative. Again, employees' gender was a significant predictor of employees' work engagement. In addition, the inspirational motivation subconstruct score stood apart as the only leaders' transformational leadership subscale that predicted employees' work engagement beyond what was accounted for by the other subscales. Examination of the unstandardized *B* value indicated that after holding the covariates and remaining

subscales of transformational leadership constant, a single point increase in leaders' inspirational motivation scores corresponded with a 0.42 point increase in employees' work engagement.

Research Subquestion 2 asked whether employees' age, employees' gender, and employees' duration of employment in current position affect the relationship between their own work engagement and their perceptions of their leaders' emotional intelligence in pharmaceutical organizations in the United States. Results of the multiple linear regression analysis indicated a significantly predictive regression model in the final step suggesting that the null hypothesis can be rejected in favor of the alternative. Employees' gender, once again was a significant predictor of employees' work engagement, as were the leaders' emotional intelligence subscales of emotional reasoning and emotional management of others. Examination of the unstandardized *B* value indicated that after holding the covariates and remaining subscales of emotional intelligence constant, a single point increase in leaders' emotional reasoning scores corresponded with a 0.13 point increase in employees' work engagement. Similarly, a single unit increase in leaders' emotional management of others scale corresponded with an increase in employees' work engagement of 0.10 units.

Finally, Research Subquestion 3 investigated to what degree leaders' emotional intelligence moderates the relationship between their transformational leadership and employees' work engagement in pharmaceutical organizations in the United States. Using the Baron and Kenny (1986) method of moderation analysis, both steps of the regression were significant, however, the interaction term in Step 2 did not provide significant predictive ability beyond what was accounted for by transformational

leadership scores alone. As such, the null hypothesis could not be rejected and moderation of leaders' transformational leadership by leaders' emotional intelligence was not supported.

Chapter 5 presents an overview of the study, including an interpretation and discussion of the obtained results. Implications of the study findings, as well as recommendations for future research based on the results of this study are also discussed in their relation to theoretical and practical implications.

CHAPTER 5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS

Introduction

Work engagement has become a topic of critical importance for organizational success, both at the company level, and the employee level. However, the lack of work engagement has a significant impact on organizational productivity, with some estimates of annual economic losses in the United States as high as 550 billion dollars (Gallup, 2013; Pati & Kumar, 2011). On the other hand, the benefits of engaged employees include a better work environment, exhibiting positive emotions at work, better employee health, lower employee turnover, higher productivity, and better financial performance (Bakker, 2011; Baumruk, 2006). Practitioners and scholars have put forth leadership, especially transformational leadership, as a significant contributor in affecting employee work engagement. However, in the absence of fully understanding the mechanisms of how leadership affects work engagement, emotional intelligence has been proposed as a significant consideration.

Taken together, however, transformational leadership, emotional intelligence, and work engagement have not been examined within the same study. As such, there was a glaring gap in the literature on the relationships between leaders' transformational leadership and emotional intelligence and employees' work engagement, especially within the pharmaceutical industry. This study focused on leadership in the pharmaceutical industry

in the United States, which is highly competitive, dynamic, with an ongoing need for innovation, creativity, and rapid responses to change. However the pharmaceutical industry is an industry that is generally under-represented in the scholarly literature. The industry has an urgent need for emotionally intelligent transformational leadership but few managers display those qualities (Honeysett & Metheny, 2014; Willink, 2009).

This study employed a cross-sectional, quantitative, nonexperimental, survey design that utilized multiple linear regression to test for relationships between leaders' transformational leadership, leaders' emotional intelligence, employees' age, employees' gender, employees' duration of employment in current position, and employees' work engagement in pharmaceutical organizations in the United States. This study also sought to understand the moderating role of leaders' emotional intelligence on the relationship between leaders' transformational leadership and employees' work engagement.

The study relied on three validated rater and self-reported survey instruments. The Multifactor Leadership Questionnaire (MLQ 5X-Short) and the Genos Emotional Intelligence Inventory-concise (rater), measured leaders' transformational leadership and emotional intelligence, respectively, as assessed by direct reports. To measure employees' level of work engagement, the Utrecht Work Engagement Scale (UWES-17) was used in this study. SurveyMonkey was contracted by the researcher to recruit study participants specifically employed in the pharmaceutical industry in the United States. The study was considered finished when 157 completed responses were obtained. Using IBM SPSS 22.0 statistical software for analysis (IBM SPSS Statistics for Windows), multiple linear regression analyses were conducted to answer the research questions.

Summary of the Study Results

This study investigated one omnibus research question and three research subquestions. To examine the omnibus research question and the research subquestions, a series of four multiple linear regression analyses were conducted. Results from this study indicate that based on employees' age, employees' gender, employees' duration of employment in current position, leaders' transformational leadership, and leaders' emotional intelligence, only a relationship between employees' work engagement and employees' gender and leaders' transformational leadership were significant predictors in the variance of employees' work engagement. Furthermore, when evaluating the subconstructs of transformational leadership, only leaders' inspirational motivation stood out as a significant predictor of employees' work engagement. On the other hand, when considering the dimensions of leaders' emotional intelligence that predict employees' work engagement, in the absence of evaluating transformational leadership, only leaders' emotional reasoning and leaders' emotional management of others stood out as significant predictors of employees' work engagement. Finally, leaders' emotional intelligence did not significantly moderate the relationship between leaders' transformational leadership and employees' work engagement.

Discussion of the Study Results

Predictor Variables

Work engagement. The results of this study indicate that overall employees in the pharmaceutical industry in the United States are engaged in their work at least once a week but less than a few times a week. Consequently, an implication of this result is that

in general, employees in the pharmaceutical industry in the United States are not fully engaged and there is room for improving employees' engagement in their jobs.

Transformational leadership. The overall impression of leaders by their subordinates is that leaders exhibit transformational leadership behaviors a little more than sometimes. The individual subconstructs of transformational leadership (idealized influence (attributed), idealized influence (behaviors), inspirational motivation, intellectual stimulation, and individual consideration scores obtained in this study are very similar to the normative ranges for the MLQ 5X-Short (Avolio & Bass, 2004). However, since this study was only interested in the transformational leadership behaviors of leaders it is not known how leaders in the pharmaceutical industry would be rated on the other components of the full leadership model, namely transactional leadership and laissez-faire leadership. In addition, it is difficult to predict whether similar findings for transformational leadership behaviors would be obtained if the study also investigated transactional leadership and laissez-faire leadership. This is perhaps a point of consideration for future research. Nevertheless, given the premise of transformational leadership in advancing the notion that transformational leaders are able to solicit significant positive changes in their followers, scores reflective of demonstrating transformational leadership behaviors with a greater frequency would be more desirable.

Emotional intelligence. In this study, the score of the overall emotional intelligence construct was lower compared to the normative score for the composite emotional intelligence scale (Gignac, 2010b). The values for the seven constituent scores of emotional intelligence were also lower in this study compared to the normative dataset.

The implications from this finding are twofold. First, as perceived by employees, leaders in the pharmaceutical industry in the United States, on average, exhibit lower emotional intelligence scores compared to other industries. A second implication is that employees who participated in this study may have had a different understanding of emotional intelligence compared to raters in other industries and as such they misinterpreted the survey questions. If this was the case, this could also potentially explain the relatively low Cronbach's α values obtained in this study.

Omnibus Research Question 1 (RQ1)

The results of the multiple linear regression indicated a significantly predictive regression model indicating that collectively, employees' age, employees' gender, employees' duration of employment in current position, along with employees' perceptions of their leaders' transformational leadership and employees' perceptions of their leaders' emotional intelligence, explained 52% of the variance in employees' levels of work engagement. However, further investigation of the data revealed that only employees' gender and leaders' transformational leadership significantly contributed in predicting employees' work engagement.

Age. The lack of support for employees' age predicting employees' work engagement in this study may be confounded and is not surprising. For example, according to James, McKechnie, and Swanberg (2011) generally, work engagement decreases with age, however, this trend has not been supported by employees over the age of 60. Unfortunately, this study enrolled only two participants over the age of 60. Lack of sufficient representation in this age group may have influenced the results. In

addition, the data supporting the relationship between age and work engagement has been mixed.

Avery, McKay, and Wilson (2007) found a negative correlation between age and work engagement ($r = -.12, p < .01$) and Bakker, Demerouti, and ten Brummelhuis (2012) found an extremely low and not significant relationship ($r = .03$). On the other hand, Schaufeli and Bakker (2003) demonstrated a positive but weak relationship of age with work engagement ($r = .14$), while Goštautaitė and Bučiūnienė (2015) showed that age was significantly positively and linearly related to work engagement ($r = .55, p < .001$) and was able to predict work engagement ($B = .01, \beta = .16, p < .01$). These findings suggest that employees' age alone may not be indicative of their work engagement.

In light of this finding, age may be a factor of job resources available to the employee. Job resources encompass the physical, psychological, social, and organizational elements of the job that stimulate personal growth and development, contribute the pursuit of important goals, and counteract job demands. These factors may include the individual employee's position level in the company or duration of employment in a particular position or organization. It is conceivable that older employees have been with an organization for longer periods of time than younger employees and their duration of employment may be related to the position they hold within the organization. Additionally, the context of the work environment may influence individuals who are different in age, differently, affecting their work engagement. For example younger employees, with less tenure, may be more engaged in their jobs through the use and familiarity with technology, whereas older employees, with longer tenure, may be less engaged due to perhaps less familiarity with technology.

Gender. Schaufeli, Bakker, and Salanova (2006) posited that the relationship between gender and work engagement has been inconsistent. For example, Schaufeli and Bakker (2003) posited that men tend to have statistically significant higher work engagement scores compared to women, however, the numerical difference lacks practical significance. On the other hand, Schaufeli (2012) observed that no systematic differences seem to exist between gender and work engagement.

The results from this study indicate that females had work engagement scores that were naturally 0.32 points higher than those of males. These results are aligned with the findings observed by the consulting firm Blessing White (2013) that indicated men are slightly more disengaged compared to women. Based on the current findings, at least in the pharmaceutical industry in the United States, gender may in fact be a differentiating factor contributing to employee work engagement, where women are more engaged than men.

Duration of employment in current position. Duration of employment in current position as it relates to work engagement has not been systematically studied. However, the time that an individual has been in their current role may be a factor in predicting work engagement. It could be conceptualized that as employees spend more time in their jobs, they are given more tasks, greater accountability, and they develop a more significant interest in their job function. Consequently, these factors may lead to greater work engagement.

In research performed by Blessing White (2013), the leadership consulting firm found that the duration of time in current position increased levels of work engagement. Employees with less than one year in their current role were less engaged than employees

with more than seven years of experience in their current position: 32% versus 42%, respectively. The lack of evidence from this study supporting duration of employment in current position, as a predictor of work engagement, provides additional information highlighting the lack of agreement on the role tenure may play in affecting work engagement.

Emotional intelligence. Leaders' emotional intelligence approached significance, but did not provide any predictive ability beyond what was explained by the demographic variables of employees' age, employees' gender, and employees' duration of employment in current position, and leaders' transformational leadership scores. The lack of statistical significance of emotional intelligence predicting work engagement, when also investigating transformational leadership, was somewhat surprising in this study considering the results obtained by Ravichandran et al. (2011) and Webb (2013) that suggested emotional intelligence is at least moderately correlated with work engagement. Furthermore, according to Thor (2013) emotional intelligence was responsible for predicting 17.3% of the variance in work engagement. The findings from this study indicate that emotional intelligence, in the presence of other factors, such as transformational leadership, may not account for eliciting high work engagement and that there are likely other variables that are more responsible for predicting work engagement.

Since this study also investigated the role of leaders' transformational leadership in predicting employees' work engagement, the lack of significance of leaders' emotional intelligence predicting employees' work engagement may be a result of transformational leadership being a stronger factor than emotional intelligence in predicting work engagement. Alternatively, the lack of statistical significance for emotional intelligence

predicting work engagement in this study may also indicate that transformational leadership and emotional intelligence, to some extent overlap. However, when emotional intelligence was investigated on its own in predicting work engagement, as in Research Subquestion 2, the results offer a different perspective.

Transformational leadership. Results from this study confirmed previous findings (Aryee et al., 2012; Breevaart, Bakker, Hetland, et al., 2014; and Kovjanic et al., 2013) of a positive relationship between transformational leadership and work engagement. In this study, after holding leaders' emotional intelligence and the set of demographic variables constant, a single point increase in leaders' transformational leadership scores corresponded with a 0.76 point increase in employees' work engagement. This finding is not surprising, as transformational leaders are able to elicit employee work engagement due to the leader's ability to align the organizational vision with employees' work related desires. Moreover, since transformational leaders exert a direct positive impact on the work environment, employees who participated in this study likely viewed their leaders as able to create a stimulating work environment.

This positive relationship is due to the leader's ability to create an environment that fosters employees' vision of themselves within the organization. In addition, transformational leaders positively affect employees' work engagement by inducing employees' needs for competence, relatedness, and autonomy. The results from this study are aligned with the findings of Salanova et al. (2011) that showed transformational leadership helps to explain the level of employees' work engagement, as well as Babcock-Roberson and Strickland (2010) who demonstrated that charismatic leadership,

leadership aligned with the subconstruct of idealized influence, explained 16% of the variability in work engagement.

Research Subquestion 1 (RSQ1)

The intent of exploring Research Subquestion 1 was to further investigate to what extent leaders' transformational leadership may help explain employees' work engagement when the demographic variables of age, gender, and duration of employment were held constant due to evidence, albeit mixed, that these variables may themselves contribute in predicting work engagement. Results of the multiple linear regression analysis indicated a significantly predictive regression model that suggested the subscales of transformational leadership accounted for 44% more of the variation in employees' work engagement than the covariates alone. As in the omnibus analysis, employees' gender was once again a significant predictor of work engagement. In addition, leaders' inspirational motivation score stood apart as the only transformational leadership subscale which predicted employees' work engagement beyond what was accounted for by the other subscales. A single point increase in the inspirational motivation score corresponded with a 0.42 point increase in work engagement.

Inspirational motivation refers to the ability to articulate a convincing organizational vision that motivates others to strive toward achieving personal and group goals (Bass & Riggio, 2006). Optimism and enthusiasm are qualities that underpin inspirational motivation. Passion is an essential quality of an inspirational leader (Kouzes & Posner, 2007). A transformational leader is able to articulate and present an inspirational vision for the future through passion, and belief in the organization (Reuvers et al., 2008).

Inspirational motivation inspires followers to see themselves as part of the vision and enables followers to believe that they can be part of contributing to the vision. As such, inspirational motivation creates and fosters an environment of psychological safety that Bass & Riggio, (2006), Bass & Steidlmeier (1999) and Kahn (1990) posited is essential in establishing positive and high levels of work engagement.

Psychological safety denotes a sense that an individual can display and exercise one's real self, without fear of negative ramifications. From a leadership perspective, leaders play a significant and important role in creating an environment that promotes a culture of psychological safety where employees can feel free to express themselves and take risks. The culture of psychological safety may be related to levels of trust. As a result, as followers' trust in their leaders increases so may their work engagement. This observation is supported in practitioner research that showed engaged employees (90%) are more trustworthy of their managers compared to disengaged (51%) employees (Blessing White, 2013).

This study demonstrated that employees working in the pharmaceutical industry clearly see the value of inspirational motivation as this behavior was the sole transformational leadership behavior responsible for positively affecting subordinates work engagement. Results from this study illustrate that leaders in the pharmaceutical industry in the United States create an effective and positive vision for their followers, a vision that followers believe in and subscribe to. The alignment of beliefs, goals, and objectives between leaders and followers perhaps allows employees to focus on their work role by becoming immersed and engaged in their jobs and helps them perform their duties with pride, accountability, and high energy.

The finding in this study-related to the relationship between inspirational motivation and work engagement is consistent with the findings by Hayati, Charkhabi, and Naami (2014). In their study, the authors not only presented a finding of a significant correlation between transformational leadership and work engagement ($r = .70, p < .01$) but also demonstrated that inspirational motivation was the greatest contributor in predicting absorption, dedication, and vigor, subconstructs of work engagement. Through inspirational motivation leaders can create greater follower work engagement by encouraging employees to be accountable and energized about their jobs.

Perhaps the positive relationship observed in this study between inspirational motivation and work engagement in the pharmaceutical industry stems from the fact that the industry as a whole strives to develop products that improve the lives of patients by creating goods that range from medications to medical devices that help treat and manage medical conditions. It is conceivable that the altruistic fabric of the industry serves as a motivating factor for employees who work in this industry to do better for humankind and hence readily subscribe to the vision proposed by their leaders. By subscribing to the vision and being inspired by the notion of helping others, employees in the pharmaceutical industry may be naturally engaged in their work. This observation is consistent with the findings of Ghadi et al. (2013) who posited that when transformational leaders create a meaningful environment for their employees, the employees' work engagement increases.

Notwithstanding the findings concerning inspirational motivation, the lack in predicting work engagement by the remaining transformational leadership subconstructs of idealized influence (attributed and behaviors), intellectual stimulation, and

individualized consideration was surprising in this study, given that the overall composite transformational score was able to significantly account for the variance in employees' work engagement. After all, idealized influence defines leadership behaviors that provoke appreciation, respect, and trust from followers. Leadership by example epitomizes the concept of idealized influence. Perhaps participants in this study did not see their supervisors as individuals who exhibit their own characteristics of work engagement. As such, participants were not able to determine to what extent their supervisors exhibited positive work engagement. Hence, the inability to perceive supervisors' level of work engagement did not align with the employees' perception of their own work engagement.

Intellectual stimulation involves soliciting ideas, opinions, and insights from followers to for example, promote innovation and creativity (Bass & Riggio, 2006). Intellectual stimulation allows the leader to create an environment where individuals are allowed to experiment with novel approaches to solving problems and are free to communicate new ideas. Given that the pharmaceutical industry is extremely competitive, creativity and innovation are essential for organizational success. Results from this study may imply that lack of intellectual stimulation affected negatively employees' perception of psychological meaningfulness, one of the primary tenets for work engagement. As discussed earlier, psychological meaningfulness implies that the effort invested in work makes one feel useful, worthwhile, and valuable. Intellectual stimulation therefore, could be an important conduit in creating a work setting that emphasizes the importance of creating meaningful tasks, tasks that according to Kahn (1990) are challenging, varied, creative, and carry some degree of autonomy.

Finally, through individualized consideration a leader recognizes individual's needs for professional growth and work place recognition, creates opportunities for new learning experiences, and encourages followers to aspire to higher levels of achievement. Mentoring and coaching are leader behaviors that reflect individualized consideration. In this study, individualized consideration did not predict work engagement, perhaps inferring that leaders in the pharmaceutical industry in the United States do not practice this behavior often enough. In fact, the results from this study indicate that individualized consideration was the second to last lowest scoring transformational leadership behavior. On the other hand, participants in this study may be characterized as self-starters and personally accountable for their work compared to other industries. In addition, employees working in the pharmaceutical industry may be afforded significant autonomy in their work compared to other types of businesses. As such, in the context of the other transformational leadership behaviors, individualized consideration may be less important.

Research Subquestion 2 (RSQ2)

The intent of exploring Research Subquestion 2 was to further investigate to what extent leaders' emotional intelligence helps to explain employees' work engagement when the demographic variables of employees' age, employees' gender, and employees' duration of employment were held constant due to evidence that these variables may themselves contribute in predicting employees' work engagement. Results of this analysis indicated a significantly predictive regression model showing that the subscales of leaders' emotional intelligence accounted for 39% more of the variation in employees' work engagement than the covariates alone.

Again, as in the previous analyses, subordinates' gender was a significant predictor of their work engagement. In addition, leaders' emotional reasoning and leaders' emotional management of others scores stood apart as the only emotional intelligence subscales that predicted employees' work engagement beyond what was accounted for by the other remaining subscales. A single point increase in leaders' emotional reasoning score corresponded with a 0.13 point increase in employees' work engagement. Similarly, a single unit increase in the leaders' emotional management of others scale corresponded with an increase in employees' work engagement of 0.10 units.

Emotional reasoning is associated with the relative frequency with which an individual incorporates emotionally relevant information into the process of problem solving or decision making in the work environment (Gignac, 2010b). This subscale was designed to measure an approach to problem solving that balances one's own emotions and the emotions of others when making decisions at work (Gignac, 2010b). Emotional reasoning emphasizes the effective use of emotions in the process of engaging others.

The effective use of emotional reasoning transpires when individuals ask questions and inquire about the validity of their own and others' understanding of issues. As such, the results of this study imply that participants felt their supervisors understood their own and the employees' feelings in the context of decision making. The implication of this observation is that emotional reasoning infers there is a partnership between the effective exchange of information between leaders and followers. As such, Toegel, Kilduff, and Anand (2013) suggested that employees contribute to the organization at a higher level when they recognize that their managers understand and support them. Through emotional reasoning leaders were able to understand the feelings and emotions

of their direct reports, while the direct reports felt comfortable in expressing their own emotions, thoughts, and feelings. The positive perceptions of supervisors' use of emotional reasoning suggest that participants in this study see their leaders as being able to create an environment of trust and psychological safety in the exchange of emotional information.

Emotional management of others is concerned with how emotions of others are managed at work. Effective use of emotional management of others addresses how leaders motivate their direct reports and how leaders are able to modify their direct reports' emotions to improve work related outcomes (Gignac, 2010b). Leaders who are effective in the emotional management of others create a positive working environment for their staff and perhaps specifically are adept at resolving issues, frustrations, and obstacles that employees may be facing in their job.

The results from this study suggest that leaders in the pharmaceutical industry in the United States can successfully determine and manage their direct reports' emotions for the betterment of work engagement. Since emotional management of others is concerned with positively influencing the emotions of others, participants in this study felt that their supervisors created a positive work environment by possibly enhancing the moods and emotions of their direct reports. A work environment rich in positive mood and morale can enhance the employees' desire to want to come to work, and hence feel engaged in their job.

Nonetheless, an interesting result of this study was that the other five emotional intelligence subscales of emotional self-awareness, emotional expression, emotional awareness of others, emotional self-management, and emotional self-control did not

contribute in predicting work engagement. Perhaps it is not surprising that emotional self-awareness was not associated with predicting work engagement since emotional self-awareness measures the awareness of one's own emotions at work. Therefore, participants in this study may have been of the collective perception that how their supervisors handle their own emotions may not play a significant impact on their own work engagement, or the ability of their supervisors to handle their own emotions may not be important in the context of other emotional intelligence behaviors.

Similarly, emotional expression is related to the frequency with which individuals express their own emotions at work. The capability to effectively express emotions at work hinges on an individual's ability to not have reservations in the expression of their emotions. The lack of emotional expression predicting work engagement in this study could be a factor that participants in this study were less concerned about whether their supervisors can or cannot effectively express their emotions. Perhaps if the work environment is demarcated and defined by other behaviors, expression of supervisors' emotions is less of a concern in predicting work engagement.

Emotional awareness of others is the ability to identify emotions of others and implement effective mitigations when the emotions are negative, while promoting positive emotions. The lack of emotional awareness of others in predicting work engagement was surprising in this study. The inference of emotional awareness of others is the ability to perceive emotions and implement proper adjustments or enhancements, as needed. Since work engagement is built on the premise of psychological safety, psychological availability, and psychological meaningfulness (Kahn, 1990), a supposition can be made that emotional awareness of others is an important factor from the

standpoint that an awareness of others' feelings and the ability to act on that awareness could contribute in defining work engagement. After all, if leaders are able to create an environment that supports the expression of direct reports' feelings and emotions without negative ramifications, it should stand to reason that emotional awareness of others would be a significant predictor of work engagement.

Emotional self-management defines how individuals engage in activities that can promote the development of positive emotions and reduce negative emotions (Gignac, 2010b). Emotional self-control on the other hand measures an individual's ability to remain focused at work and not lose one's temper or become angry. The implication from both of these emotional intelligence behaviors is that an individual's ability to stay cool, calm, and collected in times of challenge and learn how to harness these abilities in future situations is of importance.

An interesting consideration in the lack of emotional self-management and emotional self-control predicting work engagement in this study is that both subconstructs of the Genos Emotional Intelligence Inventory-concise (rater) scale are associated with how the dimensions define an individual rather than the relationship between two individuals. The implication from this study is that with the exception of emotional awareness of others, the emotional intelligence subconstructs that were not able to predict work engagement were the dimensions of emotional intelligence that specifically define the behaviors at only the supervisor level (emotional self-awareness, emotional expression, emotional self-management, and emotional self-control) rather than affecting the supervisor-direct report relationship.

Research Subquestion 3 (RSQ3)

Given the role transformational leadership and emotional intelligence play in positively affecting work engagement, the goal of investigating Research Subquestion 3 was to determine if leaders' emotional intelligence can moderate the relationship between leaders' transformational leadership and employees' work engagement. It was hypothesized that the moderator variable, emotional intelligence, would affect the strength or direction of the relationship between leaders' transformational leadership and employees' work engagement.

In order to address Research Subquestion 3, a moderation analysis was conducted using Baron and Kenny's (1986) approach. To perform this analysis, a two-step regression was conducted with leaders' transformational leadership predicting employees' work engagement in the first step, and an interaction term between leaders' transformational leadership and leaders' emotional intelligence added to the model in Step 2. The hypothesis was that if the interaction term was significant in the final model, then moderation would be supported and leaders' emotional intelligence could be said to significantly affect the relationship between leaders' transformational leadership and employees' work engagement.

In a bit of surprise, the results of the Baron and Kenny (1986) moderation analysis did not support leaders' emotional intelligence as a significant moderator to the relationship between leaders' transformational leadership and employees' work engagement. Though both steps of the regression were significant, the interaction term in Step 2 did not provide significant predictive ability beyond what was accounted for by transformational leadership alone.

The theoretical implication of this finding infers that dimensions of emotional intelligence are perhaps embedded in the constructs of transformational leadership. As such, based on the results of this study, if individuals exhibit strong transformational leadership behaviors that on their own can predict work engagement, emotional intelligence will not strengthen that relationship. Interestingly, Modassir and Singh (2008) demonstrated that transformational leadership was not significantly correlated with emotional intelligence and that emotional intelligence of a leader did not mediate the relationship between perceived transformational leadership and the Organization Citizen Behavior of followers. Organization Citizen Behavior has been proposed to be a concept somewhat related to work engagement, where positive work engagement encourages employees to display discretionary work behaviors (Babcock-Roberson and Strickland, 2010). In the context of Research Subquestion 3, when emotional intelligence was investigated in the framework of transformational leadership, the results of this study raise the question of whether emotional intelligence is an important characteristic essential to be perceived as a transformational leader capable of positively affecting employee work engagement.

Implications of the Study Results

This study aimed to address a gap in the literature on leadership in the pharmaceutical industry and more specifically on the relationships between leaders' transformational leadership, leaders' emotional intelligence, employees' age, employees' gender, employees' duration of employment in current position, and employees' work engagement in pharmaceutical firms in the United States. Literature review has revealed a limited number of studies that specifically assessed the role of demographic variables

on work engagement or research that investigated the relationships between transformational leadership, emotional intelligence, and work engagement in a single study. Consequently, this study offers an insight into the relationships between the aforementioned variables and expands on previous research.

In the investigation of the demographic variables to predict work engagement, only employees' gender contributed in the prediction in the variability of their work engagement. Subordinates' age and duration of employment were not factors capable of predicting work engagement in this study. These results suggest that other factors, such as perhaps employees' job level within the organization, or the type of job within the pharmaceutical industry may affect work engagement in the context of employees' age or the duration of employment in their current position.

With regards to the variables of leaders' transformational leadership, leaders' emotional intelligence, and employees' work engagement, in general, the results from this study support previous findings of dyadic relationships between these variables. Specifically, results from this study provide evidence of a strong relationship between transformational leadership and work engagement. A one point improvement in leaders' transformational leadership could improve employees' work engagement by approximately three-quarters of a point. Such an increase in work engagement implies that fostering an environment supportive of transformational leadership behaviors can have significant effects on work engagement and in turn positive effects for the organization. However, when emotional intelligence was examined in the presence of transformational leadership, emotional intelligence did not significantly predict the variability in work engagement nor did it strengthen the relationship between

transformational leadership and work engagement. This finding suggests that a greater scrutiny needs to be employed in future studies assessing the dimensions of transformational leadership and emotional intelligence to determine to what extent these two variables overlap.

On the other hand, when the subconstructs of leaders' emotional intelligence and leaders' transformational leadership were assessed individually to determine their ability to predict employees' work engagement, several interesting and meaningful results were obtained. Although leaders' transformational leadership accounted for 44% more of the variation in employees' work engagement beyond the demographic variables of employees' age, employees' gender, and employees' duration of employment in the current position, only the dimension of inspirational motivation was a significant predictor of employees' work engagement. Bearing in mind that a single point increase in a leaders' inspirational motivation score can increase employees' work engagement by 0.42 points, the results from this study are indeed intriguing. Considering the financial implications for organizations in terms of productivity and economic returns, an almost half point increase in work engagement per employee could have significant fiscal and operational benefits for pharmaceutical companies in the United States, especially considering the need for differentiation between organizations that operate in this sector. Therefore, from a practitioner perspective, organizational leaders need to ensure that if anything, a demonstration of leadership behaviors associated with inspirational motivation is essential in creating an environment conducive to positive work engagement.

Similarly, with respect to emotional intelligence, this study suggests that a leader's emotional intelligence is an important factor in contributing to subordinate's work engagement. Results from this study suggest that leaders' emotional intelligence accounted for 39% more of the variation in employees' work engagement than the demographic variables of employees' age, employees' gender, and employees' duration of employment in the current position. However, upon closer examination of the results, based on the leaders' emotional intelligence, only the subconstructs of emotional reasoning and emotional management of others, stood apart as significant predictors of subordinates' work engagement. Although not as strong as the transformational leadership subconstruct of inspirational motivation, a single point increase in the emotional reasoning score corresponded with a 0.13 point increase in employees' work engagement. Similarly, a single unit increase in the emotional management of others scale corresponded with an increase in employees' work engagement of 0.10 units. Again, due to the significant benefits of employee work engagement, even relatively modest increases in work engagement can translate into significant financial and organizational benefits for a company.

Since the Genos Emotional Intelligence Inventory-concise (rater) scale is a relatively new scale, the findings from this study also expand the scholarly knowledge regarding this instrument. A noteworthy result from this study is that Cronbach's α values for the subscales of emotional intelligence (except emotional reasoning) were .60 or greater but below .70. This finding may not be entirely surprising given that emotional intelligence was measured by the Genos Emotional Intelligence Inventory-concise scale,

which is expected to have reduced internal consistencies of the subscales relative to the full version (Palmer et al., 2009).

From the seven dimensions of the Genos Emotional Intelligence Inventory scale, the subconstructs (with the exception of emotional awareness of others) that did not predict the variability in subordinates' work engagement were constructs more closely associated with specific emotional intelligence behaviors associated with the supervisor, rather than emotional intelligence behaviors associated with the relationship between the supervisor and subordinate. Additional investigations to explore the validity of this observation are warranted.

Limitations

Quantitative Design

All studies are subject to limitations, often based on considerations associated with available resources, cost, and time. Critics of quantitative research (Sale et al., 2002) suggested that one of the primary challenges in conducting quantitative research is the focus on hypothesis testing based on a distillation of the research question into several predetermined variables, which are purported to represent reality. This deconstruction suggests a narrow approach to investigating the research question and creates an opportunity for potentially missing a broader research inquiry. Therefore, a potential limitation for this study was its quantitative approach in an evaluation of a research problem that some could argue was narrow focused.

Instrumentation in Quantitative Research

Instrument validity and reliability are also potential limitations in quantitative research. Instrument validity and reliability were discussed in detail in Chapter 3. This

study employed three validated instruments: the Multifactor Leadership Questionnaire (MLQ 5X-Short), the Genos Emotional Intelligence Inventory, and the Utrecht Work Engagement Scale (UWES), to measure transformational leadership, emotional intelligence, and work engagement, respectively. A surprise finding in this study was the low Cronbach's α scores associated with six of the seven subscales of emotional intelligence. However, even with the observed levels of reliability, the overall emotional intelligence score had good reliability and two of the subscales emerged as significant predictors of work engagement.

Single Source Data

Another limitation related to the conduct of this study was that the data came from a single source of respondents who evaluated their supervisors and themselves. Conway and Lance (2010) posited that self-reporting might lead to bias. Additionally, Schaller, Patil, and Malhotra (2014) suggested that study designs that collect data from a single source evaluating both the independent and dependent variables may contribute to spurious findings in estimating the level of correlation between variables. However, the authors also acknowledged that the understanding of the effect of common method variance (CMV) is not clear and consensus on the implications of CMV has not been reached (Schaller et al., 2014). Nonetheless, in choosing between self-assessment or rater measurements, consideration needs to be given to social desirability bias when self-responders can be accused of faking responses (Antonakis et al., 2009; Holtgraves, 2004). Therefore, a limitation in this study was that respondents provided responses based on the perceptions of their own work engagement and perceptions of their leaders' level of transformational leadership and emotional intelligence.

Survey Conduct

Although the SurveyMonkey Audience service was selected as a method for collecting data as it provides a random sample of data to maximize external validity and allows for the generalizability of the results, two potential limitations arose from the utilization of an electronic survey, mainly the anticipated response rate and length of survey.

Response rate. As the database of participants was comprised of pharmaceutical and healthcare employees it was not clear what proportion of participants were specifically employed in the pharmaceutical industry versus those employed in healthcare disciplines. As such, estimating an accurate return rate that would fulfill the minimum required sample size for this study was a challenge. The concern for a low response rate was further heightened by various estimates reported in the scholarly and practitioner literature.

In a study conducted by Cook, Heath, and Thompson (2000) the authors reported a mean response rate to web based surveys between 35% to 40%. However, Kaplowitz, Hadlock, and Levine (2004) estimated web based surveys elicit a much lower response rate of approximately 21%, while SurveyMonkey estimated an even more conservative response rate of approximately 10% to 15% (SurveyMonkey Blog, 2012). To mitigate the limitation of a potentially low return rate, the researcher contracted with SurveyMonkey to obtain at least 150 completed responses from participants who were only employed in the pharmaceutical industry.

In this study, SurveyMonkey did not reveal how many requests for participation were distributed. However, in total, 1,214 responses were obtained with most

participants (n = 1,057) rejected due to not meeting study eligibility criteria, likely due to not being employed in the pharmaceutical industry, or disagreeing with the informed consent. The 157 completed responses obtained by SurveyMonkey and used in this study, represented a 12.9% response rate based on responding participants only.

Survey length. A limitation of this study may have been its ambitious goal of investigating three significant theories in a single study. Aside from the demographic questions, the instruments measuring transformational leadership, emotional intelligence, and work engagement accounted for 68 additional questions. Although the total length of the survey may seem long, Deutskens, De Ruyter, Wetzels, & Oosterveld (2004) determined that “the length of the questionnaire did not have a negative effect on the quality of responses” (p. 33) when conducting internet based surveys. Although the quality of responses may not have been an issue, the length of the survey may have influenced some participants to discontinue from the study, as implied by the observed response rate.

Population

This study focused on only those participants who were employed full time in the pharmaceutical industry in the United States and had a direct supervisor at the time they responded to the survey. As such, conclusions made from this research can only be generalized to a population of employees working in the pharmaceutical industry in the United States and who have a supervisor. Therefore, findings from this study cannot be extended to all employees in the pharmaceutical industry.

Recommendations for Further Research

Confirmation of Findings

Based on the results of this study and the aforementioned limitations, several potential recommendations for future research arise. On the basis of an identified limitation in the literature in investigating transformational leadership, emotional intelligence, and work engagement in a single study, this study may be one of the earliest attempts to investigate the simultaneous relationships between the three constructs. As such, this study may pave the way for future research in this area to confirm the relationships observed between the variables investigated in this study in other settings or settings that are more specific within the pharmaceutical industry itself. For example, as this study focused only on participants employed in the pharmaceutical organizations in the United States, a future consideration should be given to investigating the relationships between transformational leadership, emotional intelligence, and work engagement, in pharmaceutical organizations outside the United States. This is particularly noteworthy given that the pharmaceutical industry represents organizations that operate on a global basis.

Furthermore, findings from this study should be confirmed through qualitative or mixed method approaches that incorporate interaction with study participants. Such an approach would yield a deeper exploration of the results to better understand the reasons for participants' perceptions of their leaders and their own work engagement. A qualitative or mixed methods study approach could address the observations noted in this study regarding the significance of the relationship between leaders' and employees' in the context of emotional intelligence and its' influence on work engagement.

Common Method Variance

Consideration for future studies may also address the concern raised with regards to common method variance. Future research could consider a study where data is obtained from multiple sources. For example, an investigation could be carried out where subordinates rate their supervisors on the level of transformational leadership and emotional intelligence, while the supervisors rate their employees on the level of perceived work engagement.

Organizational Setting

Additional studies may also consider investigating whether the findings from this study are specific to certain functional areas within the pharmaceutical industry or can be uniformly applied across the numerous organizational settings within the industry. For example, leadership, emotional intelligence, and work engagement relationships may be different in the context of a manufacturing line compared to employees working in the area of research and development, or marketing. Whereas the former situation may rely heavily on established processes and strict operational procedures, the latter job environments may hinge on job resources that foster creativity and innovation. In this context the role of job resources impacting the relationship between leadership and work engagement could be explored.

Full Leadership Model

An aspect of potential future research should consider an assessment of the full leadership model, namely not only an investigation of transformational leadership but also transactional leadership and laissez-faire leadership. Prior research has shown a potential positive relationship between transactional leadership and emotional

intelligence (Quader, 2011), as well as a potential influence of transactional leadership behaviors on work engagement (Breevaart, Bakker, Hetland, et al., 2014). This perhaps is not overly surprising as the full leadership model implies that a leader functions on a continuum between transformational leadership and transactional leadership, depending on the specific situation (Avolio & Bass, 2004). Future research could investigate what situations in particular affect the selected leadership and how the selected leadership affects work engagement.

Evaluation of Transformational Leadership Subscales

Given the results of this study in determining which specific transformational leadership dimensions predict work engagement, additional research is warranted to investigate the reasons for these findings. For example, an investigation worthy of exploring is to understand whether inspirational motivation is the sole predictor of work engagement only in the pharmaceutical industry in the United States or does this finding also apply to other industries. If the findings across industries are similar, the importance of the characteristics defining leaders in the different industries would be interesting in the context of how inspirational motivation is used to elicit high levels of work engagement.

Evaluation of Emotional Intelligence Subscales

Based on the results of this study, evaluations of the specific dimensions of emotional intelligence affecting work engagement require additional investigation. As discussed previously, of significant interest may be the importance of emotional intelligence behaviors that consider both the leader and follower, rather than the emotional intelligence behaviors that describe the behaviors of only the leader. Future

research could also consider confirming the findings of this study using a different instrument to measure emotional intelligence, given the general findings of poor internal consistency of the Genos Emotional Intelligence subscales in this study. Future studies could evaluate how performance, trait, or behavior models of emotional intelligence affect work engagement, especially in the presence or absence of transformational leadership.

Conclusion

This study aimed to address the relationships between leaders' transformational leadership, leaders' emotional intelligence, and employees' work engagement in the pharmaceutical industry in United States through a cross-sectional, quantitative, nonexperimental, survey design that utilized multiple linear regression to test for relationships between variables. A moderation analysis based on the Baron and Kenny (1986) methodology was also conducted to examine the influence of the interaction of leaders' emotional intelligence and leaders' transformational leadership on employees' work engagement. The survey was conducted by SurveyMonkey, an online survey hosting company utilizing validated survey instruments, including the MLQ 5x-Short, the Genos Emotional Intelligence Inventory-concise (rater), and the UWES-17, to measure transformational leadership, emotional intelligence, and work engagement, respectively.

The results of this study demonstrated that from the investigated demographic variables, only employees' gender significantly predicted employees' work engagement, with women achieving higher scores compared to men. In addition, leaders' transformational leadership was accountable for predicting employees' work engagement, while emotional intelligence, in the presence of transformational leadership,

only approached statistical significance. Furthermore, when leaders' transformational leadership dimensions were evaluated for their ability to predict employees' work engagement only leaders' inspirational motivation significantly predicted employees' work engagement.

Furthermore, emotional intelligence also predicted work engagement but only in the absence of assessing leaders' transformational leadership. In addition, upon further examination, only the emotional intelligence dimensions of leaders' emotional reasoning and leaders' emotional management of others were able to significantly predict the variability in employees' work engagement. Lastly, a hypothetical assumption was made that leaders' emotional intelligence would strengthen the relationship between leaders' transformational leadership and employees' work engagement. However, through the moderation analysis based on Baron and Kenny's (1986) methodology, leaders' emotional intelligence did not moderate the relationship between leaders' transformational leadership and employees' work engagement.

The results of this study contribute to the scholarly literature by providing important information regarding the relationships between leaders' transformational leadership, leaders' emotional intelligence, and employees' work engagement, which have not been previously investigated in a single study. From a practitioner standpoint, the findings from this study suggest that for pharmaceutical organizations in the United States, leaders who exhibit the transformational leadership behavior of inspirational motivation are more apt to elicit employee work engagement. Additionally, findings from this study infer that emotional intelligence behaviors that affect the relationship between supervisors and subordinates may be of more importance in predicting

employees' work engagement than emotional intelligence behaviors that define only the emotional intelligence characteristics of leaders. As such, leadership training programs could take advantage of these findings by focusing on leader development from the perspective of presenting an inspirational approach towards employees, as well as addressing the importance of relationship building with followers.

Finally, this study suggests that leaders' emotional intelligence does not contribute to strengthening the relationship between leaders' transformational leadership and employees' work engagement. Thus, the latter finding suggests that there may be an overlap between transformational leadership and emotional intelligence.

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APPENDIX A. STATEMENT OF ORIGINAL WORK

Academic Honesty Policy

Capella University's Academic Honesty Policy ([3.01.01](#)) holds learners accountable for the integrity of work they submit, which includes but is not limited to discussion postings, assignments, comprehensive exams, and the dissertation or capstone project.

Established in the Policy are the expectations for original work, rationale for the policy, definition of terms that pertain to academic honesty and original work, and disciplinary consequences of academic dishonesty. Also stated in the Policy is the expectation that learners will follow APA rules for citing another person's ideas or works.

The following standards for original work and definition of *plagiarism* are discussed in the Policy:

Learners are expected to be the sole authors of their work and to acknowledge the authorship of others' work through proper citation and reference. Use of another person's ideas, including another learner's, without proper reference or citation constitutes plagiarism and academic dishonesty and is prohibited conduct. (p. 1)

Plagiarism is one example of academic dishonesty. Plagiarism is presenting someone else's ideas or work as your own. Plagiarism also includes copying verbatim or rephrasing ideas without properly acknowledging the source by author, date, and publication medium. (p. 2)

Capella University's Research Misconduct Policy ([3.03.06](#)) holds learners accountable for research integrity. What constitutes research misconduct is discussed in the Policy:

Research misconduct includes but is not limited to falsification, fabrication, plagiarism, misappropriation, or other practices that seriously deviate from those that are commonly accepted within the academic community for proposing, conducting, or reviewing research, or in reporting research results. (p. 1)

Learners failing to abide by these policies are subject to consequences, including but not limited to dismissal or revocation of the degree.

Statement of Original Work and Signature

I have read, understood, and abided by Capella University's Academic Honesty Policy ([3.01.01](#)) and Research Misconduct Policy ([3.03.06](#)), including the Policy Statements, Rationale, and Definitions.

I attest that this dissertation or capstone project is my own work. Where I have used the ideas or words of others, I have paraphrased, summarized, or used direct quotes following the guidelines set forth in the *APA Publication Manual*.

Learner name
and date

Stefan J. Ochalski October 9, 2015

Mentor name
and school

Terry M. Walker, PhD School of Business and Technology