EFFECTS OF INSIGHT MEDITATION ON SELF-AWARENESS IN LEADERS: A QUASI-EXPERIMENATAL STUDY

by

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Abstract

Emotional intelligence has been linked to positive leadership outcomes. The construct of self-awareness is a foundational competency in emotional intelligence theory. There is a gap in current research literature exploring ways to develop self-awareness in organizational leaders. This research used a quantitative methodology to explore the effect of a mindfulness-based training program on self-awareness in a sample of organizational leaders. The research was grounded in emotional intelligence theory. The quasi-experimental design used a two-group pre- and posttest nonequivalent-group approach and convenience sampling to measure the difference in mean scores of self-awareness with the emotional social competence inventory. The training intervention was an eight-week mindfulness-based approach designed and trained by Stanford University. The training methodology was conceptualized in the study as mindful insight meditation, a process adapted from traditional methods of Tibetan Buddhist practices. The results answered the research question by showing that the training intervention significantly increased self-awareness in the experimental group producing a large effect size. Implications of the research for psychological theory and application are discussed. Limitations of the research are identified and recommendations for future research are made.

Dedication

No journey of great length or difficulty is done alone. There are so many that support in seen and unseen ways. I would like to dedicate this work to my family and friends that whole heartedly supported this effort despite long odds and mountainous obstacles. The love and strength was felt in all those quiet moments of doubt. I would like to particularly recognize Rita Frangione at the Veterans Administration, without whom this journey could not have begun.

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CHAPTER 1. INTRODUCTION

The study of mindfulness practices to improve performance in the workplace is relatively new to the field of industrial and organizational (I/O) psychology (Dane & Brummel, 2013). This study explored how a mindfulness-based training program impacted the self-awareness competency of emotional intelligence (EI) in organizational leaders in the United States. Chapter 1 is organized into nine sections. The chapter will begin by providing a detailed review of the background of the problem. Section 2 will define the problem statement that will be used to frame the research. Next, Section 3 will detail the purpose of the study and Section 4 will outline the significance of the study within the field of psychology and the specialization of I/O psychology. Section 5 will describe the research question and Section 6 will define the terms used in this research. Section 7 will outline the experimental design. Section 8 will discuss the assumptions and limitations of the study. Lastly, Section 9 will provide an overview of how the rest of the dissertation is organized and the content of each chapter. Chapter 1 will begin with a discussion of the background of the research problem.

Background of the Problem

The background of the study will encompass four areas. The first area will be an overview of the psychological challenges of organizational leadership in contemporary society. The second area is a summary of relevant research in the area of EI and mindfulness study. The third area explored is the importance of this research subject to leadership development. Lastly,

the theoretical grounding that served as the foundation for this research is explored. This section begins with a discussion of organizational leadership in a contemporary setting.

The first 16 years of the 21st century has seen a series of corporate leadership failures that had catastrophic impacts on the world economy and the lives of millions of U.S. citizens. In the fall of 2016, just eight years after the global financial meltdown caused by leadership failures that allowed speculative subprime mortgage lending (Knights & McCabe, 2015), the banking behemoth Wells Fargo admitted to opening over two million fake accounts to boost the company's stock price and increase leader bonuses (Corkery, 2016). According to the Chief Executive Officer (CEO) of Wells Fargo, over 5,300 employees, managers, and directors had been fired for the fraudulent practice that had occurred over a seven-year period (Corkery, 2016). The Senate Banking Committee characterized the behavior of senior executives at Wells Fargo as, "gutless leadership" (Corkery, 2016, para. 8).

Quigley and Hambrick (2015) argued that the importance of the CEO and corporate leadership has grown in importance in the American psyche. Quigley and Hambrick (2015) researched whether the *CEO effect* (variance in organizational performance that is attributable to the CEO) was just an American fixation or if corporate CEOs really brought increased value to the organization that justified their compensation and power. Prior to the 1990s, CEOs and senior organizational leaders generally rose through the ranks of the company (Quigley & Hambrick, 2015). Beginning in the 1990s and continuing to today, CEOs are often brought into a company from the outside with expectations of quick return on investment and significant pressure from boards of directors and stockholders (Krieger & Ang, 2013; Quigley & Hambrick, 2015). Kriegar and Ang (2013) found that new CEOs were more likely to manipulate performance measures based on pressure and expectations. In businesses where the incoming

CEO experienced higher pressure to succeed, Kriegar and Ang (2013) found an increased likelihood for the CEO to cheat to meet or exceed expectations. While Krieger and Ang (2013) identified the dangers of stress and pressure on CEOs, Quigley and Hambrick (2015) found that 20% of the variance in business performance can be explained by the CEO effect. Quigley and Hambrick (2015) argue that the importance of senior leadership to business success may be driven by the increased speed of business experienced in the late 20th Century and the increased availability of international markets. These circumstances combined to make a more dynamic business environment requiring a bolder, more dynamic and skilled, leader (Quigley & Hambrick, 2015). Boyatzis, Smith, Van Oosten, and Woolford (2013) argued that given the recent catastrophic CEO behavior and increased stress on leaders at all levels, leadership programs should focus on the development of EI and specifically the competency of self-awareness. The background of EI research and theory development will be discussed next.

Emotional Intelligence and Self-Awareness

Through seminal research by Salovey and Mayer (1990) and Goleman (1995), the theory of EI was established (Boyatzis, Gaskin, & Wei, 2015). The theory argued that awareness and mastery of one's emotions was a separate and unique form of intelligence (Mayer, Caruso, & Salovey, 1999). Salovey and Mayer (1990) defined EI as:

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

Goleman and Boyatzis furthered the study of EI by developing an EI model comprised of two competencies (Boyatzis, 2009). This two competency EI approach became the foundation for a comprehensive model of behavior using a four factor emotional and social competency model

(Boyatzis et al., 2015). The first EI competency in this model is self-awareness and focuses on preferences, resources, and intuitions for the purpose of recognizing how one's emotions impact the individual (Boyatzis et al., 2015). The second EI competency is self-management and is comprised of four clusters. The four self-management clusters are (a) emotional self-control, (b) adaptability, (c) achievement orientation, and (d) positive outlook (Boyatzis, 2009). Cherniss, Goleman, Emmerling, Cowan, and Adler (1998) argued that within the study of EI, self-awareness is fundamental and critical to emotional and social proficiency. Research by Rentsch, Gunderson, Goodwin, and Abbe (2007) supported Cherniss et al. (1998) finding that one's self-awareness is a foundational component of EI and critical to the multicultural perspective-taking skills of leaders. Multicultural perspective-taking competency helps leaders extract, interpret, and utilize cultural information to make better strategic decisions, motivate organizations, and communicate more effectively (Rentsch et al., 2007). There is a significant volume of research showing the importance of EI and employee awareness in the workplace, an overview of this research will be considered next.

Emotional intelligence is argued to be an important competency for organizational leaders (Goleman, Boyatzis, & McKee, 2001). Ashkanasy and Dasborough (2003), Boyatzis (2008), and Yip and Côté (2013) asserted that the study of self-awareness and EI is important to leadership development and leader decision making. In meta-analysis research, O'Boyle, Humphrey, Pollack, Hawver, and Story (2011) found that EI was correlated with higher levels of performance and successful leadership. Further arguing the importance of emotion in understanding the work place, Bowen (2014) argued that the study of emotion is how organizational behavior is understood and should be studied and integrated in university MBA programs.

In research that specifically looked at leader awareness, Côté, Lopes, Salovey, and Miners (2010) found that EI and particularly the awareness of emotions help predict leader emergence in groups. Dane (2011) argued that awareness skills are an important aspect of how leaders make strategic decisions. In a subsequent study, Dane (2013) found that attention and awareness to nuanced constantly changing business inputs often determined the success or failure of organizations in fast-paced high stress industries. Specifically exploring the self-awareness competency of EI, Bratton, Dodd, and Brown (2011) found that self-awareness was positively related to higher job performance ratings. Hays, Arredondo, Gladding, and Toporek (2010) argued that the EI competency of self-awareness was a critical leadership skill for working in diverse workgroups and recognizing cultural bias and power dynamics that could derail a work team. Lastly, Houghton, Wu, Godwin, Neck, and Manz (2012) found that self-awareness was a key aspect of leader self-efficacy, performance, and stress management. In qualitative research aimed at determining a training intervention that could improve EI in business leaders, McGarvey (2010) hypothesized that mindfulness training could be an effective method for improving EI. Next, the background of mindfulness research in psychology will be considered.

Mindfulness Research in Psychology and I/O Psychology

The study of mindfulness is new in the social sciences, but in recent years the study has increased in the fields of psychology, neuroscience, and medicine (Dane & Brummel, 2013). The study of Tibetan Buddhist methods of mindfulness in cognitive psychology and neuroscience research has shown that sustained meditation practice can change how the brain processes information and can improve brain plasticity (Lutz, Slagter, Dunne, & Davidson, 2008). Moore and Malinowski (2009) and Van Vugt and Jha (2011) found that experienced mindfulness

meditation practitioners had increased measures of attention, working memory, and cognitive flexibility. Zeidan, Johnson, Diamond, David, and Goolkasian (2010) found increased executive functioning and cognitive performance in four mindfulness meditation sessions. Singleton et al. (2014) used echo MRI scans to show that subjects using the eight-week Mindfulness-Based Stress Reduction (MBSR) program experienced increases in gray matter density in brain areas that correlated with higher states of psychological well-being. An earlier study of brain activity during Zen meditation using an electroencephalogram (EEG) and trait anxiety self-report measures, found that different types of mindfulness practice had different effects on subjects' attention and alerting-related processes (Jha, Krompinger, & Baime, 2007). Next, mindfulness study in the area of academic performance will be discussed.

In the area of education and learning, mindfulness has been shown to improve individual academic performance (Mrazek, Franklin, Phillips, Baird, & Schooler, 2013; Shao & Skarlicki, 2009). Mrazek et al. (2013) explored the effect of a two-week mindfulness program on GRE scores. The research found that those in the mindfulness group improved reading-comprehension and reduced mind wandering (Mrazek et al., 2013). Bellinger, DeCaro, and Ralston (2015) explored the effect of dispositional mindfulness on performance while taking difficult math tasks. The researchers found that dispositional mindfulness helped improve performance by reducing test anxiety (Bellinger et al., 2015). Bellinger et al. (2015) argued that performance was improved by increasing working memory through the reduction of anxiety in those with higher trait mindfulness. Within the study of mindfulness, there is debate over the constructs of the phenomenon (Quaglia, Brown, Lindsay, Creswell, & Goodman, 2015). This debate is confounded by the conceptual differences between Western psychological practices and traditional Buddhists perspectives that have been the foundation of mindfulness methodological

development (Quaglia et al., 2015). Next, Western and Buddhist perspectives of mindfulness will be considered.

Dane (2011) and Quaglia et al. (2015) presented multiple definitions of mindfulness in use from academic and Buddhist traditions. The lack of a definitive definition is often cited as one of the difficulties in studying mindfulness as a disposition and as a training method (Dane, 2011). While the phenomenon of mindfulness may be lacking a definitive psychological definition, there is a commonality in most mindfulness definitions describing the phenomenon as an act of non-judgmental awareness in the present moment (Bishop et al., 2004; Dane, 2011; Quaglia et al., 2015). Purser and Milillo (2015) asserted that this common definition has permeated mindfulness research due to the popularity of Kabat-Zinn's MBSR program. Kabat-Zinn (2009) asserted that the MBSR program was developed using traditional Buddhist mindfulness techniques adapted to Western culture. Purser and Milillo (2015) contend that while the MBSR definition of mindfulness is suitable for that specific mindfulness training modality, the definition leaves out important concepts that were foundational to the traditional view of Buddhist mind training.

Recent psychological research has begun to identify two prevalent types of mindfulness meditation practice (Van Vugt, 2015). The first practice is generally identified as focused attention (FA) practice or shamatha in the Buddhist tradition. In FA practice, the practitioner focuses attention on a single object; usually the breath or other fixed object (Van Vugt, 2015). In the shamatha method, the practitioner focuses on the breath and brings attention back to the breath when the mind wanders (Trungpa, 2003). The meditator does not assign any judgment to the breath; the breath is not too fast or too slow, it just simply is (Trungpa, 2003). A second type of traditional Buddhist mindfulness practice is known as vipassana or insight meditation (Holas

& Jankowski, 2013; Van Vugt, 2015). Insight meditation (IM) fosters a state of open monitoring (OM) which is identified as a "nonreactive monitoring of the content of experience from moment to moment" (Lutz et al., 2008, p. 1). Furthering the understanding of the Buddhist concept of insight meditation within mindfulness study, Goldstein and Kornfield (1987) and Grabovac, Lau, and Willett (2011) argued that IM has the additional feature of recognizing in the moment the transience nature of thoughts and feelings. Lutz et al. (2008) argued that the deliberate practice of focusing on affective states like empathy and compassion is often an indispensable element of IM.

One of the key aspects of Buddhist conceptualizations of mindfulness is the deliberate evaluative and reflective thought processes and self-awareness practiced in these traditions (Quaglia et al., 2015). Mosig (2007) argued that a key aspect of the Buddhist view of self-awareness is the recognition of the transient nature of the ego and the Buddhist concept of non-attachment to distorted mental narratives designed to shield the ego. Supporting the importance of self-awareness in mindfulness practice, Goldstein and Kornfield (1987), Grabovac et al. (2011), argued that self-awareness was central to the phenomena of mindfulness study. Brown, Ryan, and Creswell (2007) and Tanay and Bernstein (2013) argued that within the study of mindfulness, state self-awareness is a key aspect of attending to both physical and mental phenomena in the moment.

Recent cognitive research has differentiated between mindful states and cognitive processes associated with FA and OM meditation processes (Van Vugt & Slagter, 2014). Ainsworth, Eddershaw, Meron, Baldwin, and Garner (2013) and Van Vugt (2015) asserted that different types of mindfulness meditation might impact cognitive processes differently. Ainsworth et al. (2013) and Van Vugt (2015) reasoned that awareness and task focus were likely

improved through FA types of mindful attention meditation, while emotional regulation and decision making were more likely improved through OM processes. Traditional Buddhist practice has characterized FA (shamatha) and IM (vipassana) as integrated practices on a continuum of mindfulness states (Jinpa et al., 2013; Trungpa, 2003).

Next, this section will explore how mindfulness and awareness research has been conducted in the field of I/O psychology. The study of mindfulness in the workplace has grown in the past decade (Dane & Brummel, 2013). Dane (2011) argued that mindfulness and awareness study was germane to I/O psychology and the exploration of task performance in the workplace. In later research, Dane and Brummel (2013) found that employees with higher scores in mindfulness had better performance reviews in a dynamic work environment. In addition to heightened performance found by other researchers, leaders with higher scores on mindfulness and self-awareness assessments have been shown to behave in a more ethical manner (Lampe & Engleman-Lampe, 2012; Ruedy & Schweitzer, 2011; Shapiro, Jazaieri, & Goldin, 2012). In a qualitative study, Goldman Schuyler (2010) asserted that mindfulness practice with business executives built strategic awareness and value-based behavior. Matthias, Narayanan, and Chaturvedi (2014) found that trait mindfulness was correlated with employee performance and happiness. Mindful managers were found to make better context driven decisions and be less influenced by corporate pressures (Fiol & O'Connor, 2003; Pirson, 2012). Brusman (2014) and Hafenbrack, Kinias, and Barsade (2014) found that mindfulness meditation had a positive relationship to better decision making and EI development in a business population, while Khisty (2010) argued that IM helped business leaders remain calm and regulate emotion in stressful situations.

Beyond worker performance, mindfulness practice has also been shown to increase worker engagement, well-being, and worker authentic functioning (Leroy, Anseel, Dimitrova, & Sels, 2013). In a mindfulness study conducted at Dow Chemical, Aikens et al. (2014) found that an online mindfulness program improved worker performance and well-being. A similar study found that a 12-week mindfulness online program reduced worker stress and increased well-being during a time of organizational change (Wolever et al., 2012). Roche, Haar, and Luthans (2014) found that higher scores on the Mindful Awareness and Attention Scale (Brown & Ryan, 2003) resulted in greater well-being and performance in leaders. In related research, a mindfulness training intervention was shown to help workers evaluate work stressors differently and offered tools for being more productive and happier at work (Newsome, Waldo, & Gruszka, 2012). Synthesizing the concepts of mindfulness and self-awareness, Carlson (2013) argued that mindfulness increased self-awareness by reducing informational and motivational barriers to self-knowledge. Next, the gaps in research literature will be discussed.

Despite evidence in the research indicating the value of mindfulness to increase awareness and job performance; little study of specific mindfulness methods in the workplace has been conducted. Khisty (2010) and Pirson (2012) argued that in spite of the business related benefit of mindfulness training, few leaders were taught how to remain focused and in the moment. Vogus and Sutcliffe (2012) argued that mindfulness in executives is important to strategic decision making and recommended that future psychological research should explore Eastern mindfulness practices. Purser and Milillo (2015) and Vallabh and Singhal (2014) asserted that future study in the specialization of organizational psychology and leader development should include mindfulness meditation in the Tibetan Buddhist tradition as a method for improving workplace performance and ethics in the business environment.

The study of the effects of mindfulness-based practices is new to the field of I/O psychology. While the underlying evidence supporting the psychological benefits of mindfulness-based training is strong, there have been questions raised about the definition of mindfulness and identifying the active components in various types of traditional Buddhist and Western adaptations of mindfulness practices. Many of the early studies used the popular eight-week MBSR program developed for use with chronic pain suffers. The MBSR program was adapted from traditional practices, but also introduced other interventions designed to alleviate chronic pain, like yoga and Tai Chi (Kabat-Zinn, 2009). These additional activities make it difficult for researchers to determine the active component of the practice that may be causing the measured effect. Other mindfulness interventions studied have used variations of methods and durations from five minute daily practices to month long silent mindfulness meditation retreats. While the use of mindfulness training as a method for improving well-being and performance in a variety of areas has generally been supported by research, there have been opposing views about the efficacy of mindfulness. Next, research presenting opposing views to the benefits of mindfulness will be discussed.

The effects of mindfulness in some studies have been inconclusive and the construct of mindfulness has been challenged by some researchers. Van Berkel, Boot, Proper, Bongers, and Van der Beek (2014) found no significant difference in employee performance or health benefits in a study exploring a six-month mindfulness training package with e-coaching in a business population. Grossman (2011) contends that recent studies have been unsuccessful in actually measuring the Buddhist conceptualization of mindfulness. Grossman (2011) asserted that common measurement instruments assess how poorly one feels he/she pays attention to minor activities and not actual state awareness. Mindfulness measurement tools that are aligned with

varying definitions of mindfulness practices are still being debated (Brown, Ryan, Loverich, Biegel, & West, 2011; Grossman, 2011; Tran, Gluck, & Nader, 2013).

An area that has yet to be thoroughly explored is the impact of Tibetan Buddhist mindfulness practices on cognitive processes and affective states (Purser & Milillo, 2015). There has been minimal discussion concerning contemplative practices found in the IM Buddhist traditions and how these practices impact habitual thinking processes and the awareness of emotions (Purser & Milillo, 2015; Van Vugt, 2015). A foundational aspect of these contemplative practices is the development of self-awareness to accurately identify internal physical and mental states that assist in positive outcomes from increased task awareness to better strategic decision making (Purser & Milillo, 2015; Vallabh & Singhal, 2014). A gap identified in the current research is the lack of study of a standardized contemplative practice that intentionally engages both the FA and OM areas of awareness conceptualized in IM Buddhists traditions. In addition, current research has neglected to try to isolate and measure the impact of such contemplative practices on the foundational EI and leadership competency of self-awareness. An instructional parable in Tibetan Buddhist mind training advises one to, *Begin where you are at* (Trungpa, 2003). This parable provides a good starting place for the study of IM mindfulness-based training grounded in the foundational competency of self-awareness.

Research Interest

Improving the performance of organizational leaders is an area of interest for businesses and I/O psychologists alike. Given the catastrophic failures of leadership experienced in the last decade (Corkery, 2016; Knights & McCabe, 2015), finding low-impact cost-effective methods for improving leadership is germane to the practice of I/O psychology and research in the field. The presence of EI has been shown to improve a leader's performance in many areas (Boyatzis,

2008; O'Boyle et al., 2011). However, a reliable method for training EI has been elusive. Lomas, Edginton, Cartwright, and Ridge (2014) asserted that mindfulness meditation could be one method for improving EI. In proximal areas of research, mindfulness practices have shown much promise in diverse areas from pain relief (Kabat-Zinn, 2009) to improving scores on standardized tests (Mrazek et al., 2013). This study furthers the exploration of the psychological benefits of mindfulness meditation training in the area of EI and leadership development research that is of interest to organizations and the specialization of I/O psychology.

General Theory

The general theory that supports this study is EI theory presented by Salovey and Mayer (1990) and Goleman (1995). Emotional intelligence theory has been used extensively by other researchers to explore leadership behavior in the workplace (Boyatzis, 2009; Bratton et al., 2011; Goleman, Boyatzis, & McKee, 2001). Within EI theory there are several working models designed to explain the phenomenon (Boyatzis et al., 2015). This dissertation research utilizes the two-competency EI structure found in the Boyatzis and Goleman (2007) model of emotional and social competence. The Boyatzis and Goleman (2007) model asserted that EI is comprised of two competencies, self-awareness and self-management. The Boyatzis and Goleman (2007) competency model of EI was selected for the ability to have consistency throughout the research design. This design consistency will be discussed next.

The two-competency model of Boyatzis and Goleman (2007) allowed for design consistency throughout the research. The competency model of EI was supported with a reliable and valid psychometric measurement instrument, the Emotional Social Competence Inventory (Hay Group, 2011), which measures the two EI competencies along with two aspects of social competency identified in the Boyatzis and Goleman model (Boyatzis & Goleman, 2007). The

theory, measurement instrument, and research design are aligned around the consistent treatment of the construct of self-awareness as a competency within EI. The consistency between the study's theory and operationalization helped maintain uniformity between constructs and aligned how those constructs were understood and measured within the larger context of the theory.

This section has provided a background of EI and mindfulness research in psychology. The use of EI theory was shown to create consistency within this study. Emotional intelligence theory and the competency model of EI were shown to be consistent with how researchers understand leadership behavior and have been used in peer reviewed scientific research exploring leadership development (Boyatzis, 2008). Design consistency was also shown between the selected EI model, the construct of self-awareness, and the measurement instrument used to observe the phenomenon of interest. Next, the research problem will be discussed.

Statement of the Problem

Within EI theory, a leader's self-awareness competency has been shown to predict workplace performance (Dane & Brummel, 2013; Goldman Schuyler, 2010; Hulsheger, Alberts, Feinholdt, & Lang, 2013). The research literature showed a current problem in the specialization of I/O psychology regarding how to increase a leader's self-awareness and improve performance (Purser & Milillo, 2015). One method that has been argued to improve aspects of awareness and EI is mindfulness practice (Goldman Schuyler, 2010; Hafenbrack et al., 2014; Hulsheger et al., 2013; Lomas et al., 2014). The research problem that emerged from the review of relevant literature is that previous research has shown that self-awareness is a component of EI and that self-awareness can be improved; what the research has not empirically explored is how self-awareness is impacted by IM practice. There is a gap in current EI and mindfulness research

within the specialization of I/O psychology studying the effect of specific types of Tibetan mindfulness meditation on self-awareness in a population of organizational leaders.

Purpose of the Study

The purpose of this study is to answer the research question and address the research problem by closing the gap in the scientific literature and determining the effect of mindful-insight meditation on self-awareness in a population of organizational leaders. The overarching purpose of this study was to help identify a method of improving leader performance through EI development. A narrower definition of the purpose of this research was to determine if IM would impact EI in organizational leaders. Khisty (2010), Purser and Milillo (2015), Roche et al. (2014), and Vogus and Sutcliffe (2012) argued that the gap in mindfulness research literature needs to be explored through empirical study. In so doing, this research took the next step in EI and mindfulness research by advancing and exploring new aspects of scientific knowledge within I/O psychology. This study advanced the scientific knowledge within I/O psychology by exploring how to improve the EI competency of self-awareness in organizational leaders through an IM training program. Finally, this research provided new knowledge to the field of I/O psychology by empirically studying the impact of a method of IM that has not been quantitatively studied before in the population of interest. This study provided valuable information to the larger community of researchers and practitioners in the fields of I/O psychology, human resources management, and leader coaching.

Significance of the Study

The significance of this study is that answering the research question provided valuable insights that can be applied throughout a wide range of research and professional areas. This section will consider three areas of significance for this study. The first area of significance to be

discussed is to organizations of all types and sizes that have a vested interest in improving leader performance. Next, the significance to practitioners within I/O psychology will be discussed. Lastly, the significance of this research on the knowledge base and theory within the field of I/O psychology will be explored. This section will begin by discussing the significance of this research to stakeholders in the business community.

A research study by Deloitte (2016) found that 86% of global human resources and business leaders cited leadership development as a top concern for their organization. According to the Society for Human Resources Management, organizations in the United States spent over $15.5 billion in 2013 on leadership development training (Meinert, 2014). Boyatzis (2008) and Brusman (2014) argued that EI is an important component of leadership development. By filling the gap in the research, this study provided insight into one cost effective method for improving the EI self-awareness competency that would be relevant for the wider business and organizational development community. Next, the significance of this research to those in I/O psychology and the organizational development profession will be considered.

According to Kaiser and Curphy (2013), failure of leadership development programs led to a significant need for consulting psychologists to add rigor and science-based practices to the field of leadership development. Despite the significant financial investment by US corporations in leadership development programs, few of the training interventions are exposed to rigorous review or empirical study (Kaiser & Curphy, 2013). Bowen (2014) argued that the study of emotion in organizations is critical to understanding how organizations function and how decisions are made. Bowen (2014) asserted that business programs should actively explore and teach emotional intelligence and emotional skill building as part of MBA programs and seek to add new knowledge to the field. In the area of mindfulness research within I/O psychology,

Purser and Milillo (2015) and Roche et al. (2014) asserted that more research needs to be done to understand how different mindfulness interventions impact performance in the workplace. The study of the effect of mindfulness-based training on EI was significant to the field of I/O psychology and organizational development professions for two reasons. First, the study will provided a rigorous measure of the effect of a training approach on the key leadership performance indicator of EI. As cited, the leadership development industry is a $15.5 billion industry in the US and there is currently a lack of empirically tested methods to improve leadership (Kaiser & Curphy, 2013; Meinert, 2014). The data gleaned from this study is useful to consulting psychologists and educators within the field of I/O psychology that conduct work or research in the area of EI and leadership development.

The second area this study was significant is in the growing domain of mindfulness research. Roche et al. (2014) and Van Vugt (2015) asserted that different types of mindfulness practices might impact individual performance differently. Roche et al. (2014) and Van Vugt (2015) argued that more research needed to be done to determine how different methods of mindfulness practice impacted the cognitive and emotional centers of the brain. Van Vugt (2015) hypothesized that awareness and task focus were likely improved through FA meditation, while IM likely impacted emotional regulation and decision making. The findings of this dissertation extended the knowledge base of IM mindfulness interventions and will assist other researchers in the field of psychology that are interested in the impacts of different mindfulness practices. Next, how this research contributed to the base of knowledge and theory within I/O psychology will be considered.

This research contributed to the knowledge within the field of I/O psychology in two significant ways. First, the findings increased the knowledge within EI theory by showing the

effect of an IM meditation program on the self-awareness competency of EI. Testing the effect of an IM based training program to develop EI also increased knowledge by helping to confirm or deny that EI can be improved through training. The two contributions to theory that were made by this study will be discussed next.

The Goleman and Boyatzis theory of EI supported a competency-based model that had two competencies (Boyatzis, 2009). The use of a quasi-experimental research design along with continuity of theoretical constructs throughout the study (theory, construct, and operationalization) helped advance the rigor of EI theoretical research in the competency-based model. The mindfulness-based practice engaged the self-awareness competency in the Goleman and Boyatzis EI model and provided data on the impact of the approach on self-awareness. This research helped strengthen the competency-based theory of EI by exploring the construct of self-awareness within the theory.

The second contribution this research made to theory is in the discussion of EI as an actual intelligence. This study helped confirm existing theory by showing that it is possible to improve EI through training like a standard intelligence. Mayer, Savoley, Caruso, and Sitarenios (2001) argued that one aspect that made EI an actual intelligence and not just an aspect of personality was that EI abilities could be improved with training. This research helped confirm or deny this assertion of EI theory by exploring if the self-awareness competency of EI could be improved through a mindfulness-based training approach.

Section 4 has shown the significance of this research to theoretical and applied work in the field of I/O psychology. An argument was made that this study was significant to organizational stakeholders that have a vested interest in improving leader performance. Next, this section showed the significance of this research to practitioners within the field of I/O

psychology. Lastly, the significance of this research on the knowledge base and theory within the field of I/O psychology was shown. The possible theoretical contributions of this study were shown to be germane to the fields of I/O psychology, human resource management, and executive or management coaching.

Research Questions

This research utilized one research question with two subquestions. Answering this research question may close the gap found in the research literature.

RQ1 Research Question: Is IM training effective in improving self-awareness in a sample of organizational leaders?

RQ1A: Is there a difference in scores of self-awareness in the IM group based on pretreatment (T1) to end of treatment (T2) measures?

RQ1B: Is there a difference in scores of self-awareness at the end of treatment (T2) between those in the IM group and those in the control group?

Definition of Terms

This section will define the constructs and operational terms that were used in this research. First, the training intervention will be defined. Next, definitions of mindfulness and different types of meditation practice will be defined. The working definition of organizational leadership used in this paper will be presented along with the population of interest. Lastly, a definition for the construct of self-awareness will be presented. This section will begin by defining the training intervention.

Compassion Cultivation Training

The training program used to study self-awareness growth in this research was *Compassion Cultivation Training* (CCT). The CCT program was developed at Stanford

University with the help from a grant by His Holiness the Dalai Lama (Jinpa et al., 2013). The principal developer of the program was Thupten Jinpa, Ph.D., a former Buddhist monk and Visiting Scholar at Stanford University School of Medicine (Jinpa et al., 2013). The eight-week training program designed for CCT uses a contemplative or insight focused process with meditation-based skill development (Jinpa et al., 2013). The integrated IM program takes students through both FA and OM meditation practice with aspects of compassion being the focal point of contemplation and insight (Jinpa et al., 2013). The training included weekly guided FA and OM meditation training presented in a group setting by a certified Stanford instructor. Daily meditation homework was also assigned as part of the training. The meditation instructors used for the training were not affiliated with the study. The CCT lesson plan was approved by the Capella University Institutional Review Board (IRB) for research using human subjects.

Focused Attention (FA)

The definition of *focused attention* (FA) was taken from Ainsworth et al. (2013). This definition asserted that FA is a process of "maintaining sustained selective attention towards a volitionally chosen object (e.g. localized sensation of breathing) and engaging in 'self-monitoring' for intrusive thoughts and attentional distractors" (Ainsworth et al., 2013, p. 1226).

Insight Meditation (IM)

Insight meditation (IM) is a meditation practice that includes aspects of FA and OM techniques for the purpose of recognizing and developing knowledge of one's mental processes, emotion, and self (Lutz et al., 2008; Mahasi, 1994). Brown and Ryan (2004) highlighted that in this type of meditation, "Concentration trains the attentional capacity of the mind, while active

observation of the ever-changing present encourages insight into the nature of conscious experience through a clear 'view' of what makes up our world of consciousness" (p. 244).

Mindfulness

The definition of the phenomenon of *mindfulness* is taken from Brown and Ryan (2004). Brown and Ryan (2004) defined mindfulness as, "an open or receptive attention to and awareness of ongoing events and experience" (p.245).

Open Monitoring (OM)

The definition of *open monitoring* (OM) was taken from Answorth et al. (2013):

> [OM] involves no deliberate de-selection of stimuli, but active monitoring and acceptance of internal and external sensation to promote a receptive field of non-judgmental awareness. By encouraging an attentional focus towards internal emotional experiences (yet recognizing them as subjective and prone to personal bias), OM attention mechanisms relate to both attentional and affective/attitudinal mindfulness facets (p. 1226).

Organizational Leader

A *leader* is defined as someone who "influence[s] people in a way that motivates them to contribute to the achievement of group goals" (Haslam & Reicher, 2016, p. 2). For the purposes of this research, the definition of *organizational leader* was expanded to include one or more of the following three criteria; (a) supervises two or more individuals, (b) is a member of a board of directors, or (c) is a member of a leadership team.

Research Population

The theoretical population for this study was comprised of organizational leaders in the United States who met the inclusion criteria. The accessible population was comprised of

organizational leaders that had registered to participate in the eight-week CCT training program who met the study inclusion criteria. The sampling frame was comprised of organizational leaders that had registered to participate in the eight-week CCT training and volunteered to participate in the study and who met the study inclusion criteria.

The study used a two-group design, the experimental and control group were comprised of organizational leaders from the theoretical population. The research population was comprised of 72 volunteer organizational leaders. This study defined organizational leader as anyone that supervised two or more individuals, or presently was a member of a board of directors, or was presently a member of a leadership team. Inclusion criteria for participation in the study were; (a) organizational leader, (b) between the ages of 25-65, and (c) did not currently participate in an active meditation program. An active meditation program was defined as meditating three or more times a week.

Self-Awareness

The construct of *self-awareness* was defined as "the ability to understand our own emotions and their effects on our performance" (Hay Group, 2011, p. 5). The operational definition of self-awareness identifies a two variable construct. The two self-awareness variables are; (a) awareness of emotions and (b) awareness of effects of emotions (Boyatzis et al., 2015). The construct and variables that comprise the self-awareness dependent variable studied in this research were connected and congruent with the competency theory of EI proffered by Goldman and Boyatzis (Hay Group, 2011). The variables of interest were operationalized and measured with the Emotional Social Competence Inventory (ESCI) and produced a global score of self-awareness.

Research Design

This study used a quantitative methodology with a quasi-experimental research design. The quantitative research method was selected because the gap in the literature indicated a lack of empirical study in the psychological outcomes of mindfulness-based practices. This study used statistical analysis of mean scores generated from a numeric inventory of self-awareness to address this gap in the literature. The research problem delineated a need to discover if a causal relationship existed between IM practice and increased self-awareness. To address the research problem, an experimental or quasi-experimental research design was required. Next, the specific quasi-experimental design will be discussed.

The quasi-experimental approach used in this study was a two-group pre- and posttest nonequivalent-group design using convenience sampling (Reichardt, 2009). The quasi-experimental approach with a two-group pre- and posttest nonequivalent-group design was appropriate for this research problem because it provided an answer to the research question. This quasi-experimental design allowed for a robust recruiting effort while incorporating reasonable controls to reduce confounding variables (Reichardt, 2009). The utilization of two-groups and pre- and posttest measurements allowed for the ability to manipulate the independent variable and understand the effect of the intervention on the dependent variable.

In accordance with this study design, participants were assigned to two groups. Group 1 (experimental group) was comprised of volunteers that had registered for an eight-week CCT program and met the inclusion criteria of the study. Group 2 (control group) did not receive the CCT program. Group 2 was comprised of volunteers from the same target group (see p. 77) and geographical location as Group 1 and met the inclusion criteria of the study. After the study was completed, the control group was given information for participating in CCT programs in their

geographical area. The contemplative insight meditation practice was an eight-week program developed by Stanford University. The ESCI was used to measure self-awareness and was administered online before and after the eight-week training period. Next, the data collection method used in this study will be discussed.

Both the control and experimental group went through identical data collection protocols. First, the groups were administered a demographic questionnaire to identify specific characteristics of the study's population and to ensure that the population was similar. The demographic questionnaire collected information about gender, age, the number of years in a leadership role, number of employees supervised, and industry. Next, self-awareness data was gathered through the ESCI. Participants were sent an e-mail link to the ESCI portal where they could take the online version of the inventory. The ESCI measured the two variable self-awareness construct using a self-report 5-point Likert scale. A global score of self-awareness was provided for each participant. For participants in the experimental group, the pretest (T1) was administered online prior to conducting the CCT program. The posttest (T2) was administered online eight-weeks after the pretest and corresponded with the completion of the CCT program. The data was analyzed with SPSS software using a related samples and independent samples *t* test. The statistical analysis procedure will be discussed next.

This study used descriptive and *t* test statistical analysis to answer the research question and subquestions. Descriptive statistics were calculated for all the relevant variables and used to test the assumptions of the *t* test statistical procedure, identify invalid responses to ensure the integrity of the data, and to accurately describe the sample. The *t* test has four assumptions; (a) normal distribution, (b) continuous dependent variable, (c) homogeneity of variance, and (d) no significant outliers (Bakker & Wicherts, 2014; Hoekstra, Kiers, & Johnson, 2012). The study

used related samples and independent samples *t* tests to conduct hypothesis testing. A related samples *t* test was selected to analyze the difference in means scores within-group form T1 to T2. The independent samples *t* test was used to analyze the difference in mean scores between groups at T2. The *t* test was selected because it is a valid statistical method for comparing significance of mean scores and is robust to Type I and II errors when the sample sizes are equal and large enough to meet power requirements (Sawilowsky & Blair, 1992).

Assumptions and Limitations

Clearly identifying assumptions and limitations in quantitative research is critical to the evaluation and validity of the research (Shadish, Cook, & Campbell, 2002). This section will first discuss the assumptions made in this study. Next, the limitations of the study will be discussed. This section will begin with a discussion of the assumptions used in this research.

Assumptions

The discussion of research assumptions used in this study will be divided into four subjects. First, the assumptions associated with research philosophy will be considered. Next, assumptions about the study's ability to generalize and the assumptions around causality will be explored. The third area discussed in this section will be theoretical and topic specific assumptions. Lastly, this section will discuss the assumptions germane to the measurement of the dependent variable using the ESCI and assumptions made about the CCT program.

Research philosophy: Ontology, epistemology, and axiology.

Ontological assumption. This research took a post-positivist view that the nature of reality was fixed, stable, observable, and measurable. This ontological view assumed that self-awareness was observable and could be measured.

Epistemological assumption. The epistemological approach of this research assumed that knowledge could be gained through empirical inquiry and research. This epistemological view assumed that knowledge of the construct of self-awareness could be gained through quasi-experimental study.

Axiological assumption. The axiological philosophy of this study was that the researcher must remain objective and free of subjective values. This axiological view assumed that in order for the research to be valid the researcher must remain objective and implement control measures to remove bias from the study. Based on these philosophical assumptions, the appropriate methodological approach to the research question was a quantitative quasi-experimental design.

Design, generalizations, and causation.

Design. The research utilized a quasi-experimental two-group pre- and posttest nonequivalent-group design. The dependent variable was measured using a self-assessment inventory. Shadish et al. (2002) and West, Biesanz, and Pitts (2000) asserted that the quasi-experimental design had several important assumptions that must be considered. The first assumption was that the experimental and control groups must be similar in important background characteristics at the time of pretesting (West et al., 2000). A second assumption was that the measurement instrument uses a valid objective assessment method (Shadish et al., 2002). This research used a self-report inventory to measure the dependent variable. Ross (2006) argued that self-report assessments provided adequate reliability. Baer et al. (2004) argued that self-assessments provided valid measurements of internal states. Baer et al. (2004) and Ross (2006) argued that an assumption of the self-report assessment was that respondents would answer the questions honestly. Ross (2006) asserted that certain research designs could assist in improving the quality of self-report responses. West et al. (2000) asserted that an assumption of

quasi-experimental design was that design features can increase the generalization and causality assertion of the research. Shadish et al. (2002) and West et al. (2000) argued that design features like pre and post testing, the use of control groups, and statistical regression can help improve the generalization and causality assertion of quasi-experimental research. Taking into account the general practices and assumptions of quantitative research design, this study made four assumptions about the design of the research presented here. First, this study assumed that recruitment of nonequivalent groups resulted in the similarity of the important background characteristics that were assessed through descriptive statistics. Second, this study assumed that the self-assessment was a valid method for measuring internal states. Third, this study assumed that participants answered the self-awareness inventory honestly and were able to read and understand the questions in the assessment. Lastly, this research assumed that the use of more rigorous quasi-experimental design features increased the ability to make generalization and causation inferences with caution.

Generalizations. Generalization is normally evaluated by a study's external validity (Shadish et al., 2002). The nonequivalent two-group quasi-experimental design has largely been assumed to have weak generalization compared to randomized experimental approaches (Shadish et al., 2002; West et al., 2000). West et al. (2000) presented a four dimension model of assessing generalization in social science research. The four dimensions of the model were; (a) units (participants), (b) treatment, (c) observations, and (d) setting. West et al. (2000) argued that the participants and intervention (treatment) in nonequivalent quasi-experimental was generally more similar to actual conditions than random experimental approaches lending validity to causal generalizations of the findings. This research made four assumptions in relation to the generalization of the research findings based on the West et al. (2000) four dimensional model.

First, this research assumed that the sample frame adequately represented the theoretical population (units). Second, this research assumed that CCT instruction delivery (treatment) was standardized across Stanford University certified instructors. Third, this research assumed that the observations were standardized through the use of the ESCI assessment tool. Lastly, this research assumed that the group setting where the CCT instruction was presented was not similar and could contain co-variables not anticipated in this research.

Causation. Shadish et al. (2002) and West et al. (2000) argued that the quasi-experimental design was a valid method for exploring the causal relationship of an intervention when assumptions were met. These assumptions were related to threats to internal validity that strengthened the probability of assessing causation (West et al., 2000). Shadish et al. (2002) and West et al. (2000) outlined several assumptions germane to causation in the quasi-experimental design, these assumptions will be considered next. The first assumption was that the two groups were similar at the time of pretest in both measured covariates and hidden variables (West et al., 2000). This research assumed that the efforts to ensure group similarity at the time of pretest in both measured covariates and hidden variables were successful. The second assumption was that the pre- and posttest design accounted for the process of maturation that could have occurred over the eight-week period and impacted the dependent variable. This research made the assumption that the pre- and posttest design accounted for any maturation concerns. The third assumption considered sample history – the concept that some event may occur to one group that did not occur to the other group after the pretest was administered. In this study, a significant event that could confound the results would be if members of the control group began a mindfulness-based or other contemplative program on their own during the eight-week pre- and posttest period. This study assumed that participants in the control group refrained from starting

a mindfulness program during the eight-week period as directed by the study literature. The last assumption mentioned by West et al. (2000), was that the measurement instrument remained constant throughout the study. This study assumed that the online version of the ESCI remained constant in both the questions and the method of accessing throughout the duration of the study.

Theoretical and topic specific assumptions.

Theoretical assumptions. This study was grounded in EI theory. Theorists of emotional intelligence argued that EI was an actual intelligence and can be learned (Boyatzis et al., 2013; Mayer et al., 2001). In addition, EI theory argued that self-awareness was a component of EI (Boyatzis & Goleman, 2007; Salovey & Mayer, 1990). This study made three theoretical assumptions. First, this study assumed that EI was an actual intelligence. Second, this study assumed that self-awareness was a component of EI. Lastly, this study assumed that EI can be improved through training.

Topic specific assumptions. The topic of this research concerned the use of a mindfulness-based training program to improve self-awareness and ultimately the performance of organizational leaders. Mindfulness is a new construct in the field of psychology that has gained popularity and increased scientific study in recent years (Dane & Brummel, 2013). Within mindfulness study, there has been debate over definitions and active components of different types of meditation practices and traditions (Ainsworth et al., 2013; Van Vugt, 2015). Holas and Jankowski (2013) argued that the traditional Buddhist mindfulness practice known as vipassana was equivalent to insight meditation and known to Western psychological science as open monitoring (OM) meditation. Jinpa et al. (2013) and Purser and Milillo (2015) argued that insight meditation utilized different training processes. Van Vugt (2015) argued that the cognitive processes and outcomes are different based on the particular meditation practice and

that OM meditation likely impacted areas of the brain associated with emotional regulation. Jinpa et al. (2013) asserted that insight meditation is part of the training protocols for CCT. This study made two topic specific assumptions. The first assumption was that vipassana and insight meditation were analogous practices and included aspects of both FA and OM. The second assumption was that insight meditation was trained and practiced as part of the CCT program.

Assumptions about measures. The ESCI measurement inventory used to collect data for this study employed a 5-point Likert scale. Norman (2010) asserted that there is a long standing debate in medical and social science research over the use of Likert scales with parametric statistical methods. While the Likert scale is considered an ordinal measurement, Norman (2010) and Sullivan and Artino (2013) argued that research evaluation has shown that parametric methods are robust enough to manage any potential treats to normal distribution and are suitable for use with Likert data. The statistical analysis used in this research was a related samples and independent samples *t* test. Norman (2010) argued that Likert data provided accurate analysis used with a *t* test when the sample size is larger than 10 per group. This research made three assumptions about the measures used in this research. First, this research assumed that Likert data was suitable for parametric analysis using the *t* test and provided an accurate analysis of the observations. Second, this research assumed that standard administration protocols were followed by all testers and that the test and protocols remained constant for both the pre and posttest. Third, this study assumed that the participants resembled the norm groups for the measures instrument. Chapter 2 will discuss the group and instrument norm in more detail.

Limitations

This section will discuss the limitations of this study. Limitations were identified in two areas. The first areas that will be discussed are limitations in investigating the research problem.

The second areas that will be discussed are limitations of the research design. This section will begin by exploring limitations in regards to investigating the research problem.

Shadish et al. (2002) asserted that a key benefit of the experimental and quasi-experimental design is the ability to make causal inferences. Causal inferences can be broken down into two types; causal description and causal explanation (Shadish et al., 2002). Causal description allows the researcher to describe the changes that occurred due to the implantation of a particular intervention, while causal explanation allows the researcher insight into why the intervention produced a certain result (Shadish et al., 2002). The research problem in this study was concerned with exploring the effect of a mindfulness-based training program on self-awareness. The CCT program is an insight-based mindfulness meditation platform. However, participants experienced interactions with the instructor and other participants that were not meditation based. The ability to isolate the meditation practice was troublesome when considering the student/instructor interaction. Insight meditation requires instruction, contemplation, and discussion with the meditation instructor, especially for the new practitioners that were the focus of this study. The process of instruction and facilitation made it difficult to isolate the active components of insight meditation practice. Therefore, this study assumed that the results represent accurate causal description of the phenomenon, but that a limitation of the study is the inability to isolate the insight meditation process and provide a casual explanation for the results. This limitation impacted how the research problem can be explained and understood. Next, design limitations will be considered.

This study had several design limitations. The first limitation was the difficulty of finding a large enough sample to use an experimental design. This limitation resulted in the use of a quasi-experimental design that allowed for a greater number of participants to be included in

the experimental group. The quasi-experimental approach is a less rigorous design and limits what can be generalized and can threaten the validity of casual inferences (Shadish et al., 2002). To mitigate the loss of random assignment in the design, this study used robust quasi-experimental design features in an effort to retain experimental integrity. This study assumed that the design limitation did not prevent the answering of the research question or the ability to draw valid conclusions about the results. Next, delimitations will be discussed.

The research literature pointed to a need to study behavioral aspects of specific types of Buddhist mindfulness practices (Purser & Milillo, 2015; Vallabh & Singhal, 2014). This research concurred with the need to study these practices to better understand the positive behavioral and decision making qualities that Buddhist mindfulness practices might bring to the business community and as possible training tools for organizational consultants. However, a constraint to researching these methods was the difficulty in finding a standardized program that could be applied across a broad spectrum of participants and geographical areas with a reasonable expectation of internal validity. This study chose to create an artificial boundary and delimit the study's training methodology (CCT) to a single standardized program based on traditional Buddhist practices, but secularized for a Western audience. This delimitation resulted in ruling out many valid alternative methods of training insight-based meditation practices.

Organization of the Remainder of the Study

This section will give a brief summary of Chapter 1 and provide an overview of the content in the four chapters that follow. Chapter 1 began with a brief introduction on self-awareness and mindfulness study in the workplace. The background of the research problem was discussed and an overview of relevant research in the areas of EI, self-awareness, and mindfulness was conducted. An argument was made for grounding the research problem within

the EI theoretical domain of the competency EI model developed by Goleman and Boyatzis (Boyatzis & Goleman, 2007). Next, Chapter 1 discussed the purpose and significance of the study and clearly established the research question and subquestions. Definitions of critical terms and variables were established and the research method was discussed. Lastly, assumptions and limitations of the study were outlined. Next, the organization of the remaining four chapters will be considered.

The remaining four chapters will provide greater detail into concepts introduced in Chapter 1 and will clearly present the results of this quasi-experimental study. Chapter 2 will introduce a detailed literature review. The literature review will begin with the theoretical orientation of previous research concerned with similar constructs. Next, a review of the literature in the areas of EI, self-awareness, and mindfulness study will be conducted. Lastly, the literature review will synthesize relevant topics for use in following chapters and discussions. Chapter 3 will cover the research methodology used in this study and detail how the research question was answered. Chapter 3 gives a brief review of the purpose of the study and will then provide a detailed outline of the research question and hypotheses. Next, the research design, population, and a review of the research procedures will be provided. Lastly, the instrument used to collect data will be discussed and ethical consideration will be explored.

Chapter 4 will provide the results of the study. This chapter will begin with a concise description of the data collected and the statistical analysis conducted. Next, a detailed description of the sample will be provided. Following the sample description, the results of hypothesis testing will be presented. Lastly, Chapter 4 will summarize the findings of the hypothesis testing.

Chapter 5 will discuss what the study means in the context of the research purpose and previous research conducted in the field. The chapter will begin with a summary of the results. Next, Chapter 5 will determine how well the findings of the dissertation addressed the research problem. Implications of the research will be explored and limitations that could have impacted the study will be discussed. Lastly, recommendations for future research will be made based on the results of the data analysis, methodological insights, and research limitations. Chapter 5 will end with a discussion of the broad conclusions that were derived from the research.

CHAPTER 2. LITERATURE REVIEW

Chapter 2 will provide a comprehensive literature review of the topic area. This chapter will be organized into five sections. The first section will detail the process used to search and find relevant sources in the area of study. Next, the theoretical perspective of the study will be discussed. The third section of the chapter will provide a detailed review of the literature in the topic area. The fourth section will provide a review of conflicting theories and a critical review of the research methods used in the studies discussed in Section 3. Finally, Section 5 will synthesize the findings of the literature review and discuss the relevance of this synthesis to the development of the research topic and the methodology selected to research the phenomenon. This chapter begins with a review of how relevant research in the topic area was found.

Method of Search

The search for relevant literature began with an interest in how to improve leader workplace performance. This interest led to a focused database search using relevant search terms; Table 1 details the search methods and search terms used. Within the volumes of research on leadership performance, studies in the area of EI theory appeared to show promise for improving leader performance. The potential of EI development to improve leader performance led to a detailed search of EI leadership studies and personally contacting a leading researcher in the area of EI and leadership development. The review of EI theory and research identified the competency of self-awareness as a foundational skill and generated the question; if self-

awareness is a critical competency in EI and leadership performance, how does one develop self-awareness?

Table 1
Search Terms and Methods

Area of Interest	Database/Subject Matter Experts	Search Terms
Leader Development	Google Scholar, Business Source Complete, EBSCOhost, PsycARTICLES, ProQuest Psychology Journals, PsycINFO, SAGE Journals	*leader, leadership, leader development, executive, skills, competency, experience, performance, quantitative, qualitative*
Self-Awareness	Google Scholar, Business Source Complete, EBSCOhost, PsycARTICLES, ProQuest Psychology Journals, PsycINFO, SAGE Journals	*self-awareness, attention, awareness, cognitive processes*
Emotional Intelligence	Google Scholar, Business Source Complete, EBSCOhost, PsycARTICLES, ProQuest Psychology Journals, PsycINFO, SAGE Journals Richard Boyatzis, Ph.D. Co-developer of the competency model of EI – Personal correspondence	*Emotional intelligence, theory, models, performance, leadership, development, self-awareness, perspective taking*
Mindfulness	Google Scholar, Business Source Complete, EBSCOhost, PsycARTICLES, ProQuest Psychology Journals, PsycINFO, SAGE Journals	*Mindfulness, attention, awareness, self-awareness, focused attention, open monitoring, leadership, mindfulness methods, Tibetan, MSBR, CCT*

Table 1 continued
Search Terms and Methods

Area of Interest	Database/Subject Matter Experts	Search Terms
	Kathryn Goldman Schuyler, Ph.D. Mindfulness researcher, executive coach, and professor at Alliant International University, San Francisco – Personal correspondence Monica Hanson Stanford University CCT Program Director – Personal correspondence Tom Gaylord Seattle Shambhala Center Director – Personal correspondence	

Note. The table shows search terms and methods of search used in the literature review portion of this dissertation.

Table 1 shows the search methods and search terms used to find relevant self-awareness research. While the focus of the search was peer-reviewed journals with subjects of interest to the specialization of I/O psychology, proximal areas of research were explored as well. The results of this search produced a wealth of studies on the relatively new area of research into mindfulness. To get a depth of understanding into this new area of research within psychology, a database search was conducted, researchers and practitioners in the area of mindfulness were contacted, and the program developer at Stanford University's Center for Compassion and Altruism Research and Education was contacted. The results led to a depth of knowledge and understanding of the current state of research in the topic area that was needed to conduct the research presented in this dissertation. Next, the theoretical perspective of the study will be discussed.

Theoretical Orientation for the Study

Early EI research and theoretical formulation was conducted by Salovey and Mayer (1990) and Goleman (1995). Salovey and Mayer (1990) took a functionalist approach to theory development and characterized emotion as an organized process that cut across multiple psychological systems. Salovey and Mayer (1990) adopted the view of Wechsler (1958) of intelligence as a capacity to think intentionally and rationally with the purpose of successfully navigating one's environment. Salovey and Mayer (1990) argued that EI was a component of social intelligence and involved three abilities; (a) to monitor one's own and others emotions, (b) discern nuances and aspects of emotion, and (c) use this knowledge to inform behavior.

Early critics of EI theory argued that EI did not constitute a real intelligence (Roberts, Zeidner, & Matthews, 2001; Sadri, 2012). Roberts et al. (2001) asserted that the definition of EI was too broad and overlapped with traditional beliefs and theory of personality and social ability. Critics argued that in order for EI to be a true intelligence the constructs of the theory had to be measurable and that there had to be correct and incorrect answers to questions designed to measure EI (Mayer et al., 2001; Roberts et al., 2001). Roberts et al. (2001) and Fambrough and Hart (2008) argued that the relatively new psychological theory of EI had merit, but the constructs required more research and the operationalization of the theory needed more development.

In response to critics, Mayer et al. (1999) and Mayer et al. (2001) argued that EI was a standard intelligence and could be operationalized. Mayer et al. (2001) argued that EI could be operationalized with the ability based Mayer – Caruso – Salovey Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 2000). Boyatzis et al. (2015) concurred with the assertion that EI could be operationalized. Further arguing that EI theory represented a standard

intelligence, Mayer et al. (2001) argued that EI developed/improved with age, and the abilities outlined by EI theory were related and correlated with other types of intelligence. Since the initial publication of EI theory, the theory has undergone revisions and multiple models of EI have been developed (Boyatzis et al., 2015; Sadri, 2012). The divergence of EI theory into multiple models will be discussed next.

Boyatzis et al. (2015) argued that there were three significant models of EI within current psychology research and theory. Boyatzis et al. (2015) argued that one approach is an ability-based model grounded in the research of Salovey and Mayer (1990). The second model is a self-perception approach based on the research of Bar-On (1997). The final model of EI identified by Boyatzis et al. (2015) was a behavior or competency approach based on research by Goleman (1995) and Boyatzis, Goleman, and Rhee (1999). Sadri (2012) asserted that the two most popular and most researched models of EI are the ability-based approach and the competency approach. The ability-based approach has four dimensions: "regulating, understanding, assimilating, and expressing emotions" (Salovey & Mayer, 1990, figure 1). The competency model had two competencies (Boyatzis et al., 1999). The first competency was self-awareness and was initially comprised of three awareness variables. The three self-awareness variables were emotional "self-awareness, accurate self-assessment, and self-confidence" (Boyatzis et al., 1999, p. 4). The second competency was self-management and was comprised of four clusters. These four clusters were "emotional self-control, adaptability, achievement orientation, and positive outlook" (Boyatzis et al., 2015, p. 249).

After over 25 years from when the theory of EI was first presented to the psychological community, the theory is still working towards a unified definition and operationalization (Sadri, 2012). The ability-based model of Salovey and Mayer (1990) initially attempted to

operationalize their EI model with the Multi-Factor Emotional Intelligence Scale (MEIS; Mayer, Caruso, & Salovey, 1999). However, later attempts to operationalize the construct resulted in the creation of the MSCEIT argued by Mayer et al. (2000) to have greater validity. The competency model of Goleman and Boyatzis originally operationalized with the Emotional Competence Inventory (ECI; Goleman & Boyatzis, 2001). The ECI experienced construct validity issues, particularly with the variables that comprised the self-awareness competency (Hay Group, 2011). The variables that comprised self-awareness (self-awareness, accurate self-assessment, and self-confidence were found to highly correlate with each other or other variables in the model (Boyatzis, 2011). Factor analysis resulted in the dropping of the three variables used for self-awareness in the ECI for a global measure of self-awareness used in the ESCI (Boyatzis, 2011). The correlational issues found during factor analysis resulted in the refinement of the model and operationalization of the model with the Emotional Social Competency Inventory (ESCI; Goleman & Boyatzis, 2011). Boyatzis (2011) argued that the construct validity of the self-awareness competency was strengthened with the change.

Review of the Literature

This section will review the relevant literature in the topic area. The section will begin by providing an overview of the topic area to provide context and clarity for the literature review that will follow in subsequent subsections. The remainder of the literature review will be organized by theme. Subsection 1 will review literature pertinent to research of EI as an indicator and predictor of performance in business and educational settings. Subsection 2 will explore research in the area of self-awareness as it is understood in EI theory and companion leadership theories. The third subsection will review research literature relevant to mindfulness as a cognitive process, training method, and predictor of performance in business and

educational environments. The final subsection will consider research germane to the methodology and measures used in this study. The literature review will conclude with a section that discusses conflicting theories and offers a critique of previous literature in the topic area. The research topic that will frame this literature review is the exploration of a mindfulness-based method for improving self-awareness within the theoretical construct of EI for the purpose of improving leader performance.

Emotional intelligence. The theoretical review of relevant EI literature was conducted in Section 2 (see p.38). This subsection will provide a review of salient EI research in the specialization of I/O psychology. Emotional intelligence theory has been studied in organizational settings, particularly in the area of leader development (Boyatzis, 2008). Within the domain of leadership development research, the application of EI has been studied as a predictor of leader performance (Fambrough & Hart, 2008; Goleman et al., 2001; O'Boyle et al., 2011; Yip & Côté, 2013). Goleman et al. (2001) argued that EI was a better predictor of leader performance than IQ. An early organizational study evaluating an EI training program at American Express showed performance for sales staff increased after EI training (Cherniss & Caplan, 2001).

Cherniss and Caplan (2001) conducted a case study with a team of sales personnel from American Express Financial Services. The vice president and the direct reports conducted an EI training program designed specifically for American Express (Cherniss & Caplan, 2001). The researchers found that those in the EI training generated 11% more growth over those that did not participate in the training (Cherniss & Caplan, 2001). While the study showed positive results, there were design issues that could impact the validity of the research. The lack of an experimental design in the Cherniss and Caplan (2001) study resulted in the inability to make

causal inferences. The case study approach also limited the ability to generalize outside of the study population. In addition, the study did not discuss the theoretical model of EI used in the instruction, the method of instruction, or how long the EI instruction lasted. While there was design and methodological issues with the work of Cherniss and Caplan (2001), the study is significant because it was an early attempt to show quantifiable business results attributed to EI training and was conducted within an organizational setting. Later research would build on the Cherniss and Caplan (2001) work and apply more stringent research methods to the study of EI in leadership performance.

Rubin, Munz, and Bommer (2005) conducted experimental research with 145 managers and direct reports to explore the relationship between emotion intelligence, personality, and transformational leader performance. Rubin et al. (2005) used the ability-based model of EI developed by Salovey and Mayer (1990) as the foundational theory for their research. Rubin et al. (2005) asserted that EI was an important aspect of building trusting relationships and inspiration needed in transformational leadership. An assessment of transformational leadership developed by Podsakoff, MacKenzie, and Bommer (1996) was used to measure six areas of transformational leadership performance (Rubin et al., 2005). The EI ability of emotional recognition was measured with the Diagnostic Analysis of Nonverbal Accuracy (DANVA) created by Nowicki and Duke (2001). Rubin et al. (2005) used hierarchical regression analyses to analyze the data and found that emotional recognition predicted transformational leadership behavior. In related research, Côté et al. (2010) found that EI did not just predict transformational leadership ability, but it was also correlated with others perception of leader emergence in small groups. The research of Rubin et al. (2005) was unique in the large sample

size of organizational leaders and the use of a measurement tool that attempted to isolate an ability (emotional recognition) theorized to be a factor of EI.

Further adding to the research exploring EI and leader performance, O'Boyle et al. (2011) conducted a comprehensive meta-analysis study attempting to better understand the relationship between job performance and EI, general mental ability, and personality. The researchers hypothesized that EI would add incremental validity to job performance prediction (O'Boyle et al., 2011). O'Boyle et al. (2011) looked at research in multiple models of EI that used various methods to measure the constructs of interest and drew from a large study sample (n = 5795). The research found that when combining all three models of EI, EI explained 47% of the variance in job performance. Looking at the three models separately, the competency based model predicted the variance in job performance better than the ability based model (O'Boyle et al., 2011). When combined with general mental ability and personality as measured by the Five Factor Model (FFM), the EI model of Goleman and Boyatzis (2001) was found to have the highest incremental validity, explaining an additional 6.8% of variance (O'Boyle et al., 2011). While comprehensive, the O'Boyle et al. (2011) study is not unique; other researchers have also argued for the significance of EI in workplace performance (Bowen, 2014; Fambrough & Hart, 2008; Pittenger, 2015). Next, this literature review will consider research that specifically studied leadership performance.

An early assertion that EI was a predictor of leadership performance came from Goleman et al. (2001) in an article for the Harvard Business Review. Goleman et al. (2001) argued that leader emotion significantly impacted the behavior of the leader and the mood of the organization. Since this early research, others have studied the leadership outcomes of EI. Yip and Côté (2013) found that those with higher measurements of EI were more skilled at

identifying and regulating emotions that could cause anxiety and influence decision making. Yip and Côté (2013) reasoned that individuals that could recognize their own emotions in the moment would be better able to identify anxiety caused by either outside circumstances or issues related to workplace decisions. The researchers hypothesized that those that could identify outside stressors would be better able to control unrelated bias that could influence workplace decision making (Yip & Côté, 2013). Using a sample of 108 undergraduates from a business program, Yip and Côté (2013) tested participant EI using the MSCEIT assessment and then gave them problem solving scenarios. As predicated, those with higher levels of EI were better able to identify the nature of stressors and make better decisions (Yip & Côté, 2013). The relationship between leader EI and performance outcomes has also been shown in studies by Boyatzis et al. (2013), Houghton et al. (2012), and Zakariasen and Zakariasen Victoroff (2012).

Recent research has looked at advances in neuroscience technology to help understand why EI makes a difference in workplace performance. Boyatzis, Rochford, and Jack (2014) argued that there was an antagonistic relationship between the neural networks that perform analytic functions and the networks that perform emotional and social reasoning (E/SI). They asserted that leaders with higher levels of EI would be able to use more neural network capacity on executive functioning tasks since less capacity would be needed for E/SI performance (Boyatzis et al., 2014). Boyatzis et al. (2014) argued that a key skill for leaders would be to recognize through internal awareness what neural networks (task or emotional) were needed and switch focused attention between the two to optimize performance. For instance, when a leader needed to empathize and motivate team members, the leader would be aware of the need to activate emotional networks (Boyatzis et al., 2014). When task focus was needed, the leader would be aware to activate task specific neuro networks and attempt to control antagonistic

emotional disruptions (Boyatzis et al., 2014). A key aspect of accessing this higher level of functionality according to Boyatzis et al. (2014) is self-awareness and being aware of internal and external stimuli that impact the neuro network. Next, the construct of self-awareness in the context of EI and leader performance will be discussed.

Self-awareness. This subsection will review and analyze recent relevant research in the specialization of I/O psychology in the area of self-awareness and leader performance. Within the seminal EI research, self-awareness was found to be a foundational competency of EI (Cherniss et al., 1998; Goleman, 1995; Mayer, Caruso, & Salovey, 1999; Salovey & Mayer, 1990). Subsequent research in I/O psychology and leadership development concurred with the foundational assertion that self-awareness was an import element of EI (Ashkanasy & Dasborough, 2003; Bar-On, 2010; Higgs & Rowland, 2010; Rentsch et al., 2007). Boyatzis (2011) argued that the self-awareness competency was a foundational component of EI and a critical leader skill. Houghton, Wu, Godwin, Neck, and Manz (2012) asserted that the self-awareness construct of EI was a key component of leader self-efficacy, performance, and stress management. The Houghton et al. (2012) leadership model integrated the concept of self-awareness found in EI theory with the competency of self-awareness found in Bandura (1989) social cognitive theory. Houghton et al. (2012) argued that initial quantitative research confirmed the usefulness of the integrated model in improving management student performance outcomes. Lastly, a significant argument for the importance of self-awareness within EI theory can be found in the competency EI model of Boyatzis and Goleman (2007). This model of EI has only two competencies; self-awareness and self-management (Boyatzis et al., 2015). In this model, self-awareness accounts for half of the model that is used to explain and understand emotional intelligence and is seen as a foundational competency for needed to access the other

competencies in the model (Boyatzis et al., 2015). Boyatzis et al. (2015) defined the construct of self-awareness within EI theory as "knowing one's internal states, preferences, resources, and intuitions" (p. 249). Next, this subsection will review research relevant to the leadership performance aspects of self-awareness.

Higgs and Rowland (2010) found that self-awareness in senior leaders was a good predictor of managing change in high stress environments. The research of Higgs and Rowland (2010) used a qualitative design to identify themes in interviews of 33 leaders from different organizations. The researchers found that self-awareness helped the leader work in the moment and know when his/her ego was affecting decision making (Higgs & Rowland, 2010). The Higgs and Rowland (2010) study provides a good narrative of the experiences of organizational leaders, but the qualitative design and a lack of a standardized self-awareness measurement makes it difficult to generalize these findings outside of the study.

In a quantitative study, Bratton et al. (2011) researched self-awareness and EI in a North American business population. The researchers had a large matched sample population of 146 managers and 1,314 direct reports (Bratton et al., 2011). The study used an analysis of survey answers provided by the leaders and direct reports. Emotional intelligence was measured using the Emotional Quotient Inventory (Bar-On, 1997). The Emotional Quotient Inventory (EQ-i) is a self-perception approach based on the research of Bar-On (1997). The study was concerned with the nature of self/other reports as a perception of leader performance (Bratton et al., 2011). The research found that self-awareness was positively correlated to higher ratings in job performance for leaders that underestimated their leadership ability (Bratton et al., 2011). However, there was a negative correlation in leadership performance for leaders that overestimated their leadership ability (Bratton et al., 2011). Bratton et al. (2011) acknowledged

that the results were somewhat inconclusive. One difficulty identified with this study was that the correlational design made it impossible to make causal inferences and while there was scientific merit in understanding the relationship between self-awareness and perceived performance, the research was unable to shed light on aspects of self-awareness development that could push the research further.

Dane and Brummel (2013) conducted quantitative research to study aspects of awareness and job performance and engagement in a dynamic service industry. The research sample included 102 employees of restaurant chains in the southwest United States (Dane & Brummel, 2013). Dane and Brummel (2013) studied awareness through the lens of mindfulness as defined as "a psychological state in which one focuses attention on events occurring in the present moment" (p. 106). Embedded in the concept of mindfulness is the construct of self-awareness (Dane, 2011). Dane and Brummel measured employee mindfulness and awareness with the Mindful Attention Awareness Scale (Brown & Ryan, 2003). Performance was assessed by immediate supervisors in a survey (Dane & Brummel, 2013). Dane and Brummel (2013) found that there was a relationship between mindfulness (in the moment awareness) and performance. Dane and Brummel (2013) also found a negative correlation between mindfulness and turnover. The study is significant, because it showed the importance of self-awareness in workplace performance. In this study, the employees did not receive self-awareness training, but were tested and assessed on trait self-awareness competencies. This research is important in showing how the ability of self-awareness can improve performance outcomes, but the research does not provide answers to what types of interventions might develop self-awareness. Further exploring this concept of developing awareness; Subsection Three will review the growing literature concerned with mindfulness research.

Mindfulness research. This subsection will review and analyze the research literature conducted in the area of mindfulness study. First, an overview of recent relevant mindfulness research in psychology will be discussed. Next, proximal areas of mindfulness research will be explored. The subsection will then conduct a detailed review and analysis of mindfulness research within the specialization of I/O psychology. Lastly, a discussion about Western and Eastern concepts of mindfulness will be considered. This subsection will begin with an overview of mindfulness research.

The study of mindfulness has been conducted in many areas within the field of psychology and related scientific fields of research. The effect of mindfulness on awareness, memory, and plasticity has been studied in cognitive psychology and neuropsychology (Lutz et al., 2008; Singleton et al., 2014). Lutz et al. (2008) studied the effect of Tibetan Buddhist methods of mindfulness in cognitive and neuroscience. The study used a sample of long-term meditation practitioners with 15-40 years of experience practicing Tibetan meditation techniques (Lutz et al., 2008). The study showed that prolonged meditation practice can alter the nature of brain processing from moment to moment and could increase brain plasticity and emotional regulation (Lutz et al., 2008). In a later neuroscience research, Singleton et al. (2014) found that grey matter increased in several areas of the brain after an eight-week mindfulness training program that stressed self-awareness development. The mindfulness method used by Singleton et al. (2014) was a form of Mindfulness Based Stress Reduction (MBSR) created by Kabat-Zinn (2009). While this study was encouraging for the application of mindfulness-based training, the MBSR method of training included several types of interventions (self-awareness, nutrition, yoga, and Qigong) adding confounding variables to the study. These confounding variables

make it difficult to determine if the grey matter increases were from a particular intervention or a combination of all methods.

In the area of educational psychology, a two-week mindfulness training program that stressed self-awareness was found to increase test performance and attention in the classroom (Mrazek et al., 2013). This research provided encouraging results for the study of the effects of mindfulness practice on self-awareness, but this study had methodological problems. The Mrazek et al. (2013) study used a two-week variation of the eight-week MBSR program. Like the Singleton et al. (2014) study, the Mrazek et al. (2013) two-week program also introduced confounding variables. Group discussions were used in the intervention as were multiple techniques of mindfulness that made it difficult to identify the active component of the intervention.

Research in gender psychology by Lomas et al. (2014) studied the effect of self-awareness and mindfulness training as a way to help men develop EI and regulate negative emotion. The mixed methods study analyzed cognitive abilities and EI over a one-year period in a group of 30 men participating in a mindfulness program that focused on self-awareness development. The study found that the men experienced both attention and EI improvement over the one-year period (Lomas et al., 2014). Lomas et al. (2014) used the ability-based EI model of Salovey and Mayer (1990). As discussed in an earlier section, the ability-based model measures outcomes of self-awareness, but does not directly measure self-awareness. This measurement distinction is problematic when trying to isolate active variables. Another problem found in the Lomas et al. (2014) study was that the meditation intervention was not standardized for all 30 participants. This non-standardization of the training intervention made it difficult to draw conclusions about what condition caused the measured result. In addition, Lomas et al.

(2014) did not use a control group design in their research. Lomas et al. (2014) acknowledge these short comings in the study and conclude that casual relationships could not be determined from the study.

In the area of cognitive processes, Van Vugt and Jha (2011) conducted quantitative research using a test/retest control group design to study the effect of an intensive 30-day mindfulness retreat on participants' information processing and working memory. The study found that the experimental group had a significant increase in attention, working memory, and cognitive flexibility. The Van Vugt and Jha (2011) study showed the cognitive benefits of intensive long-term mindfulness practice. However, a potential confounding variable with the Van Vugt and Jha (2011) study was that experienced meditators took part in the retreat. It is impossible to know how the prior meditation experience impacted the results of the study. Zeidan et al. (2010) looked at another aspect of mindfulness outcomes and studied the effect of limited mindfulness training on a population with no previous mindfulness practice. Zeidan et al. (2010) found improved executive functioning and cognitive performance after just four mindfulness meditation sessions. The results of the study led Zeidan et al. (2010) to argue that even short-term mindfulness training can produce results that improve performance in cognitive tasks. Next, proximal areas of mindfulness research will be considered.

In the field of medical research, Perlman, Salomons, Davidson, and Lutz (2010) studied the effect of mindfulness practices on pain perception. Perlman et al. (2010) studied the effects of pain on two matched groups. The first group was experienced Tibetan Buddhist meditators with over 10,000 hours of mediation; the second group was novice meditators that participated in a seven-day self-directed mindfulness program based on the MBSR model. Perlman et al. (2010) found that the experienced meditators had a lower emotional response to pain stimuli than novice

meditators even when both groups reported the same intensity of pain. Next, this subsection will review relevant mindfulness and awareness research in the field of I/O psychology.

Dane and Brummel (2013) asserted that the study of mindfulness in the workplace has grown significantly in the past decade. Goldman Schuyler (2010) conducted a qualitative study of the use of mindfulness training with leaders in an executive coaching program. The research is important because it is one of the early studies that researched the workplace experiences of leaders practicing a specific method of mindfulness (Goldman Schuyler, 2010). Goldman Schuyler (2010) argued that mindfulness practice with business executives built strategic awareness and resulted in ethical value-based behavior. The Goldman Schuyler (2010) research provided a good example of mindfulness approaches used in I/O psychology and executive coaching. However, the lack of quantitative data makes the research difficult to empirically evaluate. The coaching process introduced confounding variables that could have influenced the positive outcomes identified by Goldman Schuyler (2010). Subsequent research conducted by Shapiro et al. (2012) supported Goldman Schuyler's (2010) argument of improved ethical decision making. In a single-group pilot study, Shaperio et al. (2012) found that participants in an eight-week MBSR program showed increased measures of ethical decision making up to two months after the training.

McGarvey (2010) wrote her dissertation while at Harvard University on the effect of mindfulness on leader EI. The study was significant for mindfulness research for several reasons. First, McGarvey (2010) made a considerable effort to explain the history and psychological concepts of mindfulness and insight from multiple cultural perspectives. These perspectives provided a greater context for future research. The next significant aspect of McGarvey's (2010) research is that she conducted an early quantitative study of the impact of

mindfulness practice on leader EI. McGarvey (2010) used Pearson's *r* correlational analysis and found that higher mindfulness scores were associated with higher EI scores. While the study was significant in its scope of mindfulness study, the quantitative design was poorly constructed. The correlational design used a population that was already mindfulness practitioners from multiple traditions of practice. The participants were simply asked to complete a questionnaire describing their mindfulness practices and to complete an EI assessment, personality inventory, and a mindfulness questionnaire. The lack of a specific mindfulness practice likely introduced confounding variables into the study that are impossible to account for. The lack of pre- and posttest assessment makes it difficult to determine if EI changed as a result of mindfulness practice.

In a more quantitatively robust study, Leroy et al. (2013) researched the effect of mindfulness training on authentic functioning and worker engagement within several large organizations. The study used a control group, pre- and posttest design with a follow-up measure four months after training. Mindfulness training was conducted within an organizational setting (Leroy et al., 2013). The mindfulness training was designed after the MBSR method. Leroy et al. (2013) used structural equation modeling to statistically analyze the results projecting a linear growth trajectory of the variables over time. Mindfulness was found to enhance engagement and authentic functioning (Leroy et al., 2013). An analysis of this research indicates that the study had a sound design and was executed well. One potential problem with the study is that the MBSR method of training uses multiple methods of mindfulness practice within the training approach (Kabat-Zinn, 2009). The multiple methods employed by the MBSR model increased the likelihood of confounding variables that could complicate the findings especially when results are attributed to mindfulness training.

Aikens et al. (2014) conducted mindfulness research at Dow Chemical using a modified online version of the MBSR program that was significantly shortened to meet the time constrains of busy workers. The purpose of the study was to measure the effect of the training on employee stress, resilience, and vigor (Aikens et al., 2014). An experimental design was used with 89 participants taking part in the study (Aikens et al., 2014). Aikens et al. (2014) used an analysis of covariance to analyze the between group and within-group variance and found that the mindfulness training did reduce stress while increasing resilience and vigor, even after six months. The analysis of this research indicates that the researchers appeared to conduct a thorough scientific study. However, the use of the MBSR based mindfulness intervention is problematic in this research as it has been in other research reviewed in this section. The modified MBSR program used by Aikens et al. (2014) included many types of mindfulness practices including; laying yoga, music meditation, and visualization exercises. The multiple mindfulness practices make it impossible to know if a particular practice or the combination of practices caused the results measured by Aikens et al. (2014). Next, research exploring aspects of mindfulness and awareness from Western and Buddhist perspectives will be considered within the field of psychology.

Dane (2011) and Quaglia et al. (2015) provide multiple definitions of mindfulness from psychological and Buddhist traditions. A common characteristic of these mindfulness definitions is the act of awareness in the present moment (Bishop et al., 2004; Dane, 2011; Quaglia et al., 2015). According to Purser and Milillo (2015) Western concepts of mindfulness have largely drawn from the work of Kabat-Zinn and treat mindfulness from the psychological perspective of a multifaceted trait that also has state like qualities. The Western approach predominately is concerned with prolonged focused attention that can have individual and organizational benefits

(Purse & Milillo, 2015). Within Buddhist tradition, there is a more refined mindfulness practice known as insight meditation within mindfulness study (Goldstein & Kornfield, 1987; Grabovac et al., 2011). Mindful-insight practice has the added aspects of recognizing in the moment the impermanence of thoughts and feelings, the phenomena of suffering, and the interrelatedness of people and events (Goldstein & Kornfield, 1987; Grabovac et al., 2011). Purse and Milillo (2015) argued that the Buddhist tradition of mindfulness formed a triadic model that included; right view, right effort, and right mindfulness. These qualities transcend simple attentional capacity and lead to skillful capacity and wise behavior (Purser & Milillo, 2015). A significant difference between Western and Eastern conceptualizations of awareness and mindfulness is the deliberate evaluative thought process and non-judgmental self-awareness practiced in Buddhist mindfulness traditions (Quaglia et al., 2015). An important feature of the Buddhist view of self-awareness is the impermanent nature of the ego and the Buddhist concept of non-attachment to distorted mental storylines that attempt to protect the ego (Mosig, 2007). Next, this subsection will consider research that explored a mindful-insight based intervention developed using the Buddhist concept of compassion as the focus of contemplation.

Jazaieri et al. (2013) conducted quantitative research into the effect of a mindful-insight training program based on Tibetan Buddhist traditions of mindfulness, affect, and emotional regulation. Compassion served as the focal point of the contemplative meditation practice (Jazaieri et al., 2013). The concept explored was the idea that contemplative meditation practices could improve psychological flexibility (Jazaieri et al. 2013). The mindful-insight approach researched by Jazaieri et al. (2013) was based on the concept of compassion cultivation. Jazaieri et al. (2013) asserted that the construct of compassion had four variables; a cognitive variable (awareness), an affective variable (emotional concern), an aspirational

variable (intentional activation), and a motivational variable (responsive to condition). Jazaieri et al. (2013) argued that compassion contemplative meditation training would impact psychological flexibility through improvements in mindfulness, affect, and emotional regulation. Jazaieri et al. (2013) asserted that there was a gap in the research exploring compassion-based mindful-insight training programs and how such practices might impact psychological flexibility. The research by Jazaieri et al. (2013) explored two research questions. The first question explored of the impact of the training intervention on the outcome variables of mindfulness, affect, and emotional regulation. The second question explored how time spent meditating impacted the dependent variables. This study was found to be important for the dissertation topic because it was one of the first studies to quantitatively research the effect of a mindful-insight training intervention. Next, the research methodology will be evaluated.

Jazaieri et al. (2013) incorporated an experimental two-group design with participants randomly assigned to an experimental or waitlist group. Volunteers were recruited from an on-line community and after initial screening the study sample included 100 participants (Jazaieri et al., 2013). The Tibetan based mindful-insight compassion training included a two-hour introductory class and eight weekly two-hour training sessions (Jazaieri et al., 2013). Participants were encouraged to meditate at home and to keep a log of the duration of home mediation (Jazaieri et al., 2013). Training was delivered in a community setting by two experienced meditation instructors (Jazaieri et al., 2013). An independent evaluator was used to ensure standardization between instructors and with study protocols (Jazaieri et al., 2013).

The use of Tibetan based mindful-insight compassion training is relatively new and according to Jazaieri et al. (2013) their study was one of the first of its kind. The intervention method was operationalized based on Tibetan contemplative traditions and psychological and

neurological research conducted at Stanford University's Center for Altruism and Compassion (Jazaieri et al., 2013). The intervention's approach was created to develop compassion for self and others (Jazaieri et al., 2013). Jazaieri et al. (2013) asserted that the training developed compassion through meditative processes that cultivated attention, increased awareness, developed openness to present moment, awareness of emotions in self, and a motivational aspect of recognizing emotions in others. Unlike the MBSR approach, the approach used by Jazaieri et al. (2013) was specifically designed to cultivate mental aspects that develop psychological flexibility and cognitive competencies. The intervention supported assertions by Purse and Milillo (2015) and Quaglia et al. (2015) that mindfulness methods based on Buddhist contemplative traditions were more appropriate for developing complex psychological functioning than Western mindfulness interventions.

Jazaieri et al. (2013) used a 2 X 2 repeated measure analysis of variance (ANOVA) to evaluate changes in mean scores between groups at T1 and T2 for the outcome variables of mindfulness, affect, and emotional regulation. Jazaieri et al. (2013) used *t* tests to measure within-group differences at the pre- and posttest interval. For the dependent variable of mindfulness, Jazaieri et al. (2013) found significant results for the main effect of time with a small effect size. There was also a significant interaction for time and group also with a small effect size. The within-group *t* test was significant ($p < .001$) for the intervention group only (Jazaieri et al., 2013). Jazaieri et al. (2013) also found a significant result of the main effect of time for the decentering variable with a small effect size. The within-group *t* test for decentering was significant for the intervention group only (Jazaieri et al., 2013). Exact significance probablity values were not reported by Jazaieri et al. (2013). The research found significant results for the affect variable and the effect of time for the intervention group with a small effect

size. There was also significance for the interaction of group by time for the intervention group with a small effect size (Jazaieri et al., 2013). The research showed significance for the variable of happiness for the intervention group with a small effect size and the within-group *t* test for worry indicated significance for decreased worry for the intervention group only (Jazaieri et al., 2013). Jazaieri et al. (2013) found significance for the main effect of time for the variable of emotional suppression reduction with a small effect size. Jazaieri et al. (2013) also found a signifigance for the interaction of the group by time for the intervention group and the reduction of suppression of self-efficacy with a small effect size. Jazaieri et al. (2013) found significance for the within-group *t* test for the intervention for reduction of emotional suppression ($p < .001$) and suppression of self-efficacy ($p < .03$). Jazaieri et al. (2013) concluded that the statistical results supported the hypotheses; the intervention increased aspects of mindfulness, decreased worry and increased happiness in the construct of affect, while decreasing emotional suppression found in emotional regulation.

Synthesizing the concepts of compassion with emotional regulation and behavior in the workplace; Boyatzis, Smith, and Beveridge (2013) theorized that coaching methods that incorporated compassion increased employee well-being, motivated change, and improved organizational systems. Boyatzis et al. (2013) argued that traditional views of compassion were too narrow and not conducive to understanding compassion in an organizational environment. Boyatzis et al. (2013) argued that the expanded Buddhist concept of compassion included the concepts of both negative and positive experience that can be applied to both the hedonic phenomenon of easing suffering and to the eudaimonic phenomenon of self-actualization. In this model, compassion can be mobilized in an organizational environment to help individuals grow and develop (Boyatzis et al. 2013). Boyatzis et al. (2013) concluded by asserting that in the

compassion coaching process, employee engagement with the organization will improve as will organizational pro-social behavior. Next, this section will focus on research surrounding the methodological and measurement approaches used in this dissertation research.

Methodology and measures. This subsection will discuss the literature relevant to the methodological and measurement choices made in this dissertation research. The section will first consider literature germane to the selection of the quantitative methodology. Next, this section will review literature about the psychometric tool selected to measure the dependent variable in this study. The efficacy of self-report measures in psychological study will be considered. Lastly, this subsection will consider the use of the Likert scale with parametric statistical procedures. The subsection will begin with a review of the literature significant to the quantitative methodology selected for this study.

Purser and Milillo (2015) and Quaglia et al. (2015) argued that there was a current gap in the literature exploring the quantitative outcomes of mindfulness-based training. Boyatzis et al. (2013) called for more research to be conducted exploring the relationship between compassion training, emotional development, and organizational outcomes in the workplace. Filling the gaps in the current research required the ability to manipulate the independent variable and measure the impact on the dependent variable using a sample that could be generalized to the population of interest. Kirk (2009) argued that the internal and external validity of robust experimental designs offer the most reliable method for drawing causal relationships in scientific research. The ability to randomize participants into groups offers a reasonable expectation of controlling for confounding variables that could be present in the sample (Kirk, 2009). Unfortunately, the rigor of the experimental design often eliminates this design approach in quantitative research (Reichardt, 2009).

Quasi-experimental designs offer an alternative to the rigors of experimental design when the latter is either impractical or unethical (Reichardt, 2009). However, because the sample is not randomized, there could be threats to the validity of the results impacting the ability to generalize or infer causation (Shadish et al., 2002; West et al., 2000). Reichard (2009) argued that non-randomization of participants could cause selection bias that threatens the internal validity of the study. Despite the validity problems associated with quasi-experimental design, Reichard (2009) and Shadish et al. (2002) asserted that the method is popular in psychological research and validity issues can be reduced with certain design elements. Reichard (2009) asserted that with the pre- and posttest design, it is possible to significantly control the effect of selection bias. The impact of unknown confounding variables associated with selection bias can be reduced when the pretest is the same as the posttest and conclusion are drawn from the changes in the pre and post scores (Reichard, 2009). West et al. (2000) further asserted that the maturation effect can also be controlled with a pre- and posttest two-group design. However, Reichard (2009) warns that change rate can still vary among groups and argues that before and after mean scores should be checked to see if they are similar when the treatment effect is eliminated from the equation.

A general weakness of the quasi-experimental design is the problems associated with generalization and causation (Shadish et al., 2002). West et al. (2000) argued that generalization and causation are enhanced in quasi-experimental studies using the pre- and posttest nonequivalent group design when four aspects of the design are met. West et al. (2000) separated these four aspects into participants, treatment, measurement of observations, and the setting of the experiment. West et al. (2000) argued that by keeping these four areas as similar as possible for all groups and in testing, a quasi-experimental study would have acceptable external

validity adding credibility to the assertions of generalization. Next, causal inferences in quasi-experimental design will be explored.

West et al. (2000) highlighted several design elements that would increase the causal inferences that could be made from quasi-experimental studies. First, causation can be increased when care is made to have both groups as similar as possible prior to the intervention (West et al., 2000). Next, West et al. (2000) asserted that pre and post testing helped control the effect of maturation and other unknown variables that could be present and reduce the internal validity. Lastly, West et al. (2000) argued that causation could be more reliable if researchers attempted to reduce the possibility that some event could occur within the sample of either or both groups between the pre- and posttest that could skew the results. Next, literature concerning the construct validity of measuring emotional intelligence and the ESCI will be reviewed.

One of the early criticisms of EI theory was the difficulty in measuring the variables associated with the constructs (Mayer et al., 1999). Researchers in each of the three major theories of EI have produced instruments designed to measure the phenomenon (Boyatzis et al., 2015). Mayer et al. (2000) argued that EI is best measured through an ability based test that had discriminate answers. Expert raters were used to assess the correct answers to the Multi-Factor Emotional Intelligence Scale, and the second generation, Mayer-Caruso-Salovey Emotional Intelligence Test (Mayer et al., 2001). Roberts et al. (2001) argued that the expert rater model used by Mayer et al. (2000) did not produce a reliable measure of EI. Roberts et al. (2001) hypothesized that a consensus scoring would be a more reliable method of assessing EI. A further speculation by Roberts et al. (2001), was that the observed phenomenon identified as EI may really be characteristics of social adaptation seen in Big Five personality factors of like extroversion, agreeableness, and conscientiousness. Mayer et al. (2001) countered the Big Five

personality speculation by arguing that EI should have some overlap with discriminate personality types, but that factor analysis indicated it was not significant enough to alter the theory.

Another operationalization of EI is the ESCI developed by Goleman and Boyatzis (2011). This measure is based on an ability or competency approach and used interviews and inductive observations to identify and code EI abilities (Boyatzis et al., 2015). These initial codes were then verified and refined through the use of 360 surveys and analysis (Boyatzis et al., 2015). In meta-analysis research comparing the three most popular measurements of EI, O'Boyle et al. (2011) found that the competency-based model of Goleman and Boyatzis (2011) did the best at explaining the variance in job performance. Watson (2007) argued that the earlier version of the competency based measure, the Emotional Competence Inventory (ECI; Goleman & Boyatzis, 2001), had suspect construct validity and low criterion validity. Watson (2007) asserted that there was not enough data to determine the validity and reliability of the instrument. Boyatzis (2011) acknowledge that earlier versions of the inventory experienced intercorrelations between measurement scales. Later versions of the instrument sought higher psychometric standards and reduced the number of competencies to create great divergent validity (Boyatzis, 2011). Boyatzis (2011) argued that the latest version of the ESCI has sufficient validity and reliability to be used in scientific research involving EI. Chapter 3 will discuss the psychometric qualities of the ESCI in greater detail. Next, the literature exploring the use of Likert scales in statistical research will be discussed.

Jamieson (2004) argued that the Likert scale is rank ordered, but that equal distance cannot be assumed between scale responses. The assumption that there is not equal distance between scale responses poses reliability issues when a Likert scale is used with descriptive and

inferential statistics (Jamieson, 2004). Jamison (2004) argues that mean and standard deviation values are meaningless with ordinal data and non-parametric procedures should be used to analyze the data. Jamison (2004) asserted that even if one assumes that a Likert scale can be used with parametric statistics, the responses on Likert tests are often skewed and often violate assumptions associated with the statistical procedure. Norman (2010) and Sullivan and Artino (2013) disagreed with the assertion that Likert scales were not appropriate for parametric statistical analysis. Norman (2010) argued that many parametric statistical procedures were robust enough to handle challenges to normal distribution when the sample size was large enough and would still produce valid results. Rasmussen (1989) also argued that the Likert scale was appropriate for parametric analysis, especially when the scale included 5-7 choice options. Rasmussen (1989) asserted that Likert scales do not pose an unusual Type I or II error risk and that the power rates were often superior using parametric analysis over nonparametric analysis. Weighing in on the discussion about the usefulness of mean values when analyzing Likert scales, Sullivan and Artino (2013) argue that mean values are useful if the distribution is within normal limits. Sullivan and Artino (2013) also argued that the frequency of response might sometimes be a better than mean scores when interpreting the data. Next, Section 4 will synthesize the literature review and discuss how this dissertation research fits into the larger body of research literature.

Conflicting Theories and Critique of Previous Research

This section will critique previous research outlined in the literature review and consider conflicting theories and perspectives in the area of EI theory and mindfulness. Since the inception of EI theory there has been two major criticisms of the theory (Mayer et al., 2001; Sadri, 2012). The first criticism was that EI is not a real intelligence; that the phenomenon called

EI was really an aspect of personality (Mayer, Salovey, & Caruso, 2008; Mayer et al., 2001). Critics argued that in order for EI to be a true intelligence the constructs of the theory had to be measurable and that there had to be correct and incorrect answers to questions designed to measure EI (Mayer et al., 2001). Mayer et al. (1999) and Mayer et al. (2001) argued that EI was a standard intelligence because EI could be operationalized, EI developed/improved with age, and the abilities outlined by EI theory were related and correlated with other types of intelligence. Mayer et al. (2001) argued that EI was a measurable ability with correct and incorrect answers to assessment questions and Boyatzis et al. (2015) outlined two assessments argued to have adequate reliability and validity for measuring EI. The second criticism of EI is that the definition of EI is too broad and varies depending on the EI model selected (Sadri, 2012). Boyatzis et al. (2015) argued that there are three competing theories of EI. The multiple definitions and constructs of EI theory is a valid criticism of the theory (Sadri, 2012).

Next, research presenting opposing views of the relevance and psychological construct of mindfulness will be discussed. The first criticism of the mindfulness practice is that the effects of mindfulness in some studies have been inconclusive. Van Berkel et al. (2014) found no significant worker performance or health benefits in research looking at a long-term (six months) mindfulness training programs. The research used a mindfulness training program as part of an e-coaching intervention with business professionals. The mindfulness training that was used was based on the MBSR program that has shown positive results in other studies. A criticism identified in the mindfulness programs reviewed in the previous section identified the MBSR program of mindfulness as adding confounding variables into the research design. Therefore, it is impossible to know what part of the intervention used by Van Berkel et al. (2014) did not produce positive results.

The second criticism of mindfulness is that there are significant differences in the way the phenomenon is defined and operationalized when viewed through the lens of Western and Eastern practices (Grossman, 2011; Purser & Milillo, 2015). Grossman (2011) argued that resent research has failed to actually measure mindfulness in the Buddhist tradition. Grossman (2011) argued that popular measurement tools assess how poorly an individual feels they pay attention to trivial activities and not actual awareness. The construct of current mindfulness measurement tools that align with varying definitions of mindfulness is still being debated and is a valid criticism of the practice (Brown et al., 2011; Grossman, 2011; Tran et al., 2013). In addition to conflicting views about definitions and constructs, early mindfulness research has also struggled with sampling and design issues. These issues will be discussed next.

Mindfulness research has experienced design, sampling, and methodological problems that have created validity issues and made it difficult to transfer the findings to the population of interest. In the design of several studies, only pre-existing trait mindfulness was measured (Dane & Brummel, 2013; Matthias et al., 2014; Ruedy & Schweitzer, 2011). These studies did not include a control variable or the before and after testing needed for higher quality quantitative research. While these studies helped increase what is known about the performance and health benefits of mindfulness in the workplace, they did not contribute to knowledge about how to develop mindfulness in the workforce. Other early studies used incomplete versions of westernized mindfulness practices based on Kabat-Zinn's (2009) MBSR program (Arch & Craske, 2006; Hafenbrack et al., 2014; Hulsheger et al., 2013). As discussed previously in this chapter, the MBSR model encompasses multiple methods to develop mindfulness. This multi-method approach makes it impossible to know what aspect of the intervention is creating the change or if it is a combination of the different training approaches that are combining to create

the change observed in the studies. Within the study of mindfulness practices, Tibetan forms of mindful-insight meditation are argued to be more germane to the development of self-awareness and performance in business leaders than the MBSR method (Goldman Schuyler, 2010; McGarvey, 2010; Purser & Milillo, 2015; Roche et al., 2014). In dissertation research while at Harvard University, McGarvey (2010) studied the effect of Tibetan forms of mindfulness practice on leader's EI and found a positive correlation. However, McGarvey (2010) did not conduct pre- and posttest measurements nor did he standardize the mindfulness method used by practitioners. The design called for the recruitment of participants from multiple Tibetan practices with varying years of experience in the practice. The design used by McGarvey (2010) made it impossible to isolate a particular form of Tibetan practice or to reduce the confounding variables through pre and posttesting.

Lastly, several studies used convenience samples that confounded the predictor variable and were not readily generalizable to a larger population. There are many types of confounding variables that can be introduced when using an undergraduate convenience sample. The students may feel they have an obligation to respond a certain way or even participate in the research. The students may not provide a good representative sample of the larger population. Lastly, there could be biological maturation issues that confound the results. The following research typifies the sampling problems identified in previous mindfulness research. Tanay and Bernstein (2013) used a convenience population of college students to validate a measure of mindfulness based on the combination of Buddhist and Western psychological principles. Arch and Craske (2006) used a similar undergraduate population when studying the effect of a 15-minute mindfulness program based in the MBSR model. Shao and Skarlicki (2009) used graduate students to study the impact of mindfulness on performance. Zeidan et al. (2010) used

undergraduate psychology students to explore the impact of mindfulness approaches on cognitive performance and mood. Mindfulness research is a new area of study within the behavioral sciences, given the novelty of the phenomenon in research, it is not unexpected that initial research was conducted with less rigorous designs and sought populations that were easy to access. The limitations of these previous works support the need for research using a more rigorous quantitative design with a sample more representative of the population of interest.

Synthesis and Findings

The literature review began by exploring foundational research in EI theory by Salovey and Mayer (1990) and Goleman (1995), and later Boyatzis and Goleman (2007). The literature review of EI theory identified divergent models and thinking about EI and how to operationalize the construct. In evaluating the different models of EI, O'Boyle et al. (2011) conducted an analysis of the various models of EI and how the models predicted workplace performance. The researchers found that the ability-based model of Salovey and Mayer (1990) explained a small variance (6.4%), while the competency approach of Boyatzis and Goleman (2007) explained a moderate variance (13.6%) in predicting job performance (O'Boyle et al., 2011). While the models of EI diverged in several areas, one area of agreement was the central importance of self-awareness in both models (Boyatzis et al., 2015).

The literature review identified research that found self-awareness was an important individual ability in workplace performance (Bratton et al., 2011; Higgs & Rowland, 2010; Dane, 2013). While these studies identified the importance of self-awareness to positive business outcomes, the research did not quantifiably explore methods or training interventions to improve self-awareness. Exploring divergent perspectives of self-awareness in performance, Dane (2013) found that worker experience had the most significant impact on awareness/self-

awareness in dynamic work environments. Dane (2013) argued that situational experience helped the worker know what aspects of the environment needed to be attended to and which could be ignored. Dane (2013) acknowledged that while experience was found to improve awareness, little was known about ways to improve the acquisition of attentional qualities identified in the study. Dane (2013) asserted that there may be factors that help develop these attentional qualities in the worker that needed to be studied in future research. Next, the literature review focused on mindfulness research and training interventions to improve self-awareness and EI in the workplace.

The review of relevant mindfulness literature identified a growing body of research in mindfulness-based practices explored in a variety of fields. The literature review found that early mindfulness-based research focused on the practice of the MBSR method. The MBSR method was also found to be a popular technique of mindfulness training in research conducted in I/O psychology. Shapiro et al. (2012), Leroy et al. (2013), and Aikens et al. (2014) all conducted research within I/O psychology exploring the performance outcomes associated with mindfulness training based on the MBSR methodology. While the MBSR-based research identified beneficial performance and wellbeing outcomes associated with the mindfulness intervention, the literature review also identified research that argued that mindful-insight methods based on Tibetan practices of meditation could have a significant application in the workplace (Grabovac et al., 2011; McGarvey, 2010; Mosig, 2007, Purser & Milillo, 2015). Despite evidence in the research indicating the potential benefit of mindful-insight meditation training, the literature review found that few studies had been conducted using these mindfulness approaches. McGarvey (2010) researched the effect of mindful-insight Tibetan based practices, but McGarvey did not isolate a particular practice for study. Speaking to the need to isolate a

particular mindfulness-based method, Vogus and Sutcliffe (2012) argued that mindfulness in top leaders is particularly important to strategic thinking and mindful organizations and that future research should explore Eastern methods of mindfulness. The literature review further found that Purser and Milillo (2015) and Vallabh and Singhal (2014) argued that future research in I/O psychology and leader development should explore mindfulness meditation in the Tibetan Buddhist tradition as a means to improve performance and ethics in the business community.

The research literature showed a current problem within the field of I/O psychology regarding how to increase a leader's self-awareness and improve performance (Bratton et al., 2011; Higgs & Rowland, 2010; Purser & Milillo, 2015). One method for improving aspects of self-awareness discussed in the literature review was mindfulness-based practices (Goldman Schuyler, 2010; Hafenbrack et al., 2014; Hulsheger et al., 2013). The logical argument that emerged from the synthesis of relevant literature was (a) that research has shown that a leader's EI can improve business outcomes, (b) the research has shown that self-awareness was a component of EI, (c) that self-awareness can be improvement with training (Boyatzis et al., 2015; Mayer et al., 1999), and (d) research has shown that mindfulness-based training using the MBSR method has had successful wellbeing and performance outcomes. What was still yet to be empirically explored was the effect of a mindful-insight training approach on self-awareness. There was a gap in current research within the field of I/O psychology exploring the effect of specific types of Tibetan mindful-insight meditation on self-awareness in a population of business leaders. Purser and Milillo (2015), and Vogus and Sutcliffe (2012) argued that this gap in mindfulness literature needed to be explored through empirical research. This dissertation addressed the current gap in the research literature and advanced scholarly research in the topic area.

Summary

Chapter 2 has provided a comprehensive review of relevant literature exploring the areas of interest in this dissertation. The chapter began with a review of the search topics and methods that led to the research reviewed in the rest of the chapter. The literature review initially focused on theoretical research exploring EI and the divergence of multiple models of EI. Next, the review explored EI literature that researched performance aspects of EI in the workplace. The literature showed a significant volume and diversity of research designs and methods that found EI had beneficial individual and organizational performance outcomes. This research argued that EI was particularly valuable in leadership development and decision making. Within this body of literature, self-awareness was found to be a foundational competency of EI.

Next, Chapter 2 focused on an in-depth review of the literature relevant to self-awareness. This review found significant performance benefits for workers with self-awareness and that self-awareness was a critical competency in several theories of leadership. What was found to be missing in the literature was research exploring ways to develop self-awareness in an organizational setting. This gap in the research led to the exploration of mindfulness research that showed early promise as a potential method for improving self-awareness. A detailed review of mindfulness literature was conducted in Chapter 2. This review explored both Western and Easter views of mindfulness and the Tibetan Buddhist concept of mindful-insight. Research in each of these areas was explored and strengths and weaknesses were identified. Lastly, a critique and synthesis of the literature was conducted. The critique found that much of the quantitative research exploring the effect of mindfulness interventions on psychological outcomes had design and sampling problems that created issues of validity and threatened the ability to generalize the research to larger populations. The synthesis of the literature review

found that EI theory postulates that self-awareness is a critical foundational competency. Empirical research showed a connection between workplace performance and EI. In addition, the synthesis of the literature found that the competency of self-awareness was particularly relevant to leadership. While there was a significant volume of credible literature exploring self-awareness, EI, and leader performance, there was no discussion of methods to improve self-awareness in leaders. This lack of research into a hypothesized training intervention for self-awareness led to the exploration of literature in the area of mindfulness. A synthesis of this literature found that self-awareness was hypothesized to be a developmental quality of mindfulness training and different types of mindfulness practices were argued to produce different psychological outcomes. Traditional Tibetan Buddhist methods were researched and the practice of mindful-insight or OM meditation was explored. Finally, the synthesis of relevant literature revealed that there was a gap in current research within the field of I/O psychology exploring the effect of specific types of Tibetan mindful-insight meditation on self-awareness in a population of business leaders. The synthesis of literature found several arguments that this gap should be explored using the quantitative method. Acknowledging the argument that this gap in the research literature needed to be addressed using quantitative methods, this dissertation employed quantitative methodology to answer the research question. The quantitative methodology used in this dissertation research will be explored in greater detail next.

CHAPTER 3. METHODOLOGY

Chapter 3 will provide a detailed review of the methodology used to conduct this research. The goal of this chapter is to provide sufficient detail and clarity that future researchers can evaluate the validity and reliability of the results described in Chapter 4 and replicate the study if desired. To aid in the clear step-by-step description of the methods used in this study, Chapter 3 will be divided into seven sections. The first section will describe the purpose of the study and methodological implications. Next, the research questions and hypothesis will be presented. The third section will discuss the research design. Section 4 will discuss in detail the study's target population and how participants were selected for the research. Section 5 will provide a step-by-step review of the procedures used to conduct the research. The sixth section will discuss the instrument used to collect data and the psychometric properties of the instrument. Lastly, Section 7 will discuss the ethical considerations involved in conducting the research. Chapter 3 will begin with a discussion of the purpose of the dissertation research.

Purpose of the Study

Chapter 1 described the purpose of the study conceptually within the larger framework of I/O psychology research. As described on page 18, the conceptual purpose of this study was to identify a method of improving leader performance through EI development. While the conceptual purpose was important for the larger placement of this dissertation study in the applicable universe of theoretical and applied research, the conceptual purpose does not help structure the study from a methodological perspective. Therefore, this section will focus on the

purpose of the study from a methodological view in an effort to show a clear rational line of inquiry from the study's purpose to the methodological choices made in the conduct of the research. To that end, this study sought to answer the research question and address the research problem by closing the gap in the scientific literature and determining the effect of IM meditation on self-awareness in a sample of organizational leaders. From a methodological perspective, the purpose statement called for the use of quantitative methods to address the research question. This research used a quasi-experimental two-group pre- and posttest design to meet the methodological requirements of the purpose statement. The study was specifically designed to measure the change in self-awareness after IM meditation training and compare these measures against the measures of a control group. In so doing, this research took the next step in EI and mindfulness research by advancing what was known about how one method of IM meditation training effected EI development in the sample.

Research Questions and Hypotheses

Section 2 will present the research question, subquestions, and hypotheses used in this research. The research used one main research question with two subquestions. This section will begin with the main research question.

RQ Main Research Question: Is IM training effective in improving self-awareness in a sample of organizational leaders?

Null Hypothesis (H0): Insight meditation will not improve self-awareness in organizational leaders.

Alternate Hypothesis (H1): Insight meditation will improve self-awareness in organizational leaders.

RQ1A: Is there a difference in scores of self-awareness in the IM group based on pretreatment (T1) to end of treatment (T2) measures?

Null Hypothesis (H1o): There will be no difference in levels of self-awareness in the IM group from T1 to T2.

Alternate Hypothesis (H2): There will be a difference in levels of self-awareness in the IM group from T1 to T2.

RQ1B: Is there a difference in scores of self-awareness at the end of treatment (T2) between those in the IM group and those in the control group?

Null Hypothesis (H2o): There will be no difference in scores of self-awareness at the end of treatment (T2) between those in the IM group and those in the control group.

Alternate Hypothesis (H3): There will be a difference in scores of self-awareness at the end of treatment (T2) between those in the IM group and those in the control group.

Research Design

The research design used in this study was a quasi-experimental two-group pre- and posttest nonequivalent-group design (Table 2). The quantitative research method was selected because the literature review indicated a need for experimental research exploring the effect of mindfulness-based practices on psychological outcomes. The two-group pre- and posttest nonequivalent-group design was selected because the research question called for measuring the effect of the independent variable on the dependent variable. The two-group design allowed for the manipulation of the independent variable in the experimental group while maintaining a control group and the pre- and posttest allowed for the measure of change from Time 1 (T1) to Time 2 (T2).

Table 2
Research Design Diagram

Nonequivalent -groups	Group	Time →		
	Treatment Group	Obs (T1)	Tx(IM)	Obs (T2)
	Control Group	Obs (T1)	-------	Obs (T2)

Note. Two-group nonequivalent-group design used throughout the research. IM = insight meditation training.

The independent variable in this research was an IM training program. The IM practice selected for study was an eight-week program developed at Stanford University. The dependent variable was the self-awareness competency described in the Goleman and Boyatzis (2011) model of EI theory. For the purposes of this research, the definition of the construct of self-awareness was characterized as "the ability to understand our own emotions and their effects on our performance" (Hay Group, 2011, p. 5). The definition of self-awareness was operationalized with two variables and was measured using the global self-awareness score from the ESCI. The two variables that comprised the operational definition were (a) awareness of emotions and (b) awareness of effects of emotions (Hay Group, 2011). Next, the weaknesses and strengths of the design used in this study will be discussed.

Shadish et al. (2002) argued that the weaknesses of the quasi-experimental design are problems associated with the ability to make generalizations outside of the study and the ability to reliably establish causation. Shadish et al. (2002) and West et al. (2000) argued that the inability to randomize in quasi-experimental designs caused threats to the validity and reliability of the research findings and conclusions. Another weakness noted by Reichard (2009), was that the non-randomization of participants found in quasi-experimental designs may cause selection bias that could threaten the internal validity of the study. Reichardt (2009) asserted that the experimental design was the most scientifically rigorous and often the most desired quantitative

design. The arguments of Reichardt (2009), Shadish et al. (2002), and West et al. (2000) can be found in more detail in Chapter 2.

There are many good arguments cautioning against the use of the quasi-experimental design when scientific rigor is desired. However, Reichardt (2009) argued that there are often practical reasons why a true experimental design can't be used in behavior science research. The strength of the quasi-experimental design is that it allows researchers to overcome the strict constraints of the experimental design while providing sufficient rigor to produce practical results (Reichardt, 2009; West et al., 2000). Sampling constraints in this dissertation study led to the adoption of a quasi-experimental design. Next, methods for increasing the scientific rigor of the quasi-experimental design will be discussed.

Reichardt (2009) and West et al. (2000) argued that there are design elements that can be implemented when using a quasi-experimental design that can help increase the validity and reliability of the research. Two design elements that can be used to increase the scientific rigor of a quasi-experimental design are the use of control and experimental groups and the use of multiple measures (Reichardt, 2009; Shadish et al., 2002; West et al., 2000). West et al. (2000) argued that generalization and causation were enhanced in the pre- and posttest nonequivalent group design when the participants, treatment, measurement of observations, and the setting of the experiment were kept as similar as possible (see pp.26-28). Reichardt (2009) supported this view, arguing that when care is given to selecting similar participants for the nonequivalent groups, that the two-group design provides adequate safeguards to control for aspects of participant variables that are normally controlled through random assignment. When conditions and participant variables are kept as similar as possible, Reichardt (2009) asserted that the incorporation of an experimental and control group into the quasi-experimental design was one

method for increasing the validity and reliability of the design. The two-group design helps control for the maturation effect that could threaten assertions of causation (Reichardt, 2009). In addition, the two-group design helps control the effect of confounding participant variables that hamper studies that are not able to randomize the assignment of participants. Next, the strengths of the pre- and posttest design will be considered.

Reichard (2009) asserted that with the pre- and posttest design, it is possible to adequately control the effect of selection bias while showing a change in the dependent variable over time and between groups. The effect of unknown confounding variables associated with selection bias can be reduced when the pretest is the same as the posttest and conclusions are drawn from the changes in the pre and posttest scores (Reichard, 2009). Reichard (2009) cautioned that the rate of change can still vary among groups and recommended the comparison of the before and after mean scores to see if they were similar when the treatment effect was eliminated from the equation. In an effort to apply the most rigorous scientific design possible given sampling constraints, this dissertation research incorporated the two-group pre- and posttest design elements recommended by Reichardt (2009), Shadish et al. (2002), and West et al. (2000).

The methodological approach used in this study was a two-group pre- and posttest nonequivalent-group design using convenience sampling. This approach was appropriate for the research problem because it allowed for a robust recruiting effort while incorporating reasonable controls to reduce possible confounding variables. The utilization of two-groups and pre- and posttest measurements allowed for the manipulation of the independent variable and the ability to measure the effect of the intervention on the dependent variable that was needed to answer the research question. Next, the target population and study sample will be discussed.

Target Population and Sample

This section will focus in greater detail on the population of interest for the research problem and the sample used in this study to answer the research question. This section will have three subsections. The first subsection will discuss the larger target population that is the concern of the research problem. The next subsection will detail the sample used in this study to explore the research question. The final subsection will discuss the power analysis used to determine the sample size needed for sufficient statistical power. Subsection one will begin with a discussion of the target population.

Target Population

The target population for this study was organizational leaders in the United States. When the U.S. Department of Labor classifies occupational job categories, the term *manager* is used instead of the term *leader*. The management occupation code was applied to only those responsible for planning and directing organizational activities (Bureau of Labor Statistics [BLS], 2015a). As of May 2015, there were 17 million employed managers in the United States (BLS, 2015a). Those managers that also performed the labor were not included in the occupational category (BLS, 2015a). While there were 17 million employed managers listed in the BLS (2015a) report, this dissertation study assumed that many categories of leaders were excluded or not reported in the government report. Although the population of leaders in the United States is likely be higher than the BLS (2015a) report indicates, it is not the purpose of this dissertation to argue the precise number of a target population that exceeds 17 million. Therefore, the theoretical target population was comprised of the figures reported by the BLS (2015a) report. The median age of this population was 46.9 (BLS, 2015b). Men comprised 61% of the population and women made up 39% (BLS, 2015c). The ethnic composition of this group

was approximately 76.5% Caucasian, 7.5% African American, 6.1% Asian, and 9.9% Hispanic or Latino (BLS, 2015b). Next, the sample population will be discussed.

Sample Population

This subsection will describe the sample population used in this research. The sampling methodology used in this study was non-probability convenience sampling. The accessible population from which the experimental group sample was drawn, or the sampling frame, was comprised of a population of organizational leaders that had registered to participate in an eight-week CCT program. The sample frame included CCT courses taught in California, Oregon, and Washington State. Some of these courses were open to the public; other courses were conducted specifically for organizational leaders in the community. Individuals that met the inclusion criteria were allowed to volunteer to take part in the study. There was no overall demographic information for participants in CCT courses. This study assumed that since CCT courses were open to the public and often directed towards organizational leaders, that the demographics of the sample frame should be within reasonable limits of the target population. Next the inclusion and exclusion criteria will be discussed.

The study had two inclusion criteria and one exclusion criterion. The first inclusion criterion was that the participant was an organizational leader. For the purposes of this study, organizational leadership was defined as (a) supervising two or more individuals, or (b) serve as a member of a board of directors, or (c) serve on a leadership team. The second criterion was that the participant was between the ages of 25-65. The exclusion criterion was that the participant could not have an active meditation practice outside of the CCT course. An active meditation program was defined as meditating three or more times a week during the four-month period prior to the start of the CCT course. The four-month time period was selected because

previous research had not identified a consistent fade-out period for mindfulness based training. Van Berkel et al. (2014) found no significant improvement in workplace mindfulness at a one-year follow-up, while Leroy et al. (2013) showed incremental improvements in workplace performance and engagement through a four-month follow-up. The variation in long-term outcomes and fade rate reported in mindfulness studies could be from the different types of mindfulness-based training explored or from the different outcome variables measured. This dissertation research assumed that a four-month period was sufficient to reduce the validity threat posed by previous mindfulness-based training.

Power Analysis

The GPower 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009) statistical power program was used to determine a suitable sample size to attain the needed power for valid statistical results. This dissertation study used two versions of the *t* test to compare the means of assessment scores. The two *t* tests used in this study were the independent samples *t* test and the related samples *t* test. Because the study used two versions of the *t* test statistical procedure, two power determinations had to be analyzed. Taking the advice of Cohen (1992), the actual power selected for the GPower 3.1 analysis was .80. Cohen (1992) argued that .80 was a reasonably conservative power estimate given the conventional $\alpha = .05$ and concluded that a power estimate smaller that .80 would increase the possibility of a Type II error and an estimate higher than .80 would likely increase the sample size to prohibited levels.

The first power analysis considered a related samples (within group) analysis. The GPower 3.1 power analysis for a *t* test related samples design and $\alpha = .05$, calculating for a medium effect size and an actual power of .80 resulted in a sample estimate of 36 participants. The second power analysis considered an independent samples or between group analyses. The

GPower 3.1 analysis for the *t* test independent groups design and $\alpha = .05$, calculating for a medium effect size, and an actual power of .80 resulted in a sample of 36 participants per group for a total of 72 participants. Given the results of the power analysis, the target sample size for the study was 36 participants in each group. Next, the research procedures used in the study will be discussed.

Procedures

This section will provide a step-by-step guide to the procedures used to conduct this study. To better organize the procedures used to conduct the research, this section will be divided into four subsections. The first subsection will outline the procedures used for participant selection. The second subsection will discuss procedures used for participant protection. The third subsection will detail the procedures used in data collection. The final subsection will discuss the procedures used for data analysis. This section will begin with the procedures used to select participants for the study.

Participant Selection

The sampling method used in this study was non-probability convenience sampling (Baker et al., 2013). The study used a two-group nonequivalent group design requiring recruitment from different sample frames. Initially, organizations were contacted to sponsor the study. This method failed to produce any organizations willing to participate in the research. Next, a convenience sampling plan was adopted and individuals already enrolled in CCT instruction were recruited for the study. There were not sufficient study volunteers to randomly select CCT participants for the study. All CCT participants that met the inclusion criteria were included in the study. The first step for selecting participants for the experimental group (CCT group) was to contact CCT instructors and solicit their participation in the study. Compassion

Cultivation Training instructors are trained at Stanford University and go through a multi-year certification program implemented by the university. Once the CCT instructor completes certification, the instructor can teach CCT courses independently or at Stanford University under the Center of Compassion Cultivation and Altruism Research and Education (CCARE). A CCARE certified CCT instructor database is maintained by Stanford University, this database was used to contact potential instructors and solicit participation in the study. Interested instructors were asked to provide an e-mail notice to individuals that had signed up for the CCT class informing them that there was the opportunity to volunteer for a research study. Next, the instructor was asked to hand out a flyer with study information and the researcher's contact information to all CCT participants on the first day of class. Lastly, interested CCT participants contacted the researcher and were screened for the inclusion/exclusion criteria. Once the participant had been screened into the study, the participant was given a link to the informed consent release and the survey website to take the pretest survey. Next, participant selection for the control group will be discussed.

The use of nonequivalent groups made it important to have the sample frame for the control group match as closely as possible with the experimental group and the target population. The sample frame for the control group included leadership from organizations and online meet-up groups in the same geographical areas as the sample frame for the experimental group. Behrend, Sharek, Meade, and Wiebe (2011) argued that online population pools provided reliable data for organizational psychology research. Behrend et al. (2011) found that online populations were generally older, had more work experience, and had more ethnic diversity than popular university population pools.

The first step in control group participant selection was to contact the organizations that had originally declined to participate in the study as part of the experimental group and ask if the organizations would participate as part of the control group. Next, the site administrators of organizational leadership meet-up groups hosted by Meetup.com were contacted. Meetup.com is a social media site that allows individuals to create virtual environments around shared interests. The key word *leadership* was used to identify potential study sites. After potential sites were identified, recruitment of participants was solicited in the meet-up groups in the same geographical areas as the CCT courses in the experimental group. Solicitation was conducted by giving the site administrator an IRB approved study notice to post on the site.

Individuals that wanted to volunteer for the study contacted the researcher by e-mail. The potential participants were screened using the inclusion/exclusion criteria. Those that met the study parameters were sent a link to the informed consent release and the survey website to take the pretest. Next, methods for protecting the volunteer participants will be discussed.

Participant Protection

The protection of participant welfare, information, anonymity, and confidentiality were of primary concern in this study. This subsection will discuss the participant protection safeguards used during the study. All aspects of recruitment and study procedures were reviewed and approved by the Capella University IRB. The sample was not an at-risk population and was comprised of healthy adult volunteers. The guidelines for human subject research directed by the *Belmont Report* (National Institute of Health [NIH], 1979) and the American Psychological Association (2010) ethics code were applied to protect the sample throughout all processes of the research from recruitment through publication. Next the procedures used to safeguard study participants will be discussed.

During the recruitment process, recruiting material was e-mailed to the certified CCT mindfulness instructors that had agreed to participate in the study. The e-mail did not show the names or contact e-mail address of others that also received the e-mail. During the first day of the CCT course, the CCT instructor handed out study flyers to all course participants and told the participants to contact the researcher for questions or if they wanted to volunteer for the study. The CCT instructor did not know which, if any, CCT course members volunteered for the study. The CCT course members were asked not to discuss participation in the study with other individuals taking the CCT course.

In response to study solicitation, volunteers e-mailed the researcher. The potential participants were screened to ensure that they meet the study's inclusion/exclusion criteria and that they had ample opportunity to ask questions about the study and voice any concerns. The potential participant was notified that he/she could drop out of the study at any time without penalty and without impacting his/her continued participation in the ongoing CCT course. These recruitment procedures provided ethical safeguards for initial study participation and guarded against peer and/or CCT instructor influences to participate and protected the anonymity of study participants from the CCT instructor and other participants in the CCT course. When a potential participant agreed to participate in the research and met study parameters, the participant was sent a link to the informed consent release. Individuals that decided not to participate in the study or did not meet the inclusion criteria were thanked for their time and no further contact was made. The contact information for potential participants that did not participate in the study was deleted from the e-mail contact list along will all corresponding e-mails.

Once participants volunteered for the study and met the inclusion/exclusion criteria, they were e-mailed the informed consent release. Along with the release form, participants were

given a unique alpha-numeric identification code. The unique code, not the participant's name, was used in all data collection and correspondence. Participants were required to read and agree to the informed consent release before continuing to the survey website. A click-through statement was used to ensure that the participants were informed and aware of the requirement to read and agree to the informed consent release. After agreeing to the informed consent release, participants were sent to the ESCI survey website. The ESCI survey was administered through the Hay Group. The Hay Group further encrypted participant information and issued another unique participant identifier. This unique identifier was used in conjunction with all data collected with the ESCI. Participant names were never collected as part of the study. A master copy of the unique participant IDs was stored in a bank safe deposit box. Digital data, associated with unique coded IDs only, was stored on a removable hard drive that was locked in a secure file cabinet in the research office when the hard drive was not in use. No identifying information was associated with the data throughout the research process. The coding system, survey identity safeguards, and storage procedures provided adequate safeguards for the participants.

Procedures for Data Collection

This section will describe the exact procedures that were used to collect data in this dissertation study. The section will provide the step-by-step process for data collection from the receipt of the informed consent through completion of the study. Two types of data were collected from participants. First, demographic data was collected. Next, dependent variable data was collected. This subsection will begin with a review of the procedures used to collect demographic data.

Demographic data. After participants agreed to the online informed consent release, they were directed to the ESCI survey website. At the website, participants were asked to

complete a short demographic questionnaire that asked 10 questions designed to identify the participant's gender, age, number of years in a leadership role, number of individuals supervised, and industry. Participants were free to not answer any or all of the demographic questions. The Hay Group compiled the demographic information for all study participants by unique participant user code and provided that information to the researcher on an excel spreadsheet. Once the demographic questionnaire had been submitted or declined, participants were taken to the ESCI survey. Next, data collection for the dependent variable of self-awareness will be discussed.

Dependent variable data. Dependent variable data was collected twice using an online assessment. The first collection (T1) occurred during the first week of the CCT course. After completing the online demographic questionnaire, participants were taken directly to the online ESCI survey. Data for the ESCI was collected by the Hay Group and delivered to the researcher in an Excel spreadsheet at the completion of the posttest. The data was organized by unique participant user codes and showed a break-down of the scores from a five-point Likert scale for each of 12 competencies measured by the survey. After the eight-week CCT training was completed, participants were sent another e-mail from the Hay Group site with a link to take the posttest (T2) ESCI survey. Participants were given an additional identifier on their unique user code to identify the test as the posttest. This additional identifier helped ensure that the data was organized and analyzed correctly. Once the T2 surveys were completed, the Hay Group e-mailed an Excel spreadsheet showing the results of the posttest with data organized by unique participant user codes and showing the break-down of the scores from a five-point Likert scale for each of 12 competencies measured by the survey.

Data management. Data was primarily managed using IBM SPSS Statistics Premium v24.0 statistical software. Redundant systems were also incorporated into the data management strategy. Back-up data files were managed in Excel. A clean (unmanipulated) data file was maintained separate from the active study data files to ensure that a clean/original data file was available in case of catastrophic user error or technical difficulty. In addition, a back-up clean data file was also maintained in an off-site bank safe deposit box to protect against theft or fire. Data from the research will be stored for seven years and then destroyed using a shredder to destroy paper documents and commercial software applications designed to remove all data from storage devices to Department of Defense standards. Next, the procedures for data analysis will be discussed.

Procedures for Data Analysis

This subsection will describe the step-by-step procedures used to conduct data analysis. The IBM SPSS Statistics Premium v24.0 statistical software was used to conduct data analysis. First, the demographic and ESCI Excel spreadsheet data was visually inspected to ensure that the data was within the allowable parameters of the measurement instruments. Next, data from the Excel spreadsheet was imported into the SPSS software. After importing the data into SPSS, another detailed data scrub was conducted to ensure that the data was transferred accurately and that values were within the possible given range of responses used in the ESCI survey. Next, this subsection will consider the descriptive statistics and the statistical procedures used in hypothesis testing. The analysis of descriptive statistics will be considered first.

Descriptive statistics. The third step of the data analysis procedure was to use descriptive statistics and a histogram to initially analyze the data and ensure that the data meet the assumptions of the *t* test statistical analysis (Bakker & Wicherts, 2014; Hoekstra et al., 2012)

and to ensure that the sample groups were similar and representative of the larger target population. The *t* test has four assumptions. The assumptions are (a) normal distribution, (b) continuous dependent variable, (c) categorical independent variable, (d) no significant outliers (Bakker & Wicherts, 2014; Hoekstra et al., 2012). The data was found to have met the required assumptions and the groups were found to be similar and representative of the desired target population; no data transformation was necessary.

Hypothesis testing. The fourth step in the process was to conduct hypothesis testing of the data using a related samples and independent samples *t* test. The assumptions associated with these statistical procedures were covered in the descriptive statistics section. The type of data that was analyzed in this dissertation research was the mean value of the global self-awareness score from the ESCI. The *t* test was selected to analyze the data because the *t* test was designed to measure the difference in mean scores and is robust to Type I and II errors when sample sizes are of equal size and large enough to meet power requirements (Sawilowsky & Blair, 1992). The first step of hypothesis testing was to test the null hypothesis associated with the first research subquestion.

Null hypothesis (H1o). There will be no difference in levels of self-awareness in the IM group from T1 to T2.

To test the null hypothesis and determine the statistical significance between T1 and T2 measures of the dependent variable within the experimental group, an analysis using a related samples *t* test was used to measure the change of the dependent variable within individuals from T1 to T2. The results of this analysis answered the first research subquestion. The next step in the process was to conduct an analysis to test the hypothesis associated with the second research subquestion.

Null Hypothesis (H2o). There will be no difference in scores of self-awareness at the end of treatment (T2) between those in the IM group and those in the control group.

To test the null hypothesis and determine the statistical significance of T2 measures of the dependent variable between the experimental and control group, an independent samples *t* test was used. The independent samples *t* test compared mean scores of the dependent variable between the experimental and control group at T2. The results of the analysis answered the second research subquestion. The analysis of the data using the related samples and independent samples *t* tests answered the research question and no additional data analysis was needed.

Instruments

This section will describe the instruments used to collect data. Reliability and validity data will be provided when applicable. This dissertation research used two instruments to gather data on the study participants. The first instrument was a demographic questionnaire. The second instrument was the ESCI. Both instruments were administered online through a study web portal administered by the Hay Group. The Hay Group has copyrights on both instruments. A letter of agreement was signed between the researcher and the Hay Group allowing the researcher to use the instruments free of charge for the purposes of dissertation research. No special training or certification was needed for research use of the instruments. Next, specific details about each instrument will be discussed.

Demographic Questionnaire

The demographic questionnaire was administered to the study participants online prior to sending the participants to the ESCI survey. The Hay Group developed the demographic questionnaire to accompany the ESCI survey. The questionnaire had 10 questions. The first question asked the respondent to enter his/her job title. This was an open field item where any

response was allowed. The second question asked the participant's responsibility level within the organization and was a forced choice question with six possible responses from entry level to executive. The third question asked what functional job the participant held within the organization. This was a forced choice question with multiple organizational roles to choose from. The forth question asked how long the participant had been in a leadership role and was a forced choice response with five possible answers ranging from no leadership experience to over 10 years of experience. The fifth question asked about the leadership role the participant performed within the organization. This question was a forced choice question with four possible responses that ranged from having no direct reports to having direct reports. The sixth question asked how many years the participant had been with his/her current company. This question was an open field item where any response was allowed. The seventh question asked the participant's gender and allowed for three possible answers. The eighth question asked the participant's age and was a forced choice question with five possible age ranges. The ninth question asked the participant his/her country of origin and was a forced choice question. The tenth question asked the participant where he/she grew up. Participants were able to answer as many or as few of the questions as desired before moving on to the ESCI survey. Next, the survey instrument will be described.

Emotional Social Competence Inventory (ESCI)

The ESCI (Goleman & Boyatzis, 2011) is a 68-item online self-assessment that takes 20-30 minutes to complete. The ESCI is grounded in EI theory and based on the Boyatzis and Goleman competency model of EI (Boyatzis et al., 2015; Hay Group, 2011). The inventory questions identify frequency of occurrence based on a 5-point Likert scale (Hay Group, 2011). The responses provide data for assessing the 12 competencies identified in the competency-based

EI model (Boyatzis et al., 2015; Hay Group, 2011). A mean score is generated for each of the measured competencies. The ESCI scoring algorithm has a minimum threshold for responses; assessments that did not meet the minimum threshold were not scored and were reported as incomplete. To assist in the completion of the assessment, the program prompted the user before moving on to the next page that an answer was not completed. The ESCI was designed to assist leader development through coaching with a certified ESCI consultant (Hay Group, 2011). The instrument focused on emotional and social competencies that were relevant to heightened individual and organizational performance (Hay Group, 2011). The ESCI was selected for this dissertation research because it was congruent with the theoretical foundations of the research topic and it allowed for the direct measure of the dependent variable. Next, the psychometric properties of the ESCI will be discussed.

Validity. The ESCI is an updated version of the ECI 2.0 (Hay Group, 2011). The ESCI consolidated competencies from the ECI 2.0 that were found to have a strong covariance (Hay Group, 2011). The Hay Group (2011) does not provide updated psychometric properties for the ESCI, but argued that the ECI 2.0 reliability and validity measures were also applicable to the ESCI. Next, the construct validity, criterion validity, and the norm will be presented using data obtained for the ECI 2.0.

Construct validity. Construct validity helps determine if the measurement tool accurately measures the variables of interest (Hay Group, 2005). To help determine the construct validity of the ESCI, the content validity, discriminate validity, convergent validity, and criterion validity will be explored. Content validity is an aspect of construct validity and is concerned with how well the instrument is matched with construct definitions. The content validity of the ESCI is good given that the assessment was created specifically to measure the same constructs identified

in the competency model of EI. This means that the construct and variable definitions are congruent from the measurement instrument to the foundational psychological theory. Next, discriminate validity was tested using confirmatory factor analysis and showed that the ECI 2.0 measured a set of factors that were distinct from personality variables and intelligence (Hay Group, 2005). The self-awareness cluster that was the dependent variable in this dissertation research was found not to correlate with intelligence as measured by GMAT (-.071) and was not correlated with critical thinking (Hay Group, 2011). The Hay Group (2011) also used factor analysis to test for convergent validity and found that self-awareness was correlated with the factors of openness (.295), agreeableness (.257), extroversion (.380), and conscientiousness (.253) at the $\alpha = .01$ significance level using the five-factor personality model developed by Costa and McCrae (1992). The actual coefficients for each variable of the self-awareness cluster were not available.

Criterion validity. The Hay Group (2005) argued that predictive qualities of an assessment are particularly important for a test that measures competency. The research topic for this study was the exploration of ways to improve EI to increase workplace performance. According to the Hay Group (2005), the self-awareness cluster that was the dependent variable in this dissertation research was correlated with higher levels of promotion (.150, $\alpha = .05$), peer assessment (.180, $\alpha = .01$), and prosocial behavior (.165, $\alpha = .01$). The Hay Group (2011) argued that meta-analysis of organizational leaders using a large sample ($n = 4{,}332$) showed that the competency of self-awareness was correlated with the development of other EI competencies and was associated with more skilled leadership approaches. In addition, high leader self-awareness was associated with creating a high performing positive work environment for employees 92% of the time while leaders with low self-awareness created negative work environments 78% of

the time (Hay Group, 2011). While the Hay Group argued that the ESCI had sufficient validity data, Watson (2007) asserted that more research needed to be conducted with the instrument and concluded that the construct validity was unknown. The lack of reliable validity data is a limitation of the present study.

Norm. The norm sample consisted of a large balanced sample (n = 4,014) from 273 organizations (Hay Group, 2011). Men comprised 55% of the population, women comprised 34% of the population, and 11% of the sample gender was unknown (Hay Group, 2011). The age range for the norm was 20 to over 60 with nearly half of the sample between the ages of 30 and 49 (Hay Group, 2011). The region of birth for the sample was over two thirds from North America or Europe, 9% from Asia, 6% from Africa, and 11% not identified. Norms were also calculated over six managerial categories (Hay Group, 2011).

Reliability. According to the Hay Group (2011), test-retest reliability had not been formally tested because the assessment was generally used with a training program administered between the pre and posttest. In research using a small population (n = 20), the test-retest reliability for the self-report data of the early version of the ECI 1.0 after a seven-month period was found to have a mean of .25, the peer-report mean was .55 (Hay Group, 2005). Boyatzis and Goleman (2005) argued that test-retest scales could be showing a sensitivity to change based on the training intervention. Internal consistency was evaluated using the Cronbach's Alpha reliability coefficient. The Cronbach's Alpha for the ESCI competency of self-awareness was .83 (Hay Group, 2011). Next, the ethical considerations associated with this dissertation research will be discussed.

Ethical Considerations

This section will draw on relevant literature to identify and evaluate ethical considerations related to this dissertation research. This research used a quasi-experimental design to study an OM meditation training program conducted with a sample of organizational leaders in a community setting. The sample was comprised of healthy adult volunteers and was not considered an at-risk population. Ethical considerations for experimental human subject research are addressed in the ethical standards of the American Psychological Association Ethical Principles of Psychologists and Code of Conduct (APA, 2010), Federal Title 45, Part 46, governing human subject research (Department of Health and Human Services [DHHS], 2009), the *Belmont Report* (NIH, 1979), and the written guidelines and practices of Capella University's IRB. The relevant aspects of these guidelines will be discussed in relation to ethical considerations of the dissertation research.

The IRB is charged with overseeing and enforcing the professional and statutory requirements of human subject psychological research (DHHS, 2009). Key ethical concerns of this dissertation research were ensuring the autonomy of the participants through informed consent, maintaining the privacy of participants, minimizing risk to participants, obtaining site permission, and obtaining approval to use the ESCI measurement instruments. The ethical research requirements asserted that IRB approval must be granted before dissertation research and recruitment could begin. Institutional Review Board approval required the submission of a detailed research plan that included how ethical issues would be addressed. A detailed research plan that included the identification and mitigation procedures for all ethical considerations identified in the research plan was submitted to the IRB of record. This dissertation research

received IRB approval on September 16, 2016. Next, key ethical concerns of the dissertation will be discussed.

Minimizing the risk to participants was the paramount concern of the IRB and was imbued throughout the design of this research study. A nonclinical population was used in the study and no psychical or psychological stress was anticipated with the intervention. The only active component of the research was a pre- and posttest administered online. In similar research using the same intervention, Jazaieri et al. (2013) did not report any risks or mental health problems with the participants. The research conducted participant recruitment in organizational and community settings from a sample frame that had independently signed-up to take an eight-week CCT course taught by a certified instructor. In accordance with IRB procedures, written authorization was obtained for all research sites and all recruiting solicitation. Next, participant autonomy was protected through the informed consent release form. The informed consent release outlined the performance requirements of the study, the rights of the participant to drop out of the study at any time for any reason, and provided contact information in case the participant had any questions or was experiencing any difficulties associated with participation in the study. Autonomy was further enhanced by e-mailing study information to all participants that had signed-up for the CCT. By including all course participants in the study notification, peer and instructor influence to participate was significantly reduced and those interested in participating in the study of their own accord were free to contact the researcher for more information about the study. Next, participant anonymity and data security will be discussed.

Participant anonymity and data collection privacy and security were a research concern. Data collection was conducted using the ESCI assessment. Formal authorization was given by the Hay Group to use the measurement tool for the purposes of the dissertation research. This

dissertation research used several coding and storage protocols to maintain privacy and data security. The first anonymity safeguard was that no participant names were taken or saved during the data collection process. Participants were given a unique participant ID code prior to logging into the study website. The unique study ID was used to login to the ESCI assessment site where the Hay Group further encrypted the data using a different unique user ID number. No data was associated with an individual's name, data was only associated with the double encoded unique ID number. Data security was maintained using a removable hard drive that was locked in secure locations when not in use, no data was stored in the cloud. The working copy of the data was double locked in the researcher's office, and a master copy of the data was secured in a bank safe deposit box. Secure destruction of the data after the required waiting period was covered in the data management section of this chapter.

Summary

Chapter 3 provided a comprehensive discussion of the quantitative methods used in this research. The chapter began with the aspirational goal to explain the methodology in such detail that future researchers would have no difficulty replicating all aspects of the study. The chapter started with a review of the purpose of the study that led to the declaration of the formal research questions and hypotheses. One primary research question was identified with two relevant subquestions. Next, the research design was discussed and an argument was made for the design's appropriateness for answering the research question. The chapter then focused on the target population of the study and the sample. A target population was identified and a sample frame that comprised CCT course participants was discussed. Next, the power analysis was presented and the results indicated that 72 participants were needed to achieve the desired statistical power for the data analysis procedures selected for the study.

The step-by-step process for conducting this study was discussed in the procedures section. This section included the procedures for participant selection, safeguarding participants, data collection, and data analysis. Detailed descriptions and arguments were provided for the statistical procedures selected to answer the research question. This section also provided a detailed description and discussion of the psychometric qualities of the ESCI survey selected to measure the dependent variable in the study. The ESCI was found to have adequate validity. However, the reliability of the ESCI instrument was found to be untested. Lastly, ethical considerations of the study were discussed. This section argued that the online pre- and posttest measure of self-awareness of healthy adult volunteers presented a minimal risk to the human subjects participating in the research. Measures to safeguard participants and data were presented; these measures were approved by the IRB of record and were found to be in accordance with applicable federal regulations. Next, Chapter 4 will present the results of the study.

CHAPTER 4. RESULTS

Chapter 4 will provide a summary of the study results. The chapter is divided into three sections. The first section will summarize the principal results of the statistical analysis. Next, a detailed description of the sample will be provided. Following the sample description, a summary of the hypothesis testing will be discussed. The chapter will conclude with a comprehensive summary.

Introduction to the Summary of Results

The statistical analysis was designed to answer the research questions and explore the effect of IM meditation training on the self-awareness of the sample. The results of the statistical analysis rejected the null hypotheses in favor the alternate hypotheses of the main research question and both subquestions. The IM training program was found to significantly increase self-awareness in the experimental group with a large effect size. The between groups analysis also had a significant finding with a medium effect size. Self-awareness did not increase significantly for the control group from T1 to T2. Given the results of the statistical analysis of the data, the research question was answered. Insight meditation increased self-awareness in the sample of organizational leaders. Next, a detailed description of the sample will be provided.

Description of the Sample

This section will provide a thorough description of the sample used in this study. The section will begin by discussing the size and power of the sample. Next, the section will provide the descriptive demographic information that is relevant to the sample and will compare that

description with the desired population discussed in Chapter 3. This section will then discuss the completion and dropout rate experienced in the study. Lastly, the section will consider other aspects of the sample that could be relevant to the data collected. This section will begin by considering the sample size and power.

Sample size and power. This study utilized a sample size of 67 participants. The experimental group was comprised of 33 participants and the control group was comprised of 34 participants. The study made use of two types of *t* tests to compare means; a within group comparison and a between groups comparison. Post hoc power analysis of the within group *t* tested resulted in a power of .972 and the between group power analysis resulted in a power of .790. Next, the sample's descriptive demographic information will be described.

Demographic information. The study had 107 initial respondents to recruiting directed at experimental and control group populations within the desired sample frame. The sample was recruited from volunteers in Washington, Oregon, and California. The initial response for the experimental group was 48 and the initial response for the control group was 59. After initial screening to ensure that the volunteers met the inclusion/exclusion criteria, 38 experimental group participants began the study and 49 control group participants began the study. The experimental group lost five participants because they failed to meet the minimum class attendance requirement of 50%. The control group lost 15 participants because they failed to complete one of the two required surveys. The attrition of participants resulted in an experimental group sample of 33 participants completing the study and a control group sample of 34 participants completing the study.

The study sample was comprised of 42 women and 25 men. The experimental group was comprised of 75.8% women. The control group was evenly split between men and women

participants. Participants' ages were largely similar between the two groups. The experimental group had 27.2% of the sample under the age of 40 and 72.8% of the sample 40 years old or older. The largest age segment (40-59) accounted for 54.6% of the experimental group sample. The control group had 26.5% of the sample under the age of 40 and 73.5% of the population 40 years old or older. The largest age segment (50-65) accounted for 58.8% of the control group. Leadership experience was also found to be similar between groups. The experimental group had 21.2% of the sample with five years or less of leadership experience and 75.7% of the sample with more than five years of leadership experience. The largest range (more than 10 years) accounted for 54.5% of the experimental group's leadership experience. One participant from the experimental group did not answer the leadership experience question, resulting in a three percent delta in the overall percentage of the group. The control group had 28.2% of the sample with five years or less of leadership experience and 71.8% with more than five years of leadership experience. The largest range (more than 10 years) accounted for 51.3% of the control group's leadership experience. A comparison of the sample's demographic characteristics with those described by the BLS (2015b) in Chapter 3 indicate that the experimental group's age is similar to the national leader age, but the control group is slightly older than the national average. Both the experimental and control group were comprised of larger portions of women than the national leader average.

Table 3
Sample Demographic Descriptive Statistics

Group	Sex	Age	Leadership Experience (In years)
Experimental Group (n = 33)	8M, 25F	4 (25 -29)	4 (< 3)
		5 (30-39)	3 (3-5)
		9 (40-49)	7 (6-10)
		9 (50-59)	18 (> 10)
		6 (60-65)	
Control Group n = 34	17M, 17F	2 (20-29)	5 (< 3)
		7 (30-39)	5 (3-5)
		5 (40-49)	8 (6-10)
		13 (50-59)	16 (> 10)
		7 (60-65)	

Note. This table shows the descriptive statistics for the demographic information collected that is relevant to the research question and the ability generalize the results to the population of interest. One participant from the experimental group did not answer the leadership experience question.

Hypotheses Testing

Hypotheses testing focused on answering the research question and subquestions. The study utilized one main research question with two subquestions. Hypotheses testing were done using two versions of the *t* test to compare the dependent variable's mean assessment scores. The two *t* tests used in this study were the independent samples *t* test and the related samples *t* test. A standard alpha level of .05 was used throughout the testing to reject the null hypothesis. This section will begin by discussing the assumptions made about the data and the statistical analysis conducted. After the discussion of assumptions, this section will provide descriptive

statistics of the variables of interest. Lastly, this section will present the results of hypotheses testing by research question and subquestion.

Assumptions. This subsection will begin with a discussion of assumptions about the data and then will discuss assumptions about the *t* test statistical analysis. The data consists of responses made on a 5-point Likert scale by a sample of 67 participants. The first assumption is that the respondents could read and understand the questions on the questionnaire. The second assumption is that each participant completed his/her own questionnaire and answered the questions honestly. The last assumption made about the data was that the responses recorded using a Likert scale were suitable for use with parametric statistical methods. The argument for the use of Likert scale responses with parametric analysis was discussed in Chapter 1. Next, assumptions about the *t* test statistical analysis will be discussed.

The *t* test has four assumptions; (a) normal distribution, (b) continuous dependent variable, (c) homogeneity of variance, and (d) no significant outliers (Bakker & Wicherts, 2014; Hoekstra et al., 2012). Histograms, descriptive statistics, and a Shapiro-Wilk's test were used to explore the data's distribution and ensure normal distribution. A Levene's test was used to test the homogeneity of variance assumption and will be discussed in conjunction with the hypothesis testing for each *t* test. Lastly, a histogram and visual inspection of the data were used to identify outliers. No outliers were identified. Next, normal distribution will be explored.

Normal distribution was tested using histograms, descriptive statistics, and a Shapiro-Wilk's test. Histograms were run on the dependent variable at T1 and T2 for the experimental group, control group, and the combined group. The histograms were characterized as mesokurtic and showed normal distribution. Descriptive statistics confirmed that the distributions were within acceptable limits. The Shapiro-Wilk's test was used to validate the assumption of normal

distribution by failing to reject the null ($p > .05$). A significant result ($p < .05$) indicates a distribution that is not normal (reject the null) that could violate the assumption of normality and impact the interpretation of the results. The results of the Shapiro-Wilk's test validated the assumption of normality of distribution ($p > .05$) in all cases expect in the combined group at T2.

Table 4
Tests for Normal Distribution

Group	T1	T2
Experimental		
Histogram	Mesokurtic	Mesokurtic
Descriptive Statistics	Skew -.472/ Kurtosis .111	Skew -.379/ Kurtosis -.806
Shapiro-Wilk's (Sig.)	.404	.099
Control		
Histogram	Mesokurtic	Mesokurtic
Descriptive Statistics	Skew -.083/ Kurtosis -1.007	Skew -.124/ Kurtosis -.980
Shapiro-Wilk's (Sig.)	.308	.077
Combined		
Histogram	Mesokurtic	Mesokurtic
Descriptive Statistics	Skew -.299/ Kurtosis -.386	Skew -.289/ Kurtosis -.867
Shapiro-Wilk's (Sig.)	.172	.009*

*Indicates a significant result ($p < .05$) and a distribution that violates the assumption of normality.

Hypotheses testing of research question and subquestions. The main research hypothesis explored whether IM training improved self-awareness in a sample of organizational leaders. A null and alternate hypothesis was developed to answer this research question.

Null Hypothesis (Ho): Insight meditation will not improve self-awareness in organizational leaders.

Alternate Hypothesis (H1): Insight meditation will improve self-awareness in organizational leaders.

Table 5
Self-Awareness Descriptive Statistics

	Sample	Mean	Std. Deviation	Std. Error Mean
Group 1	$n = 33$	T1 3.842	.6824	.1188
		T2 4.185	.5397	.0940
Group 2	$n = 34$	T1 3.879	.6285	.1078
		T2 3.882	.6093	.1045

To test the main research hypothesis, an independent sample *t* test and related samples *t* test were used to compare the within and between group means of an experimental group (group 1) and a control group (group 2). Table 5 provides the group descriptive statistics for the variable of interest. The first independent *t* test was conducted at T1 to ensure that the groups were similar prior to the IM training intervention. A Levene test was used to assess the homogeneity of variance. The results of the Levene test, $F = .000$, $p = .989$ supported a homogeneity of variance and the use of the equal variances assumed output of the *t* test. The mean self-awareness scores did not differ significantly from group 1 ($M = 3.842$, $SD = .6824$) to group 2 ($M = 3.879$, $SD = .6285$) at T1, $t(65) = -.231$, $p = .818$, two-tailed.

Next, an independent *t* test was used to compare the means of the two groups at T2, post the IM training intervention. A Levene test was used to assess the homogeneity of variance. The results of the Levene test, $F = .638$, $p = .427$ supported a homogeneity of variance and the

use of the equal variances assumed output of the *t* test. The mean self-awareness scores differed significantly from group 1 ($M = 4.185$, $SD = .5397$) to group 2 ($M = 3.882$, $SD = .6093$) at T2, $t(65) = 2.419$, $p = .035$, two-tailed. The effect size calculated for η^2 was .066 and represented a medium effect size. The confidence interval with a 95% threshold had a lower boundary of .0213 and an upper boundary of .5836. A post hoc power analysis indicated a power of .7907. Based on the results of the independent sample *t* test at T1 and T2, the null hypothesis is rejected in favor of the alternate hypothesis.

Hypothesis testing on the first subquestion. The first subquestion was concerned with whether there was a significant difference in mean scores of self-awareness in the IM group from T1 (pre-training) to T2 (post-training). A null and alternate hypothesis was developed to answer this research question.

Null Hypothesis (H1o): There will be no difference in levels of self-awareness in the IM group from T1 to T2.

Alternate Hypothesis (H2): There will be a difference in levels of self-awareness in the IM group from T1 to T2.

A related samples *t* test was used to compare the means of the experimental group at T1 and T2. The mean self-awareness scores differed significantly from group T1 ($M = 3.842$, $SD = .6824$) to T2 ($M = 4.185$, $SD = .5397$) at, $t(32) = -3.989$, $p = .001$, two-tailed. The effect size calculated for η^2 was .332 and represented a large effect size. The confidence interval with a 95% threshold had a lower boundary of -.5173 and an upper boundary of -.1676. A post hoc power analysis indicated a power of .9723. Based on the results of the related sample *t* test, the null hypothesis was rejected in favor of the alternate hypothesis.

Hypothesis testing on the second subquestion. The second subquestion was concerned with whether there was a significant difference in mean scores of self-awareness at the end of treatment (T2) between those in the IM group and those in the control group. A null and alternate hypothesis was developed to answer this question.

Null Hypothesis (H2o): There will be no difference in scores of self-awareness at the end of treatment (T2) between those in the IM group and those in the control group.

Alternate Hypothesis (H3): There will be a difference in scores of self-awareness at the end of treatment (T2) between those in the IM group and those in the control group.

An independent samples *t* test was used to compare the means of the two groups at T2 (post-training). A Levene test was used to assess the homogeneity of variance. The results of the Levene test, $F = .638$, $p = .427$ supported a homogeneity of variance and the use of the equal variances assumed output of the *t* test. The mean self-awareness scores differed significantly from group 1 ($M = 4.185$, $SD = .5397$) to group 2 ($M = 3.882$, $SD = .6093$) at T2, $t(65) = 2.419$, $p = .035$, two-tailed. The effect size calculated for η^2 was .066 and represented a medium effect size. The confidence interval with a 95% threshold had a lower boundary of .0213 and an upper boundary of .5836. A post hoc power analysis indicated a power of .7907. Based on the results of the independent sample *t* test at T1 and T2, the null hypothesis was rejected in favor of the alternate hypothesis.

Lastly, a related sample *t* test was used to measure the difference in control group self-awareness scores from T1 to T2. This test was designed to measure the effect that maturation might have on self-awareness over the eight-week time period. The mean self-awareness scores were found to not differ significantly within the control group from T1 ($M = 3.879$, $SD = .6285$) to T2 ($M = 3.882$, $SD = .6093$) at, $t(33) = -.043$, $p = .966$, two-tailed.

Summary

Chapter 4 began with a reporting of the descriptive statistics to provide context and comparison of the experimental and control group sample. Analysis of the demographic descriptive statistics identified that the experimental and control groups were similar in age and leadership experience, but were significantly different in gender composition. The experimental group was comprised of 75.8% women, while the control group was comprised of 50% women. Descriptive statistics of the variable of interest, found that at T1 the experimental group (M = 3.842) and the control group (M = 3.879) had similar mean scores on the dependent variable of self-awareness. An independent sample t test and related samples t test were used to hypothesis test the main research question and subquestions. The main research used a related sample t test and independent samples t test to reject the null hypothesis in favor of the alternate hypothesis. The first research subquestion used a related samples t test to reject the null hypothesis in favor of the alternate hypothesis. The second subquestion used an independent sample t test to reject the null hypothesis in favor of the alternate hypothesis. The null hypothesis of the main research question was rejected in favor or the alternate hypothesis. Mindful insight meditation was found to increase the self-awareness of organizational leaders. The first research subquestion found an increase in mean self-awareness from T1 to T2 for the experimental group that was significant (p = .001) and had a large effect size (η^2 = .332). The second research subquestion used an independent samples t test and found a significant (p = .035) difference in self-awareness between the experimental group and control group with a medium effect size (η^2 = .066). Lastly, a related samples t test found that there was not a significant (p = .966) change in control group mean scores from T1 to T2. Next, the results will be placed in context and discussed in relation to the research topic.

CHAPTER 5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS

Chapter 5 provides a discussion of the statistical results reported in Chapter 4 in the context of the research question and larger research topic. The chapter has seven sections. The first section provides a concise summary of the dissertation and results reported in Chapter 4. Next, there will be a discussion of the results and an interpretation of what those results mean in relation to the research question and topic. The third section will draw conclusions based on the study's results for the larger field of interest. The fourth section will provide an open discussion of the limitations of the study. Next, this chapter considers the practical implications of the research from the perspective of possible stakeholders. The sixth section provides suggestions for future research based on the findings and limitations of this research. The final section concludes the dissertation with a summation of the work and offers final thoughts about the research and its findings. Chapter 5 begins with a summary of the results.

Summary of Results

The study began with a story of leadership failure at Wells Fargo that resulted in widespread bank fraud. More than 5,300 employees, managers, and directors were fired for fraudulent practices that had occurred at the bank over a seven-year period (Corkery, 2016). The Senate Banking Committee argued that the fraud conducted on scores of unwitting customers resulted from the "gutless leadership" (Corkery, 2016, para. 8) of senior leaders at Wells Fargo. Customer confidence and the bank's reputation have still not recovered from the corruption. The

story of Wells Fargo was used to frame the importance of the research topic and problem that inspired this dissertation study. The general research interest of the study was exploring a cost-effective and low-impact method for improving the performance of organizational leaders. Previous leadership research conducted in I/O psychology had found that a leader's EI was associated with leader performance (Boyatzis, 2008; O'Boyle et al., 2011). Within the major theories of EI and prominent leadership theories, self-awareness had been identified as a foundational competency (Boyatzis et al., 2015; Côté et al., 2010; Goleman et al., 2001). Further review of the literature discovered that a leader's self-awareness competency was a significant predictor of workplace performance (Dane & Brummel, 2013; Goldman Schuyler, 2010; Hulsheger al., 2013). However, the literature reviewed also revealed that little quantitative research had been conducted on specific methods for improving self-awareness and EI in organizational leaders. Lomas et al. (2014) and others (Goldman Schuyler, 2010; Hafenbrack et al., 2014; Hulsheger et al., 2013) asserted that mindfulness meditation could be beneficial in developing EI. The research problem that emerged from the review of relevant literature was that there was a gap in EI and mindfulness research exploring the effect of specific types of mindfulness meditation on self-awareness in a population of organizational leaders. The purpose of this dissertation work was to take a small step in closing the identified gap in EI, leadership, and mindfulness research by exploring if IM would impact the self-awareness in a sample of organizational leaders.

This research has been significant in the field of I/O psychology for several reasons. The research aligned and empirically researched for the first time, a known leadership competency (self-awareness) with a previously untested training method (IM) in a sample of organizational leaders. Specifically, in the area of EI research, this study advanced scientific knowledge by

empirically exploring a previously untested method for improving the EI competency of self-awareness in organizational leaders. Next, in the area of leadership study, this research advanced scientific knowledge about a method for developing the competency of self-awareness that is significant in many leadership theories. Lastly, in the growing field of mindfulness studies, this research advanced scientific knowledge by empirically testing the impact of a specific IM training method on an EI and leadership competency that had previously been untested. The conduct of this study provided useful scientific information to the larger community of researchers and practitioners in the fields of I/O psychology, human resources management, and leader coaching.

In order to answer the research question, the study adopted a quantitative methodology with a quasi-experimental two-group pre- and posttest nonequivalent-group design. The IM method selected for study was the CCT program developed, taught, and monitored by Stanford University. This IM program was selected because of its standardized pedagogy and strict instructor certification program. Experimental group participants were recruited from scheduled eight-week CCT courses taught at Stanford University, the University of Washington, and to select business leadership groups in Oregon. The courses at Stanford and the University of Washington were not part of the academic curriculum and were delivered in the evenings and open to the general public. The control group was recruited from online leadership meet-up groups and organizations in the same geographic area as the experimental group. A related samples and independent samples *t* test were used to conduct hypothesis testing.

The results of the analysis of demographic descriptive statistics found that the two groups were similar in age and leadership experience, but were significantly different in gender composition. The experimental group was comprised of 75% women, while the control group

was equally split between women and men. The descriptive statistics of the variable of interest found that the two groups' mean scores of self-awareness were similar and statistically insignificant at T1. Mean self-awareness was found to increase significantly ($p = .001$) in the experimental group from T1 to T2 with a large effect size ($\eta^2 = .332$). The comparison of the difference in mean self-awareness scores between the two groups at T2 was found to be significant ($p = .035$) with a medium effect size ($\eta^2 = .066$). Lastly, the change in T1 to T2 mean self-awareness scores did not differ significantly ($p = .966$) for the control group. Next, this chapter will conduct a detailed discussion of the results of this study.

Discussion of the Results

This section will discuss the results presented in Chapter 4 in relation to the research question and provide possible explanations for the observed outcomes. The research question sought to understand how a mindfulness-based training program impacted self-awareness in a sample of organizational leaders. The significant increase in mean self-awareness observed from T1 to T2 within the experimental group provided evidence that supported the alternate hypothesis that the mindfulness-based training would impact self-awareness. The difference in mean scores from T1 to T2 ($M_1 - M_2$) for the experimental group was .343, this difference represented an approximate increase of a third of a point on the 5-point Likert scale used to measure the construct of self-awareness. The statistical effect size ($\eta^2 = .332$) of this difference was considered large. The alternate hypothesis was also supported by the outcome of the between groups analysis. The between groups analysis found a significant difference between groups at T2 with a medium effect size ($\eta^2 = .066$). A within group analysis of the control group showed no significant change from T1 to T2. The outcomes observed and presented in Chapter 4 were not unexpected. The training modality of the IM program studied stressed the observance

and contemplation of thoughts and feelings that arise during meditation. It is reasonable that this process could result in increased self-awareness as participants experienced more practice noticing internal and external stimuli and contemplated how these stimuli impacted them emotionally.

While the effect size for both the between and within group analysis was significant, they were not necessarily consistent. The difference in T1 and T2 mean scores resulted in a large effect size for the experimental group. However, when the T2 mean scores were compared between the experimental group and control group, the outcome resulted in only a medium effect size. The between groups T2 difference (Group 1 M_2 – Group 2 M_2) was .303. The difference in measured outcome and effect can only partially be explained by a slightly higher T1 mean score by the control group (.037). The difference in between group scores at T1 was determined to be not significant. Another possible explanation is that the independent sample *t* test required a total sample of 72 participants, but only 67 participants were included in the study's analysis. Cohen (1992) asserted that effect size is impacted by alpha level, power, and sample size. It is possible that the smaller sample size impacted the observed effect size in the between groups analysis.

A limitation in the interpretation of these findings is the unit of measurement used to observe the phenomenon of interest. The analysis revealed a .343 point increase in self-awareness in the experimental group. However, it is difficult to determine what a third of a point increase in self-awareness means for an organizational leader. This question rests on two perspectives: the leader's perception of self and the observed behaviors of the leader. It is possible to argue that by altering self-awareness responses to the questionnaire from T1 to T2, leaders perceived their world differently, indicating that a .343 change can be significant at the

individual level. Had this research included a 360-degree evaluation that included coworkers and close others, it might have been possible to assess the value of the increase in self-awareness in observable leader behavior. The inability of the study to relate the outcome measure to observable behavior is a limitation. In consideration of the empirical results of the research and internal limitations, the research question is answered with caution. The IM program studied did increase self-awareness in organizational leaders, but it is impossible to know how this increase translates to improved leader performance.

Conclusions Based on the Results

This section will discuss the conclusions that can be drawn from the results of this study. The section will begin by comparing the findings with previous research and the theoretical framework of the study outlined in Chapters 1 and 2. Next, this section will discuss why the findings likely occurred and what these findings mean to the larger community of I/O psychology researchers and practitioners. Lastly, this section will discuss the ability to generalize these findings across the population of interest. The section will begin with a comparison of the findings with the theoretical framework of the dissertation.

Comparison of the Findings with the Theoretical Framework and Previous Literature

This subsection will compare the findings with previous relevant research and the theoretical framework. The results of this research were supported by the foundational theoretical framework of EI developed by Salovey and Mayer (1990), Goleman (1995), and Goleman and Boyatzis (2011). Emotional intelligence theory argues that self-awareness is a key competency in EI. The theory also maintains that competencies of EI are not static, but can be trained and developed over time (Boyatzis et al., 2015; Mayer et al., 1999). The research

described here confirmed the theoretical work of Salovey, Mayer, Goleman, and Boyatzis by showing that the EI competency of self-awareness could be specifically trained and improved. The findings in this research also supported earlier findings by Lomas et al. (2014) that found an improvement in men's EI after participating in mindfulness training.

The research presented in this dissertation supported theories about the role of self-awareness in mindfulness practices and how different types of meditation-based training may have different psychological outcomes. Brown et al. (2007) and Tanay and Bernstein (2013) asserted that self-awareness is a key aspect of attending to both physical and mental phenomena in the moment that is part of mindfulness-based practices. The research presented here helps show a significant and strong relationship between mindfulness practice and self-awareness as hypothesized by Brown et al. (2007) and Tanay and Bernstein (2013). In addition, Van Vugt (2015) reasoned that different types of meditation may impact psychological outcomes differently. Specifically, Van Vugt (2015) asserted that awareness and task focus were likely improved through FA types of meditation and emotional regulation was more likely activated through OM types of meditation. The IM meditation studied in this research supports the reasoning of Van Vugt (2015) that psychological aspects of emotion are activated by OM meditation. However, this observation is made with caution since the IM training observed in this study, while primarily OM meditation, did contain aspects of FA meditation.

The comparison of the research contained in this study with other research in psychology is limited because of the relatively new interest in the field with mindfulness research. Much of the previous research has focused on the relationship between trait mindfulness and EI, not how mindfulness-based training effects specific components of EI. Another limitation to comparisons of previous research is that many of the previous studies used a MBSR-based training approach.

As described in Chapter 2, the MBSR approach combines multiple activities into a unified practice and it can be difficult to parse out what aspect of the MBSR training is impacting the observed outcomes. The research presented here provides a modest first-step into researching outcomes associated with a simple mindfulness-based training program on specific competencies of EI.

Interpretation of the Findings

This subsection will interpret the findings in the context of what may have caused the observed phenomenon, if the findings can be generalized to the target population, and why this research is important to I/O psychology. Mosig (2007) argued that a key aspect of self-awareness is the recognition of the transient nature of the ego and the Buddhist concept of non-attachment to distorted mental narratives that attempt to shield the ego. Carlson (2013) argued that lack of self-awareness led to blind spots in accurate perception that could lead to negative outcomes. Carlson (2013) asserted that types of mindfulness practice may increase self-knowledge by improving the amount and fidelity of information that practitioners have about themselves and by reducing the ego-saving behavior that impacts how practitioners seek and process information. Vago (2014) argued that processing biases likely prevented accurate self-awareness and perception of events. Vago (2014) reasoned that types of mindfulness practice may reduce habitual biases and increase accurate cognition of the self and environment. From a cognitive perspective, Vago (2014) asserted that mindfulness-based training could impact self-awareness by isolating specific experience in the moment and allowing one to recognize habitual cognitive schemas. Recognizing distorted self-talk and views of the world that create bias can allow the practitioner to develop new and adaptive perspectives that could improve self-awareness (Vago, 2014). Research in neurobiology provides support for the views of Carlson

(2013) and Vago (2014) that mindfulness-based training impacted cognitive centers of the brain linked to aspects of the self. Zeidan (2015) asserted that brain plasticity occurs during mindfulness-based training. Brain scans of eight-week mindfulness-based training practitioners showed an increase in gray matter in areas associated with self-referential systems (Zeidan, 2015). Posner, Tang, and Lynch (2014) supported a plasticity argument citing brain scan imaging that indicated increased myelination and connectivity in the neural network associated with attention after 2-4 weeks of meditation training.

The training protocols of the mindfulness-based program studied in this research specifically directed participants to observe the transient nature of thoughts and the associated emotions in an aware and nonjudgmental manner (Jinpa et al., 2013). The practice described by Jinpa et al. (2013) is similar to the construct of self-awareness defined by the Hay Group (2011). The EI construct of self-awareness operationalized in the ESCI was defined as "the ability to understand our own emotions and their effects on our performance" (Hay Group, 2011, p. 5). It is possible that the continued practice of observing thoughts and feelings in a reflective manner, as directed in the IM training, resulted in an increase in accurate self-information and enhanced the ability of the participants to recognize and understand the manifestations of emotions from thoughts and how these emotions had habitually impacted behavior (performance). It is possible that plasticity in the attentional network helped make this moment-to-moment awareness enduring and resulted in changes in survey responses from T1 to T2. This hypothesis is supported by the theoretical work of Carlson (2013) and others (Posner et al., 2014; Vago 2014; Zeidan, 2015) and the qualitative research by Higgs and Rowland (2010). Higgs and Rowland (2010) found that a leader's self-awareness competency was significant to the leader's ability to recognize how aspects of ego protection impacted decision making.

While meditation is almost by definition an individual internal activity, the IM program studied here was delivered in a group setting. Another possible explanation of the observed effects could have come from contemplative discussions about the individual experience during the IM session. In other words, the act of talking about the meditation experience may have assisted the development of self-awareness. The possibility that reflective discussion could have contributed to the observed effects is not contrary or troubling to the findings or validity of this dissertation research. Traditional methods of Buddhist meditation advocate for some form of reflection as part of the practice, this reflection is considered an integral component of the meditation practice. It was assumed here that discussion most likely did not occur after daily home practice, but likely did occur occasionally during weekly group meditations. Next, the ability to generalize the findings of this research to the target population will be considered.

Generalization and characteristics of a study's external validity were outlined in Chapter 1. Shadish et al. (2002) argued that the nonequivalent two-group quasi-experimental design had a weak generalization compared to randomized experimental approaches. Using the West et al. (2000) model presented in Chapter 1, the validity of the results will be considered using four dimensions; (a) units (participants), (b) treatment, (c) observations, and (d) setting. Demographic descriptive statistics showed that the units of the study (sample) were similar to the target population in age and had significant leadership experience. The sample was not similar to the target population in gender composition. The experimental group had significantly more women (75%) than the number of women (39%) in management roles reported by the BLS (2015b). The second area of external validity evaluation is the delivery of training. The training was delivered by certified Stanford instructors in California, Oregon, and Washington State. The Stanford certification is a multi-year certification and oversight program. This research assumes

that practitioners adhered to the prescribed training protocols. The third area of evaluation is the use of the ESCI as a measurement instrument. The ESCI was aligned with the theoretical approach of the study and the construct that comprised the dependent variable. The ESCI questions were consistent from T1 to T2 and the survey was delivered in the same way to all participants and at similar intervals. The last area of external validity to consider in the West et al. (2000) model is location. The training studied in this research was conducted in multiple university and community locations. The environment, while similar, cannot be assumed to be the same and could have introduced unknown variables. Given the evaluation of generalization using the West et al. (2000) model, a cautious generalization of findings can be made to the target population. While the difference in gender composition is significant, there is nothing in the literature review to indicate that the training approach would produce different outcomes based on gender. Next, contributions of this study to existing scholarly research will be discussed.

This study provides several contributions to the scholarly literature and applied psychology in the areas of research in EI, leadership development, and mindfulness studies. This study contributed to the knowledge base and scholarly research of EI by identifying and measuring a method for improving the self-awareness competency foundational in all theories of EI. The literature review in Chapter 2 identified that previous research in self-awareness focused on the measurement and outcomes associated with trail self-awareness and EI. This study helps to take EI research in a new direction by studying methods of improving specific psychological states of EI. This study also contributed to scholarly knowledge by confirming through empirical research that EI can be developed and improved as predicted by Salovey and Mayer (1990), Goleman (1995), and Goleman and Boyatzis (2011).

In the scholarship of leadership, EI has been found to be a predictor of employee engagement, decision making, and leader performance (Goleman et al., 2001; Pittenger, 2015; Yip & Côté, 2013). Bratton et al. (2011) found that self-awareness was related to several models of leadership and skilled leadership performance. However, Bratton et al. (2011) argued that more research needed to be conducted in self-awareness development in organizational settings. This dissertation research adds to what is known about how a specific training method impacts the EI competency of self-awareness in a sample of organizational leaders. This research is significant because it is one of the first studies to quantitative align a specific method of mindfulness with a specific competency of EI in a population of interest to organizational leadership scholars.

Lastly, this research added to the scholarly body of mindfulness study by empirically measuring the effect of a specific type of mindfulness-based training on a psychological construct. Purser and Milillo (2015) and Vallabh and Singhal (2014) argued that future research and leader development should include mindfulness meditation in the Tibetan Buddhist tradition. This study answered this call for research and advanced the knowledge of the impact of Tibetan Buddhists traditions adapted for Western audiences in the domain of I/O psychology. Dane (2013) called for further research in organizational studies looking at the outcomes of mindfulness and if these outcomes could be developed through training. The findings of this dissertation study further the knowledge in the areas requested by Dane (2013) by quantitatively measuring a psychological outcome of a mindfulness program and providing empirical evidence that the outcome can be improved through training.

Limitations

This section will discuss the limitations that were encountered while conducting this research. The section will begin with limitations in design. Next, limitations associated with the sample will be considered. Lastly, limitations associated with the results will be discussed. The section will begin with a consideration of limitations placed on the study by the research design.

As described in Chapter 3, this research used a quasi-experimental research design. A quasi-experimental design was adopted because finding a large enough sample for randomization proved to be problematic. Multiple organizations in the geographical frame were recruited only to withdraw prior to starting the study. The organizations cited time and financial resources as the reasons for withdrawing from the study. After four months of failing to secure any organizations willing to participate in the study, the quasi-experimental design was adopted. Chapter 3 provides a detailed description of the validity issues associated with the quasi-experimental design and the methods this research used to mitigate those issues. Regardless of the mitigating measures, one must assume limitations associated with the quasi-experimental design. It is difficult to know how effective mitigating measures were in controlling possible variables that could impact the results of the study. Therefore, any interpretation of the results must be done with caution and recognizing the limitations of the design. A better design could have been adopted if a host organization(s) could have been recruited. A large host organization or multiple organizations could have afforded the opportunity to use a true experimental design, randomize, and allowed better control of the environment where the training was delivered.

The next limitation of the study involved the sample that comprised the experimental group. The sample was a convenience sample of volunteers that had already signed up and paid for the meditation-based training that was the subject of this research. It is possible that since the

sample had self-selected and paid to be in this course that they may have been motivated to provide positive responses to the survey used to measure the construct of interest. This limitation could have impacted the strength of the effect found between T1 and T2 in the experimental group. Another limitation of the sample was the gender composition. The experimental group was comprised of a significantly larger percentage of women than the control group and the target population. The larger number of women is not uncommon in mindfulness studies. While the gender disparity reported here is a limitation for consideration, it is not anticipated that the gender difference impacted the results or the ability to generalize the results to the target population. An independent samples *t* test of the dependent variable by gender did not produce significant results. The gender disparity was largely an effect of the quasi-experimental design that had to be adopted. An experimental design could allow for randomization and control for sample variables like gender. An improved design would attempt to match the study's gender composition with that of the target population.

The last limitation to be discussed here is the limitation involving the interpretation of results. As reported in Chapter 4, the results indicated an approximate increase in the self-awareness of the experimental group of a third of a point. Chapter 3 outlined an argument for the validity of the Likert scale in this type of social science research and the appropriateness of using a self-report survey to assess the construct of self-awareness. However, interpreting the actual benefit of a third of a point increase in a 5-point Likert scale remains a limitation of this study. The results could have been made stronger and placed in a behavior/performance context by including a 360-degree evaluation of the sample by coworkers or close others. This expanded context would have helped identify behavioral/performance benefits associated with a third of a point increase in self-awareness.

Implications for Practice

A leader is responsible for providing vision and motivating others to accomplish organizational goals. Self-awareness serves as a lens through which a leader interprets his/her environment (Higgs and Rowland, 2010). Boyatzis et al. (2013) maintained that self-awareness helped leaders connect with and motivate employees. Yip and Côté (2013) asserted that the inability to accurately interpret emotions resulted in poorer decision making in organizational leaders. The research presented here suggests a method to help clear a leader's lens and make perception more accurate. It is possible that increased self-awareness can help a leader identify aspects of the internal and external environment that bias perception. Noticing this bias and being aware of habitual thinking patterns gives the leader the option to behave differently and make better decisions based on a more accurate view of the operational environment. The work of Boyatzis et al. (2013) and Yip and Côté (2013) suggested that there could be both a tactical and strategic performance benefit attributed to increasing self-awareness.

It is reasonable to assume that other methods of developing self-awareness exist. Speelman and Wagstaff (2015) argued that adventure-based leadership programs increased the participants' self-awareness. Methods for developing self-awareness, like the one suggested by Speelman and Wagstaff (2015), probably work well for some leaders. However, given the median age (46.9) of leaders reported by the BLS (2015b), a less intense and sustainable training intervention is likely desired by leadership development practitioners. The training program researched here requires minimal resources and training to conduct, creates measurable results in a relative brief period, and has a low physical impact on the participant. The demographic findings reported in Chapter 4 along with the arguments made in this chapter, reason that results should be transferrable to the larger target population. This research is important to HRM

professionals and those concerned with leadership development because it adds another empirically tested developmental method to the practitioner's tool kit.

Recommendations for Further Research

The relatively recent interest in mindfulness research has made this an exciting time to study mindfulness as a training method to improve individual and organizational performance, pro-social behavior, and happiness. This section will discuss recommendations for future research in the context of EI, leadership, and mindfulness studies. The first area that will be considered is recommendations developed from the data produced in this research. The second area that will be discussed is recommendations based on research methodology. This section will begin with a discussion based on the data reported in this research.

The data reported a significant effect of mindfulness training on the EI construct of self-awareness. This effect resulted in a third of a point increase in self-awareness during an eight-week training period. While these results answered the research question, they created numerous other questions that future researchers could pursue. The first question is what is the behavior/performance benefit of a third of a point increase in self-awareness? Future research could design a study to measure not only changes in self-awareness, but also changes in behavior using a 360-degree design. Another question that arises from the data is how long do the observed effects last after the eight-week training program has ceased? The fade rate of the CCT program researched here is unknown. Other mindfulness-based longitudinal research has produced inconsistent findings in regards to the particular methods fade rate. Future research could attempt to measure the fade rate of different types of mindfulness-based training. The answers to these questions would help provide greater data density and illuminate the phenomenon in richer detail. Answers to these questions could also help develop a predictive

model that could assist in developing self-awareness and improved performance in organizational leaders.

The next suggested area for research is based on methodology and will consider both design and training intervention. As discussed in the limitations section of this chapter, the quasi-experimental design reduces the scientific rigor of this study. Future research should endeavor to use a true scientific design and find a host organization(s) to sponsor the research. This change in method would provide better validity through randomization the ability to control the experimental environment. In addition to the methodology, future research could also consider measuring the effects of other mindfulness-based training. Van Vugt (2015) argued that different methods of mindfulness training may impact psychological outcomes differently. Mindfulness research has largely explored the MBSR training program. However, recently the CCT program studied in this research and developed by Stanford has garnered more research attention. Future research could explore specific psychological outcomes associated with other specific methods of mindfulness-based training. Given that much of the previous mindfulness-based training research has been conducted in a group setting, future research could attempt to control for the group interaction and determine if the group setting impacts the outcomes observed in this study. Research such as this could work towards a mindfulness map that would identify different types of mindfulness-based training and the training's impact on specific psychological outcomes.

Conclusion

The research presented here used a quantitative methodology to explore the effect of a mindfulness-based training program on self-awareness in a sample of organizational leaders. The research was grounded in the EI theory and model developed by Goleman and Boyatzis

(2011). The quasi-experimental design measured the T1 and T2 ESCI mean scores of self-awareness in an experimental and control group. The training intervention was an eight-week mindfulness-based approach designed and trained by Stanford University. The training methodology was conceptualized in the study as mindful insight meditation, a process adapted from traditional methods of Tibetan Buddhist practices. The results answered the research question by showing that the training intervention significantly increased self-awareness in the experimental group producing a large effect size. When placed into context, the effect size equated to approximately a third of a point increase is self-awareness from T1 to T2. The research controlled for maturation, test knowledge, and other confounding variables through the use of a control group. The between group comparison had a significant result with a medium effect size showing that the mean score of the dependent variable increased in the experimental group, but not significantly in the control group.

This study supports previous research and theory by providing empirical results that competencies of EI can be trained and improved. This research also supports the hypothesis that forms of mindfulness can increase self-awareness in organizational leaders. This research is significant because self-awareness is seen as a foundational competency in many leadership theories and has been shown to have a positive relationship with enhanced performance. While several previous studies have found causal and correlational relationships between EI competencies and desired performance behaviors in organizational leaders, few studies have proposed a specific method for improving EI, and even fewer have actually attempted to measure the success of a training method on a specific competency of EI. This research accomplished both of these goals and significantly contributed to the base of knowledge in the field of I/O psychology.

This work began with a story about widespread fraud in one of the county's largest banks and a reflection on the state of organizational leadership after a decade of reported corporate and government misbehavior. One of the central concepts of mindfulness in the Buddhist context is developing self-awareness. Self-awareness helps remove biases and ego protecting habitual thinking from the perception of reality. In Buddhist psychology, this clarity of perception leads to better decision making and the realization that we are all connected and all the same. When leaders are aware and do not see themselves as separate from those they lead, it is hoped that decisions will be based on more strategic and altruistic motivations and not simply on stock prices or quarterly earnings statements.

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STATEMENT OF ORIGINAL WORK

Academic Honesty Policy

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

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

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

> Learners are expected to be the sole authors of their work and to acknowledge the authorship of others' work through proper citation and reference. Use of another person's ideas, including another learner's, without proper reference or citation constitutes plagiarism and academic dishonesty and is prohibited conduct. (p. 1)
>
> Plagiarism is one example of academic dishonesty. Plagiarism is presenting someone else's ideas or work as your own. Plagiarism also includes copying verbatim or rephrasing ideas without properly acknowledging the source by author, date, and publication medium. (p. 2)

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

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

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

Statement of Original Work and Signature

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

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

Dutch Franz
June 18, 2017