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THE UNIVERSITY OF SOUTHERN MISSISSIPPI

THE RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE AND LEADERSHIP EFFECTIVENESS AMONG SPONSORED RESEARCH ADMINISTRATORS

by

Ventez Derrell Jones

Abstract of a Dissertation Submitted to the Graduate School of The University of Southern Mississippi in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

May 2012
ABSTRACT

THE RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE AND LEADERSHIP EFFECTIVENESS AMONG SPONSORED RESEARCH ADMINISTRATORS

by Ventez Derrell Jones

May 2012

The purpose of this study was to examine the relationship of emotional intelligence, as perceived by senior level university sponsored research administration professionals and their perceived leadership effectiveness, as measured by the Bar-On Emotional Quotient Inventory and the Kouzes and Posner Leadership Practices Inventory (LPI) for Self. Senior research administrators are now more than ever being faced with profusely, increasingly, difficult issues within the scope of their daily work processes.

The relevant review of literature focused on four key areas: theoretical rationale for examining emotional intelligence, the link between emotional intelligence and leadership effectiveness, effective leadership practices within education, and implications for higher education leadership.

The participants for the study were senior level research administrators from post-secondary colleges and universities located in the Southeastern U.S. Research hypotheses were tested using inferential statistical measures of independent t test, one-way analysis of variance (ANOVA), and correlation regression analysis. A total of 30 surveys were determined useable for each of the three survey instruments (demographic profile, Kouzes & Posner’s (2003) Leadership Practices Inventory (LPI), and Bar-On (1997) Emotional Quotient Inventor (EQ-i) and used in this data analysis.
Results demonstrated a significant statistical correlation between emotional intelligence and leadership effectiveness (practices) among senior level university sponsored research administrators. Research administrators demonstrated “average – adequate emotional capacity.” Furthermore, the study found that senior level university sponsored research administrators’ total emotional intelligence and eight other components of emotional intelligence are highly correlated with the “Enabling Others to Act” component of the Leadership Practices Inventory (LPI). The results of this study support previous research findings that emotional intelligence and leadership effectiveness are correlated. Suggestions for the sponsored research administration profession and recommendations for future research are included.
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<tr>
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<th>Description</th>
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<tbody>
<tr>
<td>II:</td>
<td>Inconsistency Index</td>
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<td>AS:</td>
<td>Assertiveness</td>
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<td>RT:</td>
<td>Reality Testing</td>
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<td>IR:</td>
<td>Interpersonal Relationship</td>
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<td>SR:</td>
<td>Self-Regard</td>
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<td>IC:</td>
<td>Impulse Control</td>
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<td>FL:</td>
<td>Flexibility</td>
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<td>ES:</td>
<td>Emotional Self-Awareness</td>
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<td>EM:</td>
<td>Empathy</td>
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<td>EQ:</td>
<td>Total EQ score</td>
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<td>OP:</td>
<td>Optimism</td>
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<td>Intra:</td>
<td>Intraperonal (Composite Scale)</td>
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<td>Inter:</td>
<td>Interpersonal (Composite Scale)</td>
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<td>Adapt:</td>
<td>Adaptability (Composite Scale)</td>
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<tr>
<td>SM:</td>
<td>Stress Management (Composite Scale)</td>
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<td>GM:</td>
<td>General Mood (Composite Scale)</td>
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<tr>
<td>PI:</td>
<td>Positive Impression</td>
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<td>NI:</td>
<td>Negative Impression</td>
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<td>PS:</td>
<td>Problem Solving</td>
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<td>RE:</td>
<td>Social Responsibility</td>
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<td>HA:</td>
<td>Happiness</td>
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<td>IN:</td>
<td>Independence</td>
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<td>ST:</td>
<td>Stress Tolerance</td>
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<td>SA:</td>
<td>Self-Actualization</td>
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CHAPTER I
INTRODUCTION

Background

For more than 3 decades researchers have postulated that emotional intelligence greatly complements an individual’s ability to work collaboratively within a team setting, cope with stress, and lead others (Caruso & Salovey, 2004; George, 2000). For example, leaders who are unable to discern and self-assess their emotions may not recognize certain cues from their co-workers or subordinates. Likewise, administrators who display poor management over emotions may allow their emotions to interfere with their level of efficacy as it pertains to leading. For instance, when they feel anxious, they may avoid giving an important speech, or when they feel angry, they may inappropriately lash out at a co-worker.

The Value of Sponsored Research Administration

Historically, research administrators were introduced into the academic institutions to justify the requirements of the federal government, as well as to provide platforms for philanthropists to make formal donations to the university to carry out the missions of the institution (Hensley, 1992). However, after World War II, as the number of higher education institutions increased, military research opportunities surged. As a direct result, the research administration profession experienced exponential growth and began to witness a paradigm shift in ITS responsibilities. Research administrators went from providing part-time support to philanthropists and formalizing the demands of the U.S. Government to providing assistance to investigators in managing all of the regulatory processes as the increased popularity of grant funded research opportunities (Norris & Youngers, 2000).
The research administration profession began growing at a constant rate during World War II, as the military began developing new weaponry. After WWII, however, the federal government invested copious amounts of financial resources into academic research projects. In a report by the Council on Governmental Relations, Norris and Youngers (2000) reported that federally funded research grew “from $15 million in 1960 to $1.7 billion in 1970 (p. 33); to $2.5 billion by 1976; and to over $9 billion in 1989” (p. 36). Nelson (2002) explained that “colleges and universities received $30.2 billion from all sources in 2000; the federal level of support for R&D in colleges and universities was $17.5 billion, a figure that represented 58% of all academic R&D support” (p. 3).

The results contained in a 2004 RAND study that looked at the relationship between federal spending and higher education surmised that during a 7-year period from FY 1996 through FY 2002, the total federal R&D funds going to universities and colleges grew from $12.8 billion to $21.4 billion, after a slight dip in FY 1997, for an overall increase of 67.2% in current dollars and an overall increase of 45.7% in constant 1996 dollars (Fossum, Painter, Eiseman, Ettegdgui, & Adamson, 2004). Additionally, the study suggested that, “the top 80 institutions received 71% of the total federal funds awarded for university and college research and development” (Fossum, et al. 2004, p. 34).

Similarly, in a recent review by of the FY 2011 and FY 2012 Federal Budgets, researcher Clemins (2011) noted that federal lawmakers proposed spending $147.9 billion in total R&D-related research, with $16.7 billion going to colleges and universities, representing approximately 25% of the total research and development (R&D) support. Until the late 1960s, the profession of research administrator was considered a part-time profession; today, however, research administrators are being
given tasks with new and highly complex opportunities within their respective organizations (Atkinson, Gilleland, & Barrett, 2007) making it a full-time profession. Specifically, research administrators play a crucial role in protecting the research interest and integrity of institutions by guiding researchers and others through the malaise of compliance and accountability issues, contractual terms and conditions, and financial reporting.

Norris and Youngers (1998) reported in a 1972 study by Wilner and Hendricks and quoted in Steinberg’s doctoral dissertation in 1973 the seven basic responsibilities of an office of grants administration:

1. The identification of federal programs which might support projects of interest to the faculty,
2. Communication of information regarding programs to the faculty and the transmitting of faculty interests to appropriate government agencies,
3. Assistance in the preparation of proposals,
4. Administration of grants from the time of award to the time of completion,
5. Acting as a campus-based Washington liaison for the university,
6. Maintaining contracts with other universities and related organizations for aid in the solution of grant administration problems,
7. Keeping informed of changes in grant policies and procedures, and
8. Retain all records for adequate number of years. (p. 35)

In comparison with other professions (e.g., accounting, project management, or financial analyst), the research administrator profession is one of the most complicated and stressful professions within higher education administration. Atkinson et al., (2007)
noted, “research administration is a profession positioned within a complex university organization, in a complex research system” (p. 20). Accordingly, Katsapis (2008) suggested that university research administration is “at a heightened level necessitating the need for research investigator and institutional interventions” (p. 3). Findings by Shambrook and Brawman-Mitzer (2006), from their study of over 600 research administration professionals, reported that over 50% of university research administrators surveyed perceived their levels of work-related stress as high (43.1%) and extremely high (16.2%). These findings further suggest that such amplified stress levels would necessitate the need of higher levels of emotional intellect in order to effectively manage high levels of stress and manage the research efforts of the investigator.

One of the major reasons for such a need in emotional intelligence is that stress and complexity typically result in adverse behavior. Goleman (1995) suggested that it is very important for professionals to have a high degree of emotional intelligence in order to better manage resources thereby promoting emotional and intellectual growth. These observations further suggest that individuals with lower emotional intelligences who held a position in research administration often develop mental and emotional health issues (Goleman, 1995). Additionally, faculty members are being challenged to conduct research and contribute to economic development as requirements for tenure. Faculty members, therefore, depend heavily on research administrators to administer the day-to-day programmatic aspects of the research project or program while they conduct their research. In this regard, it may be important that research administrators exhibit high levels of emotional intelligence in order to control and manage their emotions in working with researchers, who are working in a tenure-track position.
The Significance of the Research Administrator

Senior research administrators play a vital role in the leadership effectiveness of research organizations (i.e., government, private industry, foundations, hospitals, as well as colleges and universities sponsored research offices). Abbott (1988) indicated that it is imperative for an investigator to identify aims and objectives for a particular study before carrying it out. In addition to identifying the aims and objectives, the researcher must actually “conduct” the research, which often time yields very little time for administrative tasks, such as proposal submissions or account reconciliation. Investigators have come to rely on the knowledge, skills, and abilities of a departmental or research administrator to manage the programmatic and financial components of the research project. Senior Research Administrators, therefore, play a significant role in the administration of research projects, including responsibilities such as comprehensive management of a sponsored projects team, building and maintaining positive relations with internal and external customers, and developing and delivering campus-wide training initiatives.

Often time, however, people come into the research administration profession by accident. To a very large degree, research administrators were assigned to manage various grants and contracts because of a need to have someone work with a research investigator, not because they had received any research administrator training or formal development. Two of the primary reasons for the lack of training were (a) the federal government’s rapid transition from military funded exploration to academic research activities; and (b) no centralized college or university sponsored research offices were available at that time. The research administrator had to learn on his or her own how to properly administer multiple, multi-layered, multi-million dollar, highly complex grants,
cooperative agreements, and contracts. Consequently, if one mismanaged or mistakenly violated one of the many terms and conditions of an award or agreement, it often times proved to be disastrous for the administrator and the institution. Yet, only a small number of research studies have focused on sponsored research administration professionals (Atkinson et al., 2007; Katsapis, 2008; Muhammad, 1996). Furthermore, this researcher was unable to find any empirical research studies relative to leadership and emotional intelligence of research administrators.

Emotional intelligence has in recent years been demonstrated to be an important concept in the leadership development process (Sy & Cote, 2004). Research administration professionals are challenged daily in meeting the demands of deadlines, compliance issues, budgets, and researchers. As such, it is essential that research professionals possess the skills to meet these challenges. The field of research administration does offer demonstrated strategies for effectively managing pre- and post-award offices, including accounting standards, institutional policy, federal guidance (via OMB circulars), and legal interpretations (Abbott, 1988). Consequently, it seems logical that research administrators not only possess the knowledge, skills, and abilities to manage/administer funds, but have the emotional intellect in order to provide quality support to internal and external customers, to make sound decisions based on ethical principles, offer financial and procurement clarity based on guidelines, and provide input regarding strategic planning on behalf of the organization. This logic, however, is not enough. Therefore, the focus of this research study was to explore the relationship between emotional intelligence and leadership effectiveness among senior sponsored research professionals.
Problem Statement

According to Waters, Marzano, and McNulty (2003), effective leadership is best described as balanced and thorough. Effective leaders have a discerning ability to know when, how, and what needs to be done. Further still, the significance of emotional intelligence in a senior leadership role such as a department chair, dean, or college/university president should not be trivialized. In the late 1980s, research confirmed that emotional intelligence was correlated with nearly 90% of effective leadership practices (Salovey & Mayer, 1990).

Compelling evidence has led researchers to suggest that intellectual ability, as often measured by the Intelligence Quotient (IQ) test, is strongly linked to psychological functions or emotions. Despite his more than 200 publications in the field of psychology, nearly every introductory psychology student learns that Alfred Binet created the Intelligence Quotient (IQ) test in 1908; and many believe that the IQ score is Binet’s most significant contribution to the field of psychology. Yet, many of Binet’s earlier works “focused on the goal of understanding and measuring individual differences in intelligence” (Siegler, 1992, p. 180). The reasoning that takes emotions into account is commonly referred to as emotional intelligence.

According to Salovey and Mayer (1990), emotional intelligence comprises one’s ability to perceive and understand emotions and emotional knowledge, the ability to have such a grasp of one’s own emotions that they are able to promote an intellectually emotional environment, and to access and generate emotions so as to assist thought. Research on upper and middle managers in business and industry suggests that the presence of emotional intelligence competencies and the ability to manage them is what
distinguishes effective leaders from ineffective ones (Goleman, Boyatzis, & McKee, 2002). But do the same emotional intelligence competencies offer the same marks of distinction for senior research administrators? Are some competencies more important to effective leadership than others? Is one competency more critical than the others? Do senior research administrators who are perceived effective leaders exhibit high levels of emotional intelligence?

Bass and Avolio (1994) have been credited with providing the greater majority of research on emotional intelligence and leadership effectiveness. These researchers distinguish between two types of leaders, those who are transformational and those who are transactional. Transformational leaders are seen as those people who are able to create a vision, communicate this vision, build commitment among subordinates to the vision, and model the vision within the workplace. In contrast, transactional leaders are viewed more as managers that maintain the status quo. It is argued that transformational leaders deal with strategic matters and, in turn, are able to build commitment in employees and are, therefore, more likely to take an organization forward (Bass & Avolio, 1994; McShane & Von Glinow, 2000).

Current research on emotional intelligence and leadership effectiveness supports the hypothesis that self-reported emotional intelligence is linked to transformational leadership style (Barling, Slater, & Kelloway, 2000; Gardner & Stough, 2002; Palmer, Walls, Burgess, & Stough, 2001). Barling et al. (2000) conducted an exploratory study on the relationship between emotional intelligence and transformational leadership. Their results suggest that self-reported emotional intelligence is associated with three aspects of transformational leadership, namely idealized influence, inspirational
motivation, and individualized consideration. The leaders who report exhibiting these types of behaviors were assumed to be more effective in the workplace; however, no empirical research exists to refute or substantiate this assumption.

Palmer and Stough (2001) administered a self-report emotional intelligence measure to 43 high-level managers in order to evaluate the link between emotional intelligence and leadership style. They found significant correlations with several components of the transformational leadership model. Specifically, the inspirational, motivation, and individualized consideration components of transformational leadership correlated with self-reported ability to both monitor and manage emotions.

Justification for Research Study

Although in the past the role of research administrators was limited to the military and a few universities, administrators are now employed in countless public and private sectors/organizations including medical research, manufacturing, law, education, and retail. As such, today’s research administrator is faced with the growing mounds of highly complex and often times very sensitive and proprietary information when managing externally funded projects. In brief, research administration is one of the fields that lacks significant amount of empirical research. Many of the successes and failures of the research enterprise have come to depend on the skills and abilities of research administrators. Therefore, it may be plausible that senior research administrators integrate leadership values and emotional intelligence in order to cope with the daily challenges that the position offers. Yet, a look at the literature review indicates that very few studies have been conducted on the work profile of senior university-sponsored research professionals and this researcher found no evidence of any empirical research
that connects research administration with emotional intelligence and leadership effectiveness.

A study of the available literature showed a significant deficiency in research interlinking the notions of emotional intelligence and its role in the effective functioning of a senior educational administrator. There are also very few research works that integrate issues of higher educational administration with the theories of emotional intelligence. Even though some researchers cite the necessity of being able to comprehend and control emotions as an administrator, the significant lack of research that seeks to coalesce the field of emotional intelligence and the role of administrator within higher education leadership implies a gap in the existing research work on the subject of emotional intelligence (Dannells, 1997). The literature primarily encompasses studies that connect emotional intelligence, effective leadership, and effective administrative leadership (Senior University Research Officers or SUROs) within the constructs of a higher education management.

Since leadership requires daily interaction with an array of challenges and internal and external customers, higher levels of emotional intelligence may better assist the sponsored research administrator in more effectively managing the day-to-day personnel and administrative operations associated with externally funded research projects. This style of management allows administrators to encompass the tenants of emotional intelligence such as understanding and analyzing the key decision maker’s mental processes, comprehending their underlying emotions, and guiding them towards achieving better results within the higher education institution in which they lead. The present research study filled a void in the current research on emotional intelligence and
research administration areas of study. Because of the many decision-making skills needed to effectively manage a sponsored university research office, this study was designed to investigate the extent to which the level of emotional intelligence (overall) impacts the leadership performance (effectiveness) among sponsored research administration professionals.

Purpose Statement

The purpose of this study was to examine the relationship of emotional intelligence as perceived by senior level university-sponsored research administration professionals’ and their perceived leadership effectiveness. Specifically, this study used the Bar-On (1997) Emotional Quotient Inventory (Bar-On EQ-i) to measure the five composite scores (Intrapersonal, Interpersonal, Adaptability, Stress Management, and General Mood) and the 15 subscales of (a) Self-Regard, (b) Emotional Self-Awareness, (c) Assertiveness, (d) Independence, (e) Self-Actualization, (f) Empathy, (g) Social Responsibility, (h) Interpersonal Relationship, (i) Reality Testing, (j) Flexibility, (k) Problem Solving, (l) Stress Tolerance, (m) Impulse Control, (n) Optimism, and (o) Happiness. The leadership practices of challenging the process, inspiring a shared vision, enabling others to act, modeling the way, and encouraging the heart were examined using the Kouzes and Posner (2003) Leadership Practices Inventory (LPI) for Self.

Research Questions

For the purpose of this study, the following questions were investigated:

1. How do senior level university sponsored research administrators rate their level of emotional intelligence for total (overall) emotional intelligence, the
five composite scores (Intrapersonal, Interpersonal, Adaptability, Stress Management, and General Mood) and the 15 subscales of: (a) Self-Regard, (b) Emotional Self-Awareness, (c) Assertiveness, (d) Independence, (e) Self-Actualization, (f) Empathy, (g) Social Responsibility, (h) Interpersonal Relationship, (i) Reality Testing, (j) Flexibility, (k) Problem Solving, (l) Stress Tolerance, (m) Impulse Control, (n) Optimism, and (o) Happiness as measured by the Bar-On (1997) Emotional Quotient Inventory (EQ-i)?

2. How do senior level university sponsored research administrators rate their level of leadership effectiveness as measured by the Kouzes and Posner (2003) Leadership Practices Inventory (LPI) on The Five Practices: (1) Model the Way, (2) Inspire a Shared Vision, (3) Challenging the Process, (4) Enable Others to Act, and (5) Encourage the Heart?

3. Is there a relationship between emotional intelligence, as measured by the Bar-On (1997) Emotional Quotient Inventory (Bar-On EQ-i) and leadership effectiveness, as measured by the Kouzes and Posner (2003) Leadership Practices Inventory (LPI) among senior level university sponsored research administrators?

4. Does age influence senior level university sponsored research administrators’ levels of emotional intelligence and their levels of leadership effectiveness?

5. Does gender influence senior level university sponsored research administrators’ levels of emotional intelligence and their level of leadership effectiveness?
6. Does the level of education influence senior level university sponsored research administrators’ levels of emotional intelligence and their level of leadership effectiveness?

7. Do the number years of research administration work experience influence senior level university sponsored research administrators’ levels of emotional intelligence and their level of leadership effectiveness?

8. Do the number years of work of professional work experience influence senior level university sponsored research administrators’ levels of emotional intelligence and their level of leadership effectiveness?

9. What is the relationship between senior level university sponsored research administrators’ age, gender, level of education, years of research administration work experience, and total years of professional work experience on emotional intelligence and their level of leadership effectiveness?

**Research Hypotheses**

The following null hypotheses were used to further investigate the above research questions:

Null Hypothesis #1 – There is no significant statistical relationship between the self-perceived emotional intelligence of senior level university-sponsored research administrators, as measured by the Bar-On EQ-i and their level leadership effectiveness, as measured by the Kouzes and Posner LPI (Self).
Null Hypothesis #2 – There is no significant statistical relationship between senior level university-sponsored research administrators’ age on emotional intelligence and their level of leadership effectiveness.

Null Hypothesis #3 – There is no significant statistical relationship between senior level university-sponsored research administrators’ gender on emotional intelligence and their level of leadership effectiveness.

Null Hypothesis #4 – There is no significant statistical relationship between senior level university-sponsored research administrators’ years of research administration work experience on emotional intelligence and their level of leadership effectiveness.

Null Hypothesis #5 – There is no significant statistical relationship between research administrators’ years of work professional experience on emotional intelligence and their level of leadership effectiveness.

Null Hypothesis #6 – There is no significant statistical relationship between the among senior level university-sponsored research administrators’ age, gender, years of research administration work experience, and years of work professional work experience on emotional intelligence and their level of leadership effectiveness.

Terms and Definitions

For this study of emotional intelligence and effective leadership practices of senior university research administrators, the following terms were highlighted:

*Effective leadership* - “the art of mobilizing others to want to struggle for shared aspirations” (Kouzes & Posner, 1995, p. 30)
Emotional intelligence - the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth (Mayer & Salovey, 1997).

a. Emotional (adjective) “is employed to emphasize that this specific type of intelligence differs from cognitive intelligence.” (Bar-On, 2004)

b. Intelligence describes, “the aggregate of abilities, competencies, and skills defined above in that they represent a collections of knowledge used to cope with life effectively.” (Bar-On, 2004)

Senior University Research Administrator/Professional - a university employee with at least 3 years of research administration experience within a sponsored research office who manages the day-to-day operational services of sponsored projects/programs offices for the university, including staff supervision, identification of funding opportunities, proposal development, negotiation and award acceptance, contracting, compliance, review of human and animal subjects protocol, and/or the overall facilitation of research awards in support of the university's scholarly activity and research mission.

Delimitations

The present study did have some limitations. The study attempted to assess senior research administrators’ emotional intelligence attributes and their subsequent leadership effectiveness. First, participants were limited to full-time senior level university research administrators in order to obtain a representative sample. Senior level research administrators who were not employed at a college or university were not asked to participate. The decision to include only senior level and university research
administrators might have been a delimiting factor in the results of the present study. Future studies might include a comparison between senior level (e.g., directors and assistant directors) and regular research administrators. Even further study on leadership effectiveness might include administering the LPI (Self) and (Observer) surveys to each group. Second, the results of the study were not generalizable due to a small, self-reporting (only), research sample of 30 senior level university research administrators from selected states located in the southeastern U.S. Future studies might include senior level research administrators from across the U.S.
CHAPTER II
REVIEW OF THE LITERATURE

Introduction

In context with purpose of this study, to examine the relationship between emotional intelligence and leadership effectiveness among senior level university sponsored research administrators, this chapter explores literature related to factors that impact research administrators’ leadership effectiveness. The overriding question for examination is, does the level of emotional intelligence (overall) impact leadership effectiveness among senior level university research administrators? A review and synthesis of relevant literature on emotional intelligence, effective leadership practices, and research administration, the following concepts will be discussed and are listed as follows:

1. Theoretical Rationale for Examining Emotional Intelligence
2. Link Between Emotional Intelligence and Leadership Effectiveness
3. Effective Leadership Practices within Education
4. Implications for Higher Education Leadership

Theoretical Rationale for Examining Emotional Intelligence

An examination of leadership practices attributable to effective university administrators provides an energetic rationale for exploring emotional intelligence. These effective practices are normally derived from observations and behaviors that are generally attributed to successful administrators (Klemp, 2005). As theorized by Mayer, DiPaolo and Salovey (1990), emotional intelligence is defined as a “specific set of abilities that include the capacity to understand reason about, and use emotions in
thinking and action” (p. 6). In fact, it was Salovey and Mayer (1990) who coined the phrase emotional intelligence, which they defined as being a type of social intelligence that included the ability to monitor their own feelings and those of people around them. This awareness would allow individuals to use that information to modify their own behavior and speech patterns to greatly increase their chances of successful communication. However, the concept of emotional intelligence has been traced back to Edward Thorndike and his “Law of Effect” research (1911). In his examination of the construct, the term social intelligence originated.

The key element of Thorndike’s (1911) theory was the idea that in cases where responses are made to a situation, if the consequence of those responses was a positive experience (bringing pleasure), then it was more likely for those responses to be evident again in future similar situations. Conversely, those situations that bring about a negative consequence (pain) were not likely to result in recurring responses for future events. Thus, Thorndike offered a positive and negative law of effect. This was the first time that such a theory had been proposed and supported by experimental evidence.

Thorndike’s later work on animal intelligence made reference to this theory. For example, he noted that in his experiment of a cat in a box that “gradually all the other non-successful impulses will be stamped out and the particular impulse leading to the successful act will be stamped in by the resulting pleasure” (1898, p. 13). He made similar observations about confined chickens. What he was looking for, or appeared to have identified, was a connectionist theory that could explain the mechanism behind re-enforcer actions. This was an idea that was explored by later researchers such as Hull (1943) and Skinner (1938).
Skinner’s (1938) work on reinforcement addressed a noted criticism of Thorndike’s work, namely, circularity and affect. Thorndike’s aim was to find the underlying mechanism for certain actions – namely, conceptual or physiological effects, but there were some researchers who believed that Thorndike’s theory was flawed because it did not specifically address backward actions, circularity and the definition of satisfying and negative states (Wilcoxon, 1969). Skinner (1938) wrote,

> A reinforcing stimulus is defined as such by its power to produce the resulting change. There is no circularity about this; some stimuli are found to produce the change, others not, and they are classified as reinforcing and non-reinforcing accordingly. (p. 62)

Thorndike’s methods for supporting his theories of law of effect became, over time, the building-blocks of analyzing behavior. His experiments included replications of various situations to support the idea that his theories would work over all settings. He standardized his behavioral samples in controlled settings that helped to eliminate the effect of variables that were not part of the experiment. He was determined to provide the most factual support for his findings, which was a departure from the observational or anecdotal evidence that had been used to support behavior theories prior to that point. Within this context of emotional intelligence, Thorndike’s (1911) work provided the beginnings of a framework for the factual analysis of behavior. Beyond that, he also showed that there is a link between learning and positive reinforcement. His work on both the law of effect and animal intelligence showed that there was a clear link between behavior, actions, and positive or negative consequences.
Gardner (2008), on the other hand, addressed the ideas of learning and processing information. In Gardner’s (1983) work, *Frames of Mind: Theory of Multiple Intelligences*, he provided that humans have multiple means of learning and processing information. His work was comprised of empirical studies on groups of gifted children and later on brain damaged patients. Through his studies, he argued that it was not possible for a single definition, mode and experience of intelligence to cover the broad spectrum of learning behaviors he had witnessed.

In his own definition of multiple intelligences (MI), Gardner (2008) expressed that it was based on “biological and psychological potential to solve problems and/or create products that were valued in one of more cultural contexts” (p. 1). In total, Gardner identified seven aspects within the definition of multiple intelligences in his 1983 work--linguistic, logical-mathematical, musical, spatial, bodily-kinesthetic, interpersonal, and intrapersonal; and he considered adding two additional intelligences (naturalist and existential).

The scientific impetus of this multiple intelligence theory are twofold – namely that humans have a variety of intelligences as opposed to the previously theorized one, and secondly, that intelligence goes beyond genetics or life experience alone. A further idea, that humans seek to differentiate themselves, would also impact the concept of intelligence. This last criterion became important when Gardner (2008) found educators taking his theories and putting their own interpretation on them (e.g., the idea that specific racial and ethnic groups have limited or specific intelligences, or that all children excel in at least one intelligence) (Gardner, 2008).
Gardner’s influence on emotional intelligence comes from the belief that care needs to be taken in managing people. First, Gardner asserted that different intelligences will respond to different approaches and that this is evident in individuals’ learning methods, their ability to respond and analyze information, and the way they convey information to others. Secondly, Gardner argued that each individual has the ability to learn beyond a narrow definable set of parameters and that reliance on the traditional IQ measure would be erroneous because that one aspect of intelligence is only part of the entire individual’s ability to respond to any given situation.

Salovey and Mayer (1990) are credited with having coined the term emotional intelligence. In the abstract of their paper *Emotional Intelligence* they wrote that,

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

Prior to this definition, the authors noted that researchers and philosophers alike had defined emotions more as an “acute disturbance of the individual as a whole” or as “a disorganized response…resulting from the lack of effective adjustments” (Salovey & Mayer, 1990, p.185). They then went on to make references to Thorndike’s work, which referred to social intelligence as the ability to understand others so as to “behave wisely” (Salovey & Mayer, 1990, p.187).

The purpose of Salovey and Mayer’s (1990) theory of emotional intelligence was to bring together a broad base of ideas that had sprung up in different scientific fields and to synthesize one coherent theory that could then be measured and studied using a set of
standard measures. Much of their paper discusses the different types of measures necessary to determine an accurate baseline for emotions. For example, they mention under the “emotion in self” that this process is initiated when a person first enters the perceptual system of the individual. Those individuals with a higher emotional intelligence will be able to accurately analyze and process the feelings associated with that information and then express them in a way that is beneficial to self and others.

Mayer and Salovey (1997) went on to complete further studies on emotional intelligence and created an ability model to explain the construct behind the theory. In their work entitled *Emotional Development and Emotional Intelligence* (1997), the authors examined several topics, including general scope and origin of emotional intelligence, assessment of emotional intelligence, and applications of emotional intelligence in schools and beyond (Mayer & Salovey, 1997). The focal point of their examination was that emotional intelligence was primarily centered on the “complex, potentially intelligent tapestry of emotional reasoning in everyday life” (p. 19). Two other constructs were a non-cognitive model proposed by Bar-On (2004) and the competency model that was proposed by Goleman (2001). Goleman (2001) agreed with the Salovey and Mayer (1997) findings and offered the first empirical research suggesting the significant importance of social and emotional intelligences. Goleman’s original book on the subject, *Emotional Intelligence: Why It Can Matter More Than IQ* (1995), was written more for the business community than for scientists and researchers. Leaving aside a large volume of review and research literature that criticizes Goleman’s work (Waterhouse, 2006a; Waterhouse, 2006b), Goleman followed up on Salovey and Mayer’s
ideas on emotional intelligence based on awareness of the feelings of self and others.

Goleman (1995) did review a wide number of studies on intelligence and in particular studies conducted on children. However, his later extension of the competency-based model of emotional intelligence was specifically designed for the business world. The model involves 20 different competencies that are meant to cover four different abilities – self-awareness, self-management, social awareness, and relationship management (Gardner & Stough, 2002). His model was strongly biased to the idea that emotional intelligence stemmed from a set of skills that could be learned rather than inherited. Nonetheless, after two decades since the term was first used, much debate still exists as to the conceptualization of emotional intelligence (Grubb & McDaniel, 2007) and whether or not emotional intelligence is needed for effective leadership (Weinberger, 2003).

There have been attempts by researchers in the past 20 years to show a relationship between leadership and emotional intelligence; although there is very little empirical research conducted on the topic (Gardner & Stough, 2002). Barling, Slater, and Kelloway (2000) examined the relationship behind transformational leadership and emotional intelligence. Using the guidelines set by Salovey and Mayer (1990) and Goleman (1995), they showed that leaders with high emotional intelligence were more inclined to use transformational leadership, including their ability to display self-control in their emotions, thereby providing a solid role model for others to follow. They also surmised that leaders who do have a high emotional intelligence are better able to read the emotions of the people they interact with. This perception would be useful in
determining what would motivate others, and to what degree motivations were necessary (Barling et al., 2000). Barling et al. (2000) identified two different types of transactional leadership – one that required empathy or insight and one that did not. However, the overall premise of the theory was that there was no link between emotional intelligence and transformational leadership.

Gardner and Stough (2002) were keen to show the relationship between leadership and emotional intelligence in senior level management. They used the Swinburne University Emotional Intelligence Test (SUEIT) devised by Palmer and Stough (2001). The SUEIT uses five factors to score intelligence: emotional recognition and expression, emotions direct cognition, understanding of emotions external, emotional management, and emotional control. This model relates directly to emotions in the workplace.

In the 2002 SUEIT study, which confirmed previous work by Palmer and Stough, (2001), Gardner and Stough tested their hypotheses that “there will be a positive relationship between transformation leadership and overall emotional intelligence, and that there will be no relationship between transactional and laissez-faire leadership and emotional intelligence” (p. 72). Based on the returns of 110 questionnaires from “high level managers,” the authors found that there was a “strong positive relationship between transformational leadership and total emotional intelligence” (p. 73). On the second part of the hypothesis, Gardner and Stough found that there was a “negative correlation between laissez-faire and total emotional intelligence score” (p. 73). More accurately, the study found that those high level managers who were not supportive of their staff and requests for assistance were also not aware of their own emotions, were not able to
understand the emotions of others in the workplace, and had a lack of self-control when expressing their emotions.

Link between Emotional Intelligence and Leadership Effectiveness

Within the research literature, there is a wealth of evidence that suggests that effective leadership is significantly correlated with emotional intelligence (Bumphus, 2008; Lin, 2005; Maulding, 2002; Scott, 2004; Weinberger, 2003; Whitman, 2009; Wilcoxon, 1969). According to Northouse (1997), “leadership is a process whereby an individual influences a group of individuals to achieve a common goal” (p. 3). Hollander (1978) espoused that in the system theory, leadership was a process of mutual influence between leaders and followers which vacillates among leaders, followers, and the situation at hand.

Mayer and Salovey (1997), in their definition of emotional intelligence (EI), stated that EI is “the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth” (p. 5). Many of the more widely-known research studies are based on connecting the aspects of emotional intelligence (as defined by Salovey & Mayer, 1990) with that of effective leadership.

The literature on the leadership quotient has a remarkable number of theories that create a framework on the characteristics that define an effective leader, of which the two most distinct forms of leadership traits are transactional and transformational (Mandell & Pherwani, 2003). In a transactional leadership, performance forms the main basis for rewarding or disciplining an employee. Emphasis is placed on timely completion of work, quality of work, and compliance with the company’s norms and values while
trying to affect an employee’s performance organizational punishments and incentives (Bass & Avolio, 1994).

On the other hand, transformational leadership functions through the notions of motivating and stimulating the co-workers in order to create a completely different perspective on the organizational objectives and foster an atmosphere where the employees are motivated to achieve higher levels of capability while inspiring the employees to put team interests before personal interests. Thus, transformational leadership rests on four basic pillars: intellectual incentive, edified influence, inspirational motivation, and consideration for each individual employee (Bass & Avolio, 1994).

The Center for Creative Leadership (2001) findings suggested that higher levels of emotional intelligence were correlated with better performance in nine key areas: participative management; putting people at ease; balance between personal life and work; straightforwardness and composure; building and mending relationships; doing whatever it takes; decisiveness; confronting problem employees; and change management. The Center for Creative Leadership (2001) study concluded that “co-workers seemed to appreciate managers’ ability to control their emotions and leaders are more likely to be seen as participative, composed, and balanced” (p. 4). Similarly, Dasborough and Ashkanasy’s (2003) qualitative study revealed that leaders who provided encouragement to their employees were perceived by employees to be the most effective.

Previous research studies have suggested the emotional intelligence has little to no effect on leadership effectiveness (Antonakis, 2003; Antonakis, Ashkanasy, & Dasborough, 2009; Collins, 2001; Schulte, Ree, & Corretta, 2004; Waterhouse, 2006a).
Collins (2001) examined the effect of emotional intelligence as a predictor leadership success among 91 executives from a large, international organization. The results of the study suggested that EI may not play a direct role in explaining success among executive participants. Furthermore, the findings suggested that if a role existed, other variables may have impacted the construct measurement. In a 2004 study, Schulte et al. explored the correlation and predictive behavior of the EI construct in relation to general cognitive ability or personality and the Big Five personality dimensions of Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. Their conclusions suggested that the EI construct may be limited in advancing the research literature between emotional intelligence and human performance. Waterhouse (2006a) maintained that having “multiple conflicting EI measures and constructs was problematic, argued that EI has limited predictive validity, asserted that Goleman’s (1995) claim the EI accounts for more than 80% of success, and strongly argues against having EI constructs applied in education” (p. 251).

Research studies on the “better outcome” of EI over IQ were initiated with Goleman's (1995) report on the topic and suggested that emotional intelligence is “as powerful, and at times more powerful, than I.Q.” (p. 34). Lam and Kirby’s (2002) research results support that emotional intelligence is more important than I.Q., and that emotional intelligence contributes more positively towards cognitive-based work achievements than results obtained solely from the level of general intelligence IQ. Present theories suggest that emotional intelligence by itself cannot be held as an indicator of work achievements. Emotional intelligence, however, works towards providing a basis for developing competencies related to managing and controlling
emotions and understanding the emotional processes of the co-workers, which in turn are strong predictors of work-related performance, thereby exhibiting the importance of possessing high levels of emotional intelligence in achieving the desired work outcome (Goleman, 2001; Mayer, DiPaolo, & Salovey, 1990).

Various research studies suggest that effective leadership is more readily demonstrated within the transformational style of leadership, as opposed to transactional leadership styles. Further research found that transformational styled leaders performed better in team settings (Keller, 1995), greater effectiveness and reparation (Hater & Bass, 1988), and better efforts from their junior employees (Seltzer & Bass, 1990). Burns (1978), stated,

The transforming leader recognizes and exploits an existing need or demand of a potential follower. But, beyond that, the transforming leader looks for potential motives in followers, seeks to satisfy higher needs, and engages the full person of the follower. The result of "transforming leadership is a relationship of mutual stimulation and elevation that converts followers into leaders. (p. 4)

Recent studies conducting comparative analyses on transformational leadership and emotional intelligence have demonstrated a positive interlink between the two aspects, and thereby suggested a necessary incorporation of the two for effective leadership (Gardner & Stough, 2002). Mandell and Pherwani (2003) suggested that organizational leaders’ level of emotional intelligence is strongly related to transformational leadership style. Mandell and Pherwani (2003) further suggested that transformational leadership must be combined with emotional and social forms of intelligence. This is essential as emotional and social intelligence are the two
fundamental elements considered important for forging strong employee-management relationships and motivating employees to use their optimal level of capability.

Based on his longitudinal research over a span of three decades, Klemp (2005) noted several key aspects of emotional intelligence that were highly correlated to leadership effectiveness. He highlighted that not only are effective leaders aware of their impact on others, but they use this impact to their advantage. The most effective leaders, he continued, make tough decisions while congruently showing empathy during the process. Klemp, furthermore, noted that the most effective leaders, exhibiting high levels of emotional intelligence, are passionate about what they do, are excellent communicators, and are adept at balancing feelings and logic when making decisions.

Similarly, Palmer, Walls, Burgess, and Stough (2001) assessed emotional intelligence via a modified version of the Trait Meta Mood Scale on 43 higher-level, mid-level, and lower-level managers who were “past and current students of the Swinburne University Center for Innovation and Enterprise Programs (CIE)” (p. 11). The study showed that emotional intelligence correlated with several components of transformational leadership. This study gave several indications that emotional intelligence may account for how effective leaders scrutinize and respond to their subordinates and make them feel while at work.

Emotional intelligence also has been cited as having relative significance in the workplace performance of effective leaders’ subordinates. In their examination of 44 analysts from a fortune 400 company, Lopes, Grewal, Kadis, Gail, and Salovey (2006) demonstrated that peers and/or supervisors with high emotional intelligence received greater merit increases and were held in higher company ranks than their counterparts.
Goleman (2001) opined that leaders with a high level of emotional intelligence are extremely necessary for achieving success within any formal organization. The effective leaders must empathize with the employees, comprehend their feelings on the work environment, assist whenever there are any problems, be capable of controlling their own emotions, and apprehend the socio-political norms functioning within the organization. Furthermore, effective leaders significantly affect the performance levels of an organization by creating certain a kind of work environment (using the emotional and social intelligence dimensions) best suited for that particular type of profession.

Rosete (2004) conducted a study among 41 senior executives from a large “public service organization” to examine the relationship between emotional intelligence, personality, and cognitive intelligence on leadership effectiveness. The correlation analyses revealed that higher emotional intelligence was associated with higher leadership effectiveness.

Similarly, Ciarrochi and Scott (2005) conducted a small exploratory study of the relationship between an ability measure of emotional intelligence, personality, cognitive intelligence, and leadership effectiveness among senior corporate executives. Leadership effectiveness was assessed using both managerial performance ratings and a 360-degree assessment, involving each leader’s subordinates and direct manager ratings. Confirming the findings of Rosete’s (2004), Ciarrochi and Scott (2005) demonstrated that higher emotional intelligence was associated with higher leadership effectiveness. Along these lines, it is quite evident that emotional intelligence and leadership effectiveness are two significantly related factors that must work in close concert in order to obtain the best possible organizational outcome.
In another study, Rosete (2007) expanded his earlier study by adding a self-report emotional intelligence measure to investigate the link between personality factors and emotional intelligence. His research, performed on 122 executives from a large Australian Public Service organization, demonstrated that the “ability measure of EI” predicted effective leadership. However, no significant correlations were found between SUEIT EI scores and any of the performance measures.

Effective Leadership Practices within Higher Education

Significant research has been aimed at examining the impact of emotional intelligence on the effectiveness of leadership. However, research over the past two decades that attempted to clearly outline key indicators that best defined effective leadership, particularly within higher education, has been sparse. Seldin (1988) reaffirmed this scarcity by citing the relative diminutive amount of research on the efficacy of approaches for evaluating leadership effectiveness in higher education.

In the context of higher education, the position of a senior university research administrator is of great significance to the research investigator and overall college or university research interest. An individual in this type of position must be capable of identifying all related funding opportunities related to the research investigator’s interest, development, and implementation strategies and must be compliant with institutional policies before allowing a researcher to initiate any type of research work (Abbott, 1988).

Over the past several years, the administration of sponsored research projects has become increasingly complex. The university researcher must devote a significant level of effort into identifying the most suitable research aims and objectives for his or her research interest. The senior research administrator, the investigator’s chair, dean, and
the vice president of research must evaluate the department’s budget, identify the researcher’s capabilities, and determine whether or not the investigator would be able to perform the proposed research, collaborate with other faculty members’ research interest, and conclude if sufficient course release time or level of effort needed to perform the actual research is available to the investigator. It seems plausible that the senior research administrator will need to manage one’s emotional intelligence in order to effectively manage the research affairs of the university and work with all external parties, i.e., attorneys, clinicians, other colleges and university, and private industry (Kulakowski & Chronister, 2006).

Senior research administrators must be able to demonstrate compliance to regulatory affairs processes and grantor guidelines. Furthermore, the research investigator, with the assistance of the senior research administrator, must manage the financial and non-technical aspects of the research project. Due to the highly complex world of grant and contract administration, it seems reasonable to expect the senior research administrator to possess emotional intelligence in order to facilitate in the administration of multiple, multi-layer projects, which often times translates into handling millions of research funding. In many instances, the more complex, multi-layered projects involve several subagreements with various institutions, including industry and privately held firms (Kulakowski & Chronister, 2006). Thus, senior research administrators play a momentous role in the administration of various research projects and their respective funding.

The senior research administrator must be knowledgeable about the institutional policies and guidelines presently followed accounting standards, governmental guidelines
on higher studies and research, and, along with various legal provisions, followed for the higher educational system (Abbott, 1988). Therefore, it is incumbent on senior research administrators to make use of their knowledge, leadership skills, and perhaps their emotional intelligence to implement the strategies, judge relevant ethical principles, and offer clear guidelines on the relevant financial policies to assist in administering externally funded research projects (Kulakowski & Chronister, 2006). As Aristotle once commented on the correct use of one’s own skills and emotions, “Those who possess the rare skill to be angry with the right person, to the right degree, at the right time, for the right purpose, and in the right way are at an advantage in any domain of life” (as cited in, Langley, 2000, p. 177).

Emotional intelligence may be an important concept within the realms of leadership development. Cole (2007) contends that the results of the Delphi study gave recommendations from the research faculty perspective for the improvement in the system of research administration and faculty relationships and suggested that administrators and research faculty should view each other as team members whose objectives are to discover. Bordage, Foley, and Goldyn’s (2000) research study results of 139 upper-level health care administrators offered a list of skills and attributes considered most relevant when hiring program directors and for the evaluation of health care training programs. The respondents indicated that the most desirable overall attributes of the directors -- in relations to others -- were: honest/ethical, respectful of others, empathetic and compassionate, and listener. Muhammad (1996) found the older, more experienced research administrator exhibited a higher level of decision-making skills than did the more novice administrator.
Senior research administrators are now more than ever, faced with profusely increasingly difficult issues within the scope of their daily work processes (i.e., meeting deadlines, complying with regulations and norms, ethical dilemmas, budgetary issues and restraints, and legal provisions) (Abbott, 1988). Besides these issues, senior research administrators must also cope with varying personalities of the researcher or investigator. Thus, the senior research administrator must display all aspects of an effective leader to handle the various issues of interpersonal relations, financial management, and compliance, while seeking additional sources of external funding.

Mayer and Salovey (1997), in their definition of emotional intelligence, described the Four Branch Model of Emotional Intelligence as the abilities to manage emotions (managing emotions) understand emotional meanings (understanding emotions) use emotions to facilitate thinking (facilitating emotional thought) and accurately perceive emotions in oneself and others (perceiving emotions).

Building upon the Mayer and Salovey Four Branch Model, Goleman (1995) advanced the Five Components of Emotional Intelligence concept consisting of comprehending and analyzing one’s own emotions (self-awareness) appropriately managing and controlling one’s own emotions(self-management) motivating oneself (self-control) seeing and evaluating various emotions (social awareness) and learning from the various emotional experiences (relationship management) (Salovey & Mayer, 1997).

Senior research administrators must possess the attributes of self-control and self-awareness in order to effectively manage sponsored research office personnel and needs of the research investigator. The senior administrator must also understand the
importance of the emotional domain for the overall well-being and development of a research faculty and staff, as well as other research administrators, while also managing his or her own emotions. Within this context, Delworth and Hanson (1989) stated, “knowing and understanding one’s own inner life of feelings and personal meanings as well as the effect it has on others is an important quality for those practicing from a counseling model” (p. 272).

Implications for Higher Education Leadership

Prevailing research studies suggest that administrators and effective leadership play a critical role in the university’s success (Ashkanasy, 2003; Bryman, 2009; Bryman & Lilley, 2009; Rowley & Sherman, 2003). There are various theories that discuss leadership values in the context of higher education administration. Schmoker (1999) suggested that within the context of higher education management, the person in charge must possess a sharp focus on the obtained results and the available data in order to elevate further the overall college/university achievement. Cherniss (1998) outlined certain traits that can be considered essential for achieving effective leadership within the arena of educational management: ability to control one’s emotions, ability to sense or comprehend the students’ emotions and use this understanding to motivate and stimulate the students, initiative, self-confidence, result oriented, and the capability to forge positive relationships with the students and various external factors. Hence, we find the desirable traits of an educational leader as outlined by Cherniss are along the same lines with the definition of emotional intelligence as given by Salovey and Mayer (1997), showing the close connection between the two.
Catano and Stronge (2006) claimed that educational leaders must necessarily be strong in “instructional leadership, organizational management, and community relations” (p. 221). Ashkanasy (2003) demonstrated that undergraduate leadership students’ individual performance was related to emotional intelligence and that their level of interest in and knowledge of emotional intelligence predicted team performance. Hollander (1978) contended that the ability to use problem-solving processes, good communication skills, maintain group effectiveness, develop group identification, and demonstrate leader fairness, competence, dependability, and creativity are all requirements of leadership effectiveness. According to McDowelle and Bell (1997), “Emotional intelligence research has found that the lack of EI skills, or emotional illiteracy, lowers team effectiveness and that the most effective performers with large organizations are often those with the best networking skills” (p. 5).

The Interstate School Leaders Licensure Consortium (Council of Chief State School Officers, 1996), within the context of effective K-12 educational leadership, emphasizes the importance of student and staff development and forging positive relationships with students’ families and communities and other external factors in order to optimize students’ success, thus placing stress on both the aspects of emotional and social intelligence. Marzano, Waters, and McNulty (2005), in their review of the research literature that covered 35 years of studies of various data on students and educational administrators, concluded, that “a highly effective [educator] can have a dramatic influence on the overall academic achievement of students” (p. 10).

Drucker (1999) stated that to become an effective leader one must comprehend one’s own strengths and weaknesses, consistently control and evolve, understand
colleagues’ strengths and weaknesses, and take the initiative of maintaining a positive relationship with the co-workers. Drucker’s thoughts and beliefs on effective leadership are in line with the disciplines of emotional intelligence: self-management, self-awareness, relationship management, and a general social awareness (Goleman, 2001). In this context, it can be assumed that the aforementioned traits of leadership as outlined by Drucker are also applicable in the arena of higher educational leadership issues where one must be able to intelligently judge the others’ capabilities in order to lead them towards achieving their best possible outcome.

Leadership is less about one’s individual needs and more about the needs of the people and the organization an individual leads. As leaders, senior sponsored university research administrators (SURAs) play an extensive role in guiding research investigators and research staff through the malaise of externally funded research projects. As such, SURAs have a number of leadership responsibilities in providing key oversight to the university’s research enterprise. The SURA must possess an understanding of his or her own knowledge, skills, and abilities in order to develop self-awareness and self-control (two important dimensions associated with emotional intelligence) needed to effectively lead sponsored research projects and offices. The Research Administrators Certification Council (RACC), with the assistance of the Professional Testing Corporation (PTC), conducted a 2008 role delineation study of 240 certified and non-certified research administrators from throughout the United States. The survey included 206 tasks statements and knowledge area responses divided into four major sections: proposal development, project management, general administration, and compliance. There were 13 knowledge areas, which were considered to be very important for
competent performance. Statements were rated as to the importance of the task for competent function using the following rating scale of: 4 = Extremely; 3 = Moderately; 2 = Slightly; 1 = Not Important. Table 1 displays the knowledge areas and the average importance rating given by respondents.

Table 1

Knowledge Area Importance

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<tr>
<th>Knowledge Area</th>
<th>Average Importance</th>
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<tbody>
<tr>
<td>Codes and Regulations</td>
<td>3.8</td>
</tr>
<tr>
<td>Ethical/Legal Issues</td>
<td>3.5</td>
</tr>
<tr>
<td>Management Skills</td>
<td>3.4</td>
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<tr>
<td>Information Management</td>
<td>3.4</td>
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<tr>
<td>Leadership Skills</td>
<td>3.3</td>
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<tr>
<td>Communication Skills</td>
<td>3.9</td>
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<tr>
<td>Analytical Skills</td>
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<tr>
<td>Interpersonal Skills</td>
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<tr>
<td>Organizational Skills</td>
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<tr>
<td>Change Management</td>
<td>3.1</td>
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<tr>
<td>Conflict Management</td>
<td>3.2</td>
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<tr>
<td>Diversity Management</td>
<td>2.8</td>
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<tr>
<td>Financial Skills</td>
<td>3.6</td>
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Note: Adapted from RACC (2008) Role Delineation Survey
Summary

The literature review suggests that there is a strong connection between emotional intelligence and effective leadership among business leaders, corporate executives, and K-12 administrators; however, very little is known about the emotional intelligence or leadership effectiveness among sponsored university research administrators (SURAs). In fact, no empirical study has been conducted to test the assertion that a relationship exists between emotional intelligence and leadership effectiveness among senior university research administrators. This study investigated whether or not there is a statistically significant relationship between the leadership effectiveness of sponsored university research administrators and the components of emotional intelligence as perceived by the sponsored research administrator.
CHAPTER III
METHODOLOGY

Introduction

The purpose of this study was to determine if there is a significant relationship between the emotional intelligence of senior sponsored research administrators and their leadership (practices) effectiveness. This chapter details the specific research purpose; description of participants; a profile of all instrumentation used in the study, including reliability and validity data; sampling methodology procedures, and techniques used in analyzing the data. The Bar-On (1997) Emotional Quotient Inventory (EQ-i) and the Kouzes & Posner (2003) Leadership Practices Inventory (LPI) were used in establishing a foundation for the study.

Research Questions

For the purpose of this study, the following questions were investigated:

1. How do senior level university sponsored research administrators rate their level of emotional intelligence for: total (overall) emotional intelligence, the five composite scores (Intrapersonal, Interpersonal, Adaptability, Stress Management, and General Mood, and the 15 subscales of: (a) Self-Regard, (b) Emotional Self-Awareness, (c) Assertiveness, (d) Independence, (e) Self-Actualization, (f) Empathy, (g) Social Responsibility, (h) Interpersonal Relationship, (i) Reality Testing, (j) Flexibility, (k) Problem Solving, (l) Stress Tolerance, (m), Impulse Control, (n) Optimism, and (o) Happiness as measured by the Bar-On (1997) Emotional Quotient Inventory (EQ-i)?
2. How do senior level university-sponsored research administrators rate their level of leadership effectiveness, as measured by the Kouzes and Posner (2003) Leadership Practices Inventory (LPI) on The Five Practices: (a) Model the Way, (b) Inspire a Shared Vision, (c) Challenging the Process, (d) Enable Others to Act, and (e) Encourage the Heart?

3. Is there a relationship between emotional intelligence, as measured by the Bar-On (1997) Emotional Quotient Inventory (Bar-On EQ-i) and leadership effectiveness, as measured by the Kouzes and Posner (2003) Leadership Practices Inventory (LPI) among senior level university sponsored research administrators?

4. Does age influence senior level university sponsored research administrators’ levels of emotional intelligence and their levels of leadership effectiveness?

5. Does gender influence senior level university sponsored research administrators’ levels of emotional intelligence and their level of leadership effectiveness?

6. Does the level of education influence senior level university sponsored research administrators’ levels of emotional intelligence and their level of leadership effectiveness?

7. Do the number years of research administration work experience influence senior level university sponsored research administrators’ levels of emotional intelligence and their level of leadership effectiveness?
8. Do the number years of work in professional work environment influence senior level university sponsored research administrators’ levels of emotional intelligence and their level of leadership effectiveness?

9. What is the relationship between senior level university sponsored research administrators’ age, gender, level of education, years of research administration work experience, and total years of professional work experience on emotional intelligence and their level of leadership effectiveness?

Research Hypotheses

The following null hypotheses were used to further investigate the above research questions:

Null Hypothesis #1 – There is no statistical relationship between the self-perceived emotional intelligence of senior level university sponsored research administrators, as measured by the Bar-On EQ-i and their level leadership effectiveness, as measured by the Kouzes and Posner LPI (Self).

Null Hypothesis #2 – There is no statistical relationship between senior level university sponsored research administrators’ age on emotional intelligence and their level of leadership effectiveness.

Null Hypothesis #3 – There is no statistical relationship between senior level university sponsored research administrators’ gender on emotional intelligence and their level of leadership effectiveness.
Null Hypothesis #4 – There is no statistical relationship between senior level university sponsored research administrators’ years of research administration work experience on emotional intelligence and their level of leadership effectiveness.

Null Hypothesis #5 – There is no statistical relationship between research administrators’ years of work professional experience on emotional intelligence and their level of leadership effectiveness.

Null Hypothesis #6 – There is no statistical relationship between the senior level university sponsored research administrators’ age, gender, years of research administration work experience, and years of work professional work experience on emotional intelligence and their level of leadership effectiveness.

Participants and Sampling

The participants involved in the data collection process for this study were senior sponsored research office personnel who are employed at various post-secondary institutions in the southeastern United States. Senior sponsored university-research administrators were invited, via email, to participate in the study, rather than being randomly selected. A total of 107 invitations were emailed to senior sponsored university-research administrators (SURAs). Since participation was strictly voluntary, of the 107 invitations SURAs asked to participate in the study, 40 responded (37%). Thirty-two questionnaires were returned and 30 survey data files were determined useable and were used in this data analysis. Because the study involved human subjects, permission from the Human Subjects Protection Review Committee (HSPRC) at The University of Southern Mississippi was obtained prior to any data collection (Appendix A).
Instrumentation

The study involved the use of three instruments: demographic questionnaire, leadership practices, and emotional intelligence surveys. The first instrument surveyed senior sponsored research office directors and assistant/associate directors to obtain a demographic profile (Appendix B). This instrument consist of six items that provided demographic details on the participant’s age, race/ethnic origin, gender, highest level of education, number of years of research administrator work experience, and total number of years of (combined) professional work experience.

Leadership Practices Inventory (LPI)

With the second instrument, the research investigator asked university sponsored research professionals to complete the Kouzes and Posner (2003) Leadership Practices Inventory (LPI) in order to obtain the self-perceived level of leadership effective of the senior sponsored university-research office administrators (Appendix C, sample only). The LPI consists of two components: the self-report questionnaire and the observer questionnaire. For the purposes of this study only the LPI-Self was used. The LPI is a questionnaire with 30 behavioral statements—six for each of The Five Practices—that takes 10 to 15 minutes to complete. The LPI-Self questionnaire was used to provide information about the directors’ and assistant directors’ leadership behavior and rate their level of leadership effectiveness on The Five Practices of Exemplary Leadership behaviors of Challenging the Process, Inspiring a Shared Vision, Enabling Others to Act, Modeling the Way, and Encouraging the Heart (see Table 2). The following is a representative sample for the six items of the LPI that measure each of The Five Practices (Kouzes & Posner, 2003).
Table 2

*Leadership Practice, Description, Item, and Question of the Leadership Practices Inventory (LPI)*

<table>
<thead>
<tr>
<th>Practice</th>
<th>Description</th>
<th>Item</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model the Way</td>
<td>Ability to recognize one’s feelings</td>
<td>#1</td>
<td>Sets a personal example of what is expected</td>
</tr>
<tr>
<td>Inspire a Shared Vision</td>
<td>Ability to express feelings, beliefs, and thoughts and defends one’s right’s in a nondestructive manner</td>
<td>#2</td>
<td>Talks about future trends influencing our work</td>
</tr>
<tr>
<td>Challenge the Process</td>
<td>Ability to respect and accept oneself as basically good</td>
<td>#3</td>
<td>Seeks challenging opportunities to tests skills</td>
</tr>
<tr>
<td>Enable Others to Act</td>
<td>Ability to realize one’s relationships</td>
<td>#4</td>
<td>Develops cooperative</td>
</tr>
<tr>
<td>Encourage the Heart</td>
<td>Ability to establish and maintain mutually satisfying relationships that are characterized by intimacy and by giving and receiving affection</td>
<td>#5</td>
<td>Praises people for a job well done</td>
</tr>
</tbody>
</table>


Reliability (LPI)

Reliability is determined empirically in a number of ways. Two of the more widely used measures are internal and test-retest reliability. With internal reliability, statisticians generally refer to the correlation between variables as internally reliable. Therefore, internal reliability coefficients of .50+ are considered to be good. The LPI has demonstrated a strong internal reliability, with a tendency for the reliability coefficients...
from the LPI-Self to range between .75 and .87, and the LPI-Observer ranging between .88 and .92. The LPI has shown significant test-retest reliability (or consistency) at levels greater than .90 correlations (Kouzes & Posner, 2003).

**Validity (LPI)**

Validity suggests whether an instrument truly measures what it is supposed to measure and whether or not its scores have meaning for participants. The LPI has proven quite robust in assessing individuals' leadership behaviors and in providing useful feedback in leadership development and effectiveness. Herold, Fields, and Hyatt (1993) concluded, the LPI items that had correlations with other items exceeding .60, resulted in a confirmatory model with acceptable fit (Chi-Square = 399.9, df = 363, p < .09). The authors also explained that “based on two decades of data collection, there is evidence of validity on the scores of the LPI and factor analyses, including independent analyses of the LPI, revealed a strong five-factor construction” (p. 68).

**Bar-On Emotional Quotient Inventory (Bar-On EQ-i)**

For the third instrument, the research investigator also had senior sponsored research office directors and assistant/associate directors complete the Bar-On (1997) Emotional Quotient Inventory (EQ-i) (Appendix D, sample only). The EQ-i is a self-report assessment designed to measure a number of constructs related to Emotional Intelligence. It consists of 133-items and takes approximately 30-40 minutes to complete. It gives an overall EQ score as well as scores for the following (see Table 3) five composite scales and 15 subscales (Bar-On, 2004).
Table 3

*Bar-On Emotional Quotient Inventory (EQ-i) Scales and Subscales*

<table>
<thead>
<tr>
<th>Composite</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scales</td>
<td></td>
</tr>
<tr>
<td>Intrapersonal (RAeq)</td>
<td>self-awareness and self-expression</td>
</tr>
<tr>
<td>Subscales</td>
<td></td>
</tr>
<tr>
<td>Self-Regard</td>
<td>tend to accept and respect themselves; good self-esteem</td>
</tr>
<tr>
<td>Empathy</td>
<td>aware of and can appreciate others’ feelings</td>
</tr>
<tr>
<td>Reality- Testing</td>
<td>able to evaluate the correspondence between their experiences and what reality exists</td>
</tr>
<tr>
<td>Stress Tolerance</td>
<td>able to withstand adverse events and stressful situations, without “failing apart”</td>
</tr>
<tr>
<td>Happiness</td>
<td>able to feel satisfied with their lives, genuinely enjoy the company of others, and have the ability to derive pleasure from life</td>
</tr>
<tr>
<td>Interpersonal (EREq)</td>
<td>social awareness and interpersonal relationship</td>
</tr>
<tr>
<td>Emotional-Self Awareness</td>
<td>“in touch with” their feelings and emotions</td>
</tr>
<tr>
<td>Social Responsibility</td>
<td>cooperative, contributing, and constructive members of their social groups</td>
</tr>
<tr>
<td>Flexibility</td>
<td>have an enhanced ability to adjust their emotions, thoughts, and behaviors to changing situations and conditions</td>
</tr>
</tbody>
</table>
Table 3 (continued).

<table>
<thead>
<tr>
<th>Composite</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impulse Control</td>
<td>able to resist or delay impulses; defer drives and temptations to act</td>
</tr>
<tr>
<td>Optimism</td>
<td>able to look at the brighter side of life; maintain a positive attitude, even in the face of adversity</td>
</tr>
<tr>
<td>Adaptability (ADeq)</td>
<td>Coping with the environment</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>able to express feelings, thoughts, and beliefs; defend their rights in a non-destructive manner</td>
</tr>
<tr>
<td>Interpersonal Relationship</td>
<td>establish and maintain mutually satisfying relationships</td>
</tr>
<tr>
<td>Problem-solving</td>
<td>adept at recognizing and defining problems as well generating; implementing potentially effective solutions</td>
</tr>
<tr>
<td>Stress Management (SMeq)</td>
<td>Withstanding stress without falling apart</td>
</tr>
<tr>
<td>Independence</td>
<td>self-reliant, autonomous, independent in their thinking</td>
</tr>
<tr>
<td>General Mood (GMeq)</td>
<td>One’s ability to enjoy life</td>
</tr>
<tr>
<td>Self-Actualization</td>
<td>able to realize their potential</td>
</tr>
</tbody>
</table>


The EQ-i also provides an overall EQ score, an Intrapersonal Intelligence score, an Interpersonal Intelligence score, and scores on the five components of EQ (see Table 4). The 133 questions of the EQ-i instructed participants to provide responses ranging
from: (1) “Very Seldom or Not True of Me” to (5) “Very Often True of Me or True of Me.” Individual scores are analyzed against normative samples based on extensive EQ-i use. EQ-i scores normally range between 55 and 145 (+/-3 standard deviations from the mean). Raw scores for each composite score and subscale were standardized to a mean of 100 and standard deviation of 15 (Bar-On, 2004). Item 133 was not used in scoring.

Table 4

Sample Subscale, Description, Item, and Question on Bar-On EQ-i

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Description</th>
<th>Sample Item</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Self-Awareness (ES)</td>
<td>Ability to recognize one’s feelings</td>
<td>#9</td>
<td>I’m in touch with my emotions</td>
</tr>
<tr>
<td>Assertiveness (AS)</td>
<td>Ability to express feelings, beliefs, and thoughts and defend one’s rights in a non-destructive manner</td>
<td>#111</td>
<td>Others think I lack assertiveness</td>
</tr>
<tr>
<td>Self-Regard (SR)</td>
<td>Ability to respect and accept oneself as basically good</td>
<td>#40</td>
<td>I have good self-respect</td>
</tr>
<tr>
<td>Self-Actualization (SA)</td>
<td>Ability to realize one’s potential capacities</td>
<td>#95</td>
<td>I enjoy those things which interest me</td>
</tr>
<tr>
<td>Interpersonal Relationship (IR)</td>
<td>Ability to establish and maintain mutually satisfying relationships that are characterized by intimacy and by giving and receiving affection</td>
<td># 99</td>
<td>I have good relationships with others</td>
</tr>
</tbody>
</table>
Table 4 (continued).

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Description</th>
<th>Sample Item</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Responsibility (SR)</td>
<td>Ability to demonstrate oneself as a cooperative, contributing, and constructive member of one’s social group</td>
<td>#16</td>
<td>I like helping people</td>
</tr>
<tr>
<td>Stress Tolerance (ST)</td>
<td>Ability to withstand adverse events and stressful situations without “failing apart” by actively and positively coping with stress</td>
<td>#78</td>
<td>I know how to keep calm in difficult situations</td>
</tr>
<tr>
<td>Impulse Control (IC)</td>
<td>Ability to resist or delay an impulse, drive, or temptation to act</td>
<td>#130</td>
<td>I tend to explode with anger easily</td>
</tr>
</tbody>
</table>


Several analyses were conducted on the assessments with a working professional sample (n varies by type of analyses) aged 20-75 (mean age=44, male=43%, female=53.6%) residing in the United States, England, Greece, Canada, New Zealand, and Australia. The demographic information is as follows: White (81.7%), Black (11.4%), Hispanic/Latino (2.1%), Asian (2.8%), and Two or More Races (2.1%). Cronbach’s alpha coefficients of internal consistency were used to assess the internal reliability of the Bar-On EQ-i instrument. According to Bar-On (2004),

The average Cronbach’s alpha coefficients are high for all of the subscales, ranging from a low of .69 (Social Responsibility) to a high of .86 (Self-Regard),
with an overall average internal consistency coefficient of .76; the results indicated very good reliability (p. 87).

Internal reliability coefficient (Cronbach’s alpha) for the EQ-i are summarized in Table 5.

Table 5

*Internal Reliability Coefficient (Cronbach’s alpha) Scores for the Bar-On EQ-i*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Self-Awareness</td>
<td>.80</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>.81</td>
</tr>
<tr>
<td>Self-Regard</td>
<td>.89</td>
</tr>
<tr>
<td>Self-Actualization</td>
<td>.80</td>
</tr>
<tr>
<td>Independence</td>
<td>.79</td>
</tr>
<tr>
<td>Empathy</td>
<td>.75</td>
</tr>
<tr>
<td>Interpersonal Relationship</td>
<td>.77</td>
</tr>
<tr>
<td>Social Responsibility</td>
<td>.70</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>.80</td>
</tr>
<tr>
<td>Reality Testing</td>
<td>.75</td>
</tr>
<tr>
<td>Flexibility</td>
<td>.77</td>
</tr>
<tr>
<td>Stress Tolerance</td>
<td>.84</td>
</tr>
<tr>
<td>Impulse Control</td>
<td>.79</td>
</tr>
<tr>
<td>Happiness</td>
<td>.81</td>
</tr>
<tr>
<td>Optimism</td>
<td>.82</td>
</tr>
</tbody>
</table>

Reliability is essential for an accurate, consistent, and valid test. The alpha coefficient provides information about the internal consistency of a particular scale. Test-re-test reliability provides information about the temporal stability of the assessment. Because emotional intelligence changes throughout one’s lifetime and can be impacted by key experiences, the re-test administration should occur within a few days. As shown in Table 6, all reliability estimates for the scales exceed the minimally acceptable level of .700. Thus, reliability analyses show that the Emotional Intelligence Assessment measures behavioral tendencies consistently and reliably.

Table 6

Test-Re-Test Reliability of Bar-On EQ-i for the One-Month (N=44) and the Four-Month (N=27) in South Africa

<table>
<thead>
<tr>
<th>Component</th>
<th>One-Month</th>
<th>Four-Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS</td>
<td>.83</td>
<td>.69</td>
</tr>
<tr>
<td>SR</td>
<td>.92</td>
<td>.76</td>
</tr>
<tr>
<td>SA</td>
<td>.88</td>
<td>.80</td>
</tr>
<tr>
<td>IN</td>
<td>.86</td>
<td>.72</td>
</tr>
<tr>
<td>IR</td>
<td>.87</td>
<td>.77</td>
</tr>
<tr>
<td>RE</td>
<td>.78</td>
<td>.75</td>
</tr>
<tr>
<td>PS</td>
<td>.87</td>
<td>.80</td>
</tr>
<tr>
<td>RT</td>
<td>.82</td>
<td>.61</td>
</tr>
<tr>
<td>FL</td>
<td>.82</td>
<td>.82</td>
</tr>
<tr>
<td>ST</td>
<td>.79</td>
<td>.55</td>
</tr>
<tr>
<td>HA</td>
<td>.86</td>
<td>.77</td>
</tr>
</tbody>
</table>

Thirty-two senior level research administrators returned an EQ-i assessment. However, based on the scoring criteria set forth by the Bar-On (2004) *Emotional Quotient Inventory Technical Manual* two of the assessments were discarded. The following four criteria assisted the researcher in properly assessing the overall validity of the EQ-i scored data sets. The criteria are as follows:

1. **Omission Rate (OR)** – is presented in terms of a percentage that indicates the number of incomplete items (i.e. missing items) in the inventory. If the OR is higher than 6%, the results are considered invalid, and they should not be used for assessment or decision making.

2. **Inconsistency Index (II)** – score measures response inconsistency. Response inconsistency indicates respondents who contradict themselves or respond randomly. If a responder scores higher than 12 on the II, the results are most likely invalid.

3. **Positive Impression (PI) and Negative Impression (NI)** – scale scores are standard scores and are designed to detect respondents who may be giving an exaggerated positive or negative impression of themselves. When the PI or NI scores exceed two standard deviations from the mean (30 points), the results are considered invalid.

4. **Correction factors** – PI and NI scores that do not exceed two standard deviations are employed to create a correction factor designed to adjust (“deflate” or “inflate”) the EQ-I scale and subscale scores in the computerized report, though regression analysis.

5. **Item 133** is not scored as part of any of the EQ-i subscales (Bar-On, p. 41-42).
Data Collection Procedures

The data collection process for this study proceeded in the following manner:

1. A summary of the proposed research study was submitted to The University of Southern Mississippi Human Subjects Protection Review Committee to request permission to conduct the study.

2. An authorized copyright agent or publisher of the Kouzes and Posner (2003) Leadership Practices Inventory (LPI) and Bar-On (1997) Emotional Quotient Inventory (EQ-i) were contacted to obtain permission to use the survey instruments.

3. For statistical purposes, a demographic profile form was created by the principal investigator for participants to complete.

4. A list of sponsored university research offices (or equivalent) and senior sponsored research administrators (or equivalent) at research institutions, located with the southeastern United States, was obtained via internet search.

5. Senior university research administrators were invited to participate through an email invitation. Participants were reminded that participation was completely voluntary and all responses would remain confidential.

6. The demographic profile form, Leadership Practices Inventory (LPI), and Bar-On Emotional Quotient Inventory (EQ-i) and (hereinafter referred to collectively as "document file") were emailed or mailed hard-copy (e.g., pencil and paper) to each of the respondents who indicated their willingness to participate in the study.

7. Specific instructions on how to complete the survey and where completed forms should be mailed or faxed were also included in the mailout.
8. Upon return, participants' document files were randomly assigned a document identification number (e.g., 01, 02, 03, etc.).

9. All document files were reviewed to ensure that all surveys are satisfactorily answered and completed. EQ-i surveys that demonstrated an omission rate (i.e. missing items) of 6% or higher were discarded. Additionally, any participant who responded with a 1 (Very Seldom or Not True of Me) or 2 (Seldom True of Me) were not scored. Every statement on the LPI must have been answered. Any LPI survey found to have omitted a single response was discarded.

10. All completed document files were cross-referenced with corresponding Bar-On (1997) EQ-i and the Kouzes and Posner (2003) LPI instruments. Incomplete document files were discarded.

11. Hard copies of EQ-i data entry sheets were manually entered by the research investigator into the Multi-Health Systems (MHS), EQ-i Scoring Organizer website. All scoring was completed by MHS and a Microsoft Excel file of standardized data sets was emailed to the researcher. Scored data sets were exported into SPSS 20.0 for data analysis.

12. Hard copies of the demographic profile and LPI were scored and manually entered by the research investigator into a Microsoft Excel file and exported into the same SPSS file containing the standardized EQ-i data sets. All data were analyzed using one SPSS file that contained all data from the three instruments used in this research study.
13. Upon completion of data analysis, hard copies of document files were shredded, and saved files were deleted from the MHS and the research investigator's database.

Summary

This chapter presented the methodology for this study of the relationship between emotional intelligence and leadership effectiveness of senior level university sponsored research administrators. The following areas were discussed: (a) purpose statement, (b) research questions, (c) research hypotheses, (d) participants and sampling, (e) instrumentation, (f) reliability and validity, and (g) data collection procedures.

For this study, Multiple Linear Regression (MLR) analyses were utilized for the purposes of predicting one variable from another. Multiple Linear Regression (MLR) technique was used in the data analyses to determine if perceived emotional intelligence (EI) is related to perceived leadership effectiveness.

Due to increased job demands and growing complexity of sponsored research, this research was conducted to examine the guiding questions of the research study:

1. Does a relationship between emotional intelligence, as measured by the Bar-On Emotional Quotient Inventory (Bar-On EQ-i) and leadership effectiveness, as measured by the Kouzes and Posner Leadership Practices Inventory (LPI) among senior level university sponsored research administrators?

2. How do senior level university sponsored research administrators rate their level of emotional intelligence on the five composite scores (Intrapersonal, Interpersonal, Adaptability, Stress Management, and General Mood and the 15 subscales of: (a) Self-Regard, (b) Emotional Self-Awareness, (c) Assertiveness, (d) Independence, (e) Self-
Actualization, (f) Empathy, (g) Social Responsibility, (h) Interpersonal Relationship, (i) Reality Testing, (j) Flexibility, (k) Problem Solving, (l) Stress Tolerance, (m) Impulse Control, (n) Optimism, and (o) Happiness as measured by the Bar-On (1997) Emotional Quotient Inventory (EQ-i)?

3. How do senior level university sponsored research administrators rate their level of leadership effectiveness, as measured by the Kouzes and Posner (2003) Leadership Practices Inventory (LPI), on The Five Practices: (a) Model the Way, (b) Inspire a Shared Vision, (c) Challenging the Process, (d) Enable Others to Act, and (e) Encourage the Heart?
CHAPTER IV
RESULTS

Introduction

This chapter presents the results, the research questions posed in this study, starting with a description of participant demographics and sampling methodology, and a brief explanation of the analyses utilized in assessing each research question. The second section presents the participants’ emotional intelligence scores as measured by the five subscale scores and 15 subscale from the Bar-On (1997) Emotional Quotient Inventory (EQ-i). The third section presents the participants’ leadership effectiveness scores as measured by the Kouzes and Posner (2003) Leadership Practices Inventory (LPI). Section four, using selected statistical analyses, examined the relationship between the variables of the Emotional Quotient Inventory (EQ-i) on the Leadership Practices Inventory (LPI). Next, in section five, the mean differences between participants’ demographic variable (e.g., age, gender, degree earned, years of research administrator work experience, and total years of professional work experience) and on both the Emotional Quotient Inventory (EQ-i) and Leadership Practices Inventory (LPI) scored data are discussed. Section six provides a summation on the results of this study.

Purpose of the Study

The purpose of this study was to examine the relationship of emotional intelligence on senior sponsored research administration professionals’ perceived leadership effectiveness. Specifically, this study utilized data collected from senior research administrators, who completed the Bar-On (1997) Emotional Quotient Inventory (EQ-i) for a total (overall) EQ score, comprised of the following 15 subcomponents of the Bar-

The Kouzes and Posner (2003) Leadership Practices Inventory (LPI) was administered to measure the leadership effectiveness of senior research administrators, The LPI consisted of five, six-item subscales used to measure each of The Five Practices of: Challenging the Process, Inspiring a Shared Vision, Enabling Others to Act, Modeling the Way, and Encouraging the Heart.

Participation and Sampling

The participants involved in the data collection process for this study were senior level university sponsored research office professionals, who are employed at various post-secondary institutions in the southeastern United States. Senior level university sponsored research professionals were invited, via email, to participate in the study, rather than randomly selected. A total of 107 requests for research participation were emailed to senior sponsored research administrators. Since participation was strictly voluntary, a total of 40 participants agreed to participate for a participation rate of 37.4%. Of the 40 survey files (demographic profile, EQ-i, and LPI) distributed, 32 survey files were completed and returned to the investigator. However, for the EQ-i, one participant exhibited scoring more than two standard deviations (30 points) above the standardized mean of 100 for negative impression (NI); another participant’s scoring had an inconsistency index (II) greater than 12. Both sets of EQ-i data were discarded by the
investigator. For the Leadership Practices Inventory (LPI), two participants failed to answer all 30 of the items as required by the instrument instructions. Both LPI scoring sheets were discarded by the investigator. Therefore, for the purposes of this study, a total of 30 surveys were determined useable for each data file, resulting in a 75% return rate.

A summation of participants and sampling are provided in Table 7. Because the study involved human subjects, permission from the Human Subjects Protection Review Committee (HSPRC) at The University of Southern Mississippi was obtained prior to any data collection (Appendix A).

Table 7

Summary of Participants and Sampling Methodology

<table>
<thead>
<tr>
<th>Invitations</th>
<th>Invitations Accepted</th>
<th># of Surveys Completed</th>
<th># of Surveys Accepted</th>
</tr>
</thead>
<tbody>
<tr>
<td>107</td>
<td>40</td>
<td>32</td>
<td>30</td>
</tr>
</tbody>
</table>

The results of the study were used to answer the research questions as they relate to senior level research administrators’ emotional intelligence and leadership effectiveness. All data were collected during the fall and spring semesters (November 2011 and February 2012). All data for the Bar-On EQ-i were entered into Multi-Health Systems EQ-i Scoring Organizer where raw data scores were converted into standardized scored data sets. The standardized EQ-i scores and LPI scores were entered into the SPSS version 20.0 for analysis.

Two functions -- descriptive and inferential statistics -- were involved in analyzing the data provided by the participants. The first step involved analyzing each
participant’s descriptive data for the items on the demographic profile form. The descriptive data for each participant included age, gender, race/ethnicity, type of degree earned, years of research administrator work experience, and total (combined) years of professional work experience. The second and third steps involved descriptive statistics to score the EQ-i and Leadership Practices Inventory (LPI), respectively, to attain levels of emotional intelligence and the level of leadership effectiveness. Finally, inferential analyses were performed to determine the relationship between emotional intelligence and leadership practices (effectiveness) among senior level university sponsored research administrators.

Descriptive Statistics

*Analysis of Research Questions*

This study was designed to examine the relationship between the perceived emotional intelligence of senior level university research administrators and their perceived level of leadership effectiveness. Descriptive statistics were used to report on research questions 1 and 2.

*Participant Demographics*

Of the 30 participants (N=30), 19 were female (63%) and 11 were male (27%). The age of the subjects ranged from 30 to 60 years, with seven between the ages of 30-39 years; 13 were between the ages of 40-49 years and 10 were 50 years and above. The average age range was between 30-39 years of age. The race/ethnic composition of the population was as follows: American Indian/Alaskan Native (0%), Asian or Pacific Islander (0%), Black, not of Hispanic origin (30%), Hispanic (0.03%), White, not of Hispanic origin (66.7%), and Other (0%). Two-thirds of the respondents for this study
self-reported as being White, not of Hispanic origin. The most recent type of degree earned showed that 1% held a PhD/EdD degree (n= 3), 13.3% held a J.D. (n=4), 50.0 % held a master’s degree (n=15), 20% had earned a bachelor’s degree (n=6), 0.33% held an Associate degree (n=1), and 0.33% held a degree in the “other” category (n=1). Over 64% of participants surveyed held a master’s degree or higher. Years of research administration work experience ranged from one to 26 years of experience. The mean for research administration work history was 9.3 years. Finally, total combined years of professional work experience ranged from 5 to 40 years. The average senior level research administrator, for this study, had a mean of 20.7 years of combined years of professional work experience. Frequencies of demographics are reported in Table 8.

Table 8

Frequencies of Demographic Variables

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>19</td>
<td>55.9</td>
</tr>
<tr>
<td>Male</td>
<td>11</td>
<td>32.4</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 – 39</td>
<td>7</td>
<td>23.3</td>
</tr>
<tr>
<td>40 – 49</td>
<td>13</td>
<td>43.4</td>
</tr>
<tr>
<td>50 years and older</td>
<td>10</td>
<td>33.3</td>
</tr>
<tr>
<td><strong>Race/Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Indian/Alaskan Native</td>
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<td>0.0</td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
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<td>0.0</td>
</tr>
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</table>
Table 8 (continued).

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black, not of Hispanic Origin</td>
<td>9</td>
<td>30.0</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>White, not of Hispanic Origin</td>
<td>20</td>
<td>66.7</td>
</tr>
</tbody>
</table>

Most Recent Degree Earned

<table>
<thead>
<tr>
<th>Degree</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>PhD/EdD</td>
<td>3</td>
<td>1.0</td>
</tr>
<tr>
<td>JD</td>
<td>4</td>
<td>13.4</td>
</tr>
<tr>
<td>Masters</td>
<td>15</td>
<td>50.0</td>
</tr>
<tr>
<td>Bachelors</td>
<td>6</td>
<td>20.0</td>
</tr>
<tr>
<td>Associate</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Years of Research Administration Experience

<table>
<thead>
<tr>
<th>Experience</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 5 years</td>
<td>8</td>
<td>26.7</td>
</tr>
<tr>
<td>6 – 10 years</td>
<td>13</td>
<td>43.3</td>
</tr>
<tr>
<td>11 – 15 years</td>
<td>5</td>
<td>16.6</td>
</tr>
<tr>
<td>16 – 25 years</td>
<td>4</td>
<td>13.5</td>
</tr>
</tbody>
</table>

Total Years of Work Experience

<table>
<thead>
<tr>
<th>Experience</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 10 years</td>
<td>5</td>
<td>16.7</td>
</tr>
<tr>
<td>11 – 20 years</td>
<td>9</td>
<td>30.0</td>
</tr>
<tr>
<td>21 – 30 years</td>
<td>12</td>
<td>40.0</td>
</tr>
<tr>
<td>31 – 40 years</td>
<td>4</td>
<td>13.3</td>
</tr>
</tbody>
</table>
According to Bar-On (2004), approximately two-thirds of respondents are expected to receive a total EQ score between 85 and 115. However, it is also recommended not to place too much emphasis on the interpretation of the total EQ score. Thus, a greater emphasis was placed on the EQ composite scales, particularly the EQ subscales (as recommended by Bar-On). For the population (n=30) of this study, 24 participants (80%) received a total EQ score between 85 and 115; three participants (10%) scored below the mean for total EQ; and three participants (10%) scored above the mean for total EQ. Bar-On (2004) explained that, “Scores around 100-mark indicate average ability and typical healthy functions” and scores ranged from 90 to 109 are “average – adequate emotional capacity,” (p. 40) (see Table 9).

Table 9

*Interpretive Guidelines for Bar-On EQ-i Scale Scores*

<table>
<thead>
<tr>
<th>Standard Scores</th>
<th>Interpretive Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>130+</td>
<td>Markedly High – atypical well developed emotional intelligence</td>
</tr>
<tr>
<td>120 – 129</td>
<td>Very High – extremely well developed emotional capacity</td>
</tr>
<tr>
<td>110 – 119</td>
<td>High - well developed emotional capacity, improvement</td>
</tr>
<tr>
<td>90 – 109</td>
<td>Average – adequate emotional capacity</td>
</tr>
<tr>
<td>80 – 89</td>
<td>Low – under developed emotional capacity, requiring improvements</td>
</tr>
<tr>
<td>70 – 79</td>
<td>Very Low – extremely under-developed emotional capacity, requiring improvement</td>
</tr>
<tr>
<td>Under 70</td>
<td>Markedly Low – atypical impaired emotional capacity, requiring improvements</td>
</tr>
</tbody>
</table>

Research Questions

Research Question #1 – How do senior level university sponsored research administrators rate their level or total (overall) EQ, the five EQ composite scores (Intrapersonal, Interpersonal, Adaptability, Stress Management, and General Mood), and the 15 subscales of: (a) Self-Regard, (b) Emotional Self-Awareness, (c) Assertiveness, (d) Independence, (e) Self-Actualization, (f) Empathy, (g) Social Responsibility, (h) Interpersonal Relationship, (i) Reality Testing, (j) Flexibility, (k) Problem Solving, (l) Stress Tolerance, (m) Impulse Control, (n) Optimism, and (o) Happiness as measured by the Bar-On Emotional Quotient Inventory (Bar-On EQ-i)?

For the participant sample (n=30), the total (overall) EQ-i mean score was 103.47 with a minimum score of 64 and maximum score of 132, standard deviation of 14.97. Means, minimums, maximums, and standard deviations for EQ-i scores are given in Table 8. From examination of the scores of the five composite subscales (Intrapersonal, Interpersonal, Adaptability, Stress Management, and General Mood) of the EQ-i, it was determined that Intrapersonal (M = 105.73, SD = 13.595) and Adaptability (M = 103.83, SD = 14.643) subscales yielded the two highest mean scores of the five composite subscales. Furthermore, the scores decreased on the General Mood (M = 102.34, SD = 12.574) and Stress Management (M = 102.13, SD = 13.930), with the Interpersonal composite subscale showing the lowest mean score (M = 99.17, SD = 17.009). Further still, the 15 subscales of the Bar-On EQ-i offered a closer, more detailed analysis of the participants’ level of emotional intelligence. In ranking order from highest to lowest, the top three subcomponent scores were Independence (M = 107.40), Emotional Self-Awareness (M = 105.73), and Flexibility (M = 105.53). The bottom three (in ranking
order from highest to lowest were Interpersonal Relationship (M = 99.83), Social Responsibility (M = 99.07), and Empathy (M = 95.90) (see Table 10). Bar-On (2004) explained that scores that ranged from 90 to 109 are “average – adequate emotional capacity,” as presented in Table 9. The overall level of emotional intelligence of participants of this study is therefore of “average – adequate emotional capacity.”

Table 10

Descriptive Statistics for Total EI, Five Composite Scales, and 15 Subscales for the Bar-On EQ-i (N=30)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total EI</td>
<td>64</td>
<td>132</td>
<td>103.47</td>
<td>14.97</td>
</tr>
<tr>
<td>Intrapersonal</td>
<td>69</td>
<td>134</td>
<td>105.73</td>
<td>13.60</td>
</tr>
<tr>
<td>Self-Regard</td>
<td>75</td>
<td>122</td>
<td>102.93</td>
<td>11.63</td>
</tr>
<tr>
<td>Emotional Self-Awareness</td>
<td>79</td>
<td>134</td>
<td>105.73</td>
<td>13.56</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>75</td>
<td>126</td>
<td>104.43</td>
<td>15.04</td>
</tr>
<tr>
<td>Independence</td>
<td>89</td>
<td>126</td>
<td>107.40</td>
<td>10.76</td>
</tr>
<tr>
<td>Self-Actualization</td>
<td>54</td>
<td>126</td>
<td>102.33</td>
<td>16.20</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>56</td>
<td>126</td>
<td>99.17</td>
<td>17.01</td>
</tr>
<tr>
<td>Empathy</td>
<td>44</td>
<td>123</td>
<td>95.90</td>
<td>18.85</td>
</tr>
<tr>
<td>Social Responsibility</td>
<td>59</td>
<td>124</td>
<td>99.07</td>
<td>15.55</td>
</tr>
<tr>
<td>Interpersonal Relationship</td>
<td>69</td>
<td>128</td>
<td>99.83</td>
<td>15.94</td>
</tr>
<tr>
<td>Stress Management</td>
<td>81</td>
<td>124</td>
<td>102.13</td>
<td>13.93</td>
</tr>
<tr>
<td>Stress Tolerance</td>
<td>52</td>
<td>132</td>
<td>101.70</td>
<td>16.55</td>
</tr>
</tbody>
</table>
Note. Bar-On (2004), explained that scores ranged from 90 to 109 are “average – adequate emotional capacity,” as presented in Table 9.

Research Question #2 – How do senior level university sponsored research administrators rate their level of leadership effectiveness, as measured by the Kouzes and Posner Leadership Practices Inventory (LPI) on The Five Practices: (a) Model the Way, (b) Inspire a Shared Vision, (c) Challenging the Process, (d) Enable Others to Act, and (e) Encourage the Heart?

The investigator explored senior level university sponsored research administrators’ leadership effectiveness. Means, minimum, maximum, and standard deviations are given in Table 11. The mean average for all components of the Leadership Practices Inventory for this study was M = 45.81. According to Kouzes and Posner (2004), these scores are suggestive of a “moderately high” level of leadership.
effectiveness. Analysis revealed, in ranking order on a “60 point scale” from highest to lowest, for The Five Practices that Enable Others to Act had the highest mean component score (M = 51.37, SD 4.57) followed by Encourage the Heart (M = 47.50, SD = 5.84), Model the Way (M = 46.00, SD = 6.23), Challenge the Process (M = 43.70, SD = 8.78), and the lowest score, Inspire a Vision (M = 40.47, SD = 10.60).

Table 11

Descriptive Statistics for Leadership Practices Inventory (LPI)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model the Way</td>
<td>36.00</td>
<td>60.00</td>
<td>46.00</td>
<td>6.23</td>
</tr>
<tr>
<td>Inspire a Vision</td>
<td>15.00</td>
<td>60.00</td>
<td>40.47</td>
<td>10.60</td>
</tr>
<tr>
<td>Challenge the Process</td>
<td>24.00</td>
<td>60.00</td>
<td>43.70</td>
<td>8.78</td>
</tr>
<tr>
<td>Enable Others to Act</td>
<td>41.00</td>
<td>60.00</td>
<td>51.37</td>
<td>4.57</td>
</tr>
<tr>
<td>Encourage the Heart</td>
<td>34.00</td>
<td>60.00</td>
<td>47.50</td>
<td>5.84</td>
</tr>
</tbody>
</table>

Inferential Statistics

This section addresses the hypotheses testing of this research study. A series of seven analyses of variances (ANOVAs) at the .05 level of significance was calculated to determine the effects of emotional intelligence on leadership effectiveness. The null hypothesis stated that there is no statistically significant correlation between variables. Each of the seven hypotheses has been restated and data provided to assist in organization of these results:

Null Hypothesis 1: There is no statistically significant relationship between the levels of emotional intelligence for: total (overall) EI, five composite scores
(Intrapersonal, Interpersonal, Adaptability, Stress Management, and General Mood), and the 15 subscales of: (a) Self-Regard, (b) Emotional Self-Awareness, (c) Assertiveness, (d) Independence, (e) Self-Actualization, (f) Empathy, (g) Social Responsibility, (h) Interpersonal Relationship, (i) Reality Testing, (j) Flexibility, (k) Problem Solving, (l) Stress Tolerance, (m) Impulse Control, (n) Optimism, and (o) Happiness as measured by the Bar-On Emotional Quotient Inventory (Bar-On EQ-i) of the Bar-On EQ-i and their level leadership effectiveness, as measured by The Five Practices: (a) Model the Way, (b) Inspire a Shared Vision, (c) Challenging the Process, (d) Enable Others to Act, and (e) Encourage the Heart of the Kouzes and Posner LPI (Self).

Alternative Hypothesis 1: There is a significant statistical relationship between the levels of emotional intelligence for: total (overall) EI, five composite scores (Intrapersonal, Interpersonal, Adaptability, Stress Management, and General Mood), and the 15 subscales of (a) Self-Regard, (b) Emotional Self-Awareness, (c) Assertiveness, (d) Independence, (e) Self-Actualization, (f) Empathy, (g) Social Responsibility, (h) Interpersonal Relationship, (i) Reality Testing, (j) Flexibility, (k) Problem Solving, (l) Stress Tolerance, (m) Impulse Control, (n) Optimism, and (o) Happiness as measured by the Bar-On Emotional Quotient Inventory (Bar-On EQ-i) of the Bar-On EQ-i and their level leadership effectiveness, as measured by The Five Practices: (a) Model the Way, (b) Inspire a Shared Vision, (c) Challenging the Process, (d) Enable Others to Act, and (e) Encourage the Heart of the Kouzes and Posner LPI (Self).

For hypotheses testing, a multiple linear regression (MLR) analysis was performed by regressing the total (overall) emotional intelligence score from the Bar-On EQ-i (dependent variable) on the LPI. Only one of the leadership practices, Enable
Others to Act, was found to be statistically significantly correlated with total (overall) emotional intelligence, $F (5, 24) = 3.313, p = .020, R^2 = .408$. The Multiple Linear Regression analysis in Table 11, illustrates that total (overall) emotional intelligence (EI) is positively statistically significant with Enable Others to Act. Thus, $R^2$ of .408 ($p < .020$) indicates that 40.8% of the respondents’ total (overall) emotional intelligence is predicted by Enable Others to Act. The regression model summary for total EQ and Leadership Effectiveness is given in Table 12.

Table 12

*Model Summary for Total EI and Leadership Effectiveness Correlation*

<table>
<thead>
<tr>
<th>Model</th>
<th>N</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable Others to Act</td>
<td>30</td>
<td>.639</td>
<td>*.408</td>
<td>.285</td>
<td>12.656</td>
</tr>
</tbody>
</table>

Note. Dependent variable: Total EI

*Correlation is significant at .05

In order to gain a more precise understanding of the relationship between senior level university sponsored research administrators’ five composite scores (Intrapersonal, Interpersonal, Adaptability, Stress Management, and General Mood) and the 15 subscales of Bar-On EQ-i and The Five Practices of the LPI, a correlation analysis was completed and results are summarized. The analysis revealed the following statistically significant correlation at the .05 level of significance.

Regression analysis determined that:
1. Total (overall) EQ is significantly correlated with Enable Others to Act, as \( F(5, 24) = 3.313, p = .020, R^2 = .408 \). Thus, \( R^2 \) of .408 (\( p < .020 \)) indicates that 40.8% of the respondents’ emotional intelligence is predicted by Enable Others to Act;

2. Interpersonal (Composite) is significantly correlated with Enable Others to Act, as \( F(5, 24) = 4.214, p = .007, R^2 = .467 \). Thus, \( R^2 \) of .467 (\( p < .007 \)) indicates that nearly 47% of the respondents’ emotional intelligence is predicted by Enable Others to Act;

3. Empathy is significantly correlated with Enable Others to Act, \( F(5, 24) = 4.166, p = .007, R^2 = .465 \). Thus, \( R^2 \) of .465 (\( p < .007 \)) indicates that 46.5% of the respondents’ emotional intelligence is predicted by Enable Others to Act;

4. Social Responsibility is significantly correlated with Enable Others to Act, \( F(5, 24) = 5.342, p = .002, R^2 = .527 \). Thus, \( R^2 \) of .527 (\( p < .002 \)) indicates that 52.7% of the respondents’ emotional intelligence is predicted by Enable Others to Act;

5. Impulse Control is significantly correlated with Enable Others to Act and Encourage the Heart, \( F(5, 24) = 2.624, p = .050, R^2 = .353 \). Thus, \( R^2 \) of .353 (\( p < .050 \)) indicates that 35.3% of the respondents’ emotional intelligence is predicted by Enable Others to Act and Encourage the Heart;

6. Adaptability is significantly correlated with Enable Others to Act, \( F(5, 24) = 2.915, p = .034, R^2 = .378 \). Thus, \( R^2 \) of .378 (\( p < .034 \)) indicates that 37.8% of the respondents’ emotional intelligence is predicted by Enable Others to Act;

7. Problem Solving is significantly correlated with Enable Others to Act, \( F(5, 24) = 3.860, p = .010, R^2 = .446 \). Thus, \( R^2 \) of .446 (\( p < .010 \)) indicates that 44.6% of the respondents’ emotional intelligence is predicted by Enable Others to Act;
8. General Mood is significantly correlated with Enable Others to Act, $F(5, 24) = 2.697, p = .045, R^2 = .360$. Thus, an $R^2$ of .360 ($p < .045$) indicates that 36.0% of the respondents’ emotional intelligence is predicted by Enable Others to Act; and

9. Optimism is significantly correlated with Enable Others to Act, $F(5, 24) = 3.244, p = .022, R^2 = .403$. Thus, an $R^2$ of .403 ($p < .022$) indicates that 40.3% of the respondents’ emotional intelligence is predicted by Enable Others to Act. In summary, 9 of 21 components of the Bar-On EQ-i positively correlated with Kouzes and Posner’s LPI. See Table 13 for ANOVA composite and subscale scores and leadership effectiveness summary.

Table 13

*Analysis of Variance (ANOVA) for EQ-i Composite and Subscale Scores and Leadership Practices*

<table>
<thead>
<tr>
<th>DV</th>
<th>SOS</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
<th>R2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpersonal</td>
<td>Regression</td>
<td>3922.265</td>
<td>5</td>
<td>4.214</td>
<td>.007</td>
</tr>
<tr>
<td>Residual</td>
<td></td>
<td>4467.902</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>8390.167</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empathy</td>
<td>Regression</td>
<td>4789.213</td>
<td>5</td>
<td>4.166</td>
<td>.007</td>
</tr>
<tr>
<td>Residual</td>
<td></td>
<td>5517.487</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>10306.700</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td>Regression</td>
<td>3694.426</td>
<td>5</td>
<td>5.342</td>
<td>.002</td>
</tr>
<tr>
<td>Responsibility</td>
<td>Residual</td>
<td>3319.441</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>7013.867</td>
<td>29</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 13 (continued).

<table>
<thead>
<tr>
<th>DV</th>
<th>Regression</th>
<th>SOS</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
<th>R2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impulse</td>
<td>Regression</td>
<td>1799.198</td>
<td>5</td>
<td>2.624</td>
<td>.050</td>
<td>.353</td>
</tr>
<tr>
<td>Control</td>
<td>Residual</td>
<td>3291.102</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>5090.300</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptability</td>
<td>Regression</td>
<td>2349.576</td>
<td>5</td>
<td>2.915</td>
<td>.034</td>
<td>.378</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>3868.591</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>6218.167</td>
<td>29</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Problem</td>
<td>Regression</td>
<td>3082.537</td>
<td>5</td>
<td>3.860</td>
<td>.010</td>
<td>.446</td>
</tr>
<tr>
<td>Solving</td>
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<td>3832.929</td>
<td>24</td>
<td></td>
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<tr>
<td></td>
<td>Total</td>
<td>6915.467</td>
<td>29</td>
<td></td>
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<tr>
<td>General Mood</td>
<td>Regression</td>
<td>1649.510</td>
<td>5</td>
<td>2.697</td>
<td>.045</td>
<td>.360</td>
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<tr>
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<td>Residual</td>
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<tr>
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<td>Total</td>
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<td></td>
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<tr>
<td>Optimism</td>
<td>Regression</td>
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<td>5</td>
<td>3.244</td>
<td>.022</td>
<td>.403</td>
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<tr>
<td></td>
<td>Residual</td>
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<td>24</td>
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<td></td>
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<tr>
<td></td>
<td>Total</td>
<td>5331.367</td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. *Correlation is significant at .05

Null Hypothesis 1 was an empirical test of Research Question 3, which asked if a significant statistical relationship existed between total (overall) emotional intelligence and leadership effectiveness among senior level university research administrators. The results of null Hypothesis 1 regression analysis data indicated that Total (overall) EQ, Interpersonal (Composite), Empathy, Social Responsibility, Impulse Control, Adaptability, Problem Solving, General Mood, and Optimism are significantly correlated with leadership effectiveness (see Table 12). Hence, null Hypothesis 1 is rejected and the alternative hypothesis accepted, based on the significant statistical correlation. Emotional intelligence (EI) is positively related to leadership effectiveness.

Null Hypothesis 2: There is no significant statistical relationship between senior level university sponsored research administrators’ age on emotional intelligence and their level of leadership effectiveness.

Alternative Hypothesis 2: There is significant statistical relationship between senior level university sponsored research administrators’ age on emotional intelligence and their level of leadership effectiveness.

The researcher analyzed the data to determine with 95% confidence (p < .05) that no significant statistical correlation existed between age, emotional intelligence, and leadership effectiveness, $F (6, 23) = 3.449$, $p = .105$, $R^2 = .474$. Senior level university sponsored research administrators’ age does not appear related to emotional intelligence and leadership effectiveness. Hence, the researcher failed to reject null Hypothesis 2.

Null Hypothesis 3: There is no statistical relationship between senior level university sponsored research administrators’ gender on emotional intelligence and their level of leadership effectiveness.
Alternative Hypothesis 3: There is a statistical relationship between senior level university sponsored research administrators’ gender on emotional intelligence and their level of leadership effectiveness.

The researcher analyzed the data to determine with 95% confidence (p < .05), that no significant statistical correlations were found, $F(6, 23) = 2.675$, $p = .749$, $R^2 = .257$. Senior level university sponsored research administrators’ gender does not appear related to emotional intelligence and leadership effectiveness. Hence, the research failed to reject null Hypothesis 3.

Null Hypothesis 4: There is no statistical relationship between senior level university sponsored research administrators’ years of research administration work experience on emotional intelligence and their level of leadership effectiveness.

Alternative Hypothesis 4: There is a statistical relationship between senior level university sponsored research administrators’ years of research administration work experience on emotional intelligence and their level of leadership effectiveness.

The research analyzed the data to determine with 95% confidence (p < .05) that no significant statistical correlations were found, $F(6, 23) = 2.421$, $p = .719$, $R^2 = .282$. Senior level university sponsored research administrators’ years of research administration work experience does not appear related to emotional intelligence and leadership effectiveness. Hence, the researcher failed to reject Hypothesis 4.

Null Hypothesis 5: There is no statistical relationship between senior level research administrators’ total (combined) years of professional work experience on emotional intelligence and their level of leadership effectiveness.
Alternative Hypothesis 5: There is a statistical relationship between senior level research administrators’ total (combined) years of professional work experience on emotional intelligence and their level of leadership effectiveness.

The data in Table 12 were used to test this hypothesis. The analysis revealed that $F(6, 23) = 3.897, p = .046, R^2 = .504$ for total years of professional work experience and total EQ. Hence, null hypothesis 5 was rejected and the alternative hypothesis accepted, based on regression analysis of data.

Null Hypothesis 6: There is no statistical relationship between the senior level university sponsored research administrators’ ages, genders, and total years of work professional work experience on emotional intelligence and their level of leadership effectiveness.

Alternative Hypothesis 6: There is a statistical relationship between the senior level university sponsored research administrators’ ages, genders, and total years of work professional work experience on emotional intelligence and their level of leadership effectiveness.

The researcher analyzed the data to determine with 95% confidence ($p < .05$) that no significant statistical correlations were found, $F(6, 23) = 2.734, p = .668, R^2 = .510$. Senior level university sponsored research administrators’ ages, genders, level of education, years of research administration work experience, and total years of professional work experience does not appear related to emotional intelligence and leadership effectiveness. Hence, the researcher failed to reject null Hypothesis 6. Table 14 summarizes the hypotheses for this study.
Table 14

*Summary Results of Hypothesis Tests*

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H01 – Relationship between EI and leadership effectiveness.</td>
<td>Reject the Null.</td>
</tr>
<tr>
<td>H02 – Relationship between age, EI, and leadership effectiveness.</td>
<td>Fail to Reject the Null.</td>
</tr>
<tr>
<td>H03 – Relationship between gender, EI, and leadership effectiveness.</td>
<td>Fail to Reject the Null.</td>
</tr>
<tr>
<td>H04 – Relationship between years of research administration work experience, EI, and leadership effectiveness.</td>
<td>Fail to Reject the Null.</td>
</tr>
<tr>
<td>H05 – Relationship between total years of professional work experience, EI, and leadership effectiveness.</td>
<td>Reject the Null.</td>
</tr>
<tr>
<td>H06 – Relationship between age, gender, research administration work experience, and total years professional work experience, EI, and leadership effectiveness.</td>
<td>Fail to Reject the Null.</td>
</tr>
</tbody>
</table>

**Summary**

Descriptive and inferential statistics were performed on the research data using SPSS 20.0. The general description of the participants (N = 30) for this study is: female-White, between 30-39 years of age, holding a master’s degree, with over 9 years of research administration work experience, possessed nearly 21 years of professional work history, and had a mean “average – adequate emotional intelligence” level of emotional intelligence.
The summary results of research question 1 total (overall) EQ-i mean score was 103.47. The EI composite scores ranked from highest to lowest as Intrapersonal, Adaptability, General Mood, Stress Management, and Interpersonal. For the EI subscale scores, in ranking order from top three highest scores to bottom three lowest scores, the high scores were Independence, followed by Emotional Self-Awareness, and Flexibility. The lowest scores were: Interpersonal Relationships, Social Responsibility, and Empathy.

The summary results of research question 2 for leadership effectiveness demonstrated a mean average of M = 45.81 for all components of the Leadership Practices Inventory for this study. According to Kouzes and Posner (2004), these scores are suggestive of a “very high” level of leadership effectiveness. Analysis revealed, in ranking order on a “60 point scale” from highest to lowest, for The Five Practices, Enable Others to Act had the highest mean component score followed by Encourage the Heart, Model the Way, Challenge the Process, and the lowest score was Inspire a Vision.

There were significant differences noted in Hypothesis 1 and Hypothesis 6. Correlations between Total EI, Composite, Subscale scores, and The Five Practices for senior level university research administrators suggested that Interpersonal (Composite) is significantly correlated with Enable Others to Act; and on the subscale score, Empathy is significantly correlations with Enable Others to Act; Social Responsibility is significantly correlated with Enable Others to Act; Impulse Control is significantly correlated with Enable Others to Act and Encourage the Heart; Adaptability is significantly correlated with Enable Others to Act; Problem Solving is significantly correlated with Enable Others to Act; General Mood is significantly correlated with Enable Others to Act; and, Optimism is significantly correlated with Enable Others to
Act. The regression analyses suggest that the emotional intelligence competency of Social Responsibility is the best predictor of Enable Others to Act. The Enable Others to Act component accounts for over 52% of the variance.

The purpose of this study was to investigate the relationship of emotional intelligence on senior sponsored research administration professionals’ perceived leadership effectiveness. This chapter provided a summation of the results, answered the research question posited, and tested the six hypotheses presented at the study’s introduction. The next chapter (Chapter V) will summarize the study, discuss results, and draw conclusions based on the data presented in this chapter. Implications for the research administration field, limitations, and recommendations for future study will also be expounded upon.
CHAPTER V
RESULTS AND CONCLUSIONS

Introduction

This chapter summarizes the research and draw conclusions based on the data presented in Chapter IV, in relation to each research question and its respective hypothesis. Additionally, the limitations of the study are addressed, along with recommendations for future studies for the sponsored research administration profession.

The purpose of this study was to investigate the relationship of emotional intelligence on senior sponsored research administration professionals’ perceived leadership effectiveness. A better, more succinct, understanding of this relationship will enhance the working relationships within a sponsored research office and thereby improve self-efficacy and overall office efficiency.

Lopes, et al. (2006) suggested that research examining emotional intelligence (EI) among members of a work group may be beneficial in explaining their interactions and performance. A study of the available literature showed that there is no explicit articulation of this relevance of emotional intelligence for leadership effectiveness in the higher education context. Therefore, the central aim of this study was to explore the nature of the relationship between emotional intelligence and leadership effectiveness within a higher education setting.

Discussion

For the purpose of this study, the following questions were investigated and restated to guide in the discussion:
1. How do senior level university sponsored research administrators rate their level of emotional intelligence for total (overall) emotional intelligence, the five composite scores (Intrapersonal, Interpersonal, Adaptability, Stress Management, and General Mood), and the 15 subscales of (a) Self-Regard, (b) Emotional Self-Awareness, (c) Assertiveness, (d) Independence, (e) Self-Actualization, (f) Empathy, (g) Social Responsibility, (h) Interpersonal Relationship, (i) Reality Testing, (j) Flexibility, (k) Problem Solving, (l) Stress Tolerance, (m) Impulse Control, (n) Optimism, and (o) Happiness as measured by the Bar-On (1997) Emotional Quotient Inventory (EQ-i)?

2. How do senior level university sponsored research administrators rate their level of leadership effectiveness, as measured by the Kouzes and Posner (2003) Leadership Practices Inventory (LPI) on The Five Practices: (a) Model the Way, (b) Inspire a Shared Vision, (c) Challenging the Process, (d) Enable Others to Act, and (e) Encourage the Heart?

3. Is there a relationship between emotional intelligence, as measured by the Bar-On (1997) Emotional Quotient Inventory (Bar-On EQ-i) and leadership effectiveness, as measured by the Kouzes and Posner (2003) Leadership Practices Inventory (LPI) among senior level university sponsored research administrators?

4. Does age influence senior level university sponsored research administrators’ levels of emotional intelligence and their levels of leadership effectiveness?
5. Does gender influence senior level university sponsored research administrators’ levels of emotional intelligence and their level of leadership effectiveness?

6. Does the level of education influence senior level university sponsored research administrators’ levels of emotional intelligence and their level of leadership effectiveness?

7. Do the number years of research administration work experience influence senior level university sponsored research administrators’ levels of emotional intelligence and their level of leadership effectiveness?

8. Do the number years of work in professional work environment influence senior level university sponsored research administrators’ levels of emotional intelligence and their level of leadership effectiveness?

9. What is the relationship between senior level university sponsored research administrators’ age, gender, level of education, years of research administration work experience, and total years of professional work experience on emotional intelligence and their level of leadership effectiveness?

A correlation design and descriptive methodology were used to examine the relationship between the two constructs and also to evaluate the overall level emotional intelligence of senior sponsored research administrator as self-perceived by the senior sponsored research administrators. In this study, the dependent variables were examined for variances and correlations using the Bar-On (1997) Emotional Intelligence Inventory (EQ-i) and the Kouzes and Posner (2003) Leadership Practices Inventory (LPI).
The EQ-i scores included overall EI scores, as well as composite and subscale scores; while, the LPI included the five practices of leadership. The independent variables used in this study were collected using a demographic questionnaire (Appendix B) developed by the investigator. The independent variables included age, race, gender, type of degree earned, years of research administration work experience, and combined number of years of professional work experience. Variables for race/ethnicity and level of education variable were determined to be categorical with no underlying assumptions and were therefore removed from the regression analyses. The first stage of the analyses examined demographic data. The second stage examined the relationship between emotional intelligence and leadership effectiveness using regression analyses. The investigator acknowledges that small sample size may have resulted in inaccurate findings, possibly leading to a Type 2 error.

The research questions presented at the start of this study asked whether there was statistically significant evidence to support the hypothesized relationship between emotional intelligence and leadership effectiveness. Regression analyses support the inference that there is a statistically significant positive correlation between emotional intelligence and leadership effectiveness among senior level university sponsored research administrators.

*Senior Research Administrators and Bar-On EQ-i*

Bar-On (2004) explained that, “the evolution of the EQ-I began in 1980 with the independent development of a theoretically eclectic and multi-factorial approach to operationally defining and quantitatively describing emotional intelligence” (p. 1). For this study, the participants’ mean score was well within the “average” range and
suggestive of “adequate emotional capacity” (as per Table 8). Bar-On (2004) maintains that individuals who display “adequate emotional capacity, are individuals who are in touch with their feelings, generally successful in relating to people, and fairly successful in solving problems” (p.43).

Further examination of the five composite scores revealed that senior university research administrators exhibited average emotional intelligence on all composite scores. Intrapersonal and Adaptability ranked highest among senior university research administrators and suggest that they are “strong, confident, and feel positive about what they are doing in their lives” (p. 44). Additionally, research administrators are “flexible, realistic, competent at arriving at adequate solutions, and find good ways of dealing with everyday difficulties” (p. 44). General Mood, Stress Management, and Interpersonal composites scores indicated that research administrators are “positive, create an uplifting and positive workplace, and handle tasks that are stressful.” They also, “have good social skills, understand, interact, and relate well with others” (p. 44).

The 15 subscales of the EQ-I offered a closer, more detailed discussion of research administrator’s level of emotional intelligence. The analysis found the top three sub-composite scores (in ranking order from highest to lowest) of Independence, Emotional Self-Awareness, and Flexibility indicative of those characteristics described by Bar-On (2004) as “being self-reliant, rarely depends upon others to make important decisions, understands what they are feeling and why they are feeling this way, able to adjust to changing situations” (pp. 45-46). The data analysis also revealed that the bottom three sub-composite scores (in ranking order from highest to lowest) were Interpersonal Relationship, Social Responsibility, and Empathy.
Bar-On (2004) suggest research administrators have a need for improving in the areas of “establishing and maintaining mutually satisfying relationships, becoming more cooperative, contributing, and constructive members of their social group; appreciating the feelings others” (p. 45). The bottom three subscale scores are parts of the Interpersonal subscale, which was found to have the lowest mean score of the five composite subscale scores.

Senior Research Administrators and LPI

Kouzes and Posner (1995) asserted that the leadership challenge is about how do leaders mobilize others to do and get things done in an organization? The mean average for the Five Practices of the LPI were suggestive of a “moderately high” level of leadership effectiveness. The data analysis determined that Five Practices (in ranking order from highest to lowest) were, Enable Others to Act had the highest mean; followed by Encourage the Heart, Model the Way, Challenge the Process, and Inspire a Vision.

Enable Others to Act

The regression analyses suggested that the emotional intelligence competency of Social Responsibility is the best predictor of Enable Others to Act. The Enable Others to Act component accounts for over 52% of the variance. Total Emotional Intelligence is correlated with Enable Others to Act and Encourage the Heart, both of which are highly emotional leadership behaviors.

Enable Others to Act is a leadership practice this is related to one’s emotions. This clearly suggests that, for this research sample, emotional intelligence is highly correlated with leadership effectiveness. Enabling others is about fostering collaboration by building trust and facilitating relationships; and about strengthening others by
increasing self-determination and developing competence. The six leadership behaviors related to Enabling Others to Act are (a) develops cooperative relationships, (b) actively listens to diverse points of view, (c) treats others with dignity and respect, (d) supports decisions other people make, (e) gives people choice about how to do their work, and (f) ensures that people grow in their jobs (Kouzes & Posner, 2004, p. 211). Kouzes and Posner (1992) offer that individuals must “enable others to act” by “leading with love” by (a) getting to know your followers, (b) develop your interpersonal awareness of self, (c) treat constituents as your clients, (d) help others to acquire new skills and information, (e) teach others how to solve their problems, (f) trust others to use their own best judgment, (g) working together in an atmosphere of trust and collaboration, and (h) love people (Kouzes & Posner, 1992, p. 481). Furthermore, Kouzes and Posner’s (2004) practice of Enable Others to Act appears analogous with Goleman’s (2002) EI competency of Relationship Management.

Encourage the Heart

Encouraging the Heart is concerned with recognizing contributions by showing appreciation for individual excellence; and celebrating the values and the victories by creating a spirit of community (Kouzes & Posner, 2004, p. 211). Essentially, Encouraging the Heart is about relationships, which is essential for effective leadership. The six items in the LPI that measures for Encouraging the Heart are (a) praises people for a job well done, (b) expresses confidence in people’s abilities, (c) creatively rewards people for their contributions, (d) recognizes people for commitment to shared values, (e) finds ways to celebrate accomplishments, and (f) gives team members appreciation and support (Kouzes & Posner, 2004, p. 211).
Kouzes and Posner’s 1999 book, *Encouraging the Heart: A Leader’s Guide to Rewarding and Recognizing Others*, describes principles and practices behind this work: look for encouragement, set clear standards, expect the best, pay attention, tell the story, personalize recognition, celebrate together, and set the example. The authors go on to explain that,

Encouraging the Heart is about the principles and practices that support the basic human need to be appreciated for what we do and who we are. Encouragement is absolutely essential to sustaining people’s commitment to organizations and outcomes. Encouraging the heart is about the dichotomous nature of leadership. It’s about toughness and tenderness. Guts and grace. Firmness and fairness. Fortitude and gratitude. Passion and compassion. And it’s about achieving sustainable results that would otherwise be impossible to imagine or comprehend. In the end, there’s nothing soft about Encouraging the Heart – It’s a hard requirement for anyone who aspires to lead others, their organization and their communities, to greatness. (p. 1)

**Hypotheses**

**Hypothesis #1- Emotional Intelligence and Leadership Effectiveness**

The results of null Hypothesis 1 regression analysis data indicated that Total (overall) EQ, Interpersonal (Composite), Empathy, Social Responsibility, Impulse Control, Adaptability, Problem Solving, General Mood, and Optimism are significantly correlated with leadership effectiveness.
The findings suggest that for this study research administrators were effective in areas of awareness of and appreciative of others’ feelings, cooperativeness, ability to resist or delay impulses, deferring drives and temptations to act, adept at recognizing and defining problems, implementing potentially effective solutions, and maintaining a positive attitude.

Hypothesis #2 – Age, Emotional Intelligence, and Leadership Effectiveness

In terms of senior research administrators’ leadership practices and EI scores, no statistically significant differences were identified among age groups, which is consistent with earlier research studies (Bumphus, 2008; Katasapis, 2008; Lin, 2005; Muhammad, 1996).

Hypothesis #3 – Gender, Emotional Intelligence, and Leadership Effectiveness

In terms of senior research administrators’ leadership practices and EI scores, no statistically significant differences were identified between male and female respondents, which is consistent with earlier research studies (Bumphus, 2008; Katasapis, 2008; Lin, 2005; Muhammad, 1996; Weinberger, 2003).

Hypothesis #4 – Years of Research Administration Work Experience, Emotional Intelligence, and Leadership Effectiveness

In terms of senior research administrators’ leadership practices and EI scores, no statistically significant differences were identified among senior university-sponsored research administrators’ years of research administration work experience for this study. This may suggest that while research administrators have achieved a senior role, their time spent in the research administration profession may not have been for a long period of time.
Hypothesis #5 – Total Number of Years of Professional Work Experience, Emotional Intelligence, and Leadership Effectiveness

In terms of senior research administrators’ leadership practices and EI scores, a statistically significant correlation was identified among senior university sponsored research administrators’ total number of years of professional work experience. In terms of total years of professional work experience, this study found that total (overall) emotional intelligence increased significantly with the more years worked. This might also suggest an underlying correlation that overall emotional intelligence might increase as one becomes older. Additionally, this finding may suggest that senior research administrators did not began their professional work career in sponsored research administration. The respondents’ level of education was not included in the data analysis because level of education was a categorical variable. However, research administrator’s prior work history was relevant in this research study. It is from these previous years of employment that the profession of research administration can benefit the most by bringing in a particular knowledge component. For example, an attorney would offer a wealth of contractual and legal knowledge or an engineer would offer strong analytical skills to the sponsored research team.

Hypothesis #6 – Age, Gender, Years of Research Administration Work Experience, and Total Number of Years of Professional Work Experience, Emotional Intelligence, and Leadership Effectiveness

In terms of senior research administrators’ leadership practices and EI scores, no statistically significant differences were identified among senior university sponsored
research administrators’ age, gender, years of research administration work experience, and total number of years of professional work experience.

The girth of emotional intelligence research contends there is a strong significantly positive correlation between emotional intelligence and leadership effectiveness (Bass & Avolio, 1994; Lin, 2005; Scott, 2004; Weinberger, 2003; Whitman, 2009). The results of this study are consistent with previous research on the positive relationship between emotional intelligence and leadership effectiveness; therefore, higher levels of emotional intelligence could be beneficial in improving leadership effectiveness.

Ancillary Note

It was interesting that EQ-i scores for stress management, intrapersonal (composite) or stress tolerance were found not to be significantly correlated with any component of the LPI for leadership effectiveness. As mentioned in Chapter I, the role of the research administrator is highly complex and often times extremely stressful. The sponsored research office environment requires research administrators to effectively manage stress and possess a high stress tolerance to be manage the multiple, multi-layered sponsored research projects.

Conclusions/Implications

The term emotional intelligence (EI) was coined by Dr. Reuven Bar-On in 1985 to describe his personal approach to assessing the aspect of general intelligence. Later, Salovey and Mayer (1990) espoused that emotional intelligence comprises one’s ability to perceive and understand emotions and emotional knowledge, the ability to have such a grasp of one’s own emotions that they are able to promote an intellectually emotional
environment, and to access and generate emotions so as to assist thought. Research on upper and middle managers in business and industry suggests that the presence of emotional intelligence competencies and the ability to manage them is what distinguishes effective leaders from ineffective ones (Goleman et al., 2002). But do the same emotional intelligence competencies offer the same marks of distinction for senior level university sponsored research administrators? Are some competencies more important to effective leadership than others? Is one competency more critical than the others? Do senior level university sponsored research administrators who are self-perceived as effective leaders exhibit high levels of emotional intelligence?

University sponsored research administration functions as a vital component of research intensive university setting, especially in the areas of economic development and scholarly research activity, yet these entities have remained understudied and higher education milieu. Thus, the focus of this research study was to explore the relationship between emotional intelligence and leadership effectiveness among senior sponsored research professionals at post-secondary institutions within the southeastern United States.

The research literature and results of this study indicated that there may not be a definitive model of emotional intelligence that will capture all of the factors or components that make for an emotionally effective leader. However, research administrators, more than ever before, are inundated with vastly enormous challenges and potential crisis given the more than $200 billion per year in government grants.
Tauginiene (2009) surmised,

The essential function of the research administrator consists mainly of rendering assistance to faculties in conducting research and representation of university interests. However, the conditions for the implementation of research vary, new challenges and opportunities continually arise, and thus the competences of the research administrator must change to reflect these transformations: he/she must take on the roles of manager, lawyer, financier, or quasi-researcher. The role of the research administrator varies across all steps of the managerial cycle, hence becoming multifaceted. The research administrator’s explicit responsibility is to promote research at the university. Research administrators are an integral part of the university research culture, working with faculties directly as well as indirectly. (p. 54)

The results of the RACC (2008) study knowledge areas demonstrate that four of the top five knowledge areas of Communication, Organizational, Analytical and Interpersonal skills are parallels of Bar-On (1997) EI components of Adaptability, Flexibility, and Interpersonal Relationship, as well as Kouzes and Posner’s (2003) Five Practices of Exemplary Leadership: Enabling Others to Act, Encourage the Heart, Model the Way, Challenge the Process, and Inspire a Vision.

Kouzes and Posner (1992) declared that “the fundamental notion of what comprises transformational (versus transactional) leadership is that through interaction with the leader, other people (constituents) are elevated to a higher plane—be it emotionally, intellectually, physically, or performance based” (p. 480). Senior level research administration should, therefore, continue to direct more of their efforts on
developing individuals, showing them how to improve their performance, and helping to connect their goals to the goals of the organization (“Enable Others to Act”).

Credibility is the foundation of effective leadership. If subordinates do not believe in the leader, then they will not believe in the leader’s message. The job of the leader is to empower others, enable others, and make them feel capable and efficacious (Kouzes & Posner, 1995). Leadership research (Bass & Avolio, 1994; Burns, 1978; Drucker, 1999; Goleman, et al., 2002; Kouzes & Posner, 1995) has indicated that when leaders do this people become engaged in their work and are more satisfied. Conversely, when leaders try to control others, micromanage employees, then subordinates often become distrusting of leadership. As a result, Kouzes and Posner (1995) suggested that “subordinates chose to comply, but do not fully commit to the leader’s plan for the organization” (p. 135).

Emotional intelligence is an important concept within the realms of leadership development. Cole (2007) contended that the results of the Delphi study gave recommendations from the research faculty perspective for the improvement in the system of research administration and faculty relationships and suggested that administrators and research faculty should view each other as team members whose objectives are to discover. Bordage et al. (2000) research study results of 139 upper-level health care administrators offered a list of skills and attributes considered most relevant when hiring program directors and for evaluating health care training programs. The respondents indicated that the most desirable overall attributes of the directors -- in relations to others -- were: honest/ethical, respectful of others, empathetic and compassionate, and listener. Muhammad (1996) found that the older, more experienced
research administrator exhibited a higher level of decision making skills than did the more novice administrator.

The sponsored research profession is made up of a myriad of responsibilities, complexities, and personalities. It is these challenges that offer the greatest need for an inextricable balance between leadership and managerial processes among the key decision makers within sponsored research offices. As such, sponsored research office directors rely on their past experiences, attitude, and value system when making short- and long-term choices, and these actions impact how others (e.g., research administrators) view their effectiveness as a leader. The implication is that the level of emotional intelligence exhibited by the director and assistant/associate director is at the foundation of an effective decision-making process (leadership) within the sponsored research environment.

Senior research administrators are now, more than ever, being faced with profusely increasingly difficult issues within the scope of their daily work processes, (i.e., like meeting deadlines, complying with the regulations and norms, ethical dilemmas, budgetary issues and restraints, and legal provisions) (Abbott, 1988). In addition, senior research administrators must also cope with consistently changing and varying requirements of the researcher or investigator. The senior research administrator, thus, must display all aspects of an effective leader to handle the various issues of administration, financial management, and compliance, while seeking additional sources of external funding. Therefore, undoubtedly it is essential that a senior research administrator integrate leadership values and emotional intelligence in order to cope with the daily challenges that the position offers.
Sponsored research administration offices must be about building partnerships with all parties involved in the external funding processes. It is from these collaborative partnerships that senior research administrator learn where the most critically important areas of need are, based on the needs and priorities of the village. Therefore, it would prove difficult for a senior sponsored research administrator to enter an actual research setting and decide what the most pressing need is, and what the research priority should be. Since senior sponsored research administrators do not make the decisions or carry out the research, research administration efforts are focusing on enabling others to act.

The process of enabling others to act involves consultation between sponsored research officers and research investigators; to identifying and matching research funding opportunities with the research investigator’s level of expertise; providing assistance to investigators who already have a research agenda; formalizing and standardizing, when possible, the processes between college or university, research investigator, and grantor; and, involving others to allow them to become part of the process (Goleman, 1995; Kouzes & Posner, 1995).

Effective research administrators must use their emotional intelligence to effectively manage themselves as well as other members of the sponsored research organization. The results of this study make replication of these findings mandatory. While the findings of the current study provided some small evidence for the relationship between EI and effective leadership, a better understanding of the relationship between the two constructs will better serve the training and development need of research administrative personnel and potentially increase office productivity, longevity of the research administrator, job performance, and efficiency. The awareness gained from this
study may also be used by research administration organization to enhance leadership effectiveness at college, university, and regional/national leadership training conferences for research administrators.

Limitations

For the purpose of this study, the following limitations were noted:

First, the external validity of this study was very limited due to the small sample size (n = 30). Therefore, the results of this study could not be generalized with regard to implications for research administrator. Second, the participant sample was limited to senior university research administrators from colleges and universities located in selected states in the southeastern U.S. Third, the survey instruments used in this study were “self-reporting” only. Finally, the combined length of the survey instruments may have caused “test exhaustion” or “test fatigue,” given the individual participants’ workload.

Recommendations for Future Research

Based on this study’s data analysis and findings, the following recommendations are made for future study:

1. The participant sample for this study were senior university research administrators from the southeastern U.S. The study should be replicated to include participants from the entire United States.

2. The participant sample was limited to only senior level research administrators who self-reported. The study should be replicated to include both Self and Observer surveys for the Kouzes and Posner Leadership Practices Inventory.

3. Since this study was limited to only college and university administrators, it
would be interesting to learn the results comparing research administrators from higher education, private industry, government (local, state, or federal), medical research facilities, and hospitals.

4. Qualitative research investigations of emotional intelligence may offer a different perspective to the body of research.

5. The robustness of the United States economy declined and has remained relatively flat in recent years. This decline has seen cuts to many federal and non-federal grant-funded research programs. A study should be conducted to investigate what impact the economic picture plays in the perception of key decision makers of senior university leaderships’ (i.e., President, VP for Research, Directors, Dean, Chairs) ability to attract external funding.

6. While gender was not used as a factor in the statistical analysis, as demonstrated in the current research study, the number of female research administrators far exceeded male research administrators. However, it appears, based on the invitations for participation in the current study, that nearly all positions beyond the director’s level were held by males. Further research studies may be needed focusing on gender research related to emotional intelligence and leadership effectiveness, particularly within the higher education profession.
APPENDIX A

HUMAN SUBJECTS APPROVAL (USM)

THE UNIVERSITY OF
SOUTHERN MISSISSIPPI

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS 34906-0001
Phone: 601.266.6820 | Fax: 601.266.4377 | www.usm.edu/irb

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months. Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 11102402
PROJECT TITLE: The Relationship Between Emotional Intelligence and Leadership Effectiveness Among Sponsored Research Administrators
PROJECT TYPE: Dissertation
RESEARCHER/S: Ventez Jones
COLLEGE/DIVISION: College of Education & Psychology
DEPARTMENT: Educational Studies & Research
FUNDING AGENCY: N/A
IRB COMMITTEE ACTION: Exempt Approval
PERIOD OF PROJECT APPROVAL: 11/02/2011 to 11/01/2012

[Signature]

Lawrence A. Hosman, Ph.D.
Institutional Review Board Chair
Dear Sir or Madam:

Please take a brief moment to complete the following demographic profile by placing an "X" next to the option that applies to you. Please do not leave any answers blank.

1. **Age:**
   1. _____ 16-29
   2. _____ 30-39
   3. _____ 40-49
   4. _____ 50 years and older

2. **Race/Ethnic Origin:**
   1. _____ American Indian/Alaskan Native
   2. _____ Asian or Pacific Islander
   3. _____ Black, not of Hispanic Origin
   4. _____ Hispanic
   5. _____ White, not of Hispanic Origin
   6. _____ Other

3. **Gender:**
   1. _____ Male
   2. _____ Female

4. **Type Degree Earned (if more than one, indicate most recent degree):**
   1. _____ Ph.D./Ed.D
   2. _____ J.D.
   3. _____ Ed.S. (Specialist)
   4. _____ Masters
   5. _____ Bachelors
   6. _____ Associates
   7. _____ Other

5. **Total number of years of research administration work experience:**

6. **Combine years of professional work experience:**
APPENDIX C

BAR-ON EMOTIONAL QUOTIENT INVENTORY (Bar-On EQ-i) SAMPLE

Introduction

The Bar-On EQ-i consists of statements that provide you with an opportunity to describe yourself by indicating the degree to which each statement is true of the way you feel, or act most of the time and in most situations. There are five possible responses to each sentence:

1. Very seldom or Not true of me
2. Seldom true of me
3. Sometimes true of me
4. Often true of me
5. Very often true of me or True of me

Instructions

Read each statement and decide which one of the five possible response best describes you. Mark your choices on the answer sheet by filling in the circle containing the number that corresponds to your answer.

If a statement does not apply to you, respond in such a way that will give the best indication of how you would possibly feel, think, or act. Although some of the sentences may not give you all the information you would like to receive, choose that response that seems the best, even if you are not sure. There are no “right” or “wrong” answers and no “good” or “bad” choices. Answer openly and honestly by indicating how you actually are and not how you would like to be or how you would like to be seen. There is no time limit, but work quickly and make sure that you consider and respond to every statement.

1. My approach in overcoming difficult is to move step by step.
2. It is hard for me to enjoy life.
3. I prefer a job in which I’m told pretty much what to do.
4. I know how to deal with upsetting problems.
5. I feel sure of myself in most situations.
6. I try to see things as they really are, without fantasizing or daydreaming about them.
7. I am in touch with my emotions.
8. I am unable to show affection.
9. I feel sure of myself in most situations.
10. I have a feeling that something is wrong with my mind.
11. It is a problem controlling my anger.
14. It is difficult for me to begin new things.
15. When faced with a difficult situation, I like to collect all the information about it that I can.
16. I like helping people.
17. It is hard for me to smile.
18. I am unable to understand the way other people feel.
19. When working with others, I tend to rely more on their ideas than my own.
20. I believe that I can stay on top of tough situations.
21. I really don’t know what I’m good at.
22. I am unable to express my ideas to others.
23. It is hard for me to share my deep feelings with others.
24. I lack self-confidence.
25. I think I’ve lost my mind.
26. I am optimistic about most things I do.
27. When I start talking, it’s hard to stop.
28. It is hard for me to make adjustments in general.
29. I like to get an overview of a problem before trying to solve it.
30. It does bother me to take advantage of people, especially if they deserve it.
31. I am a fairly cheerful person.
32. I prefer others to make decisions for me.
33. I can handle stress, without getting too nervous.
34. I have good thought about everyone.
35. It is hard for me to understand the way I feel.
36. In the past few years, I’ve accomplished little.
37. When I’m angry with others, I can tell them about it.
38. I have had strange experiences that can’t be explained.
39. It is easy for me to make friends.
40. I have good self-respect.
41. I do very weird things.
42. My impulsiveness creates problems.
43. It is difficult for me to change my opinion about things.
44. I am good at understanding the way other people feel.
45. When facing a problem, the first thing I do is stop and think.
46. Others find it hard to depend on me.
47. I am satisfied with my life.
48. It is hard for me to make decisions on my own.
49. I don’t hold up well under stress.
50. I don’t do anything bad in my life.
51. I don’t get enjoyment from what I do.
52. It is hard to express my intimate feelings.
53. People don’t understand the way I think.
54. I generally hope for the best.
55. My friends can tell me intimate things about themselves.
56. I don’t feel good about myself.
57. I see these strange things that other don’t see.
58. People tell me to lower my voice in discussions.
59. It is easy for me to adjust to new conditions.
60. When trying to solve a problem, I look at each possibility and then decide on the best way.
61. I would stop and help a crying child find his or her patents, even if I had to be somewhere else at the same time.
62. I am fun to be with.
63. I am aware of the way I feel.
64. I feel that it’s hard for me to control my anxiety.
65. Nothing disturbs me.
66. I don’t get that excited about my interests.
67. When I disagree with someone, I’m able to say so.
68. I tend to face out and lose contact with what happens around me.
69. I don’t get along well with others.
70. It is hard for me to accept myself just the way I am.
71. I feel cut off from my body.
72. I care what happens to other people.
73. I am impatient.
74. I am able to change old habits.
75. It is hard for me to decide on the best solution when solving problems.
76. If I could get away with breaking the law in certain situations, I would.
77. I get depressed.
78. I know how to keep calm in difficult situations.
79. I have not told a lie in my life.
80. I am generally motivated to continue even when things get difficult.
81. I try to continue and develop those things that I enjoy.
82. It is hard for me to say “no” when I want to.
83. I get carried away with my imagination and fantasies.
84. My close relationship means a lot to me and to my friends.
85. I am happy with the type of person I am.
86. I have strong impulses that are hard to control.
87. It is generally hard for me to make changes in my daily life.
88. Even when upset, I’m aware of what’s happening to me.
89. In handling situations that arise, I try to think of as many approaches as I can.
90. I am able to respect others.
91. I am not that happy with my life.
92. I am more of a follower than a leader.
93. It is hard for me face unpleasant things.
94. I have not broken a law of any kind.
95. I enjoy those things that interest me.
96. It is fairly easy for me to tell people what I think.
97. I tend to exaggerate.
98. I am sensitive to the feelings of others.
99. I have good relations with others.
100. I feel comfortable with my body.
101. I am a very strange person.
102. I am impulsive.
103. It is hard for me to change my ways.
104. I think it’s important to be a law-abiding citizen.
105. I enjoy weekends and holidays.
106. I generally expect things will turn out all right, despite setbacks from time to time.
107. I tend to cling to others.
108. I believe in my ability to handle most upsetting problems.
109. I have not been embarrassed for anything that I’ve done.
110. I try to get as much as I can out of those things that I enjoy.
111. Others think that I lack assertiveness.
112. I can easily pull out of day dreams and tune into the reality of the immediate situation.
113. People think that I’m sociable.
114. I am happy with the way I look.
115. I have strange thought that no one can understand.
116. It is hard for me to describe my feelings.
117. I have got a bad temper.
118. I generally get stuck when thinking about different ways of solving problems.
119. It is hard for me to seep people suffer.
120. I like to have fun.
121. I seem to need other people more than they need me.
122. I get anxious.
123. I don’t have bad days.
124. I avoid hurting other people’s feelings.
125. I don’t have a good idea of what I want to do in life.
126. It is difficult for me to stand up for my rights.
127. It is hard for me to keep things in the right perspective.
128. I don’t keep in touch with friends.
129. Looking a both my good points and bad points, I feel good about myself.
130. I tend to explode with anger easily.
131. It would be hard for me to adjust if I were forced to leave my home.
132. Before beginning something new, I usually feel that I’ll fail.
133. I responded openly and honestly to the above sentences.

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APPENDIX D

LEADERSHIP PRACTICES INVENTORY (LPI) SAMPLE

Introduction

The Leadership Practices Inventory (LPI) Survey (Self) consists of thirty statements describing various leadership behaviors. The RATING SCALE runs from 1 to 10 as follows:

1. Almost Never
2. Rarely
3. Seldom
4. Once in a While
5. Occasionally
6. Sometimes
7. Fairly Often
8. Usually
9. Very Frequently
10. Almost Always

Instructions

Please read each statement carefully, and using the RATING SCALE (above), ask yourself:
HOW FREQUENTLY DO I ENGAGE IN THE BEHAVIOR DESCRIBED?

Additionally,

- Be realistic about the extent to which you actually engage in the behavior
- Be as honest and accurate as you can be
- DON NOT answer in terms of how you would like to behave or in terms of how you think you should behave
- DO answer in terms of how you typically behave on most days, on most projects, and with most people
- Be thoughtful about your responses. For example, giving yourself 10s on all items is most likely not an accurate description of your behavior. Similarly, giving yourself all 1s or all 5s in most likely not an accurate description either. Most people will do some things more or less than they do other things.
- If you feel that a statement does not apply to you, it’s probably because you don’t frequently engage in the behavior. In that case, assign a rating of 3 or below.

For each statement, decide on a response and then record the corresponding number in the box to the right of the statement. After you have responded to all thirty statements, go back through the LPI one more time to make sure you have responded to each statement. Every statement must have a rating.

Questions

To what extent do you typically engage in the following behaviors? Choose the response that best applies to each statement and record it in the box to the right of that statement.
1. I set a personal example of what I expect of others.
2. I talk about future trends that will influence how our work gets done.
3. I seek out challenging opportunities that test my own skills and abilities.
4. I develop cooperative relationships among the people I work with.
5. I praise people for a job well done.
6. I spend time and energy making certain that the people I work with adhere to the principles and standards we have agreed on.
7. I describe a compelling image of what our future could be like.
8. I challenge people to try out new and innovative ways to do their work.
9. I actively listen to diverse points of view.
10. I make it a point to let people know about my confidence in their abilities.
11. I follow through on the promises and commitments that I make.
12. I appeal to others to share an exciting dream of the future.
13. I search outside the formal boundaries of my organization for innovative ways to improve what I do.
14. I treat others with dignity and respect.
15. I make sure that people are creatively rewarded for their contributions to the success of our projects.
16. I ask for feedback on how my actions affect other people’s performance.
17. I show others how their long-term interests can be realized by enlisting in a common vision.
18. I ask “What can we learn?” when things don’t go as expected.
19. I support the decisions that people make on their own.
20. I publicly recognize people who exemplify commitment to shared values.
21. I build consensus around a common set of values for running our organization.
22. I paint the “big picture” of what we aspire to accomplish.
23. I make certain that we set achievable goals, make concrete plans, and establish measurable milestones for the projects and programs that we work on.
24. I give people a great deal of freedom and choice in deciding how to do their work.
25. I find ways to celebrate accomplishments.
26. I am clear about my philosophy of leadership.
27. I speak with genuine convention about the higher meaning and purpose of our work.
28. I experiment and take risks, even when there is a chance of failure.
29. I ensure that people grow in their jobs for learning new skills and developing themselves.
30. I give the members of the team lots of appreciation and support for their contributions.
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