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An Analysis for Understanding the Impacts of Healthcare Leader Emotional Intelligence on Employee Engagement: Differences Between Clinical and Non-Clinical Employees

Adam Wilkins
Gardner-Webb University, awilkins3@gardner-webb.edu

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Adam Blake Wilkins

Doctoral dissertation

Submitted to the graduate faculty of

Gardner-Webb University in partial fulfillment

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Doctor of Business Administration

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Dissertation Committee Approval:

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Dr. Christine Sutton. DBA, Chair Date

_____

Dr. Felice Policastro. Ph.D., Committee Member

_____

Dr. Lori McMillan. DPT, MHA, Committee Member

_____

Dr. Christine Sutton. DBA, Associate Dean/DBA Director

Dedication

This dissertation is dedicated to Dissertation Chair Emeritus, Dr. Penelope Nall. I never had the pleasure of having Dr. Nall as a professor in the DBA program; however, she welcomed me with open arms when I asked her to be my chair. For our first meeting, she invited me into her home. We sat by the pool and discussed my plans and my dreams for the future. She was kind but tough. Without her, much of this would not have been possible. She was the wind beneath my wings.

I would also like to dedicate this dissertation to Dr. David Church, who is not only my Vice President at work, but also a friend and mentor. He worked tirelessly to entice me to continue my education due to the time I had left in the workforce and my potential ROI for earning a doctorate at an early age. I will never forget him saying “Do what you want, but the 3 to 4 years it takes will pass regardless.” So here I am.

Finally, I would like to dedicate this work to my mother, Rachel Wilkins, who has been my rock throughout the challenges that come with this level of education. I almost quit more than once (or 100 times), but she reminded me that mentality would never be me and that I tell my friends and family you can achieve anything as long as “no” is not an option.

Abstract

An Analysis for Understanding the Impacts of Healthcare Leader Emotional Intelligence on Employee Engagement: Differences Between Clinical and Non-Clinical Employees

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While leadership theory and its applications have been studied by academic researchers since the 1800s, the study of emotional intelligence (EI) did not become a focus until 1990. Since EI's conceptualization, this form of intelligence has remained a key focus area in the study of what motivates employees to best keep them engaged in their work. However, some critical aspects of the relationship between EI and employee engagement have not yet been explored. This research provides insight into the importance of EI in healthcare leadership. The narrowed focus of this study provides a better understanding of what role, if any, leader EI plays in the engagement of clinical and non-clinical employees in the U.S. healthcare organization setting. The healthcare industry has not been immune to the time known as "the Great Resignation." With continued staffing issues across the U.S. healthcare landscape, it is more vital now that we understand how to maintain high engagement levels for both clinical and non-clinical healthcare employees. Data for this survey-based research comes from a leader EI assessment and an employee engagement survey. Statistical testing was performed to determine the impact that a leader's EI has on clinical employees compared to their non-clinical counterparts. Based on the results from statistical analysis, practical and theoretical

implications are explained. Findings include a positive relationship between non-clinical employees' level of engagement and leader EI levels.

Keywords: Leadership Theory, Emotional Intelligence, engagement, staffing, healthcare

Table of Contents

Table of Contents i

List of Tables ii

List of Figures iii

List of Appendices iv

Chapter 1 : Introduction 1

Chapter 2 : A Review of Literature 15

Chapter 3 : Methodology 38

Chapter 4 : Results 52

Chapter 5 : Discussion, Conclusions, and Recommendation 76

References 82

Appendices 103

List of Tables

Table Page

Table 1 *Data Elements to Be Used in This Study and Supporting Information* 45

Table 2 *Population and Percent of Total for Leader Participants in the TalentSmart EI 2.0 Assessment by Leadership Level* 57

Table 3 *Population and Percent of Total for Leader Participants in the TalentSmart EI 2.0 Assessment by Highest Degree Earned* 58

Table 4 *Population and Percent of Total for Leader Participants in the TalentSmart EI 2.0 Assessment by Sex* 58

Table 5 *Population and Percent of Total for Leader Participants in the TalentSmart EI 2.0 Assessment by Age Range* 59

Table 6 *Population and Percent of Total for Leader Participants in the TalentSmart EI 2.0 Assessment by Department Type Managed (i.e., clinical or non-clinical)* 60

Table 7 *Employee Participants in the 2022 Press Ganey Associates Employee Engagement Survey by Department Type (i.e., clinical or non-clinical)* 60

Table 8 *F-Test(ANOVA) or Wilcoxon/Kruskal Wallis Test: The Relationship between Leader Degree Type and EI Assessment Results* 63

Table 9 *T-Test or Wilcoxon/Kruskal Wallis Test: The Relationship between Department Type and EI Assessment Results* 66

Table 10 *Pooled T-Test: The Relationship between Leader EI Level and Leader Type* 69

Table 11 *Fit Ordinal Logistic Regression: The Relationship between Clinical Leader EI Score and Clinical Employee Engagement Responses (from the Management Domain of Press Ganey Associates Employee Engagement Survey)* 70

Table 12 *Fit Ordinal Logistic Regression: The Relationship between Non-Clinical Leader EI Score and Non-Clinical Employee Engagement Responses (from the Management Domain of Press Ganey Associates Employee Engagement Survey)* 72

Table 13 *Fit Ordinal Logistic Regression: The Relationship between Leader EI Scores and Employee Engagement Responses with No Separation between Clinical and Non-Clinical Departments (from the Management Domain of Press Ganey Associates Employee Engagement Survey)* 74

List of Figures

Figure Page
Figure 1 *Strains on the Healthcare Industry's Workforce Post-Pandemic* 5

Figure 2 *The Impact of the Coronavirus Pandemic on Clinical Employees Working in a Healthcare-Specific Setting*.....6

Figure 3 *Conceptualization of Emotional Intelligence* 22

Figure 4 *Hypothesis 1 – Comparing Levels of EI Between Clinical and Non-Clinical Leaders*.....42

Figure 5 *Hypothesis 2 – Assessing the Relationship Between Leader EI Levels and Employee Engagement in the U.S. Healthcare Sector*.....43

List of Appendices

Appendix A List of Research Studies using TalentSmart's EI 2.0 104

Appendix B Questions from the Emotional Intelligence 2.0 Assessment by TalentSmart 112

Appendix C Proof of IRB Approval from Gardner-Webb University 113

Appendix D Proof of IRB Approval from the HCO Used as the Data Source for This Research 114

Appendix E Example: Full JMP Output for Fit Ordinal Logistic Test 116

Appendix F F-Test or Wilcoxon/Kruskal Wallis Test Results: Leader EI Scores by Leadership Level 119

Appendix G Chi Square Results: Employee Engagement Responses by Leadership Level 121

Appendix H F-Test or Wilcoxon/Kruskal-Wallis Test Results: Leader EI Score by Highest Leader Degree 122

Appendix I Chi Square Results: Employee Engagement Responses by Highest Leader Degree 125

Appendix J Chi Square Results: Employee Engagement Responses by Leader Degree Type 127

Appendix K Chi Square Results: Employee Engagement Responses by Department Type 128

Appendix L F-Test or Wilcoxon/Kruskal Wallis Test Results: Leader EI Score by Leader Age Range 129

Appendix M Chi Square Results: Employee Engagement Responses by Leader Age Range 131

Appendix N T-Test or Wilcoxon/Kruskal-Wallis Test Results: Leader EI Score by Leader's Sex 133

Appendix O Chi Square Results: Employee Engagement Responses by Leader's Sex 135

Appendix P Fit Ordinal Logistic Regression Results: Leader EI Impact on Engagement Responses from the Organization Domain of Press Ganey 136

Chapter 1: Introduction

In a post-coronavirus pandemic healthcare landscape, it may be more crucial than ever before that healthcare organizations (HCOs) better understand how to train their leaders so that HCOs have the best chance of retaining employees and keeping them engaged. Furthermore, nearing the end of the coronavirus pandemic (i.e., mid-2021 and beyond), the United States experienced a period known as *The Great Resignation.*[1] The healthcare industry was not immune to this period of job-hopping for increased pay, better company incentives, and a better work-life balance. In 2019, approximately 20% of the U.S. workforce was contemplating a job change (Serenko, 2022). In 2021, after 2 years of enduring the worldwide coronavirus pandemic, 39% of workers in the United States were considering a job change (Serenko, 2022). To put these percentages into perspective, in September 2021 alone, 4.4 million Americans resigned from their jobs—the largest employee resignation spike ever recorded (Tessema et al., 2022).

Substantial amounts of evidenced-based literature describe the appropriate leadership and human resource practices needed to retain employees and keep them engaged in a company's mission, vision, and culture. This literature further defines the importance of these practices to a company's success. Conceptual literature provides evidence that leadership style and leader empathy are forces that drive an employee to meet organizational goals via increased levels of organizational commitment (e.g., Avolio & Bass, 1995; Bass, 1990; Brown, 2018; Collins & Hansen, 2011; Hofstede,

[1] An ongoing economic trend in which employees are voluntarily resigning from their jobs in record-breaking numbers, often to take on a new role with increased compensation..

1980; Mayer et al., 2016; Salovey & Mayer, 1990; Wickström & Bendix, 2000). Studies by Avolio and Bass (1995), Bass (1990), Mayer et al. (2016), and Salovey and Mayer (1990) are only a few academic works that have illustrated the importance of transformational leadership and emotional intelligence in the workplace. Similar studies also show a relationship between these leadership methods and employee commitment, leading to an increased level of employee ownership mentalities and innovative practices and resulting in increased company financial performance (Bin Shmailan, 2015; Brunetto et al., 2012; Dessler, 1999; Harter et al., 2002; Katsaros et al., 2020).

Leadership research has often focused on the relationship between employee engagement (EE) and leadership style within an organization. Both transformational leadership and high levels of leader emotional intelligence (EI) have been shown to be particularly effective. Transformational leadership is best described as a leadership style with little to no micro-management, where employees are recognized and rewarded often for a job well done, and employee mistakes or shortcomings are not used as grounds for immediate reprimanding, but rather seen as opportunities for learning, teaching, and transformation (Bass, 1990). The counterpart to transformational leadership is transactional leadership, which has been associated with mediocracy and using fear to motivate employees to perform their jobs well (Bass, 1990).

Understanding the definition of terms such as employee engagement, transactional leadership, transformational leadership, and EI can help when clarifying the relationships between these constructs. Leaders who practice transformational leadership tend to have higher levels of EI than leaders who are more transactional. EI, at its core,

focuses on empathy and understanding the emotions and situations of others as well as oneself (Salovey & Mayer, 1990).

While there is an abundance of research that shows the relationship between a leader's EI level and overall employee engagement, there are only a handful of studies that attempt to define the relationship between leader EI levels and employee engagement in a healthcare-specific setting (e.g., Danquah, 2022; Spano-Szekely et al., 2016; Zhu et al., 2015; Zwink et al., 2013). Of the few studies that exist, the majority focus on the EI levels of clinical nurse managers and how they affect their subordinates. There have been no studies identified that look at non-clinical employees in a healthcare setting or the comparison between EI levels required by clinical employees compared to non-clinical employees, as measured by their employee engagement. For the purposes of this study, clinical employees are defined as employees who spend more than 50% of their time at work in direct patient care. This definition comes from Press Ganey Associates, the company that created the assessment tool for employee engagement aspects related to their leader that was used for this research. This study will provide a better understanding of what the two categories of employees in a healthcare setting require from their leader to be engaged in their work and to remain focused on a company's mission and vision. Thus, the overarching research question of this study is: Will clinical employees tolerate lower levels of leader emotional intelligence to be engaged in their jobs when compared to their non-clinical counterparts?

Significance of the Problem

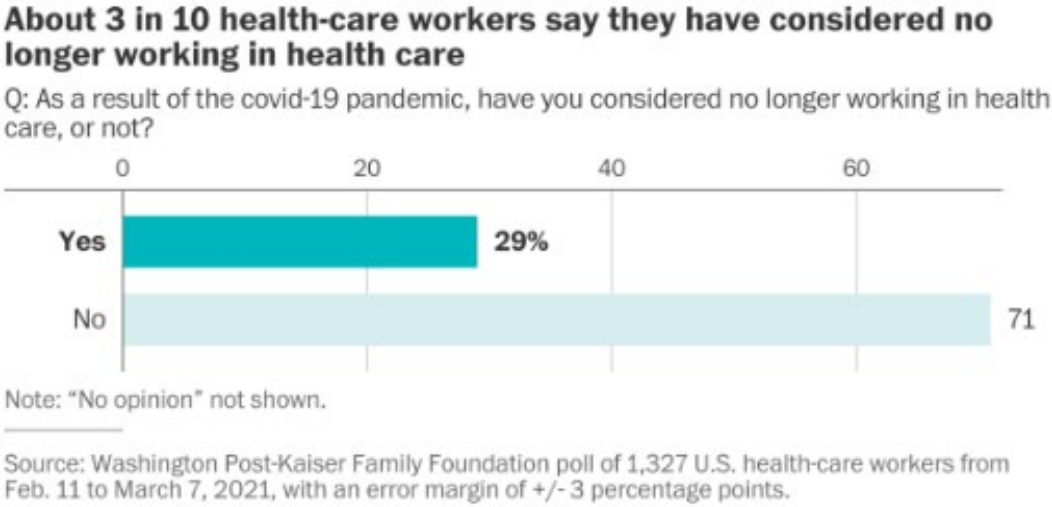
After enduring the global coronavirus pandemic and the period known as *The Great Resignation* in the U.S. job market, there is a renewed focus on employee retention. Human resource professionals from every industry are working to place an increased focus on employee retention strategy and practice (Nelson & Duxbury, 2021; Tessema et al., 2022). In the wake of the coronavirus pandemic, healthcare organizations were left with an abundance of clinicians in a state of severe burnout and emotional disarray (Mansueto et al., 2021; Moll et al., 2022; Traylor et al., 2021). As a result of this increased burnout and emotional distress, clinicians—as well as non-clinical employees—are increasingly seeking a change in job function or are leaving the healthcare industry altogether (Tabur et al., 2022). A data brief released by the American Hospital Association in 2022 regarding the issue of healthcare workforce turnover cited a Washington Post-Kaiser Family Foundation poll conducted in early 2021. With a sample size of 1,327 healthcare workers, the survey results showed that three in 10 healthcare workers said they considered leaving their job in healthcare altogether due to the impact of the COVID-19 pandemic (Wan, 2021). Furthermore, the same poll reported that approximately six in 10 respondents believed the coronavirus pandemic harmed their mental health (Wan, 2021).

Figure 1 indicates that nearly 30% of healthcare workers have considered leaving the industry altogether in the wake of the COVID-19 pandemic. If they choose to leave, their intent to return to the industry is unclear. If these workers leave over the next 2 to 3 years, there may be a massive shortage in clinical and clinical support positions that will

affect patient care. Recently, the United States has begun to see a shortage of candidates for positions that require credentials such as registered nurse, pharmacy technician, laboratory technician, imaging technician, and respiratory therapist (Bourgault, 2022; Traynor, 2022).

Figure 1

Strains on the Healthcare Industry's Workforce Post-Pandemic



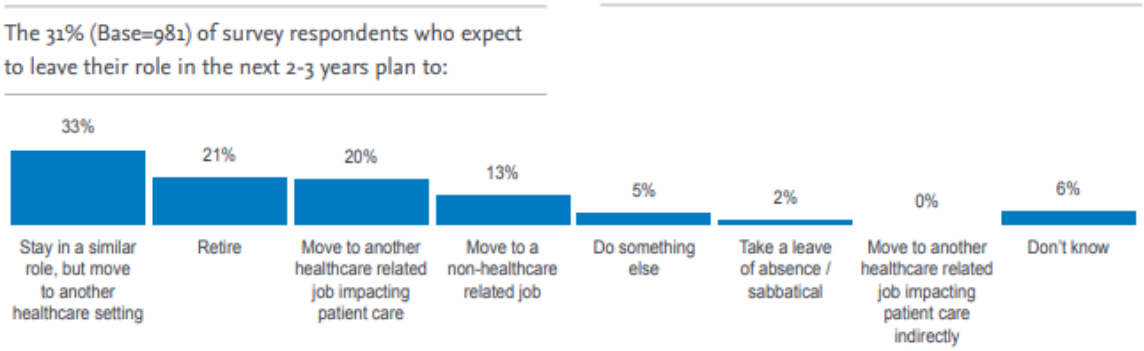
Note: From "Burned Out by the Pandemic, 3 in 10 Healthcare Workers Consider Leaving the Profession," by William Wan, 2021, *The Washington Post* (https://www.washingtonpost.com/health/2021/04/22/health-workers-covid-quit/). In the public domain.

Figure 2 is just a small piece of a much larger report but illustrates the impact that the coronavirus pandemic had on clinical employees working in a healthcare-specific setting. This graph from Goodchild et al.'s (2022) report, entitled *Clinician of the Future*, illustrates the sense of urgency healthcare systems must have in understanding how to retain their clinical workforce in a post-pandemic environment. The report details the

expectation of approximately 31% of clinicians globally, and 47% of workers in the U.S. healthcare industry to likely leave their current role in the next 2 to 3 years (Goodchild et al., 2022).

Figure 2

The Impact of the Coronavirus Pandemic on Clinical Employees Working in a Healthcare-Specific Setting



Note: From *Clinician of the Future* (p. 78), by L. Goodchild, A. Mulligan, E. S. Green, and T. Mueller, 2022, Elsevier Health (https://assets.ctfassets.net/zlnfaxb2lcqx/6ons3y4rEyATfBqNkN4fYu/0f0b54188bc1abf341253ebe674f3a16/Clinician-of-the-future-report-online.pdf). Copyright 2022 by Elsevier Health.

Figure 1 and Figure 2 aid in visualizing the current employee retention crisis in the healthcare industry as it exists today. It is important to gain a more granular understanding of what employees working in the healthcare sector of the United States require to engage and remain engaged with the HCO's mission, vision, and culture. Literature shows consistently that leader EI levels are strongly related to employee satisfaction (Milhem et al., 2019). Research has found that having engaged employees often leads to better organizational performance and innovation (Bin Shmailan, 2016;

Harter et al., 2002; Katsaros et al., 2020). Currently missing from extant research is an understanding of the differences that may, or may not, be present when it comes to the level of EI needed from leadership in an HCO to keep clinical and non-clinical employees engaged. A better understanding of this area of research may expose the need for differentiated leadership training within the healthcare industry for clinical and non-clinical leaders. For instance, the transition from clinician to clinical leader is often a difficult one. While clinicians typically exhibit EI during direct patient care, once they transition into a clinical leadership role, they may not understand how to apply the principles of EI when leading clinical employees (Delmatoff & Lazarus, 2014; Tyczkowski et al., 2015).

Theoretical Basis

The central framework of this research expands on current and existing studies showing evidence of a positive relationship between increased employee engagement levels and high levels of leader EI (Brunetto et al., 2012; Mahon et al., 2014; Ravichandran et al., 2011; Saks, 2006; Salovey & Mayer, 1990; Wollard & Shuck, 2011). This research will specifically focus on the U.S. healthcare sector and more specifically focus on the differences that may exist in the amount of leader EI tolerated from clinical and non-clinical employees to be engaged with their employer and even remain in their careers within the healthcare field. While several studies have aimed to better examine the impact leader EI has on employees and their engagement in a healthcare setting, these studies almost exclusively focus on nurse managers and their employees. Very few studies focus on other types of clinicians and their employees. In addition, no studies

exist examining non-clinical leaders and their employees in a healthcare setting, which has created a gap in the literature that requires further exploration. Acknowledging this gap highlights the need to better define the leadership and EI areas of academic study, which led to this research.

Leadership Theory – Transformational and Transactional Leadership

Leadership theory describes both how and why certain individuals become leaders. The first notable work in this area was the publication of *The Great Man Theory* in the 1840s (Khan et al., 2016). *The Great Man Theory* alluded to the understanding that leaders are born and not made, thus leadership attributes could not be taught to an individual. This evolved over time to give way to our present understanding of leadership theory, which is that leaders are likely made and not born, meaning leadership traits and practices can be taught. Two prominent types of leadership, transactional and transformational, and the understanding of how they affect employees contribute to this study. Transactional leadership practices yield a leader who likely micromanages employees, puts their needs above the needs of their employees, and rewards employees who go above and beyond, while giving little acknowledgment to those who simply do their job and immediately reprimanding employees who make mistakes and/or underperform (Avolio & Bass, 1995; Bass, 1990). The transactional leadership style is related to mediocracy and low levels of employee engagement (Bass, 1990).

Transformational leadership focuses on the transformation or growth of employees. A leader practicing transformational leadership could empathize with employees and work to understand their emotions (Bass, 1990; Harms & Crede, 2010).

Transformational leadership practices reward and recognize employees for going above and beyond, while also recognizing employees who do their job and do it well (Avolio & Bass, 1995; Bass, 1990, Choi et al., 2016). Unlike transactional leadership, transformational leadership uses employee mistakes and/or shortcomings as an area for education, understanding, and growth (Avolio & Bass, 1995; Bass, 1990; Voet, 2014). From this understanding of both transactional and transformational leadership, researchers, academics, and practitioners alike have been able to demonstrate that transactional leadership practices are associated with mediocracy, whereas transformational leadership practices can yield increased ingenuity, satisfaction, ownership behavior, and performance for an organization through its human capital (Avolio & Bass, 1995; Bass, 1990; Cavazotte et al., 2012; Mujkić et al., 2014).

Emotional Intelligence Theory – The Study of Emotional Intelligence

The conceptualization of EI did not occur until 1990, when Peter Salovey and John Mayer published their seminal work entitled *Emotional Intelligence*. EI is an area of study rather than a singular theory. EI theory has four main components: self-awareness, self-regulation, social awareness, and the management of relationships (Bradberry & Greaves, 2009). Empirical frameworks define EI as

> a set of skills hypothesized to contribute to the accurate appraisal and expression of emotion in oneself and in others, the effective regulation of emotion in self and others, and the use of feelings to motivate, plan, and achieve in one's life. (Salovey & Mayer, 1990, p.185)

While the end of this definition refers to "one's life," the ability to understand, harness, and use emotions are all motivating forces that arouse, sustain, and even direct various human activities. These activities are related to the attributes of a solid leader (Bass, 1990; Leeper, 1948; Salovey & Mayer, 1990). With this understanding of EI, it is important to note the ways in which it may foster a better leader and, therefore, increase employee engagement. Research points to the notion that individuals who understand the emotional process and are endowed with the ability to control their emotions through their cognitive mood, may be able to create a better outcome for themselves and others (Bradberry & Greaves, 2009; Hoffman, 1984; Salovey & Mayer, 1990).

Contributing Factors of Leader EI to Employee Engagement

Studies have shown evidence of the relationship between high leader EI levels and increased levels of reported employee engagement. In addition, higher levels of employee engagement are related to increased organizational performance and innovativeness, as well as an increased employee ownership mentality (Bin Shmailan, 2016; Harter et al., 2002). Few of these studies look specifically at the healthcare industry, with no studies examining nuances that may exist between clinical and non-clinical employees working for an HCO. With the current state of healthcare staffing in the United States, it is now more important for researchers and practitioners to understand how leaders should be chosen and/or trained in an HCO. It is important to better understand the level at which employees are engaged by leader EI, and to examine if it differs between the two types of employees—clinical and non-clinical—that exist in the healthcare sector. A better understanding of the effect that leader EI has on employee

engagement in the U.S. healthcare sector will help researchers identify what is required to retain employees in this specific setting.

Research Question and Hypothesis

The overarching research question for this study centers around evaluating whether significant relationships between leader EI levels play a differentiated role in the engagement levels of clinical and non-clinical employees working for an HCO. It is important to note that this research uses two different data sets to show evidence that supports and/or rejects the study's hypotheses. These data sets from July 2022 can be linked by either leader name or department number. Throughout the literature, several consistencies have led to the development of this research question: (1) leadership style is related to EI levels (Delmatoff & Lazarus, 2014; Milhem et al., 2019), (2) high levels of employee engagement are related to better firm performance and innovation (Katsaros et al., 2020), (3) leading with significant levels of EI is related to increased employee engagement levels and subsequently increased job satisfaction (Milhem et al., 2019; Mahon et al., 2014), and (4) there exists sparse literature, outside of nursing leadership, that examines the impact that leader EI levels have on an HCO and its employees.

Hypothesis 1: Clinical leaders will score higher on their emotional intelligence assessment compared to their non-clinical counterparts working in the same public healthcare setting.

Academic literature points to the general understanding that clinicians must be able to display empathy, a main component of EI, when working in a patient setting to cultivate success in their careers where the primary focus is caring for patients

(Delmatoff & Lazarus, 2014; Ioannidou & Konstantikaki, 2008; Mercer & Reynolds, 2002; Weng, 2008). Data used to show evidence for the support or rejection of this hypothesis came from a singular data set. The data used for Hypothesis 1 came from a leadership EI assessment conducted in 2022 from a random sample of clinical and non-clinical leaders. The specific tool used to gather these data was an EI assessment from TalentSmart known as the EI 2.0 assessment.

Hypothesis 2: Clinical employees will tolerate a lower level of emotional intelligence from their leader to be as engaged[2] as non-clinical employees working in the same public healthcare setting.

Many studies illustrate the importance of EI in clinical practice and clinical leadership. However, few studies focus on the specified issue of what keeps clinical leaders from being known as empathetic toward employees. The studies that do exist surrounding this specific topic explain that this is true because patient-centered empathy and employee-centered EI are not one and the same (Delmatoff & Lazarus, 2014; Tyczkowski et al., 2015). Clinical employees, while very skilled, work from a guided operational basis governed by strict policies, procedures, laws, and guidelines for best practices to maximize outcomes. From such a structured area focused on the outcome of the patient, clinical employees tend to see things as black and white with little gray area or concern other than the patient (Grol, 2001). Simplified, the findings from this research

[2] Engagement levels were compiled using the results of a 2022 Press Ganey Associates employee engagement survey conducted by a mid-sized healthcare system in the upstate region of South Carolina. Press Ganey Associates owns the world's leading human experience platform for HCOs. They bring deep expertise, layered on top of their groundbreaking assessment technology.

will allow for a better understanding of the relationship between leader EI levels and employee engagement in a healthcare setting. The statistical testing targeted the level of leadership needed, given their function (i.e., clinical versus non-clinical employees) within the HCO. The first data set used was the EI 2.0 assessment mentioned in Hypothesis 1. The second data set used came from an employee engagement survey conducted in 2022, which was completed to understand employees' engagement levels in relation to their leader's management practices. These data sets can be combined by using the leader's name and department as a point for cross-reference for the data analysis process.

Conclusion

While there are studies examining the use of EI and its relationship with various business practices and organizational outcomes, very little is known about the impact that leader EI levels have in the U.S. healthcare sector. This study will provide a better understanding about what healthcare workers require from their leaders to stay engaged in their roles. This is the first study to examine relationships that may exist between a healthcare leader's assessed EI level and their employees' engagement level, tied specifically to the leader's management practices. Additionally, this is the first study to compare the two types of employees that exist within the healthcare industry (clinical and non-clinical) and their leadership requirements for increased engagement. Thus, the overarching goal of this research is to provide insight into the role leader EI levels play for each of the two types of employees in HCOs. More specifically, this study will introduce new research that will provide a better understanding of how to retain and

motivate the two types of employees working in a healthcare setting when it comes to the employees' engagement and perception of their leader. This is important, as these employees appear to be leaving healthcare or changing roles/organizations at an exponential rate.

Chapter 2: A Review of Literature

Introduction

This literature review discusses and explores both seminal and current academic works regarding EI and its relationship to management science—more specifically, leadership theory. At a granular level, this literature review conceptualizes the depth of impact of the EI levels of healthcare sector leaders on employee engagement for clinical and non-clinical employees. In this research, it is important to note that literature regarding the EI needs of non-clinical employees comes primarily from the general principles of EI and how it relates to employee engagement. This is because few, if any, studies exist that focus on non-clinical employees in a healthcare setting. This literature review begins by examining the research that exists about the history, conceptualization, and utilization of leadership theory and EI. Since the primary focus of this research is to examine the impact that leader EI levels (the independent variable) have on employee engagement levels (the dependent variable), it is vital to understand and analyze the scarce amount of literature that exists differentiating employee engagement from employee satisfaction. This literature review highlights the significant gaps in the literature that exist in understanding the potential varied EI levels required from leaders in the U.S. healthcare sector pertaining to the engagement levels of clinical vs. non-clinical employees. While there is minimal literature focusing on the differences that leader EI plays on the engagement levels of clinical employees, there is little-to-no literature that examines the role of leader EI levels in a non-clinical department working in the healthcare sector. Thus, there is no current study that compares the levels of EI

needed from clinical and non-clinical employees to be engaged in their work in a healthcare setting.

The first section of this literature review provides a historical overview of studies focused on leadership theory, EI, and various types of intelligence that contribute to the development of EI theory (Salovey & Mayer, 1990). Intelligence types such as social intelligence, personal intelligence, interpersonal intelligence, and cognitive intelligence all play a role in defining and framing what we know today as EI. It is important to note that while EI is considered a viable form of intelligence, foundational literature shows that has not always been the case, and a few critics of that viewpoint still exist today (Landy, 2005; Locke, 2005; Salovey & Mayer, 1990).

Secondly, this literature review focuses on understanding the difference between employee satisfaction and employee engagement, and how each is a component of organizational behavior (Shuck, 2011; Shuck et al., 2017). The general understanding is that organizational behavior, the larger umbrella encompassing organizational culture, has an impact on leadership styles/traits as well as leadership training efforts (Shein, 1996). In both foundational and recent studies, leadership styles have been shown to have a strong relationship with varying levels of EI, which has been linked to overall employee engagement, employee turnover rates, and, subsequently, organizational performance (Bass, 1990; Breevaart et al., 2014; Shuck, 2011).

The third section of this literature review focuses specifically on the effects of the correlation between transformational leadership style and EI. This correlation is explored in relation to employee engagement. This section of the literature review also focuses on

tying this topic to the use of EI in the U.S. healthcare sector, specifically regarding clinical leadership. It is vital to examine certain nuances described by some literature sources—for example, clinical leaders who may present with a high level of EI towards patients, but not toward the employees that they lead due to various *capacity restraints*[3] that may exist when one is both a clinician and a leader (Delmatoff & Lazarus, 2014; Tyczkowski et al., 2015).

Unfortunately, little research has been done that explores the impacts of leader EI levels on non-clinical employees working in a healthcare-specific setting. Therefore, this research is conducted on the assumption that employees working in non-clinical departments within the U.S. healthcare sector have minor differences, if any, from those working in other sectors of business. For example, an accounting manager working for a healthcare system and an accounting manager working for a technology company would not be different in terms of what they desire from their leader to be engaged. Thus, the general findings of the impacts of leader EI levels on employee engagement will suffice for the purpose of this research.

Historical Background

History of Leadership Theory

While there has been an abundance of great leaders throughout history, from Julius Caesar (100 B.C.) to Martin Luther King, Jr. (1960), the actual conceptualization of leadership as a field of study did not occur until approximately 20 years before

[3] Capacity restraints refer to other added job responsibilities such as budgeting, scheduling, meetings, employee evaluations, etc., that may cause time conflicts between one's dual roles.

President Abraham Lincoln took office. In the 1840s, *The Great Man Theory* boldly claimed that great leaders are born and are not made or trained (Benmira & Agboola, 2021; Borgatta et al., 1963). More than 100 years after the publication of *The Great Man Theory*, the next prominent theory in leadership, known as *Trait Theory*, was introduced. *Trait Theory* was an evolution from *The Great Man Theory,* stating that leaders are either born or made with certain qualities such as intelligence, responsibility, creativity, critical thinking, and other values that make them excel in various leadership roles (Benmira & Agbool, 2021; Khan et al., 2016). In the 1940s and 1950s, the study of leadership theory focused more on the psychological aspects associated with being a leader, which subsequently became known as a focus of the behavioral era. *Behavioral Theory*, an evolution of *Trait Theory*, was the first to explain that leaders are largely *made* as opposed to being *born* (Benmira & Agbool, 2021). *Behavioral Theory* focused on examining specific leadership behaviors that can be learned/taught to ensure the creation and success of an effective leader (Benmira & Agbool, 2021; Conger & Kanungo, 1987). In the 1960s, both contingent and situational leadership theories were developed and influenced academic research about leadership. These theories focused less on leadership traits and more on the influence of the environment and various situations on the leader-follower dynamic (Benmira & Agbool, 2021). In the 1990s and early 2000s came the advent of two leadership theories that remain widely accepted and studied today: transformational and transactional leadership (Bass, 1990; Benmira & Agbool, 2021). The founding of these two theories contested the former focus of leadership studies by recognizing that focusing on one aspect or dimension of leadership could not address the

abundance of complexity that the phenomenon entails (Bass, 1990; Benmira & Agbool, 2021; George, 2000).

Transformational versus Transactional Leadership

Literature describing the relationship between these two prominent leadership styles and employee engagement is voluminous. Starting in 1990, transformational leadership was defined as a leadership style that focused on building up employees, even when they make a mistake, and identifying opportunities for human capital growth and development, versus looking for reasons that may require an employee to be reprimanded (Avolio & Bass, 1995; Bass, 1990). Transactional leadership, like transformational leadership, has a reward and recognition component for a job well done. However, in contrast, transactional leadership is based on the understanding that employees are threatened and/or penalized for not doing sound work or meeting expectations (Avolio & Bass, 1995; Bass, 1990). These studies showed that under a leader practicing transactional leadership styles, an employee sees job performance as a *transaction* where there is a promise of reward for good work and a threat of discipline for poor performance or underperforming (Bass, 1990).

Over the last several decades, numerous studies have cultivated new findings in the areas of leadership theory and interrelated fields. Throughout this time, academics and practitioners alike have been able to show evidence that transactional leadership practices can be associated with mediocracy, whereas transformational leadership practices yield increased ingenuity, satisfaction, ownership behavior, and performance for a firm through its human capital (Avolio & Bass, 1995; Bass, 1990; Cavazotte et al.,

2012; Mujkić et al., 2014). Given that transformational leadership typically involves a close relationship with followers in the leader-follower dynamic, the study of EI has become a niche area of focus within the research community when it comes to transforming employees (George, 2000; Harms & Crede, 2010). This close connection to followers requires leaders to have the ability to empathize with members of their team, which is a large component of EI (Salovey & Mayer, 1990).

EI

Academic works studying the influence of EI on employee engagement are prominent in past and present literature (Bass, 1990; Brunetto et al., 2012; Mahon et al., 2014; Milhem et al., 2019; Salovey & Mayer, 1990). However, this relationship has not been a main area of concentration for practitioners and scholars for quite as long as other management concepts and EI as a general construct. The conceptualization of EI did not occur until 1990 when Peter Salovey and John Mayer published their seminal article, "Emotional Intelligence." This was the first academic work that focused on this newly defined form of intelligence, EI. The study of EI examined the role that relationships, empathy, and understanding play in the world and in the workplace (Salovey & Mayer, 1990). Interestingly, this was the same year that Bernard Bass published his foundational article entitled "From Transactional to Transformational Leadership: Learning to Share the Vision," which gave way to an increased focus on the practices of transformational and transactional leadership (Bass, 1990). It is important to note that while each article does not reference the other, they each mention concepts that the other defines as vital components of being a strong leader. Salovey and Mayer (1990) highlight the importance

of leadership style and leadership mentality, while Bass (1990) highlights the role that emotions play in being or becoming a great leader, one that is transformational at its core. While EI was conceptualized for the first time in 1990, its roots are much older and can be traced to the theory of emotion, which was published by John Dewey, an American psychologist, in 1895 as "The Theory of Emotion" in *Psychological Review*. Dewey postulated that emotion, at its core, is a mode of behavior that is purposive or has a significant intellectual component. In a more general sense, EI has been defined as:

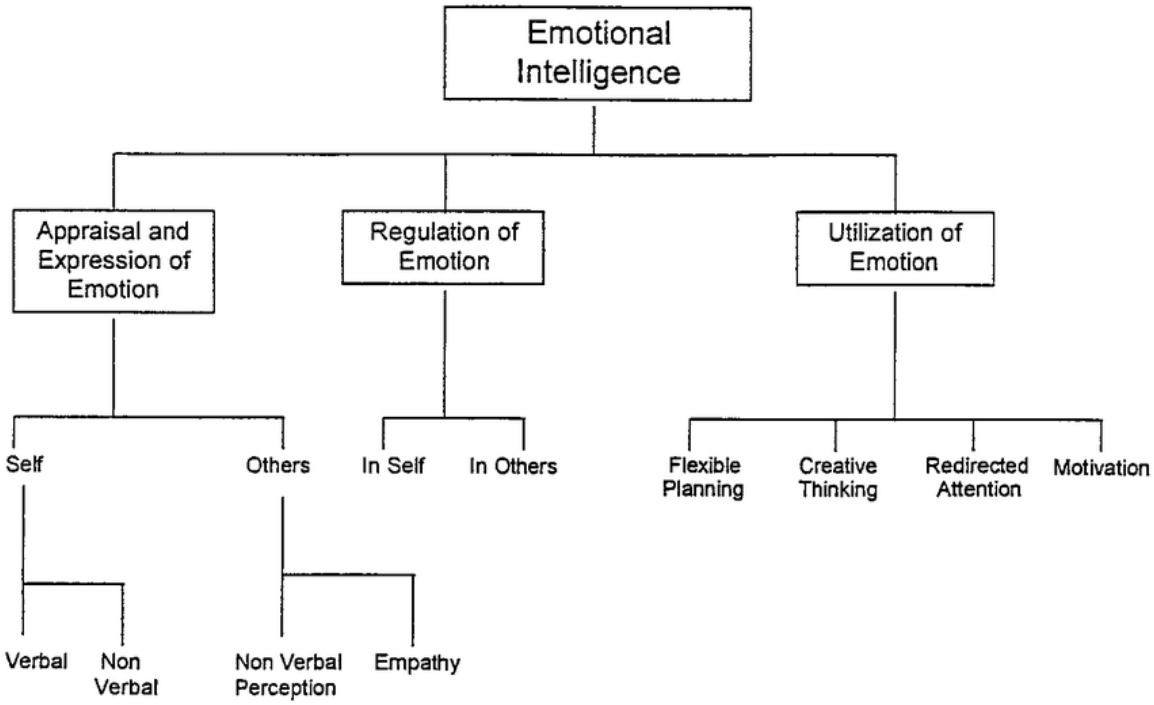
> a set of skills hypothesized to contribute to the accurate appraisal and expression of emotion in oneself and in others, the effective regulation of emotion in self and others, and the use of feelings to motivate, plan, and achieve in one's life. (Salovey & Mayer, 1990, p. 185)

While the end of this definition refers to "one's life," the ability to understand, harness, and use emotions are all motivating forces that can arouse, sustain, and even direct various activities that can be associated with the attributes of a solid leader (Bass, 1990; Leeper, 1948; Salovey & Mayer, 1990). This more focused research defines EI as a subset of social intelligence that involves the "ability to monitor one's own and other's feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and actions" (Salovey & Mayer, 1990, p. 190). With this definition, the role that empathy plays in leading and engaging followers can be better understood. Examining the definitions of transformational leadership and EI, one can visualize what employees desire most, which is a leader who is relatable, personable, and of good character (Choi et al., 2016; Hargett et al., 2017; Mahon et al., 2014).

Salovey and Mayer (1990) explained that EI is composed of three interrelated branches, defined as (1) the appraisal and expression of emotion, (2) the regulation of emotion, and (3) the utilization of emotion. Each of these components can be broken down further to better understand their conceptualized theory. This is seen in the following "3-branch" conceptual model (Figure 3).

Figure 3

Conceptualization of Emotional Intelligence



Note: From "Emotional Intelligence," by P. Salovey & J. D. Mayer, 1990, *Imagination, Cognition, and Personality, 9*(3), p.190 (https://doi.org/10.2190/DUGG-P24E-52WK-6CDG). Copyright 1990 by Sage Publications.

The first component, the appraisal and expression of emotion, occurs when information enters the mind's perceptual system (Salovey & Mayer, 1990). These appraisals can and should be conducted on both oneself and others. When appraising and

expressing the emotion of oneself, it is important to assess both verbal and non-verbal thoughts, cues, and actions (Mayer et al., 2016; Salovey & Mayer, 1990). Likewise, when appraising and aiding in the expression of others' emotions, it is vital to—in a contemporary idiom— "read" someone's non-verbal actions or cues to help regulate perceptions and understand the emotion that is likely about to be conveyed (Salovey & Mayer, 1990).

Once an emotion has been appraised and/or expressed, in the second component, the ability to regulate emotion in oneself and in others comes into play. The regulation of emotion is how an individual chooses to process their emotions based on circumstances and/or the people around them. This is described as one's mood (Salovey & Mayer, 1990). While mood is a mental state, it can be a state derived from experiences and meta-experiences that have been conceptualized as "the result of a regulatory system that monitors, evaluates, and sometimes acts to change mood" (Mayer & Gaschke, 1988, p. 102). Thus, mood is a state that can be regulated by having a better understanding of emotions and the role they play in oneself and others. Mood can also be regulated by the people with whom an individual associates (Salovey & Mayer, 1990). For others, the regulation of emotion deals with how one attempts to help others process their emotions based on circumstances or the people around them. The regulation of EI in others is "the ability to regulate and alter the affective reactions of others" (Salovey & Mayer, 1990, p. 197).

After the appraisal and regulation of emotion occur (i.e., the first two components of EI), the third component, the utilization of that emotion in an intelligent way, becomes

paramount. The utilization of emotion may consist of flexible planning, creative thinking, redirected attention, and/or motivation (Salovey & Mayer, 1990). When actively engaging in flexible planning, mood affects the way a person perceives the likelihood that positive and negative events will occur (Bower, 1981). Thus, people who are in a more positive mood will likely be of the mindset that positive events are more likely to occur than negative events. The reverse can be said for people who are generally in more unpleasant moods. Therefore, people who are generally in better moods may be more likely to make a greater number of future plans and, therefore, be more prepared to take advantage of opportunities as they present themselves (Mayer, 1986; Salovey & Mayer, 1990).

Like flexible planning, mood plays a significant role in the utilization of emotion and an individual's ability to engage in relevant aspects of critical thinking. Salovey and Mayer (1990) stated, "Mood may also assist in problem-solving by virtue of its impact on the organization and use of information in memory" (p. 199). Essentially, individuals may find it easier to categorize various elements of problems as they present themselves to allow an easier resolution if they are generally in a more positive mood (Isen & Daubman, 1984). From this ability to categorize and organize thoughts surrounding problems or issues, one will likely have an increased ability to engage in creative problem-solving (Isen, Daubman, & Nowicki, 1987). A related study yielded evidence that participants who were exhibiting a more positive mood were more likely to have unusual or innovative ideas compared to those who exhibited a negative mood more frequently (Isen et al., 1985). This increased innovativeness in individuals exhibiting a

more positive mood comes from the notion that happy individuals may be more capable of understanding category-organizing principles (Isen, Daubman, & Gorgoglione, 1987; Salovey & Mayer, 1990). A better understanding of categorical organization allows individuals to utilize critical thinking to better integrate and remember information (Isen, Daubman, & Nowicki, 1987).

Redirected attention refers to how attention may be redirected to new problems or issues, should they arise (Bradberry & Greaves, 2009; Salovey & Mayer, 1990). When people are struck by a change or problem outside of everyday life, the change or problem will typically invoke a redirection of emotion to what is of more immediate significance in that person's life (Bradberry & Greaves, 2009; Salovey & Mayer, 1990). This is a frequent occurrence, and one example would be a single mother who has just been diagnosed with cancer. Her emotions would be redirected away from that of everyday life and trivial problems that exist such as work-related issues, relationship-related issues, financial-related issues, and so on. The mother's emotions are redirected to help her better understand herself and her current situation. Thus, we as humans learn to capitalize on our capacity and ability to understand and use the emotional process to be able to refocus our attention on the most significant stimuli in the present time (Mayer et al., 2000; Salovey & Mayer, 1990).

Finally, we learn to utilize emotions as a form of motivation. Mood plays a large role in one's persistence and endurance (Mayer & Gaschke, 1988; Salovey & Mayer, 1990). An individual with a negative mindset will likely show little motivation for an array of things in their life (e.g., work, education, socioeconomic advancement) while an

individual with a positive mindset and mood will likely have substantial motivation, which may push them to be more persistent in the pursuit of the things they desire most in life (Bandura & the National Institute of Mental Health [NIMH], 1986). From this, we can draw the conclusion that mood has an impact on the ability of individuals to utilize emotions properly and in a way that is beneficial to themselves and others.

Again, it is generally understood that not all individuals can control their emotions and/or mood, and most cannot control them all the time. However, those individuals who understand the emotional process and are endowed with the ability to control their emotions through their cognitive mood may be able to best create a better outcome for themselves and others. These individuals can be deemed emotionally intelligent on some or many levels. An individual who has little-to-no EI can become more emotionally intelligent over time by making a conscious effort to better understand the role that their mood plays on their emotions and thus their life and the lives of those around them (Bandura & NIMH, 1986).

Foundational Forms of Intelligence

The study and conceptualization of multiple forms of intelligence pre-existed the conceptualization of EI and laid the foundation for EI research (Salovey & Mayer, 1990). While it may seem that EI was derived from the study of leadership and psychology on its own, other forms of intelligence contributed to the overall understanding of EI even if they are only loosely related to EI today. These forms of intelligence include social intelligence, personal intelligence (PI), interpersonal intelligence, and cognitive intelligence. Intelligence encompasses a broad set of abilities and has been defined as

"the aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment" (Wechsler, 1944, p. 3).

Social intelligence was originally explored by Dr. Edward Thorndike, an American psychologist. Thorndike (1920) defined this sub-form of intelligence as one in which an individual possessed the ability to perceive their own, and others', internal states, motives, behaviors, and morals. The ability to perceive these social cues and constructs allows an individual with social intelligence to use their perceptions to act optimally in a manipulative manner that is most favorable to themselves (Salovey & Mayer, 1990). Since its conceptualization, social intelligence has been further defined in several ways. Definitions include (1) "the ability to understand and manage people" (Thorndike & Stein, 1937, p. 275), (2) "the ability to manipulate the responses of others" (Weinstein, 1969, p. 755), and (3) the ability to "get others consistently and voluntarily to do the things he wants them to do and even like doing so" (Bureau of Personnel Administration Staff, 1930, p. 73). While each of these definitions differs slightly, the consensus is that social intelligence, at its core, is a manipulative form of intelligence, since traditional views of this intelligence type omit any consideration for one's own and other's emotions (Dienstbier, 1984; Hoffman, 1984). Social intelligence, from a traditional viewpoint, is the opposite of what we have defined as EI. Because of this, social intelligence could be more closely related to transactional leadership, as it aims to induce someone to do what another individual or group desires for that individual's or group's gain or primary benefit (Dienstbier, 1984; Hoffman, 1984; Thorndike & Stein, 1937).

Personal intelligence (PI) has been defined as "the capacity to reason about personality and to use personality and personal information to enhance one's thoughts, plans, and life experiences" (Mayer, 2008, p. 210). Every individual is different in the way they look at themselves and assess how they fit into the larger picture of life. Thus, every individual possesses unique emotional reactions, thoughts, plans, traits, and self-understanding (McAdams, 1996). These differences contribute to an individual's level of perceived PI. PI consists of four specific components, which include (1) the ability to recognize personality-relevant information in oneself and others, (2) the ability to form information into an accurate representation of personality, (3) the ability to guide one's choices by using personality-specific information where it is applicable, and (4) the ability for one to synthesize one's plans, goals, and life experiences to have a positive outcome (Mayer, 2008). These four components illustrate that PI, unlike EI, focuses intently on knowing oneself and controlling certain aspects of one's own life, and not the lives of others, to create the best possible outcome.

Interpersonal intelligence has been defined as the "capacity to discern and respond appropriately to the moods, temperaments, motivations, and desires of other people" (Morgan, 1996, pp. 286–287). As opposed to PI, which nearly exclusively focuses on knowing oneself, interpersonal intelligence focuses exclusively on knowing and understanding others. An individual who possesses an extreme amount of interpersonal intelligence is inclined to be focused on elements of global and social orientation during their interaction with a group or individual (Morgan, 1996).

Interpersonally intelligent individuals focus on the betterment of a group or others more than the betterment of themselves.

Cognitive intelligence simply refers to human mental capacity (Salovey & Mayer, 1990). The American Psychological Association defines cognitive intelligence as "one's ability to learn, remember, reason, solve problems, and make sound judgments, particularly with emotional intelligence" (American Psychological Association, 2023). Understanding that cognitive intelligence contributes significantly to who each individual is and how they act allows for a better understanding of the foundations of EI. EI has been shown to be closely related to cognitive intelligence (Cote & Miners, 2006). Individuals who possess higher cognitive abilities are typically more emotionally intelligent (Cote & Miners, 2006).

Employee Engagement vs. Employee Satisfaction

There are few studies that clearly delineate the difference between employee engagement and employee satisfaction. This delineation has not been a significant focus in academic research; therefore, there is no consistent definition for each construct. Harter et al. (2002) defined an employee's engagement and overall job satisfaction as the degree to which an employee is influenced by the behavior and actions of management. Academics and practitioners alike measure employee engagement and employee satisfaction by measuring an employee's level of commitment to an organization (Bin Shmailan, 2015; Breevaart et al., 2014; Little & Little, 2006). Many times, the two terms are used interchangeably. However, for the purpose of this research, it is vital to understand and define employee satisfaction and employee engagement as separate terms

that are interrelated, but not identical. It is also important to identify whether employee engagement is part of employee satisfaction or if employee satisfaction is part of employee engagement.

Employee engagement and employee satisfaction have both been shown to be positively related to the ability of organizations to become more competitive and profitable (Bin Shmailan, 2015; Harter et al., 2002). However, establishing a specific and consistent definition for employee engagement over the last 2 or more decades has been challenging (Shuck et al., 2017). This is largely due to the use of entangled terms such as job engagement, work engagement, organizational engagement, and so on (Shuck, 2011; Shuck et al., 2017). This does not mean a viable definition of employee engagement does not exist. Employee engagement has been defined as "an individual employee's cognitive, emotional, and behavioral state directed toward desired organizational outcomes" (Shuck & Wollard, 2010, p. 103), while employee satisfaction has been described as a measure of how satisfied an employee is with his or her job and immediate working environment (Sageer et al., 2012).

In a robust meta-analysis of employee satisfaction, employee engagement, and business outcomes, Harter et al. (2002) stated that "the term employee engagement refers to the individual's involvement and satisfaction with as well as enthusiasm for work" (p. 269). Examining Harter et al.'s (2002) definition in comparison with Shuck and Wollard's (2010) definition, one can see that they are similar, despite the nearly 10-year gap between the two publications. When comparing the definitions of employee engagement (Wollard & Shuck, 2011) and employee satisfaction (Sageer et al., 2012), it

seems clear that employee engagement is the overarching construct that encompasses employee satisfaction, as an employee who is disengaged will most likely not be satisfied with their work. Further, an employee's engagement level can consist of many facets that affect the relationship between the employee and the organization, while linking the employee's satisfaction to personal performance (Bin Shmailin, 2015).

Leadership, EI, and Employee Engagement

Ample literature exists that shows the relationship between leadership style and the application of EI to employee engagement. However, in many instances, the literature surrounding this topic examines leadership style and EI as intermediaries, not focusing on one specifically over the other. While some academics claim that statements made connecting EI with transformational leadership are bold in nature and consist of minimal substantiating evidence (Landy, 2005; Locke, 2005), experts in the field of EI and leadership theory have concluded that this continued debate is no longer necessary, as substantial evidence shows that transformational leadership and EI have a strong positive relationship (Daus & Ashkanasy, 2005; Elfenbein & MacCann, 2017).

Previous foundational research does not necessarily mention EI, specifically, as a construct used within the academic study of leadership theory (Avolio & Bass, 1995; Avolio & Gardner; 2005; Greenleaf, 1998. However, authors of previous seminal and foundational works almost always mention the importance of leader emotions when it comes to an individual acting as a well-rounded leader who is successful in their endeavors to transform individuals or groups to perform in the best interest of themselves and the organization (Avolio & Bass, 1995; Avolio & Gardner; 2005; Greenleaf, 1998.

Components of EI such as empathy, self-confidence, and self-awareness are key concepts in the practice of transformational leadership (George, 2000; Harms & Crede, 2010). This basis of knowledge helps to establish a solid connection between leadership style and the EI levels of a leader based on the individual's chosen leadership style. It should be noted that leaders do not always adhere to a set leadership style. This may result in a leader who is more situational, meaning they do not hold themselves to a particular set of leadership standards or practices (Avolio & Bass, 1995).

EI and Employee Engagement

The literature provides evidence that increased levels of leader EI assist with the betterment of certain organizational components such as overall organizational performance (Lyons & Schneider (2005), firm financial performance (Katsaros et al., 2020), employee ownership mentality (Naghneh et al., 2017; Wollard & Shuck, 2011; Xu & Thomas, 2011), and organizational behavior (Daus & Ashkanasy, 2005). The focus of research varies regarding EI's relationship with an array of organizational output variables (e.g., employee satisfaction, organizational performance, leadership practices), and a small selection of literature exists specifically pertaining to the interaction between EI and employee engagement. The overarching goal when organizations actively monitor employee engagement is to ensure the organization is equipped to take continuous steps to ensure employees are energetic, passionate, and satisfied with their roles and work environment (Brunetto et al., 2012; Lyons & Schneider, 2005; May et al., 2004). The reason for the recent increased monitoring of employee engagement across most industries in the United States comes from the knowledge that increased employee

engagement leads to increased firm competitiveness and performance (Bin Shmailan, 2015). Over the last decade, studies examining factors that have the greatest effect on employee engagement have started to transition their focus from the relationship between various forms of leadership practice and levels of employee engagement to the relationship between the EI levels of leaders and levels of employee engagement (Danquah, 2022; Levitats et al., 2019; Saha et al., 2023).

Brunetto et al. (2012) contended that previous empirical studies from a variety of disciplines do not provide a singular definition for employee engagement or the factors that are most likely to affect it. However, other researchers have been able to narrow down the factors most likely to affect an employee's engagement level either positively or negatively. May et al. (2004) suggested that antecedents of employee engagement are most likely to be effective leadership, co-worker relations, thought-provoking work tasks, an employee's resources to perform their job to the best of their ability, and just rewards. It has also been stated that while engagement is most likely influenced by management practices, environment, and organizational factors, other variables such as age, gender, and employee personality cannot be ruled out completely, as each employee is an individual with diverse backgrounds (Richman, 2006). Workplace diversity means each employee or group of employees may have different needs, wants, and expectations. Since the early 2000s, multiple studies have sought to establish a positive relationship between EI and/or leader emotions and employee engagement (Brunetto et al., 2021; Mahon et al., 2014; Ravichandran et al., 2011; Saks, 2006; Salovey & Mayer, 1990; Wollard & Shuck, 2011). Some of the studies focus more specifically on EI and

employee satisfaction, since the terms are often used interchangeably; however, they are different in meaning (Lam & O'Higgins, 2012; Sudibjo & Sutarji, 2020; Sy et al., 2006).

EI and Engagement in Clinical Leadership

Academic research to better understand the use of EI within a healthcare-specific setting is scarce. The studies that do exist do not exclusively focus on EI's relationship with employee engagement, but instead focus on one type of clinical leader—specifically, the nurse manager (Akerjordet & Severinsson, 2008; Heffernan et al., 2010; Mansel & Einion, 2019; Spano-Szekely et al., 2016; Tyczkowski et al., 2015; Zhu et al., 2015). While the word *healthcare* describes an industry in a category of its own, the leadership requirements of healthcare organizations are not abundantly different from that of other business sectors operating in the United States. Thus, the healthcare sector is not immune to the consequences of poor leadership practices or the lack of EI in organizational leaders. While healthcare is seen as an inelastic good and/or service, it can still suffer financial hardships due to the growing competitive landscape that exists in the current oligopolistic market (Martin et al., 2011; Mondal, 2013; Suarez-Villa, 2014). This is especially true as the U.S. healthcare model is continuously changing, leaving less room for mistakes and ineffectiveness, especially in leadership (Freshman & Rubino, 2002; Hargett et al., 2017; Vitello-Cicciu, 2002).

As stated earlier in the chapter, the majority of EI-based clinical leadership studies focus on nursing leadership and less on other clinical leaders. Some studies, which are not as abundant in quantity, examine the role EI plays in physician leadership (Mintz & Stoller, 2014). With vast challenges such as a lack of specific leadership and

business training facing clinical leaders, it continues to be a daunting task for hospital recruiters and hospital executives to identify viable clinical leaders, especially when it has been reported that only 12.5% of nurses have an aspiration to seek a leadership role (Tyczkowski et al., 2015).

The transition from a nurse to a nurse manager can be difficult as the focus must shift from applied EI and resiliency with individual patients to applied EI towards a team while acting as a model for resiliency for a team of nurses caring for a group of patients (Akerjordet & Severinsson, 2008; Delmatoff & Lazarus, 2014; Tyczkowski et al., 2015; Zwink et al., 2013). Due to the difficulty in transitioning from caregiver to leader, it has been documented that it can be difficult for nursing leaders, especially nurses new to clinical leadership at the manager level, to shift their focus away from being emotionally intelligent for their patients to being emotionally intelligent towards their employees (Aufegger et al., 2020; Perez, 2021). Like the decrease in the number of clinical employees post-coronavirus, a lack in the supply of clinical leaders can also be seen. This incites concern as to whether clinical leaders are put into place because they actually have a desire to assume a leadership role and possess either the ability to learn necessary leadership skills or already have the existing ability to lead effectively.

Furthermore, it is important to identify to what degree EI is required by clinical employees to be engaged. A clinical leader may not affect employee levels of engagement solely through his or her leadership practices, because a clinician's commitment to their patient(s) and/or their team may be enough to push for successful outcomes on some level (Kane et al., 2007; Naghneh et al., 2017; Teng et al., 2009).

However, evidence indicates that clinical leaders should pay close attention to their leadership style, as it can have an impact on the long-term caring behavior of nurses and their organizational commitment through increased levels of engagement (Naghneh et al., 2017). While nuances do exist between clinical leadership practices, EI usage, and clinical employee engagement, the literature indicates an overwhelmingly positive relationship between high levels of clinical leader EI and clinical employee engagement (Aufegger et al., 2020; Mintz & Stoller, 2014; Perez, 2021; Smith et al., 2009; Spano-Szekely et al., 2016; Tyczkowski et al., 2015; Zwink et al., 2013).

Conclusion

In summary, this review of literature has (1) described the historical background of prominent leadership theories, (2) examined the founding of EI as a field of study while discussing various types of intelligence that contributed to the conceptualization of the topic, (3) examined the role that leadership theory (i.e., transformational leadership) plays with EI, (4) defined the difference between employee satisfaction and employee engagement, (5) illustrated the use of EI by leaders to increase employee engagement, and (5) explored nuances and barriers that exist for clinicians who become leaders and struggle to transfer their EI skills from direct patient care to management of employees.

While combining these concepts helps highlight the unknown, it is important to note that the amount of literature available for each section of this literature review narrows significantly as it relates to the specific research topic of this study. Based on the literature review, EI has been shown through multiple studies to have a direct relationship with employee engagement levels. What is still largely unknown is the level of EI that is

desired by clinical and non-clinical employees to be engaged. It is unknown if the level of leader EI required for maximum employee engagement between these two groups is the same or differs.

Chapter 3: Methodology

This quantitative study worked to develop a better understanding of the effect leader EI has on employees working for an HCO. More specifically, this study aimed to identify a difference between the levels of assessed leader EI required by clinical and non-clinical employees, in comparison, for their being *engaged*[4] in their work. This study used two measurement tools; the first was an EI assessment for leaders, and the second was an engagement survey for participating leaders' direct reports.[5] The results from the two assessments were cross-referenced based on the leader's name and department number, which was found in both the EI assessment and employee engagement survey. By delineating which departments were clinical and non-clinical, this study was effectively able to measure the differences in EI levels that existed between clinical and non-clinical leaders working within the same HCO. From this, the researcher was able to determine if a leader's EI score was related to their direct reports' engagement scores, providing additional evidence regarding how a leader's management style affects their employees.

Design Statement

Studies examining the effect of leader EI in a healthcare-specific setting focus intensely on nursing leadership, with only a handful focusing on EI regarding physician leadership practices. No studies were identified that focus on the effect of leader EI on

[4] *Engaged*, in this context, refers to the level of employee engagement that will be assessed for this research regarding their leader's management (see Figure 5 on page 43).

[5] *Direct report* refers to an employee who reports directly to a leader within a company's organizational structure. For example, a Vice President may have hundreds of reports, but will likely have many fewer direct reports.

non-clinical employees working in a healthcare setting. This study reasonably assumed that non-clinical employees working in the healthcare industry have few differences, if any, in comparison to their counterparts working in other industries. For instance, an accountant working for an HCO and an accountant working for a technology company would not differ in mentalities and what they require in a leader to be engaged. Regarding clinical leadership, it has been noted that "effective healthcare leadership is difficult to overestimate as leadership not only improves major outcomes in patients but also improves provider well-being by promoting workplace engagement and reducing burnout" (Hargett et al., 2017, p. 69). Thus, this study answered the research question: Do leader EI scores in a healthcare-specific setting impact clinical and non-clinical employees differently in terms of employee engagement?

Data were collected from completed EI assessments from a random population of both clinical and non-clinical leaders for strategic comparison. The tool used for this was TalentSmart's[6] Emotional Intelligence 2.0 (EI 2.0) assessment. TalentSmart's EI 2.0 assessment and consultant services are used by 75% of Fortune 500 companies and government entities such as Amazon, Bristol Myers Squibb, Goodyear, JP Morgan Chase, the United Nations, and the World Health Organization, to name a few. From 2001 to 2022, many studies used EI 2.0 as their measurement tool to define EI levels. Of these studies, 20 were in peer-reviewed research publications, 18 were completed

[6] TalentSmart is the world's premier provider of EI training and development, certification, assessments, and coaching. More than 75% of Fortune 500 companies rely on their products and services. All TalentSmart's assessments and services are based on rigorous research conducted in the field of EI. They have served as a leading consultant in leader EI for almost 20 years.

dissertations, and six were independent studies that have not been published (Appendix A). The optional survey participation requests were delivered via email and were conducted online through TalentSmart's secure assessment portal, which was able to provide an aggregate output of results from the leaders who completed the assessment. The TalentSmart assessment focused on the four main areas of EI: (1) self-awareness, (2) self-management, (3) social awareness, and (4) relationship management. Participants were scored in each of these areas separately while also being scored on their overall EI level. The assessment was composed of 20 questions, with responses recorded on a 6-point Likert scale as shown in Appendix B.

Secondly, data were collected from an employee engagement survey conducted by Press Ganey Associates. Press Ganey Associates is one of the largest partners in the U.S. healthcare sector utilized in assessing employee engagement.[7] Press Ganey Associates has partnered with more than 65% of the U.S. healthcare systems on the Forbes 2022 Best Employer List[8] and has provided a voice for over 3.4 million healthcare workers. While the Press Ganey Associates survey is completely anonymous, blind survey responses were linked to a specific leader; thus, responses from this engagement survey can be correlated to the results of the TalentSmart EI 2.0 assessment

[7] Press Ganey Associates defines its approach to employee engagement as a continuous process to align a culture and talent strategy to organizational goals, with the intent of accelerating performance across the board.

[8] To compile this ranking, Statista surveyed 150,000 full-time and part-time workers from 57 countries working for multinational companies and institutions to determine which ones excel in corporate impact and image, talent development, gender equality, and social responsibility. The list for 2022 comprises 800 companies.

for participating leaders. Only responses from the manager domain[9] of the Press Ganey Associates employee engagement survey were used. The manager domain consists of eight questions that ask employees specifically about their perception of their leader's ability to manage in a way that connects employees to organizational objectives.

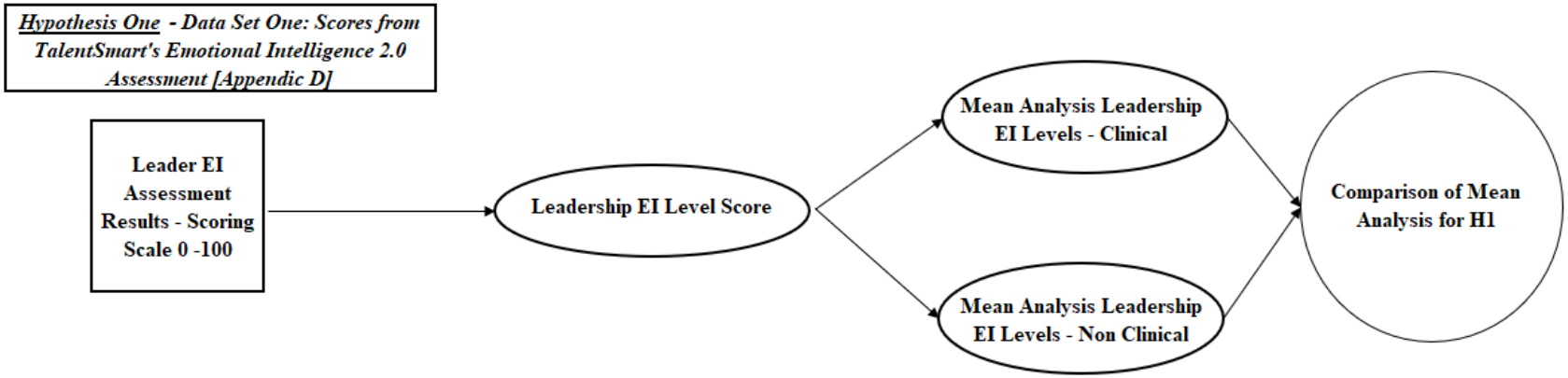
Since the intent of this study was to close a gap that exists in the current literature, no previous study has the exact design developed for this research. However, a small number of studies exist that use a similar study design and use TalentSmart's EI 2.0 assessment as a measurement tool for the study's independent variable and correlate the independent variable derived from the TalentSmart EI 2.0 assessment with another set of data as the dependent variable to show a correlation between EI levels and some other element (Buckley et al., 2020; Goodlet et al., 2022; Smith et al., 2018).

Figure 4 and Figure 5 illustrate how data collected from the TalentSmart EI 2.0 assessment and responses from the Press Ganey Associates employee engagement survey were used to test both hypotheses proposed by this research. Figure 4 depicts the study design for the testing of Hypothesis 1. Figure 5 shows the study design for the testing of Hypothesis 2. It is important to remember that the eight questions from the Press Ganey Associates employee engagement survey were from the manager domain, which means they were engagement questions, answered by employees, pertaining to their direct leader.

[9] Press Ganey Associates Manager Domain – these items measure the degree to which employees feel connected to the person they report to—typically, a supervisor or manager.

Figure 4

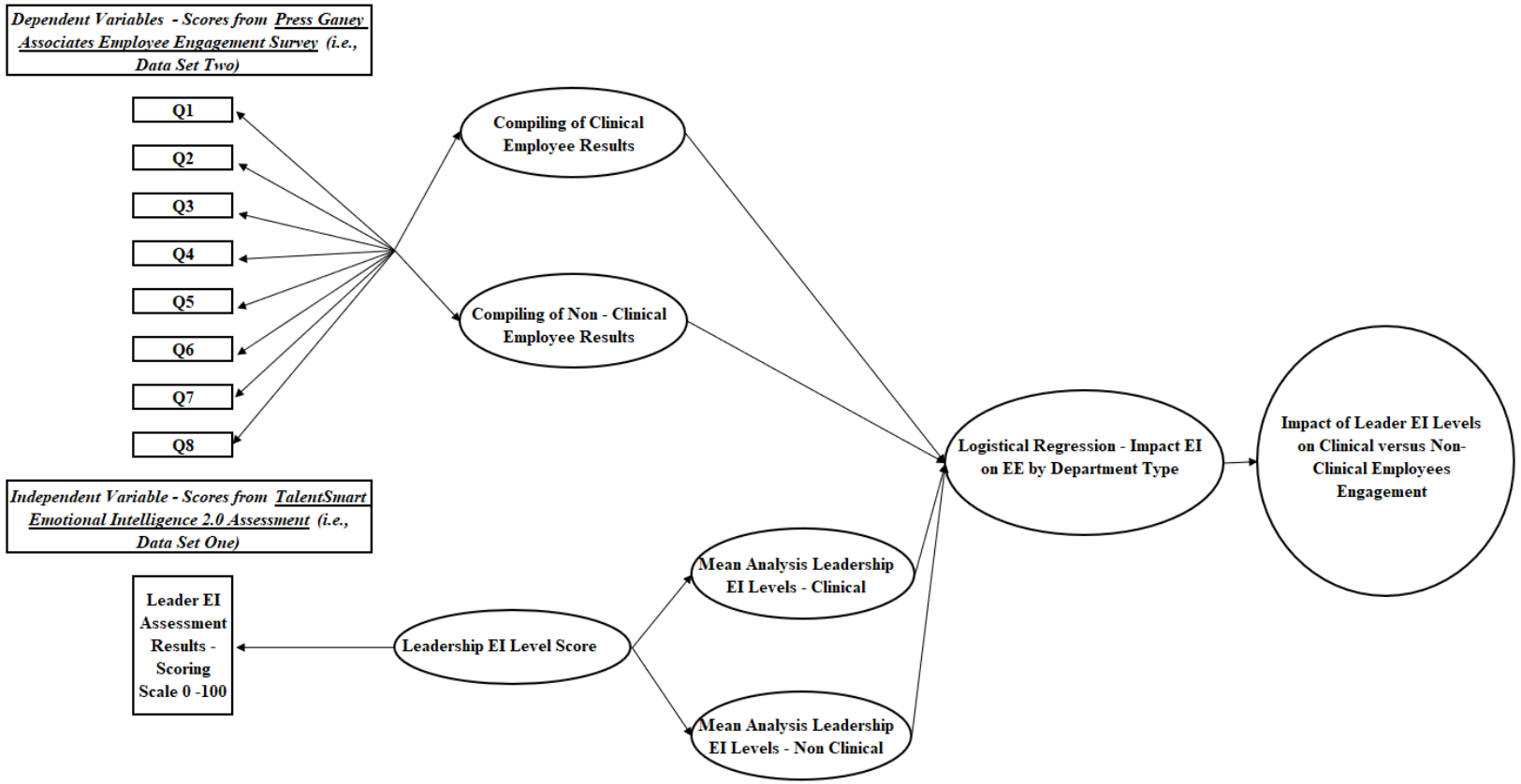
Hypothesis 1 – Comparing Levels of EI Between Clinical and Non-Clinical Leaders



Notes: Conceptual model of the study design using elements from Hypothesis 1. Tested with Pooled T-Test for Mean Analysis.

Figure 5

Hypothesis 2 – Assessing the Relationship Between Leader EI Levels and Employee Engagement in the U.S. Healthcare Sector



Notes: Conceptual model of the study design using elements from Table 1 for Hypothesis 2. Tested with multiple ordinal logistic regression outputs. The dependent variables (i.e., Press Ganey Associates employee engagement scores from Questions 1–8), were compiled by Press Ganey to provide an aggregate score by leader per question and then by the eight questions combined. The independent variable for this was Leader EI scores.

Data

For both measurement tools used in this study (EI 2.0 and the Press Ganey Associates employee engagement survey), data were collected from a public, not-for-profit healthcare system in the upper region of South Carolina that has approximately 10,000 employees (hereafter referred to as "The HCO"). The data used were from the calendar year 2022. The healthcare system had already collected this data, as it does each year, to better understand where the system is currently lacking in terms of employee engagement and employee retention methodologies. Being that there were two measurement tools used for this study, two separate data sets were used. These data sets were combined using leader name and department number, which were kept confidential when reporting the results of this study. The use of these data was vetted and approved by (1) the university's IRB department (Appendix C) and (2) the HCO's Office of Research Compliance (Appendix D).

Variables

The variables listed in Table 1 were derived from three different sources. A leader's EI score was collected using TalentSmart's EI 2.0 assessment. Also from the EI 2.0 assessment, leader sex and leader age range were gathered. Scores depicting employee engagement came from the "Manager" domain of the Press Ganey Associates Employee Engagement survey given by the HCO. Information pertaining to job functions was also gathered from the Press Ganey Associates survey (i.e., clinical and non-clinical job functions). Information related to leader tenure and highest education level was gathered from the HCO's human resources department.

Table 1

Data Elements to Be Used in This Study and Supporting Information

Variable label/name	Variable description	Variable type	Source	Supporting literature/information (if applicable)
Q1	The person I report to treats me with respect.	Dependent	Press Ganey Associates Employee Engagement Survey	Dressler 1999; Mani, 2011
Q2	The person I report to cares about my job satisfaction.	Dependent	Press Ganey Associates Employee Engagement Survey	Salovey & Mayer, 1990 (i.e., empathy); Sonnenfeld, 1985 (pp. 115, 125)
Q3	I am satisfied with the recognition I receive for doing a good job.	Dependent	Press Ganey Associates Employee Engagement Survey	Bass, 1990 (p. 20); Collins & Hanson, 2011; Dewey, 1895 (p. 19); Harter et al., 2002; Sonnenfeld, 1985
Q4	I am involved in decisions that affect my work.	Dependent	Press Ganey Associates Employee Engagement Survey	Bass, 1990 (p. 20); Rana, 2015
Q5	When appropriate, I can act on my own without asking for approval.	Dependent	Press Ganey Associates Employee Engagement Survey	Breevaart et al., 2014 (i.e., autonomy); Dressler, 1999 (i.e., trust); Xu & Thomas, 2011 (i.e., autonomy)
Q6	The person I report to encourages teamwork.	Dependent	Press Ganey Associates Employee Engagement Survey	Bass, 1990 (p. 31); Salovey & Mayer, 1990 (pp. 191–192)
Q7	I respect the abilities of the person to whom I report.	Dependent	Press Ganey Associates Employee Engagement Survey	Bass, 1990 (pp. 1, 27)

Variable label/name	Variable description	Variable type	Source	Supporting literature/information (if applicable)
Q8	The person I report to is a good communicator.	Dependent	Press Ganey Associates Employee Engagement Survey	Bass, 1990 (p. 1); Salovey & Mayer, 1990 (pp. 189, 193); Xu & Thomas, 2011
EI(L)	Emotional intelligence level of leadership	Independent	Emotional Intelligence 2.0 Assessment by TalentSmart	Appendix B
Clinical employee	50% or more of job is spent in direct patient care.	Moderator	Press Ganey Associates Employee Engagement Survey	Defined by Press Ganey Associates
Non-clinical employee	Less than 50% of job is spent in direct patient care.	Moderator	Press Ganey Associates Employee Engagement Survey	Defined by Press Ganey Associates
Leader level	The current level of leadership of the leader	Control	Human Resources Department of the HCO	Manager, Director, Executive
Leader education	Leader's highest level of education	Control	Human Resources Department of the HCO	Unknown, High school, Associate's, Bachelor's, Master's, Doctorate
Leader sex	Leader sex	Control	Human Resources Department of the HCO	Male or Female
Leader age	Leader age range	Control	Emotional Intelligence 2.0 Assessment by TalentSmart	30–39, 40–49, 50–59, 60–69 (Note. No leaders below the age of 30 or above the age of 69 participated in this assessment)
Leader education type	Clinical or non-clinical educational background	Control	Human Resources Department of the HCO	Clinical or non-clinical

Variable label/name	Variable description	Variable type	Source	Supporting literature/information (if applicable)
Organizational culture	The overall assessed engagement of employees based on the "organization domain"	Control	Press Ganey Associates Employee Engagement Survey	N/A

Note: To test Hypothesis 1, only leader EI scores were used from this table. To test Hypothesis 2, both the leader EI scores and employee engagement scores were used from this table in a fit ordinal logistic regression analysis, which used clinical and non-clinical employees as a moderator variable (i.e., department type). Control variables were tested for a significant relationship between leader EI scores and employee engagement scores.

Data Time Period

Data for this study was previously collected by the HCO as part of their standard practice for employee engagement and leadership development. The data were collected and maintained by executive leadership and the HCO's System Director of Organizational Development and Education. Data from both sources (i.e., Press Ganey Associates and TalentSmart) were collected in the summer of 2022 and released for this study in the summer of 2023. While the HCO collects both sets of data as standard practice, the HCO has never combined and assessed the two data sets for any type of relationship.

Leader EI

A handful of tools are available to organizations to assess the EI levels of their employees and/or leaders. One foundational tool for the assessment of EI is the *Mayer-Salovey-Caruso Emotional Intelligence Test version 2.0*[10] (MSCEIT V2.0; Mayer et al., 2003). While this assessment is foundational, it is not the only trusted assessment for assessing EI in 2022 and is cumbersome to administer online. Furthermore, an individual must be certified to administer the MSCEIT assessment, which can be quite costly. The MSCEIT takes participants, on average, 45 minutes to complete, making it less likely that leaders will participate unless it is mandated by administration. Thus, participation volumes would be less than that of an assessment that can be easily administered online and take approximately 15 minutes to complete (e.g., TalentSmart's EI 2.0 assessment).

[10] MSCEIT V2.0 is based on a four-branch ability model of EI. This model defines EI as an actual type of intelligence that focuses on the cognitive skills needed to detect and reason with emotional information. The branches consist of perceiving emotions, facilitating thought, understanding emotions, and managing emotions.

The studies using TalentSmart's EI 2.0 assessment can be found in Appendix A of this study. The HCO's reasoning behind using TalentSmart's EI 2.0 assessment as a measurement tool for leader EI is due to TalentSmart's company accolades, academic studies that use the tool, timeframe for completion of the assessment (i.e., efficiency), and the increased likelihood for voluntary participation given the immediate score output, explanation, and feedback at the end of the assessment.

Employee Engagement Based on Management

For the purpose of this study, employee engagement scores were examined in relation to management-specific questions on the Press Ganey Associates Employee Engagement survey. This survey was completed by the HCO as standard annual practice in 2022. The questions asked by Press Ganey, along with supporting academic literature references relating these questions to literature that examines management's influence on employee engagement, are outlined in Table 1. Thus, this study focuses only on the management-specific engagement questions in the Press Ganey Associates engagement survey, aligned with the goal of narrowing the focus to how leader-assessed EI levels relate to employees' feelings about their leader in terms of engagement.

Clinical Versus Non-Clinical

For this research, the Press Ganey Associates' definitions of clinical and non-clinical employees were used, as these are standard data elements of the survey. According to Press Ganey Associates, a clinical employee is defined as an individual spending more than 50% of daily job function working in direct patient care. Press Ganey Associates define a non-clinical employee as an individual spending less than 50% of daily job function in direct patient care.

Control Variables

Control variables have been added, as they are variables that were cited as potentially having some level of impact on the leader's EI scores and/or engagement scores from their employees. These control variables may also shed light on areas for future research and/or research expansion in this niche area of study, exploring clinical versus non-clinical employees working for an HCO. These variables include leader position level (i.e., executive, director, manager), highest education level obtained by the leader (i.e., high school diploma, associate's degree, bachelor's degree, master's degree, doctoral degree), leader sex (i.e., male or female), and leader age range as defined in Table 1.

Limitations

The following assumptions were made: (1) that all respondents answered truthfully and to the best of their ability; (2) for the EI 2.0 assessment, it assumed that leaders answered in accordance with the truth and not the answers they perceived would facilitate the best score; (3) for the Press Ganey Associates Employee Engagement survey, it was assumed that respondents answered truthfully and understood that the survey was completely anonymous; and (4) it was assumed that the employees participating in the engagement survey did not feel fear or intimidation to respond a certain way regarding the questions asked about their leader's management practices. It should also be understood that since both data-gathering tools were voluntary for potential respondents, there was no control over the number of clinical versus non-clinical leaders and which employees chose to respond.

Summary

While academic studies seldom use identical study designs and methodologies, methodologies used in the study design process are often similar. Many of the studies shown in Appendix A use a similar design when assessing whether EI levels are related to another variable. The studies in Appendix A used TalentSmart's EI 2.0 assessment specifically as a measurement tool. By using both the Press Ganey Associates employee engagement survey and the TalentSmart EI 2.0 assessment tool to assess leader EI levels, relationships between the two can be established through statistical analysis. Several statistical tests were selected based on the type of data collected for this study. The results show evidence for the acceptance or rejection of the proposed hypotheses presented by this study.

Chapter 4: Results

Introduction

The research for this study was designed to evaluate the differences that may exist in the level of leader EI tolerated by clinical and non-clinical employees in a public healthcare setting. This is especially important to understand in a post-coronavirus environment, when the retention of clinical and non-clinical employees in the HCO setting has become an increasing issue following the timeframe known as *The Great Resignation*. In fact, the healthcare system examined in this study spent an estimated $50 million in contract labor in fiscal year 2022. This quantitative study used data collected from a mid-sized, public, not-for-profit healthcare system in South Carolina. The data utilized came from two sources. The first source was an EI assessment from TalentSmart known as their EI 2.0 assessment. A total of 65 leaders participated in this pilot assessment, that was deployed by the HCO's human resources department. Of the 65 leader participants, 41 met the criteria for further analysis (i.e., manager level or higher with at least five direct reports). These 41 participants were the population for this study. The TalentSmart EI 2.0 assessment scores from these participants were the independent variables for this study. The second source was an employee engagement survey (i.e., Press Ganey Associates) administered annually by the HCO's human resources department to all employees. Eight questions were selected for use in this study from the manager domain. This domain examined employee engagement in relation to the behaviors of their leader. From the employee engagement survey, the respondents

consisted of 570 individuals who reported directly to the 41 leaders who participated in the TalentSmart EI 2.0 assessment.

Hypothesis 1 Testing

To test Hypothesis 1, a goodness of fit test was used to check for normality among leader EI scores as continuous data (i.e., scores measured on a 100-point scale). The scores assessed yielded a $p < 0.17$, indicating the data showed a normal distribution. After this, a Pooled T-Test was performed as a mean analysis to assess whether clinical leaders had a significant probability of scoring higher on the TalentSmart 2.0 EI assessment compared to their non-clinical counterparts.

Hypothesis 2 Testing

To test Hypothesis 2, the same data used to test Hypothesis 1 were combined with aggregate results from employee engagement scores collected by Press Ganey Associates. Press Ganey Associates reported these scores by leader with aggregate scores for each of the eight questions provided as well as an aggregate score for all eight questions combined. To test for a correlation between leader EI scores and employee engagement levels, a fit ordinal logistic test was used. Ordinal logistic regression was used because the results, or output, of the Press Ganey Associates employee engagement survey was on a scale of 1–5 (i.e., ordinal data) and leader EI scores were continuous data points (i.e., score range up to 100). For the analysis, a fit ordinal logistic test was run for each of the eight employee engagement questions assessed (i.e., the dependent variables). An additional fit ordinal logistic regression was run for the aggregate mean scores of Questions (Q) 1 through 8. Leader EI scores were tested as continuous data elements

(possible scores out of 100) and employee engagement scores were run as ordinal data elements (Likert scale 1–5). This regression focused specifically on showing evidence to support Hypothesis 2. In total, 27 fit ordinal logistic regressions were conducted to test (1) the relationship between leader EI scores and employee responses to each engagement question individually, and (2) the relationship between leader EI scores and the aggregated mean of all eight employee engagement questions combined. An example of the fit ordinal logistic regression output from the statistical software used is illustrated in Appendix E of this study. All fit ordinal logistic tests that were conducted used the variable *department type* as the separating variable. This comes from the understanding that no clinical department was led by a non-clinical leader and vice versa. The reason separate multiple fit ordinal logistic regressions were run for the purpose of this research was to better understand how leader EI score affects each dependent variable individually and not as a set of response variables. Thus, nine regressions were performed for clinical leader EI scores to test for correlation with clinical employee engagement responses, nine regressions were performed for non-clinical leader EI scores to test for correlation with non-clinical employee engagement responses, and nine regressions were performed to test for correlation between all leader EI scores and all employee engagement responses (i.e., no separation by clinical vs. non-clinical). Some similar studies using ordinal logistic regression, or similar regression, to assess how EI affects dependent variable(s) include, but are not limited to, Gleason et al., 2020; Guerra-Bustamante et al., 2019; Lloyd et al., 2012; and Siegling et al., 2014.

Control Variable Testing

Six control variables were tested, as shown in Table 1, to assess whether any relationships existed between the control variables, leader EI scores, and employee engagement responses. If a relationship were established, it could then be assessed further to determine if there was an impact on the hypothesis results for this study. To determine these relationships, various tests were used. The test chosen was dependent on the distribution of the data elements being tested. Thus, Wilcoxon/Kruskal-Wallis Tests were used to test for relationships between continuous data elements that did not have a normal distribution to determine the relationship between two groups, F-Tests (ANOVA) were used to test the variance on normally distributed data to determine if a mean difference existed that was statistically significant, Chi-Square tests were used to show significant relation between nominal variables, and T-Tests were used to show probability for normally distributed data elements. These various tests were not used to test the two hypotheses proposed by this research. The results from the control variable statistical testing are provided in Appendix F through Appendix P.

Organization and Data Limitations

The data used in this study were collected from a single organization in July 2022 and came from two sources. Data captured from these two sources were combined using department numbers within the organization. A total of 41 leaders were participants in the TalentSmart EI 2.0 assessment, which was successfully cross-referenced to 570 employee respondents in the Press Ganey Associates annual employee engagement survey. It should be noted that while the HCO where data were collected for this study conducts the

Press Ganey Associates survey annually, the collection of the leader EI scores from TalentSmart's EI 2.0 assessment was a pilot for the HCO to determine if ongoing use of this assessment tool could be beneficial for executive leadership. Thus, with a population of 41 participating leaders, a power analysis yielded a result of 0.22, which could result in effects of practical importance not being detected. A power analysis result of 0.80 or greater is most desirable, as it aids in showing the level of practical importance based on the amount of data gathered. For future studies, the number of leaders assessed for EI levels should be increased to yield a higher power analysis. A low power analysis does not indicate that the study is not viable but simply means all effects of practical importance may not be detected. This can occur when participation in an assessment is voluntary, and the number of actual participants cannot be guaranteed.

Preliminary Descriptive Statistics

Leadership level was a control variable in the study, since it may affect either a leader's EI assessment score or how their employees answered survey questions pertaining specifically to the leader to whom they directly report. Table 2 breaks down the number of leaders who participated in the TalentSmart 2.0 EI Assessment by manager (i.e., lower-level management); director (i.e., mid-level management); and executive, which consists of any participant with a title of vice president or higher (i.e., upper-level management).

Table 2

Population and Percent of Total for Leader Participants in the TalentSmart EI 2.0 Assessment by Leadership Level

Leadership level	*N*	*Percent*
Manager	17	41.46
Director	16	39.02
Executive	8	19.51

The highest level of degree earned by a leader was controlled for in the study, since it may affect either a leader's EI assessment score or how their employees answer survey questions pertaining specifically to the leader to whom they directly report. Table 3 breaks down the number of leaders who participated in the TalentSmart 2.0 EI Assessment by those who earned an associate's degree (i.e., 2-year degree); bachelor's degree (i.e., 4-year degree); master's degree (i.e., graduate degree); doctorate (i.e., post-graduate degree); or a leader with an unknown degree status (leaders who most likely do not have a degree, but rather a high school diploma with ample experience). At a minimum, these leaders were required to have a high school diploma to work for the HCO from which these data were obtained.

Table 3

Population and Percent of Total for Leader Participants in the TalentSmart EI 2.0 Assessment by Highest Degree Earned

Leader highest degree earned	*N*	*Percent*
Associate's	3	7.32
Bachelor's	7	17.07
Master's	21	51.22
Doctorate	6	14.63
Unknown	4	9.76

A leader's sex could be a potential control variable that may have affected either a leader's EI assessment score or how their employees answered survey questions pertaining specifically to the leader to whom they directly report. Table 4 breaks down the number of leaders who participated in the TalentSmart 2.0 EI Assessment by female and male.

Table 4

Population and Percent of Total for Leader Participants in the TalentSmart EI 2.0 Assessment by Sex

Leader sex	*N*	*Percent*
Female	26	63.41
Male	15	36.59

A leader's age range could be a potential control variable that may have affected either a leader's EI assessment score or how their employees answered survey questions

pertaining specifically to the leader to whom they directly report. Table 5 breaks down the number of leaders who participated in the TalentSmart 2.0 EI Assessment by age ranges. There were no leaders who participated under the age of 30 or over the age of 69.

Table 5

Population and Percent of Total for Leader Participants in the TalentSmart EI 2.0 Assessment by Age Range

Leader age range	*N*	*Percent*
30–39	3	7.32
40–49	17	41.46
50–59	14	34.15
60–69	7	17.07

While conducting this study, it was important to note whether the number of participants, categorized by the type of department they managed (i.e., clinical, or non-clinical), represented the actual division of labor seen between these two groups working in HCOs across the United States. This information is illustrated in Table 6. In April 2020, the Bureau of Labor Statistics released a report showing that 56% of healthcare jobs were held by practitioners and technical employees, 13% were held by those in a healthcare support occupation, and the remaining 32% of healthcare jobs were held by occupations outside healthcare provider or technical related fields (Bureau of Labor Statistics, 2020).

Table 6

Population and Percent of Total for Leader Participants in the TalentSmart EI 2.0 Assessment by Department Type Managed (i.e., clinical or non-clinical)

Department type	*N*	*Percent*
Clinical	25	60.98
Non-clinical	16	39.02

Table 7 illustrates the number of clinical and non-clinical participants in the Press Ganey Associate annual employee engagement survey that corresponded with a leader who participated in the TalentSmart 2.0 EI Assessment. Clinical employees were defined as those who spend 50% or more of their time at work in direct patient care. Non-clinical employees were defined as those who spend less than 50% of their time at work in direct patient care. These definitions were provided by Press Ganey Associates and data were captured using these definitions of clinical and non-clinical to best determine clinical vs. non-clinical employees.

Table 7

Employee Participants in the 2022 Press Ganey Associates Employee Engagement Survey by Department Type (i.e., clinical or non-clinical)

Department type	*N*	*Percent*
Clinical	391	68.60
Non-clinical	179	31.40

Preliminary Findings

While several variables were tested to establish if a relationship existed between leader EI assessment results, employee engagement responses, and (1) a leader's level (i.e., manager, director, executive), (2) a leader's highest degree earned (i.e., associate's, bachelor's, master's, doctorate, unknown), (3) a leader's degree type (i.e., clinical, non-clinical), (4) the department type (i.e., clinical, non-clinical), (5) a leader's age range (i.e., 20–29, 30–39, 40–49, 50–59, 60–69), (6) a leader's sex (i.e., male, female), it was found that only two variables had an effect on leader EI assessment results. The one control variable that had a significant relationship with leader EI scores was *leader degree type.* Leader degree type was found to have a high level of significance, with a *p*-value of 0.02 when relating this control variable specifically to relationship management as a part of EI. While this one small relationship was established between a control variable and an element of EI, no further significant relationships were found between the six control variables assessed in this study, leader EI scores, and employee engagement scores. With this test result, no control variables were used in further testing of the two hypotheses presented in this study.

Table 8 illustrates the relationship between a leader's degree type and the results from the TalentSmart EI 2.0 assessment broken down into the major components of EI as well as the overall scores. While this is not a component of research aimed at answering Hypothesis 1, it does give additional insight for potential research expansion. From the analysis conducted, a positive relationship existed between a leader's degree type and their score from the relationship management component of EI, with a *p*-value of 0.02.

On average, non-clinical leaders scored 5.52 points higher in the relationship management component when compared to their clinical counterparts. Additionally, there was a moderate relationship found between a leader's aggregate score for social intelligence and a leader's overall EI score when correlated with the leader's degree type (i.e., clinical, non-clinical, unknown), with a *p*-value of 0.05.

Table 8

F-Test(ANOVA) or Wilcoxon/Kruskal Wallis Test: The Relationship between Leader Degree Type and EI Assessment Results

EI indicator	Leader degree type	*N*	*M*	*Range*	*SD*	95% CI	*p*
Self-awareness	Clinical	20	81.80	34	9.40	[77.40, 86.04]	0.08*
	Non-clinical	17	87.53	22	5.70	[84.60, 90.46]	Wilcoxon
	Unknown	4	84.25	3	1.50	[81.86, 86.64]	
Self-management	Clinical	20	82.3	34	7.98	[78.56, 86.04]	0.22
	Non-clinical	17	86.24	19	5.45	[83.43, 89.04]	F-Test
	Unknown	4	83.50	10	4.73	[75.98, 91.02]	
Aggregate personal competence	Clinical	20	82.30	26	8.16	[78.48, 86.12]	0.29
	Non-clinical	17	86.65	20	5.05	[84.05, 89.24]	Wilcoxon
	Unknown	4	84.00	5	2.16	[80.56, 87.44]	
Social awareness	Clinical	20	79.40	36	8.68	[75.40, 83.46]	0.14
	Non-clinical	17	84.41	21	6.77	[80.93, 89.24]	F-Test
	Unknown	4	80.00	9	4.24	[73.25, 86.75]	
Relationship management	Clinical	20	80.30	34	7.88	[76.62, 83.99]	0.02**
	Non-clinical	17	85.82	18	4.85	[83.33, 88.32]	Wilcoxon
	Unknown	4	79.50	10	4.73	[71.98, 87.02]	

EI indicator	Leader degree type	*N*	*M*	*Range*	*SD*	95% CI	*p*
Aggregate social competence	Clinical	20	80.10	34	7.77	[76.46, 83.74]	0.05**
	Non-clinical	17	85.35	19	5.33	[82.62, 88.09]	F-Test
	Unknown	4	80.00	9	4.08	[73.50, 86.50]	
Overall EI score	Clinical	20	81.00	30	7.72	[77.39, 84.61]	0.05**
	Non-clinical	17	86.12	16	4.60	[83.76, 88.48]	F-Test
	Unknown	4	82.00	6	2.58	[77.89, 86.11]	

Note: Items marked with (*) are of low significance, (**) are of moderate significance, and (***) are of high significance. F-Tests (ANOVA) were used when data were normally distributed. Wilcoxon/Kruskal-Wallis Tests were used when data had a non-normal distribution. How the data for each item were distributed determined the best test to use to show if a relationship exists between elements of leader EI and a leader's degree type.

Table 9 illustrates the relationship between clinical and non-clinical department types and the results from the TalentSmart EI 2.0 assessment broken down into the major components of EI as well as the overall scores. While this table is not aimed at answering the main research question posed, it does shed light on areas for potential future research. From the statistical analysis conducted and summarized in Table 9, a relationship between department type and self-management can be seen, with the high probability that non-clinical leaders will score, on average, 4.53 points higher in self-management when compared to their clinical counterparts, with a *p*-value of 0.02.

Table 9

T-Test or Wilcoxon/Kruskal Wallis Test: The Relationship between Department Type and EI Assessment Results

EI indicator	Department type	*N*	*M*	*Range*	*SD*	95% CI	*p*
Self-awareness	Clinical	25	82.96	34	8.52	[79.44, 86.48]	0.16
	Non-clinical	16	86.69	25	6.48	[83.24, 90.14]	Wilcoxon
Self-management	Clinical	25	82.28	34	7.09	[79.35, 85.21]	Prob >|t|: 0.03**
	Non-clinical	16	86.81	25	5.71	[83.77, 89.85]	Prob >t: 0.02**
							Prob <t: 0.98
							T-Test
Aggregate personal competence	Clinical	25	82.88	26	7.17	[79.92, 85.84]	0.13
	Non-clinical	16	86.44	25	5.78	[83.36, 89.52]	Wilcoxon
Social awareness	Clinical	25	80.20	36	8.27	[76.79, 83.61]	Prob >|t|: 0.16
	Non-clinical	16	83.63	21	6.86	[79.97, 87.28]	Prob >t: 0.08*
							Prob <t: 0.92
							T-Test
Relationship management	Clinical	25	81.16	34	7.39	[78.11, 84.21]	0.16
	Non-clinical	16	84.63	22	5.85	[81.51, 87.74]	Wilcoxon
Aggregate social competence	Clinical	25	80.92	34	7.24	[77.93, 84.21]	Prob >|t|: 0.11
	Non-clinical	16	84.38	20	6.08	[81.14, 87.61]	Prob >t: 0.05*
							Prob <t: 0.95
							T-Test

EI indicator	Department type	*N*	*M*	*Range*	*SD*	95% CI	*p*
Overall EI Score	Clinical	25	81.76	30	6.91	[78.91, 82.56]	Prob >|t|: 0.06*
	Non-Clinical	16	85.50	20	5.51	[82.56, 88.44]	Prob >t: 0.03**
							Prob <t: 0.97
							T-Test

Note: Items marked with (*) are of low significance, (**) are of moderate significance, and (***) are of high significance. T-Tests were used when data were normally distributed, to show probability. Wilcoxon/Kruskal-Wallis Tests were used when data had a non-normal distribution. How the data for each item were distributed determined the best test to use to show if a relationship existed between elements of leader EI and department type.

Hypothesis 1 Results

Hypothesis 1 stated that clinical leaders will score higher on their EI assessment when compared to non-clinical leaders working in the same public healthcare setting. This hypothesis comes from the idea that a clinician must have a certain level of empathy, a key component of EI, to be successful in their role as a caregiver to patients (Delmatoff & Lazarus, 2014; Hardee, 2003; Lorié et al., 2017; Ye et al., 2020). To test Hypothesis 1, only data from the TalentSmart EI 2.0 assessment were used, a means one-way ANOVA test was used to determine the probability that a clinical leader would score higher in EI when compared to a non-clinical leader.

As shown in Table 10, when assessing overall EI scores between clinical and non-clinical leaders, non-clinical leaders had a significant probability of scoring higher in EI. In this instance, the hypothesis would be rejected, as a *p*-value of 0.04 indicates the statistical likelihood that non-clinical leaders will score, on average, 3.74 points higher when assessing EI levels using the TalentSmart EI 2.0 assessment. Thus, an alternate hypothesis would be accepted, stating that non-clinical leaders will score higher on their EI assessment when compared to clinical leaders working in the same public healthcare setting.

Table 10

Pooled T-Test: The Relationship between Leader EI Level and Leader Type

Leader type	*N*	*M*	*Std. Err.*	95% CI	*p*
Clinical	26	81.76	1.28	[79.17, 84.35]	Prob>|t|: 0.08
Non-clinical	15	85.50	1.60	[82.26, 88.74]	Prob>t: 0.04** Prob<t: 0.96

Note: Items marked with (*) are of low significance, (**) are of moderate significance, and (***) are of high significance.

Hypothesis 2 Results

Hypothesis 2 stated that clinical employees will tolerate a lower level of EI from their leader to be as engaged as non-clinical employees working in the same public healthcare setting. This hypothesis comes from the understanding that clinical employees come to work to carry out a specific job function (i.e., care for patients according to their training), while non-clinical employees work in a business setting with a less specified job function (Grol, 2001). Thus, non-clinical employees will get satisfaction from sources such as their leader, while clinical employees will likely get satisfaction from the outcome of a patient or another form of reward such as work-life balance or compensation. To test Hypothesis 2, a fit ordinal logistic test was used for the regression model.

Table 11 shows that clinical employees' level of engagement is not related to their clinical leader's level of EI. This is not to say that clinical employees do not need emotionally intelligent leaders, but rather that lower levels of EI are tolerated when it comes to clinical employees' level of engagement.

Table 11

Fit Ordinal Logistic Regression: The Relationship between Clinical Leader EI Score and Clinical Employee Engagement Responses (from the Management Domain of Press Ganey Associates Employee Engagement Survey)

Employee engagement questions – Clinical employee responses	X predictor	*Coefficients*	*Std. Err.*	*p*
Predicted dependent variables				
Q1 – The person I report to treats me with respect	EI	-0.04	0.05	0.49
Q2 – The person I report to cares about my job satisfaction	EI	0.03	0.05	0.62
Q3 – I am satisfied with the recognition I receive for doing a good job	EI	-0.07	0.05	0.18
Q4 – I am involved in decisions that affect my work	EI	-0.03	0.05	0.55
Q5 – When appropriate, I can act on my own without asking for approval	EI	<-0.01	0.05	0.94
Q6 – The person I report to encourages teamwork	EI	<-0.01	0.05	0.99
Q7 – I respect the abilities of the person to whom I report	EI	-0.01	0.05	0.82
Q8 – The person I report to is a good communicator	EI	0.01	0.05	0.85
Aggregate Q1– Q8	EI	<-0.01	0.05	0.88

Note: Items marked with (*) are of low significance, (**) are of moderate significance, and (***) are of high significance. A 95% confidence interval was used when analyzing this set of data. *This table is a compilation of results from the nine fit ordinal logistic regression analyses run by clinical department.*

Table 12 shows that non-clinical employees' level of engagement is related to their non-clinical leader's level of EI. This is noted by a *p*-value of 0.02 from the fit ordinal logistic regression when assessing the aggregate mean score of Questions 1 through 8 and how non-clinical leader EI scores affect non-clinical employee engagement scores. Additionally, there were five employee engagement questions that individually showed varied levels of significance in their relationship to the non-clinical leader EI level assessment results. The individual employee engagement questions that showed a lower level of significance when correlated with non-clinical leader EI scores were Questions 2, 3, and 7. The individual employee engagement question that showed a moderate level of significance when correlated with non-clinical leader EI scores was Question 4. Finally, the individual employee engagement question that showed the highest level of significance when correlated with non-clinical leader EI score was Question 8.

Based on this output, a conclusion can be made that Hypothesis 2 was supported. Additional logistic regression testing of the relationship between clinical and non-clinical leaders' average EI scores was conducted to examine if any relationship between the employee engagement survey results from the organizational domain of the Press Ganey Associates was affected by leader EI scores. This was done to determine if the view of employees of the HCO's organizational culture was affected by leader EI scores as a control variable. No relationship was found, meaning that employees' responses to the questions related to the organization were not affected by their leader's level of EI.

Table 12

Fit Ordinal Logistic Regression: The Relationship between Non-Clinical Leader EI Score and Non-Clinical Employee Engagement Responses (from the Management Domain of Press Ganey Associates Employee Engagement Survey)

Employee engagement questions – Non-clinical employee responses	X predictor	*Coefficients*	*Std. Err.*	*p*
Predicted dependent variables				
Q1 – The person I report to treats me with respect	EI	0.14	0.09	0.11
Q2 – The person I report to cares about my job satisfaction	EI	0.17	0.09	0.06*
Q3 – I am satisfied with the recognition I receive for doing a good job	EI	0.15	0.09	0.09*
Q4 – I am involved in decisions that affect my work	EI	0.17	0.09	0.05**
Q5 – When appropriate, I can act on my own without asking for approval	EI	0.14	0.09	0.12
Q6 – The person I report to encourages teamwork	EI	0.13	0.09	0.12
Q7 – I respect the abilities of the person to whom I report	EI	0.16	0.09	0.07*
Q8 – The person I report to is a good communicator	EI	0.35	0.12	<0.01***
Aggregate Mean Q1–Q8	EI	0.23	0.01	0.02**

Note: Items marked with (*) are of low significance, (**) are of moderate significance, and (***) are of high significance. A 95% confidence interval was used when analyzing this set of data. *This table is a compilation of results from the nine fit ordinal logistic regression analyses run by non-clinical department.*

Table 13 illustrates what the statistical analysis using fit ordinal logistic regression for this study yielded if clinical and non-clinical were not used as a separating variable in this research. There was no level of statistical significance indicated between all leader EI scores and all employee engagement questions when disregarding the separation of the two types of employees that exist within an HCO.

Table 13

Fit Ordinal Logistic Regression: The Relationship between Leader EI Scores and Employee Engagement Responses with No Separation between Clinical and Non-Clinical Departments (from the Management Domain of Press Ganey Associates Employee Engagement Survey)

Employee engagement questions – No separation by clinical/non-clinical	X predictor	*Coefficients*	*Std. Err.*	*p*
Predicted dependent variables				
Q1 – The person I report to treats me with respect	EI	-0.03	0.04	0.50
Q2 – The person I report to cares about my job satisfaction	EI	0.03	0.04	0.46
Q3 – I am satisfied with the recognition I receive for doing a good job	EI	-0.02	0.04	0.68
Q4 – I am involved in decisions that affect my work	EI	<0.01	0.04	0.93
Q5 – When appropriate, I can act on my own without asking for approval	EI	<0.01	0.04	0.93
Q6 – The person I report to encourages teamwork	EI	<-0.01	0.04	0.97
Q7 – I respect the abilities of the person to whom I report	EI	<0.01	0.04	0.95
Q8 – The person I report to is a good communicator	EI	0.03	0.04	0.47
Aggregate Mean Scores Q1–Q8	EI	<0.01	0.04	0.84

Note: Items marked with (*) are of low significance, (**) are of moderate significance, and (***) are of high significance. A 95% confidence interval was used when analyzing this set of data. *This table is a compilation of results from the nine fit ordinal logistic regression analyses run without department type used as a separation variable.*

Conclusion

This chapter included the results of several statistical analyses that aid in showing if any relationship between the independent and dependent variables introduced in the two hypotheses proposed in this study existed. The overarching purpose of the analyses conducted was to better understand whether clinical and non-clinical leader EI levels had a differentiated effect on clinical and non-clinical employee engagement levels working in a public healthcare system setting in the United States. From the statistical testing associated with this study, it can be concluded that non-clinical leaders score higher on an assessment of EI, and clinical employees will tolerate a lower level of EI from their leader when related to their engagement at work.

Chapter 5: Discussion, Conclusions, and Recommendation

Introduction

EI has been a topic at the forefront of business research and practice for more than 30 years. With that said, there remains an abundance of untapped niche areas for research allowing practitioners and researchers alike to better understand the impact of EI in a magnitude of settings and situations. In 1990, EI was presented as a form of intelligence by Salovey and Mayer. EI would soon become a better-understood form of intelligence and studied for the magnitude of impacts it had for individuals who possessed higher levels of this type of intelligence (Salovey & Mayer, 1990). In the early 2000s, academic research began to make the transition from a decades-long focus on forms of leadership to a focus on EI and how it related to leadership forms such as transformational and transactional leadership (Leban & Zulauf, 2004; Palmer et al., 2001).

Recent academic literature shows that EI has been a focus for studies about leadership style, organizational culture, firm performance, leader EI, and more. In general, academic literature contends, with minimal pushback, that EI has a positive relationship with employee engagement. However, current literature lacks the exploration of this relationship in an HCO, specifically looking at more than just a singular group of workers such as nurses or physicians.

The overarching goal of this research was to better understand whether clinical or non-clinical employees working in the same HCO setting would tolerate higher or lower levels of EI from their leader to be engaged. This study was the first to explore and gain a better understanding of the role leader EI plays in the engagement of the two types of

employees that exist in one company setting and work in tandem. Thus, this chapter explores this study's findings from data collected and analyzed and how those findings relate to the study's hypotheses. Furthermore, the implications for practical application are discussed along with areas for future research.

Research Hypothesis and Findings

Hypothesis 1

The first hypothesis stated that clinical leaders will score higher on their EI assessment when compared to non-clinical leaders working in the same public healthcare setting. While academic literature contends that this would most likely be true, since clinical employees must understand, and use, empathy when dealing with patients, it seems understanding and using EI may be situational and may not transpose to a clinical leadership practice (Delmatoff & Lazarus, 2014; Ioannidou et al., 2008; Mercer, 2002; Weng, 2008). The statistical analysis for this hypothesis yielded information showing non-clinical leaders score higher on an assessment of EI when compared to their clinical peers. In this instance, Hypothesis 1 was rejected, and instead an alternative hypothesis, that non-clinical leaders will score higher on an assessment of EI when compared with clinical peers, was accepted. While the literature states that empathy is a requirement of clinical practice, and empathy is a main component of EI, it is not the sole factor when assessing EI. Some literature alludes to the idea that clinical leaders are simply unfamiliar with the concept of EI (Mansel & Einion, 2019). Core components of EI may not be practiced in clinical leadership, due to this gap in knowledge as well as to considerable time constraints in their roles and organizational pressures to perform. In addition,

fluctuating staffing levels may impede clinical leaders' potential to use their EI to become more effective leaders (Akerjordet & Severinsson, 2008; Heffernan et al., 2010; Mansel & Einion, 2019).

Hypothesis 2

The second hypothesis stated that clinical employees will tolerate a lower level of EI from their leader to be as engaged as non-clinical employees working in the same public healthcare setting. The results from the data analysis of Hypothesis 2 illustrate that the level of EI tolerated by a non-clinical employee could be related to higher levels of employee engagement. In, fact a minimal relationship was recorded between a clinical employee's engagement when answering the same set of engagement questions about their manager when compared to clinical leadership EI scores, which likely signifies that clinical employees are motivated by elements outside of their leader's way of managing. Hypothesis 2 was accepted, leading to a conclusion that higher leader EI levels do positively affect non-clinical employee engagement. Likewise, higher leader EI levels had no, or minimal, impact on the level of clinical employee engagement. This could be due to many factors. For instance, clinical employees typically perform a very specific job function with one output in mind, a patient's well-being and care. While some studies have cited salary and benefits as a driver of clinical employees' engagement levels, others have examined the clinical employees as having a passion for their chosen career (Rivera et al., 2011). Similar studies mention the importance of putting employees in a place where they feel trusted to make decisions by leadership, emphasizing an approach involving the local ownership of problems within an employee's area of expertise,

empowerment in their work environment, and psychological empowerment (DiNapoli et al., 2016; Erlingsdottir et al., 2018). The extent to which clinical employees believe in the HCO's mission, values, and ethical patient practices can also be a key driver for engagement and loyalty to the organization.

Major Implications and Practical Application

Study results explain how a leader's EI level relates to an employee's engagement between the two modalities of employees existing in an HCO. While this research provided insight into what serves as a primary motivator of non-clinical employee engagement levels (i.e., leader EI levels), it also showed that other areas should be a focus for motivating the clinical employees working in the same healthcare setting. With clinical staffing levels still presenting as a major issue in the U.S. healthcare business sector post-COVID-19, HCOs must continue to focus on recruiting and retaining clinical employees to ensure patients can be cared for appropriately. The healthcare system where data were collected for this research have spent an average of $50 million a year in contract labor annually since the start of the coronavirus pandemic in 2020. This has had an impact on both the quality of care offered and the HCO's operating budget, which constrains investment opportunities in innovative programs and equipment. Thus, this research showed that a continued investment in developing or hiring leaders with high EI levels will remain vastly beneficial for non-clinical departments in an HCO. This is especially important, as non-clinical employees can go into another business sector with the potential to earn more income during a time when job hopping remains at an all-time high. Healthcare organizations should also consider that a new generation (i.e.,

generation Z) is beginning to enter the workforce at significant levels, and, generationally, they have different preferences for work-life balance that are important to them and different than previous generations (Fan & DeVaro, 2020; Zhou et al., 2023).

In summary, this research showed that leader EI levels play a different role when it comes to the engagement of clinical and non-clinical employees working in a healthcare setting. Healthcare organizations should place a continued practical focus on investing in leadership development and training for both clinical and non-clinical employees. While leader EI is not a key driver of clinical employee engagement, this does not mean it should be disregarded altogether, as it does play a role in several different areas. However, clinical and non-clinical employees' motivations for engagement do differ. Investments in engaging each type of employee should be made to best retain these two types of employees working in an HCO. Healthcare systems should diligently work to meet these employees where they are and take a differentiated approach to drive the same level of engagement and commitment for both clinical and non-clinical employees.

Recommendations for Future Research

A continued effort should be made to research this niche area of study. Moving forward, it would be beneficial for researchers to explore this area of research with a much larger population of participants, preferably across multiple healthcare systems in different regions of the United States. More exploration should be done to find the best measurement tools to explore the key drivers of engagement between these two groups of employees working in the same industry. Literature has historically focused on what

drives better engagement of clinical employees working in an HCO, with almost no literature examining what factors lead to increased levels of non-clinical employee engagement in a healthcare setting. These two types of employees are vastly different by nature, education, and job function; thus, better understanding the terms of their motivations for working in a healthcare setting is vital.

This research shows that clinical and non-clinical leaders should not receive the same training in leadership practices to keep their teams fully engaged. More research should be done on what motivates non-clinical employees working in an HCO, independent of clinical employees, to establish a more concrete baseline for factors leading to increased engagement and subsequent commitment to the organization and industry. Additionally, more research should be conducted to determine what factors engage clinical employees most. Further research should include a comparison of leader EI with other areas that are factors in clinical employee engagement, such as organizational ethics, mission, values, commitment to quality outcomes, and more.

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Appendices

Appendix A

List of Research Studies using TalentSmart's EI 2.0

Emotional Intelligence Appraisal || Peer-Reviewed Research

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Emotional Intelligence Appraisal || Dissertations

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Emotional Intelligence Appraisal || Independent Studies (unpublished)

1. Emotional Intelligence and Perception of Ethical Conduct
2. Benefits of EQ to Construction Project Managers
3. Ability versus Skill-Based Assessment of EQ (also published; see Bradberry citation in peer-reviewed section)
4. EQ Comparison between American and Chinese Populations
5. Emotional Intelligence and Job Title
6. Team EQ and Inclusion as Predictors of Team Effectiveness

Appendix B

Questions from the Emotional Intelligence 2.0 Assessment by TalentSmart

Are you confident in your ability
Admit your shortcomings
Understand your emotions are they happen
Recognize the impact your behavior has upon others
Realize when others influence your emotional state
Play a part in creating the difficult circumstances you encounter
Can be counted on
Handle stress well
Embrace change early
Tolerate frustration without getting upset
Consider many options before making a decision
Strive to make the most out of situations whether good or bad
Resist the desire to act or speak when it will not help the situation
Do things you regret when upset
Brush people off when something is bothering you
Are open to feedback
Recognize other people's feelings
Accurately pick up on the mood in the room
Hear what the person is 'really' saying
Are withdrawn in social situations

Note: Response options from left to right were: Never, Rarely, Sometimes, Usually, Almost Always, Always

Appendix C

Proof of IRB Approval from Gardner-Webb University

From: irb <irb@gardnerwebb.onmicrosoft.com>
Sent: Wednesday, June 22, 2022 1:07 PM
To: Adam Wilkins <awilkins3@gardner-webb.edu>
Cc: Felice Policastro <fpolicastro@Gardner-Webb.edu>; Penelope Nall <pnall@gardner-webb.edu>
Subject: Re: Adam Wilkins, DBA Candidate - New IRB Submission

Mr. Wilkins and Dr. Nall,

Your IRB Application for the Exempt research project titled "Understanding the Impacts of Healthcare Leader Emotional Intelligence on Employee Engagement: Differences Between Clinical and Non-Clinical Staff" has been approved, effective June 22, 2022. It has been assigned an expiration date of June 21, 2023. Note that IRB time limits are automatically set at one year from date of approval. Regular program time limits still apply.

Please be aware that if you need to continue your study beyond the Expiration Date, you must submit a Request for Continuance (http://www.gardner-webb.edu/Assets/gardnerwebb/academics/review-board/irb-request-research-continuance1.pdf) prior to that date.

Best wishes for a productive investigation!

Sydney K. Brown, PhD

Dean, Gayle Bolt Price of Graduate Studies
Administrator, GWU Institutional Review Board
Professor, School of Education
142 Memorial Dr.
Office: (704) 406-3019
Cell: (919) 451-0203

Appendix D

Proof of IRB Approval from the HCO Used as the Data Source for This Research

Original Approval

Project Overview

[1894552-1] Understanding the Impacts of Healthcare Leader Emotional Intelligence on Employee Engagement: Difference...

You have Full access to this project. | Edit |	
Research Institution	[redacted]
Title	Understanding the Impacts of Healthcare Leader Emotional Intelligence on Employee Engagement: Differences Between Clinical and Non-Clinical Staff
Principal Investigator	Wilkins, Adam, DBA(C), MBA
Sponsor	Lori McMillan, David Church

The documents for this project can be accessed from the Designer.

Project Status as of: 10/23/2023

Reviewing Board	Initial Approval Date	Project Status	Expiration Date
[redacted]	05/18/2022	Active - Data Analysis Only	
• Report due: 06/11/2024			

Package 1894552-1 is: Locked - Revisions Complete Package 1 of 2 Jump

Submitted To	Submission Date	Submission Type	Board Action	Effective Date	
[redacted]	03/29/2022	New Project	Approved	05/18/2022	| Review Details |

Shared with the following users:

User	Organization	Access Type
Wilkins, Adam	[redacted]	Full

Renewed Approval

Project Overview

[1894552-2] Understanding the Impacts of Healthcare Leader Emotional Intelligence on Employee Engagement: Difference...

You have Full access to this project. | Edit |	
Research Institution	[redacted]
Title	Understanding the Impacts of Healthcare Leader Emotional Intelligence on Employee Engagement: Differences Between Clinical and Non-Clinical Staff
Principal Investigator	Wilkins, Adam, DBA(C), MBA
Sponsor	Lori McMillan, David Church

The documents for this project can be accessed from the **Designer**.

Project Status as of: 10/23/2023

Reviewing Board	Initial Approval Date	Project Status	Expiration Date
[redacted]	05/18/2022	Active - Data Analysis Only	

Package 1894552-2 is: Locked Package 2 of 2 | Jump |

Submitted To	Submission Date	Submission Type	Board Action	Effective Date	
[redacted]	06/08/2023	Continuing Review/Progress Report	Approved	06/12/2023	| Review Details |

Shared with the following users:

User	Organization	Access Type
Wilkins, Adam	[redacted]	Full

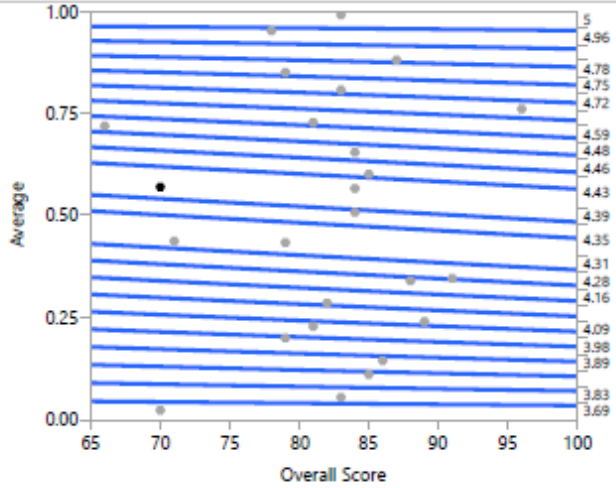
Appendix E

Example: Full JMP Output for Fit Ordinal Logistic Test

JMP Formatted - Fit Ordinal Logistic

Ordinal Logistic Fit for Average Department Type [1=C],[2=NC]=C

Logistic Plot



Whole Model Test

Model	-LogLikelihood	DF	ChiSquare	Prob>ChiSq
Difference	0.011931	1	0.023861	0.8772
Full	77.687376			
Reduced	77.699307			

RSquare (U)	0.0002
AICc	1305.37
BIC	229.409
Observations (or Sum Wgts)	25

Lack Of Fit

Source	DF	-LogLikelihood	ChiSquare
Lack Of Fit	329	63.640983	127.282
Saturated	330	14.046394	Prob>ChiSq
Fitted	1	77.687376	1.0000

Parameter Estimates

Term	Estimate	Std Error	ChiSquare	Prob>ChiSq
Intercept[3.69]	-2.5501472	4.3034984	0.35	0.5535
Intercept[3.83]	-1.812478	4.2463277	0.18	0.6695
Intercept[3.88]	-1.36223	4.2279751	0.10	0.7473
Intercept[3.89]	-1.0284088	4.2194117	0.06	0.8074
Intercept[3.98]	-0.7567453	4.2147783	0.03	0.8575
Intercept[4.09]	-0.5230164	4.2121276	0.02	0.9012
Intercept[4.1]	-0.3150282	4.2106346	0.01	0.9404
Intercept[4.16]	-0.1248872	4.2098814	0.00	0.9763
Intercept[4.28]	0.05274867	4.20964	0.00	0.9900
Intercept[4.31]	0.22120807	4.2097781	0.00	0.9581

JMP Formatted - Fit Ordinal Logistic

Ordinal Logistic Fit for Average Department Type [1=C],[2=NC]=C

Parameter Estimates

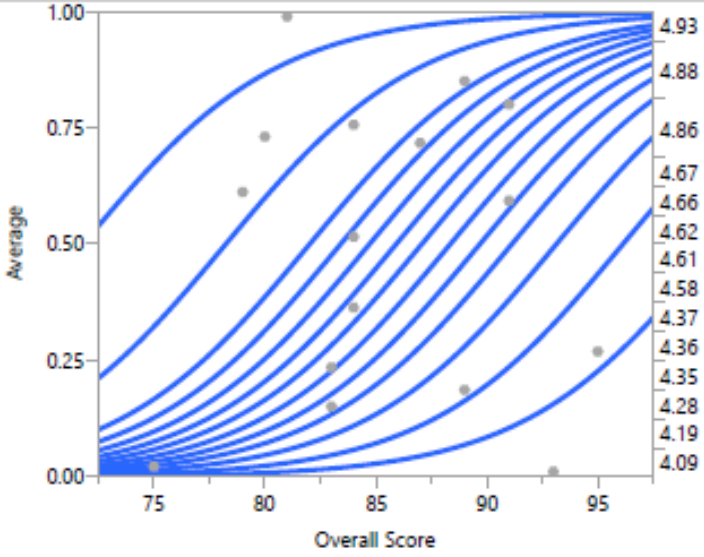
Term	Estimate	Std Error	ChiSquare	Prob>ChiSq
Intercept[4.35]	0.54445423	4.21093	0.02	0.8971
Intercept[4.39]	0.70402841	4.2118764	0.03	0.8672
Intercept[4.43]	1.02907407	4.2145326	0.06	0.8071
Intercept[4.46]	1.19906192	4.2162974	0.08	0.7761
Intercept[4.48]	1.37723364	4.2184422	0.11	0.7441
Intercept[4.59]	1.56842815	4.2211113	0.14	0.7102
Intercept[4.63]	1.77832102	4.2245436	0.18	0.6738
Intercept[4.72]	2.01297522	4.229128	0.23	0.6341
Intercept[4.75]	2.28488902	4.2356841	0.29	0.5896
Intercept[4.78]	2.61927635	4.246188	0.38	0.5373
Intercept[4.85]	3.06916808	4.2664593	0.52	0.4719
Intercept[4.96]	3.80441735	4.3253149	0.77	0.3791
Overall Score	-0.0076481	0.0512756	0.02	0.8814

Effect Likelihood Ratio Tests

Source	Nparm	DF	L-R ChiSquare	Prob>ChiSq
Overall Score	1	1	0.02386142	0.8772

Ordinal Logistic Fit for Average Department Type [1=C],[2=NC]=NC

Logistic Plot



Whole Model Test

Model	-LogLikelihood	DF	ChiSquare	Prob>ChiSq
Difference	2.498529	1	4.997057	0.0254*
Full	39.090302			
Reduced	41.588831			

JMP Formatted - Fit Ordinal Logistic

Ordinal Logistic Fit for Average Department Type [1=C],[2=NC]=NC

Whole Model Test

RSquare (U)	0.0601
AICc	526.181
BIC	116.997
Observations (or Sum Wgts)	16

Lack Of Fit

Source	DF	-LogLikelihood	ChiSquare
Lack Of Fit	129	31.635582	63.27116
Saturated	130	7.454720	Prob>ChiSq
Fitted	1	39.090302	1.0000

Parameter Estimates

Term	Estimate	Std Error	ChiSquare	Prob>ChiSq
Intercept[4.09]	-22.957889	8.6730559	7.01	0.0081*
Intercept[4.19]	-21.992231	8.5818266	6.57	0.0104*
Intercept[4.28]	-21.30605	8.50705	6.27	0.0123*
Intercept[4.35]	-20.84727	8.4497402	6.09	0.0136*
Intercept[4.36]	-20.517306	8.405355	5.96	0.0146*
Intercept[4.37]	-20.212282	8.3626734	5.84	0.0157*
Intercept[4.58]	-19.918476	8.3209106	5.73	0.0167*
Intercept[4.61]	-19.654642	8.2836172	5.63	0.0177*
Intercept[4.62]	-19.379424	8.2455579	5.52	0.0188*
Intercept[4.66]	-19.08202	8.2060389	5.41	0.0201*
Intercept[4.67]	-18.76261	8.1660615	5.28	0.0216*
Intercept[4.86]	-17.89745	8.0710667	4.92	0.0266*
Intercept[4.88]	-16.427882	7.9788091	4.24	0.0395*
Overall Score	0.22881525	0.0965314	5.62	0.0178*

Effect Likelihood Ratio Tests

Source	Nparm	DF	L-R ChiSquare	Prob>ChiSq
Overall Score	1	1	4.99705745	0.0254*

Note: This appendix contains the fit ordinal logistic test output from JMP. This is provided as an example and shows two fit ordinal logistic regression outputs examining the effects of leader EI score on the aggregate mean value of employee engagement questions 1–8 separated by department type.

Appendix F

F-Test or Wilcoxon/Kruskal Wallis Test Results: Leader EI Scores by Leadership Level

EI indicator	Leadership level	*N*	*M*	*Range*	*SD*	95% CI	*p*
Self-awareness	Manager	17	82.24	28	7.50	[78.38, 86.09]	0.24
	Director	16	86.19	37	8.60	[81.60, 90.77]	Wilcoxon
	Executive	8	85.50	22	7.11	[79.56, 91.45]	
Self-management	Manager	17	82.88	22	5.59	[80.01, 85.76]	0.48
	Director	16	85.69	25	6.62	[82.16, 89.22]	F-Test
	Executive	8	83.25	34	9.77	[75.09, 91.41]	
Aggregate personal competence	Manager	17	82.88	24	5.94	[79.83, 85.93]	0.40
	Director	16	85.56	31	7.28	[81.96, 89.44]	Wilcoxon
	Executive	8	84.63	25	7.95	[77.98, 91.27]	
Social awareness	Manager	17	78.82	26	7.21	[75.12, 82.53]	0.15
	Director	16	82.82	33	6.86	[79.16, 86.47]	F-Test
	Executive	8	84.75	25	9.93	[76.45, 93.05]	
Relationship management	Manager	17	82.29	20	5.34	[79.55, 85.04]	0.72
	Director	16	82.75	28	7.15	[78.94, 86.56]	Wilcoxon
	Executive	8	82.50	34	10.13	[74.03, 90.97]	

EI indicator	Leadership level	*N*	*M*	*Range*	*SD*	95% CI	*p*
Aggregate social competence	Manager	17	80.88	23	5.69	[77.96, 83.81]	0.56 F-Test
	Director	16	83.00	24	6.71	[79.42, 86.58]	
	Executive	8	83.75	34	9.82	[75.54, 91.96]	
Overall EI score	Manager	17	81.65	21	5.37	[78.89, 84.41]	0.44 F-Test
	Director	16	84.50	25	6.62	[80.97, 88.03]	
	Executive	8	84.00	30	8.82	[76.63, 91.37]	

Note: Wilcoxon/Kruskal-Wallis Tests were used when data had a non-normal distribution. How the data for each item were distributed determined the best test to use to show if a relationship existed between elements of leader EI and a leader's leadership level.

Appendix G

Chi Square Results: Employee Engagement Responses by Leadership Level

Employee engagement questions	Leadership level	*Unfavorable*	*Neutral*	*Favorable*	*p*
Q1 – The person I report to treats me with respect	Manager	8	14	264	0.51
	Director	5	11	196	
	Executive	0	0	72	
Q2 – The person I report to cares about my job satisfaction	Manager	9	17	260	0.21
	Director	5	18	189	
	Executive	0	4	68	
Q3 – I am satisfied with the recognition I receive for doing a good job	Manager	29	35	223	0.16
	Director	13	40	159	
	Executive	1	6	65	
Q4 – I am involved in decisions that affect my work	Manager	22	44	220	0.55
	Director	15	3	171	
	Executive	2	26	67	
Q5 – When appropriate, I can act on my own without asking for approval	Manager	13	34	239	0.50
	Director	9	21	182	
	Executive	1	2	69	
Q6 – The person I report to encourages teamwork	Manager	6	17	263	0.68
	Director	3	22	187	
	Executive	1	1	70	
Q7 – I respect the abilities of the person to whom I report	Manager	3	19	264	0.69
	Director	2	21	189	
	Executive	0	2	70	
Q8 - The person I report to is a good communicator	Manager	21	20	245	0.25
	Director	12	28	172	
	Executive	1	3	68	

Appendix H

F-Test or Wilcoxon/Kruskal-Wallis Test Results: Leader EI Score by Highest Leader Degree

EI indicator	Highest leader degree	*N*	*M*	*Range*	*SD*	95% CI	*p*
Self-awareness	Associate's	3	82.67	34	17.62	[38.91, 126.43]	0.96 Wilcoxon
	Bachelor's	7	84.43	25	8.73	[76.35, 92.51]	
	Master's	21	84.71	22	6.29	[81.86, 87.58]	
	Doctorate	6	84.33	34	11.13	[72.65, 96.01]	
	Unknown	4	84.25	3	1.50	[81.86, 86.64]	
Self-management	Associate's	3	86.33	18	9.87	[61.83, 110.84]	0.98 F-Test
	Bachelor's	7	84.14	16	6.20	[78.41, 89.88]	
	Master's	21	83.95	34	6.68	[80.91, 86.99]	
	Doctorate	6	83.50	31	9.92	[73.10, 93.91]	
	Unknown	4	83.50	10	4.73	[75.98, 91.02]	
Aggregate personal competence	Associate's	3	84.67	25	13.65	[50.76, 118.58]	0.90 Wilcoxon
	Bachelor's	7	84.57	20	6.71	[78.37, 90.77]	
	Master's	21	84.14	25	5.80	[81.50, 86.78]	
	Doctorate	6	84.33	32	10.29	[73.53, 95.13]	
	Unknown	4	84.00	5	2.16	[80.56, 87.44]	

EI indicator	Highest leader degree	*N*	*M*	*Range*	*SD*	95% CI	*p*
Social awareness	Associate's	3	78.00	17	8.54	[56.78, 99.22]	0.83
	Bachelor's	7	81.43	31	10.89	[71.36, 91.50]	F-Test
	Master's	21	82.81	33	6.66	[79.78, 85.84]	
	Doctorate	6	80.00	28	10.64	[68.83, 91.17]	
	Unknown	4	80.00	9	4.24	[73.25, 86.75]	
Relationship management	Associate's	3	79.00	14	7.21	[61.09, 96.91]	0.37
	Bachelor's	7	85.29	22	8.12	[77.78, 92.79]	Wilcoxon
	Master's	21	83.19	34	6.72	[80.13, 86.25]	
	Doctorate	6	80.67	22	7.94	[72.33, 89.00]	
	Unknown	4	79.50	10	4.73	[71.98, 87.02]	
Aggregate social competence	Associate's	3	78.67	15	7.64	[59.69, 97.64]	0.71
	Bachelor's	7	83.71	26	9.01	[75.38, 92.05]	F-Test
	Master's	21	83.19	34	6.37	[80.29, 86.09]	
	Doctorate	6	80.67	20	8.43	[71.82, 89.51]	
	Unknown	4	80.00	9	4.08	[73.50, 86.50]	

EI indicator	Highest leader degree	*N*	*M*	*Range*	*SD*	95% CI	*p*
Overall EI score	Associate's	3	81.67	21	10.69	[55.11, 108.23]	0.96 F-Test
	Bachelor's	7	84.00	23	7.53	[77.04, 90.96]	
	Master's	21	83.71	30	6.14	[80.92, 86.51]	
	Doctorate	6	82.17	24	8.54	[73.20, 91.13]	
	Unknown	4	82.00	6	2.58	[77.89, 86.11]	

Note: Wilcoxon/Kruskal-Wallis Tests were used when data had a non-normal distribution. How the data for each item were distributed determined the best test to use to show if a relationship existed between elements of leader EI and a leader's highest degree level.

Appendix I

Chi Square Results: Employee Engagement Responses by Highest Leader Degree

Employee engagement questions	Highest leader degree	*Unfavorable*	*Neutral*	*Favorable*	*p*
Q1 – The person I report to treats me with respect	Associate's	1	4	31	0.21
	Bachelor's	6	6	105	
	Master's	2	5	245	
	Doctorate	3	6	89	
	Unknown	1	4	62	
Q2 – The person I report to cares about my job satisfaction	Associate's	2	6	28	0.13
	Bachelor's	5	9	103	
	Master's	2	13	237	
	Doctorate	3	7	88	
	Unknown	2	4	61	
Q3 – I am satisfied with the recognition I receive for doing a good job	Associate's	3	14	19	0.70
	Bachelor's	14	17	87	
	Master's	13	25	214	
	Doctorate	9	15	74	
	Unknown	4	10	53	
Q4 – I am involved in decisions that affect my work	Associate's	8	6	22	0.37
	Bachelor's	10	21	86	
	Master's	8	19	225	
	Doctorate	7	16	75	
	Unknown	6	11	50	
Q5 – When appropriate, I can act on my own without asking for approval	Associate's	4	6	26	0.46
	Bachelor's	6	15	96	
	Master's	3	14	235	
	Doctorate	9	13	76	
	Unknown	1	9	57	

Employee engagement questions	Highest leader degree	*Unfavorable*	*Neutral*	*Favorable*	*p*
Q6 – The person I report to encourages teamwork	Associate's	1	10	25	0.11
	Bachelor's	4	10	103	
	Master's	3	9	241	
	Doctorate	2	8	88	
	Unknown	1	3	63	
Q7 – I respect the abilities of the person to whom I report	Associate's	0	8	28	0.25
	Bachelor's	2	10	105	
	Master's	1	11	240	
	Doctorate	1	8	89	
	Unknown	1	5	61	
Q8 – The person I report to is a good communicator	Associate's	3	10	23	0.55
	Bachelor's	8	11	98	
	Master's	8	16	228	
	Doctorate	9	12	77	
	Unknown	6	2	59	

Appendix J

Chi Square Results: Employee Engagement Responses by Leader Degree Type

Employee engagement questions	Degree type	*Unfavorable*	*Neutral*	*Favorable*	*p*
Q1 – The person I report to treats me with respect	Non-clinical	6	7	197	0.20
	Clinical	6	14	273	
	Unknown	1	4	62	
Q2 – The person I report to cares about my job satisfaction	Non-clinical	7	13	190	0.25
	Clinical	5	22	266	
	Unknown	2	4	61	
Q3 – I am satisfied with the recognition I receive for doing a good job	Non-clinical	18	31	162	0.58
	Clinical	21	40	232	
	Unknown	4	10	53	
Q4 – I am involved in decisions that affect my work	Non-clinical	11	28	171	0.59
	Clinical	22	34	237	
	Unknown	6	11	50	
Q5 – When appropriate, I can act on my own without asking for approval	Non-clinical	7	20	183	0.30
	Clinical	15	28	250	
	Unknown	1	9	57	
Q6 – The person I report to encourages teamwork	Non-clinical	3	12	195	0.38
	Clinical	6	25	262	
	Unknown	1	3	63	
Q7 – I respect the abilities of the person to whom I report	Non-clinical				
	Clinical	2	23	268	
	Unknown	1	5	61	
Q8 – The person I report to is a good communicator	Non-clinical	10	21	179	0.36
	Clinical	18	28	247	
	Unknown	6	2	59	

Appendix K

Chi Square Results: Employee Engagement Responses by Department Type

Employee engagement questions	Department type	*Unfavorable*	*Neutral*	*Favorable*	*p*
Q1 – The person I report to treats me with respect	Non-clinical	2	5	172	0.66
	Clinical	11	20	360	
Q2 – The person I report to cares about my job satisfaction	Non-clinical	4	9	166	0.62
	Clinical	10	30	351	
Q3 – I am satisfied with the recognition I receive for doing a good job	Non-clinical	10	24	146	0.33
	Clinical	33	57	301	
Q4 – I am involved in decisions that affect my work	Non-clinical	9	16	154	0.20
	Clinical	30	57	304	
Q5 – When appropriate, I can act on my own without asking for approval	Non-clinical	3	16	160	0.55
	Clinical	20	41	330	
Q6 – The person I report to encourages teamwork	Non-clinical	1	9	169	0.38
	Clinical	9	31	351	
Q7 – I respect the abilities of the person to whom I report	Non-clinical	1	8	170	0.67
	Clinical	4	34	353	
Q8 – The person I report to is a good communicator	Non-clinical	8	9	162	0.45
	Clinical	26	42	323	

Appendix L

F-Test or Wilcoxon/Kruskal Wallis Test Results: Leader EI Score by Leader Age Range

EI indicator	Leader age range	*N*	*M*	*Range*	*SD*	95% CI	*p*
Self-awareness	30–39	3	82.67	10	5.03	[70.16, 95.17]	0.55 Wilcoxon
	40–49	17	84.77	34	9.16	[80.06, 89.47]	
	50–59	14	82.64	25	7.18	[78.50, 86.79]	
	60–69	7	87.86	19	7.15	[81.24, 94.47]	
Self-management	30–39	3	83.00	8	4.00	[73.06, 92.94]	0.73 F-Test
	40–49	17	84.24	31	7.65	[80.31, 88.17]	
	50–59	14	82.86	30	7.67	[78.43,87.28]	
	60–69	7	86.43	10	4.12	[82.62, 90.24]	
Aggregate personal competence	30–39	3	83.33	7	3.79	[73.93, 92.74]	0.61 Wilcoxon
	40–49	17	84.18	32	7.63	[80.25, 88.10]	
	50–59	14	83.00	22	7.06	[78.92, 87.08]	
	60–69	7	87.43	14	5.09	[82.72, 92.14]	

EI indicator	Leader age range	*N*	*M*	*Range*	*SD*	95% CI	*p*
Social awareness	30–39	3	81.00	3	1.73	[76.70, 85.30]	0.91
	40–49	17	82.35	36	9.25	[77.60, 87.11]	F-Test
	50–59	14	80.36	28	7.87	[75.81, 84.90]	
	60–69	7	82.14	16	6.41	[76.21, 88.08]	
Relationship management	30–39	3	81.00	6	3.46	[72.40, 89.61]	0.27
	40–49	17	85.24	22	5.56	[82.38, 88.10]	Wilcoxon
	50–59	14	79.71	26	7.22	[75.55, 83.88]	
	60–69	7	82.14	26	9.16	[73.68, 90.61]	
Aggregate social competence	30–39	3	81.33	4	2.08	[76.16, 86.51]	0.48
	40–49	17	84.12	29	7.05	[80.49, 87.74]	F-Test
	50–59	14	80.15	27	7.16	[76.01, 84.28]	
	60–69	7	82.43	21	7.46	[75.53, 89.33]	
Overall EI score	30–39	3	82.00	5	2.65	[75.43, 88.57]	0.65
	40–49	17	84.17	26	7.24	[80.45, 87.90]	F-Test
	50–59	14	81.57	23	6.87	[77.61, 85.54]	
	60–69	7	84.71	13	5.74	[79.41, 90.02]	

Note: Wilcoxon/Kruskal-Wallis Tests were used when data had a non-normal distribution. How the data for each item were distributed determined the best test to use to show if a relationship existed between elements of leader EI and a leader's age range.

Appendix M

Chi Square Results: Employee Engagement Responses by Leader Age Range

Employee engagement questions	Leader age range	*Unfavorable*	*Neutral*	*Favorable*	*p*
Q1 – The person I report to treats me with respect	30–39	0	1	38	0.94
	40–49	8	12	267	
	50–59	5	10	149	
	60–69	0	2	78	
Q2 – The person I report to cares about my job satisfaction	30–39	1	0	38	0.46
	40–49	8	17	262	
	50–59	4	17	134	
	60–69	1	5	74	
Q3 – I am satisfied with the recognition I receive for doing a good job	30–39	1	2	36	0.66
	40–49	26	36	225	
	50–59	14	30	120	
	60-69	2	13	66	
Q4 – I am involved in decisions that affect my work	30–39	2	0	37	0.70
	40–49	18	47	222	
	50–59	11	18	135	
	60–69	8	8	64	
Q5 – When appropriate, I can act on my own without asking for approval	30–39	0	3	36	0.51
	40–49	13	28	246	
	50–59	7	20	137	
	60–69	3	6	71	
Q6 – The person I report to encourages teamwork	30–39	0	1	38	0.60
	40–49	6	17	264	
	50–59	2	21	143	
	60–69	2	3	75	

Employee engagement questions	Leader age range	*Unfavorable*	*Neutral*	*Favorable*	*p*
Q7 – I respect the abilities of the person to whom I report	30–39	0	1	38	0.55
	40–49	3	17	267	
	50–59	1	21	142	
	60–69	1	3	76	
Q8 – The person I report to is a good communicator	30–39	1	0	38	0.24
	40–49	17	23	247	
	50–59	10	25	129	
	60–69	6	3	71	

Appendix N

T-Test or Wilcoxon/Kruskal-Wallis Test Results: Leader EI Score by Leader's Sex

EI indicator	Leader's sex	*N*	*M*	*Range*	*SD*	95% CI	*p*
Self-awareness	Female	26	84.85	34	8.56	[81.39, 88.31]	0.53
	Male	15	83.67	31	6.86	[79.87, 87.47]	Wilcoxon
Self-management	Female	26	83.73	37	8.08	[80.47, 87.00]	Prob>|t|: 0.66
	Male	15	84.60	18	4.29	[82.23, 86.98]	Prob>t: 0.33 Prob<t: 0.67
Aggregate personal competence	Female	26	84.15	32	7.67	[81.06, 87.25]	0.76
	Male	15	84.47	23	5.26	[81.55, 87.38]	Wilcoxon
Social awareness	Female	26	83.31	36	8.78	[78.76, 85.85]	Prob>|t|: 0.37
	Male	15	80.20	25	5.92	[76.92, 83.48]	Prob>t: 0.82 Prob<t: 0.18
Relationship management	Female	26	82.16	34	8.12	[78.87, 85.43]	0.79
	Male	15	83.13	16	4.50	[80.64, 85.63]	Wilcoxon
Aggregate social competence	Female	26	82.46	34	8.06	[79.21, 85.72]	Prob>|t|: 0.40
	Male	15	81.93	19	4.65	[79.36,84.51]	Prob>t: 0.60 Prob<t: 0.79

EI indicator	Leader's sex	*N*	*M*	*Range*	*SD*	95% CI	*p*
Overall EI score	Female	26	83.42	30	7.61	[80.35, 86.50]	Prob>|t|: 0.77
	Male	15	82.87	19	4.53	[80.36, 85.38]	Prob>t: 0.61 Prob<t: 0.39

Note: T-Tests were used when data were normally distributed to show probability. Wilcoxon/Kruskal-Wallis Tests were used when data had a non-normal distribution. How the data for each item were distributed determined the best test to use to show if a relationship existed between elements of leader EI and leader's sex.

Appendix O

Chi Square Results: Employee Engagement Responses by Leader's Sex

Employee engagement questions	Leader's sex	*Unfavorable*	*Neutral*	*Favorable*	*p*
Q1 – The person I report to treats me with respect	Female	10	13	348	0.46
	Male	3	12	184	
Q2 – The person I report to cares about my job satisfaction	Female	8	25	338	0.47
	Male	6	14	179	
Q3 – I am satisfied with the recognition I receive for doing a good job	Female	26	46	300	0.51
	Male	17	35	147	
Q4 – I am involved in decisions that affect my work	Female	24	52	2959	0.38
	Male	15	21	163	
Q5 – When appropriate, I can act on my own without asking for approval	Female	17	39	315	0.38
	Male	6	18	175	
Q6 – The person I report to encourages teamwork	Female	7	22	342	0.36
	Male	3	18	178	
Q7 – I respect the abilities of the person to whom I report	Female	3	22	346	0.42
	Male	2	20	177	
Q8 – The person I report to is a good communicator	Female	25	26	320	0.22
	Male	9	25	165	

Appendix P

Fit Ordinal Logistic Regression Results: Leader EI Impact on Engagement Responses from the Organization Domain of Press Ganey

Employee engagement questions – No separation by clinical/non-clinical	X predictor	*Coefficients*	*Std. Err.*	*p*
Predicted dependent variables – Employee engagement questions about the organization				
Aggregate mean scores – All questions related to the organization	EI	<0.01	0.04	0.93

Note: This single ordinal logistic regression was used to test a control variable focusing on whether all leader EI scores have a correlation with how employees viewed the organization. No significant correlation was found between leader EI scores and how employees responded to engagement questions about the organization (HCO).