Pepperdine University

Graduate School of Education and Psychology

A CORRELATION STUDY OF EMOTIONAL INTELLIGENCE AND BEHAVIORAL STYLE OF BIO-PHARMACEUTICAL INDUSTRY DISTRICT SALES MANAGERS

A dissertation submitted in partial satisfaction
of the requirements for the degree of
Doctor of Education in Organizational Leadership

by

Greg Megowan

September, 2012

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ABSTRACT

This study explored to what extent, if at all, there was a relationship between District Sales Managers' (DMs) emotional intelligence (EQ) and their behavioral style, at Phyogen, Inc. Research demonstrated that leaders with higher levels of emotional intelligence are rated as more effective leaders (Kerr, Garvin, Heaton, & Boyle, 2005; Rosete & Ciarrochi, 2005). The literature also shows that EQ can in fact be learned and developed (Bradberry & Greaves, 2003; Cooper, 1997; Dulewicz & Higgs, 2000; Dulewicz & Higgs, 2004; Goleman, 1998; Groves, McEnrue, & Shen, 2006). In addition, emotional intelligence has been found to have a direct association with transformational leadership (Barling, Slater, & Kelloway, 2000; Palmer, Walls, Burgess, & Stough, 2001; Brown & Moshavi, 2005). Transformational leadership was demonstrated to increase organizational innovation in the pharmaceutical industry (Garcia-Morales, Matias-Reche, & Hurtado-Torres, 2008). The objective of the study was to identify whether or not the resulting correlations between leadership behavioral style and level of EQ could be used to help Phyogen, Inc. with future leadership identification, as well as be used to help increase the level of EQ with its current DM population.

The population studied was District Sales Managers at Phyogen, Inc. with at least 1 year of experience. The DiSC® Classic 2.0 assessment was employed to measure District Sales Managers' behavioral style and the Bar-On EQ-i® assessment was used to measure District Sales Managers' 6 primary emotional intelligence scores. An Analysis of Variance (ANOVA) and Pearson's Correlations were used to identify any possible relationship between behavioral style and emotional intelligence variables in this study.

Partial correlations were also employed to control for any effects associated with either age or gender.

The study did not demonstrate any direct correlation between overall leadership behavioral style (DiSC$^{®}$ Classic Pattern), and the corresponding level of emotional intelligence of District Sales Managers using the Bar-On EQ-i$^{®}$ assessment. However, this study did reveal that specific domains within the DiSC$^{®}$ behavioral classic pattern (*D, i, S, C*) positively or negatively correlated to specific areas of emotional intelligence. Results of the study may be helpful in future leadership identification, as well as development of current District Sales Managers as they deal with such changing and complex issues as comprehensive healthcare reform.

Chapter 1: Background

According to George (2007), “An enormous vacuum in leadership exists today—in business, politics, government, education, religion, and nonprofit organizations. Yet there is no shortage of people with the capacity for leadership” (p. xxiv). The challenge for organizations in today’s turbulent business environment is how to identify, develop, and retain individuals with the capacity for leadership that Bill George describes, so that they can achieve the competitive advantage they desire. Training Magazine Industry Report (2007), reported that the training industry spent $12 billion on internal and external leadership development training in 2007. Leadership and development training which combines management/supervisory and executive development training, constituted 21% of the training dollars that were spent that same year, which was the largest single category of funds spent on training. As the workforce ages and more baby-boomers begin to retire, the need for companies to increasingly engage in succession planning and leadership pipeline development grows. One of the first steps in this undertaking is to identify which individuals have the leadership skills and abilities that will enable a company to remain competitive in the future.

There has been a tremendous amount of research over the years seeking to elucidate what could differentiate followers from great leaders. Some of the early popular theories included, Trait Approach, Skills Approach, and Style Approach, all of which have added value to leadership theory, but none of which has proven to be the one model that can definitively be relied on for leadership identification (Northouse, 2004). More recently, models like Transformational Leadership, Servant Leadership, and Authentic Leadership George (2007) have become popular; however, once again there is no easy way to use these theories in a practical manner to specifically identify those individuals with the best potential to lead organizations. What many of the theories have in common is some combination of cognitive ability and a cadre of leadership competencies and personality traits which appear to confer an added level of leadership ability.

This cadre of leadership competencies and traits is very similar to what Goleman (1998) posited around the relationship of intelligence quotient (IQ) and emotional intelligence (EI), when he said:

> In professional and technical fields the threshold for entry is typically an IQ of 110-120. The result of having to jump such a high initial barrier is that since everyone is in the top 10 percent or so of intelligence, IQ itself offers relatively little competitive advantage. (p. 20)

Instead, Goleman pointed to emotional intelligence skills as those skills that would be the key differentiator for success. In his EI modeling, Goleman bases these EI skills on five competencies, self-awareness, self-regulation, motivation, empathy, and social skills. Furthermore Goleman stated that, “On average, close to 90% of their (top executives in 15 global companies) success in leadership was attributable to emotional intelligence” (p. 34). He went on to say, “For star performance in all jobs, in every field, emotional intelligence is twice as important as purely cognitive abilities. For success at the highest levels, in leadership positions, emotional competence accounts for virtually the entire advantage” (p. 34).

The two key advantages of using EI to identify possible future leaders is that, like personality/behavioral preference models such as Myers-Briggs Type Indicator®

(MBTI®) and DiSC®, EI is fairly easy to test for with standardized and validated assessments, and it is commonly believed that EI, unlike IQ, can continue to be developed with training and effort (Goleman, 1995). For corporations, this makes the measurement of EI an attractive aspect of competency modeling with which to identify and train leaders. It is for this reason that EI training was recently added to the sales management development and leadership training curriculum at Phyogen, Inc. (pseudonym for actual company).

Phyogen, Inc. is one of the world's largest biotechnology companies with revenues in excess of $14 billion dollars in 2010. The company was founded in 1980 by a group of scientists and venture capitalists, and its first CEO was the former Vice-President from a large pharmaceutical company. Phyogen, Inc. lost money for its first 5 years and was forced to issue stock several times during that period just to stay in business. It was not until 1986 that it even turned a modest profit. Then, in 1989 it gained FDA approval to launch what became its first blockbuster biotechnology drug to treat anemia in patients on dialysis. Revenue jumped from just under $3 million in 1989 to about $140 million in 1990, and at that point the first Phyogen, Inc. CEO decided to retire, and a new CEO and President was named to lead the company. In 1991 Phyogen, Inc. launched a second blockbuster product targeted at treating chemotherapy-induced neutropenia, and under the leadership of the new CEO, in 1992, for the first time, revenue exceeded the billion dollar sales volume. Between 1992 and 2000 Phyogen, Inc. continued to grow revenues and moved from the successful start-up phase to that of an ongoing successful biotechnology company. In 2000 the second President and CEO retired and the Chief Financial Officer was promoted to President and CEO. His vision

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was to rapidly expand Phyogen, Inc. through both commercialization of its R&D pipeline, as well as, acquisitions and mergers. The new CEO reinforced the ongoing mission to serve patients with grievous illnesses, but implemented a new vision of making Phyogen, Inc. the best human therapeutics company in the world.

In order to build Phyogen, Inc. into the world's best human therapeutics company the new CEO put additional emphasis on the long-standing value of competing intensely and winning. In 2001 the company launched a long-acting version of its current anemia therapy, which enabled Phyogen, Inc. to expand the use of the treatment beyond dialysis to patients with chemotherapy induced anemia. In 2002 the company also launched a long-acting version of its therapy for the treatment of chemotherapy-induced neutropenia. These two products added several billion dollars in sales and in 2004 Phyogen, Inc. bought another biotechnology company and acquired its blockbuster drug for the treatment of rheumatoid arthritis. By the end of 2007 sales revenues had grown to just over $14 billion. In order to successfully promote all of these new products, Phyogen, Inc. doubled the size of its sales force, and, in 2003, for the first time, invested heavily in the development of a sales leadership training curriculum with the hope of building and sustaining an ongoing sales leadership pipeline that would give it a long-term competitive advantage.

Phyogen, Inc. currently has a sales force of almost 1,500 representatives who are managed by 172 District Sales Managers (DMs), who report to 25 Executive Directors of Regional Sales (EDRS). Leadership and management development training at Phyogen, Inc. focuses almost exclusively on the training and development of these DMs and EDRSs and is focused on building a top sales leadership. Kevin Sharer the President and

CEO of Amgen, the world's largest biotechnology company, reinforced this same concept stating, "If you don't have the right top team, you won't have the right tiers below them. A-players won't work for B-players" (Hemp, 2004, p. 72). To build this type of top sales leadership team advanced concepts were added to the basic sales leadership and coaching curriculum at Phyogen, Inc. The first concept added was training on DiSC® as a behavior/personality model that allows leaders to best tailor their communication and coaching to staff members to maximize both their productivity, and ultimately retention. As mentioned earlier, EI was also added to the sales leadership curriculum in hopes that it could help to build the sales leadership team into the sustainable competitive advantage hoped for by the current CEO of Phyogen, Inc.

Since EI has been highly correlated to success, and over 80% of the individuals who now fill the role of EDRS at Phyogen, Inc. were promoted from the front-line leadership position of District Sales Manager, it became clear that it would be beneficial to ascertain if there is any correlation between the EI level of the current DMs, and their DiSC® styles. If a correlation is found between the EI scores of DMs and their DiSC® styles, then EI scores and DiSC® styles could both logically be examined as possible indicators of who should be included, and developed most aggressively for future leadership positions within the organization.

Statement of the Problem

Like many industries, there has long been a desire within the biotechnology/pharmaceutical industry to begin developing leadership pipelines, that could be built internally, rather than going externally to recruit future leaders. "Through discussions with senior management, we determined that developing a more systematic approach to tapping and developing the leadership potential of the people in the organization was paramount" (Jones, Simonetti, & Vielhaber-Hermon, 2000, p. 45). Companies in the biotechnology/pharmaceutical industry are facing more competition, as well as governmental healthcare reform challenges than at any time in history, causing many to make strategic and tactical changes, to address the rapidly changing environment of compliance (Van Arnum, 2011).

This new climate includes challenges from the government regarding product safety, generic competition, and governmental pricing policies and coverage. The passage of comprehensive healthcare reform (Affordable Care Act) will have a dramatic impact on pharmaceutical sales in the United States. According to Martin (2009), "The tightening of regulations and product formularies will result in less face-to-face meetings with sales representatives and physicians. The golden age of pharmaceutical sales in the United States has ended" (p. 1). To face these challenges, companies need to be able to build a pipeline of future leaders who are experts within the biotechnology/pharmaceutical industry, and who can be developed to address the future challenges companies will face. Identifying future leaders as early as possible, with tools that measure EI and behavioral style, could be the competitive advantage that companies seek, to help ensure their long-term viability and success.

Identification and development of future leaders to address the upcoming challenges need to begin with the District Sales Managers, as they are considered the front-line managers within the biopharmaceutical industry. Rabey (2008) suggests that the frontline manager is critical if an organization hopes to respond effectively and in a profitable manner to all of the demands of tomorrow. As a front-line manager DMs are not only the direct supervisors of the sales force and responsible for the talent selection, development, and coaching of the sales representatives; but are also the first-level of management with whom the majority of customers of the biopharmaceutical organization interact. Therefore, as biopharmaceutical organizations look to work with their customers to address all of the future challenges brought by increased compliance and government legislation such as the Affordable Care Act, DMs will play a pivotal role as liaison between organizations, customers, and patients.

This myriad of changes in healthcare also brings significant implications for addressing the way DMs are taught to lead in this new challenging healthcare environment. Willink (2009) addressed this challenge saying, “With the hardening global economy, numerous pipeline challenges and massive budget cuts, ensuring a commercially successful pharmaceutical brand life requires change from traditional management techniques to transformational leadership” (p. 119). Willink discusses the fact that in the past, pharmaceutical sales leadership was heavily dependent on a model of transactional leadership where sales leaders simply executed sets of activities and tactics designed to maximize their personal reward systems. However, in today’s complex and challenging healthcare climate he points out that, “transformational leadership factors – trust, commitment, imagination and the ability to take calculated risks – should be applied to existing managerial practices, so transformational leaders and followers could be awakened in all” (Willink, 2009, p. 121). Many of the tenured DMs have tremendous strengths when it comes to transactional leadership approaches, but have not had any real development with respect to transformational leadership components. The clear connection between transformational leadership concepts and emotional intelligence will be explored in chapter two of this study. The emotional intelligence and behavioral style of DMs may well be important factors in leading their sales representatives through future challenges and helping customers navigate a complex future healthcare environment.

Thus, both emotional intelligence and leadership behavioral style should be central components in a comprehensive DM leadership development curriculum. This fact was collaborated by Pettijohn, Rozell, and Newman (2010) who concluded their study comparing U.S and U.K. sales people in the healthcare industry by stating:

> The final implication entails the recognition that emotional intelligence is a common trait of both U.S. and U.K. salespeople. Thus, it suggests that U.S. and U.K. sales forces alike might be assessed and trained in the area of emotional intelligence. (p. 37)

Purpose of Study

The purpose of this study was to identify to what extent, if at all, there was a relationship between DMs emotional intelligence and their behavioral style, at Phyogen, Inc. This relationship was examined both at the overall level of EI as well as among the five composite factors from the BarOn EQ-i® assessment (*intrapersonal scale, interpersonal scale, adaptability scale, stress management scale, and general mood scale*). The DiSC® self-assessment was used to assess DMs overall behavioral style, and the four individual behavioral style domains of dominance, influence, steadiness, and conscientiousness.

Nature of the Study

Examining the relationship between EI and behavioral style to discover if there is a correlation, that could be predictive of leadership potential and success, is very similar in many aspects to the trait approach of leadership first researched by Stogill in 1948. Trait approach examines the traits of various leaders, to determine if there is a particular set of traits that are core to effective leadership. Five core traits, intelligence, self-confidence, determination, integrity, and sociability were identified over the century of research into traits of leaders by researchers. (Kirkpatrick & Locke, 1991; Lord, DeVader, & Alliger, 1986; Mann, 1959; Stogdill, 1948, 1974) While the list of traits is well researched and helpful, it was not considered to be all-inclusive. There have been criticisms of the trait approach to leadership, including that it fails to take leadership situations into account, that the traits are highly subjective, not tied to outcomes, the theory fails to delimit a definitive list of leadership traits, and that is not a useful approach for training and development for leadership (Northouse 2004).

It was hoped that this study would help to address several of the limitations that are currently associated with trait approach, and that it would also help to advance the research regarding characteristics associated with strong leaders. Both EI and behavioral style are more recent additions to the leadership landscape, and thus have not been included in the previous trait-based research, thus current findings would add to the research in this area. Looking at both EI and a behavioral style/trait model, would add to the limited list of leadership traits that have already been described, and since some of the core traits like self-confidence and sociability are captured within EI, that would allow for a refinement of the current five core factors. Studies on EI have indicated that it can be improved, and is sensitive to training and development, which could aid in dispelling the criticism that current trait theory is not addressable through training and development.

Research Questions

This study examined the following research questions with regard to the correlation of EI and behavioral style:

1. To what extent, if at all, is there a relationship between District Sales Manager DiSC® classic pattern, and the six primary Bar-On EQ-i® scores (total EQ, intrapersonal awareness, interpersonal awareness, adaptability, stress management, and general mood)?
2. To what extent, if at all, are there significant correlations between District Sales Managers four DiSC® quadrant scores (dominance, influence, steadiness, and/or conscientiousness), and the six primary EQ-I scores?
3. To what extent, if at all, are there significant correlations, after taking into account demographic characteristics (age and gender), between District Sales Managers four DiSC® quadrant scores and the six primary EQ-I scores?

Operational Definitions and Key Terms

BarOn EQ-i®: The BarOn EQ-i ® was developed by Dr. Reuven Bar-On in 1997. The EQ-i® is a 133 item self-assessment, which is backed by validation research across many countries, including the United States. The assessment provides information on the following 5 composite factors and 15 sub-scales:

1. Intrapersonal (Self-Regard, Emotional Self-Awareness, Assertiveness, Independence, and Self-Actualization)

2. Interpersonal (Empathy, Social Responsibility, and Interpersonal Relationship)
3. Stress Management (Stress Tolerance, and Impulse Control)
4. Adaptability (Reality Testing, Flexibility, and Problem Solving)
5. General Mood Scale (Optimism and Happiness)

Biotechnology/Pharmaceutical Industry: Biotechnology generally uses microorganisms such as bacteria, and/or biological substances like enzymes, in a manufacturing process to produce therapeutic medicines. This process is often associated with genetic modeling, and products like monoclonal antibodies, which are large proteins. Pharmaceuticals are more associated with chemical and small molecule manufactured medicines. Many companies now combine technologies and are often referred to as bio-pharma companies.

DiSC® (Everything DiSC® Assessment): DiSC® is a behavior/trait style model based on four traits (*Dominance, influence, Steadiness,* and *Conscientiousness*). Individuals have varying degrees of each of the traits, and research indicates that most people lean primarily towards one or two, as measured by the Everything DiSC® assessment.

Emotional Intelligence (EQ) or (EI): There are many operational definitions of emotional intelligence, as defined by a variety of researchers of emotional intelligence over the years (Goleman, 1995, Mayer, Salovey, & Caruso, 2000). Emotional intelligence can be defined as dealing with two important concepts: awareness and management of one’s own feelings and emotions, and awareness and management of feelings and emotions of others. Emotional intelligence is not static; it increases with maturity and can be learned and developed. Emotional intelligence will be measured in this study via the BarOn EQ-i® assessment.

Intelligence Quotient (IQ): IQ is a measure of general intelligence as measured on a standardize test. IQ is based on cognitive or general intelligence regarding thinking, reasoning, and learning. It is generally accepted that people are born with a given intelligence or potential intelligence, and that this intelligence is difficult to change (Gardner, 1998).

Leadership: Leadership has been defined in a number of ways using the operational definitions of researchers and authors. According to Northouse (2004), “Leadership is a process whereby an individual influences a group of individuals to achieve a common goal” (p. 3). This study will measure the behavioral styles and EI of leaders, which contribute to their ability to influence followers. EI will be measured via the BarOn EQ-i ® assessment, and behavioral style will be measured using the Everything DiSC® assessment.

Myers-Briggs Type Indicator (MBTI®): The MBTI® is a psychological assessment instrument, that was developed by Katherine Briggs and Isabel Briggs based on the theory of psychological types described by Jung. The MBTI® instrument can result in any of 16 distinct and separate personality types. According to the Myers-Briggs Foundation (n. d.), the goal of understanding personality type is to learn about and, appreciate the differences between people. There is no ideal or best personality type.

Skills approach: The skills approach was espoused by Katz (1955), and was designed to obviate the problems identified with trait approach, by focusing on leadership skills. Leadership skills are defined by Northouse (2004), as the use of an individuals' knowledge and competencies to achieve goals and objectives (p. 36).

Style approach: The style approach is largely attributable to the Ohio State studies and the University of Michigan studies in the late 1940s. Unlike the trait approach, the style approach focused on what leaders did, and how they acted, rather than what were the specific traits of a leader. One of the most recognized models of the style approach is the Managerial Grid®, associated originally with Blake and McCanse (1991), and then updated several times (Blake & Mouton, 1964, 1978, 1985). The Managerial Grid® describes how leaders help their organizations by focusing on two things, concern for production, and concern for people (Northouse, 2004).

Trait approach: Trait approach was first based on the qualities of great persons, and over the years transitioned to include situations on leadership; however, it currently has transitioned back to the role of individual traits associated with effective leadership. (Northouse, 2004)

Importance of the Study

Higher levels of EI have been positively correlated with leadership success and performance (Goleman, 1998). There currently is no known research data that examine the relationship between specific behavioral style patterns and EI. Identification of behavioral styles that align to higher levels of EI could have implications for the hiring, training, and retention of future District Sales Managers. The goal of this study was to determine if the level of EI and behavioral style of a District Manager could be used as a surrogate marker for future leadership potential. The data gathered from this report will be used to inform Senior Leadership (Vice-President level and above) at Phyogen, Inc.

about any correlation between the EI level of District Sales Managers and their behavioral styles, in an effort to identify possible best candidates for future leadership development. A positive correlation between EI and behavioral style would allow Phyogen, Inc. to identify high-potential leaders earlier, and institute development training, to better develop future leaders for the organization.

The answers to the research questions from this study would allow the sales leadership at Phyogen, Inc. to more quickly and easily identify individuals with distinct leadership potential, based on the relationship determined between the domains of EI and the behavioral style of individuals. Commercially available assessments for EI and behavioral style are inexpensive, and already in use at Phyogen, Inc. Currently, the results of the assessments are used to help develop staff members already identified for advanced leadership through a complex procedure of evaluation and review. Based on the results of this study sales leadership would be able to more effectively and efficiently identify leadership potential and reduce the chance of selecting inappropriate candidates.

Limitations

The following limitations of this study should be noted:

1. The study used the Bar-On EQ-i ® assessment for determination of District Manager level of EI based on its history and validation research; however, results cannot be compared to those using any of the other commercially available EI assessments. Other commercially available EI assessments break EI into different categories and domains, which would make results difficult to generalize across instruments.

2. The Everything DiSC® self-assessment tool used for identifying individual District Manager behavioral style is based on a self-perception assessment tool and thus is not perfectly reliable or valid.
3. There is no known research to indicate that there is any advantage of one behavioral style over another in relation to leadership success. Thus, even if a relationship were found between behavioral style and EI, the relationship of behavioral style to leadership effectiveness, would be inferentially tied to the relationship of EI and leadership effectiveness.
4. The study was limited to District Sales Managers at Phyogen, Inc. and thus the results should not be generalized across the bio-pharma industry, to other industries, or to other countries with different cultures.

Assumptions

1. That all of the respondents in the study were truthful in responding to the Everything DiSC® self-assessment based on their behavior at work versus home or in a social setting.
2. That all of the respondents were truthful is their responses to the EQ-i® emotional intelligence self-assessment.

Chapter 2: Review of the Literature

The purpose of this study was to identify to what extent, if at all, there is a relationship between DMs emotional intelligence and their behavioral style. The research questions used to address this purpose are:

1. To what extent, if at all, is there a relationship between District Sales Manager DiSC® classic pattern, and the six primary Bar-On EQ-i® scores (total EQ, intrapersonal awareness, interpersonal awareness, adaptability, stress management, and general mood)?
2. To what extent, if at all, are there significant correlations between District Sales Managers four DiSC® quadrant scores (dominance, influence, steadiness, and/or conscientiousness), and the six primary EQ-I scores?
3. To what extent, if at all, are there significant correlations, after taking into account demographic characteristics (age and gender), between District Sales Managers four DiSC® quadrant scores and the six primary EQ-I scores?

This chapter gives an in-depth review of the current literature related to the purpose of the research and the research question. The chapter is separated into three distinct sections. The first section looks at the role of Phyogen, Inc. within the healthcare industry and the Affordable Care Act, sales leadership, and specifically how Phyogen, Inc. currently handles its leadership development and leadership pipeline. The second section comprehensively examines the theory of emotional intelligence, key theorists involved in the development of emotional intelligence theory, emotional intelligence assessment, emotional intelligence as a construct, and the application of emotional intelligence to leadership. The final section of the chapter reviews leadership behavioral style and personality, literature linking emotional intelligence to behavioral/personality style, and the various models for assessing behavioral style and personality.

Healthcare Industry, the Affordable Care Act, and Phyogen, Inc. Leadership

With President Obama strongly pushing for a reformation of healthcare delivery in the United States, there have never before been more volatile or uncertain times for the pharmaceutical/biotechnology industry (Obama, 2009). The Patient Protection and Affordable Care Act (PPACA) was signed into law in March, 2010 and brought with it sweeping changes to the healthcare industry. Elias (2011) stated, "The 2010 historic Patient Protection and Affordable Care Act (PPACA), also known as the healthcare reform bill, will affect the healthcare sector in unprecedented ways" (p. 474). The biopharmaceutical industry initially backed healthcare reform with the promise that it would expand the current market for prescription drugs. The industry in return would pay extensive fees and hefty rebates on Medicaid drugs to help underwrite the cost of drugs purchased by seniors to cover the *donut hole* of the current Medicare prescription drug program. However, as Welcher (2012) points out, "Now manufacturers face a worst-case scenario: reform opponents kill the insurance exchanges and subsidies designed to expand enrollment, while retaining policies that cut pharma revenues and raise costs" (p. 10). In addition, the upcoming U.S. Supreme Court ruling on the constitutionality of the individual mandate for all citizens to purchase insurance, could also greatly reduce the hoped for market expansion for prescription drugs.

Along with the very possible loss in revenue to the biopharmaceutical industry as a result of healthcare reform, there are also structural changes to the way the industry will need to approach its customer base. Before implementation of PPACA, biopharmaceutical companies employed large numbers of sales representatives to deliver product-specific marketing messages to individual physicians. However, more often now physicians and other healthcare providers such as pharmacists, hospitals, nurses, and even patients are starting to group together into what Pesse, Erat, and Erat (2006) classify as healthcare networks. One of the clearest examples of these networks that have proliferated since PPACA is the Accountable Care Organization (ACO). An ACO is basically a collaborative working agreement between physicians or groups of physicians and a hospital designed to deliver improved patient care at a lower cost (Ronai, 2011). On March 31, 2011 the Centers for Medicare and Medicaid Services (CMS) implemented a provision in Section 3022 of the PPACA as a part of the Medicare Shared Services Program dealing with Accountable Care Organizations. According to Ronai (2011), under Section 3022, ACOs would be required to coordinate care for their assigned Medicare beneficiaries. The ACO would enter into a 3-year contract with CMS and be responsible for overall quality and cost of care for the Medicare beneficiaries assigned to it. According to Ronai, (2011), it is forecasted that by 2014 “the current number of ACOs will grow from the present count of 80 nationwide to over 500” (p. 68). All of the cost and structural changes brought on by PPACA are causing a great deal of instability in the biopharmaceutical sales industry, and creating new leadership challenges.

Leadership during times of turbulence and uncertainty is very important, as organizations try to position themselves for success in an ever changing environment. As Kouzes and Posner (2007) stated, “In uncertain times, leaders with a positive, confident, can-do approach to life and business are desperately needed” (p. 349). In addition, they point out that leaders are necessary at every level of an organization, and are the most important factor in the retention of key people. Conger and Fulmer (2003) point out that building a leadership pipeline, having a good succession plan, and developing leaders, are critical facets for a company's long-term health.

In an effort to identify leaders with the ability to be successful, and lead the organization through changing times, bio-pharmaceutical companies like Phyogen, Inc. have looked for ways to predict and develop the most likely candidates. This has generally been done based on performance reviews and sales success; however, this process has not always been a successful means for leadership identification. Two of the more recent tools that management development at Phyogen, Inc. has begun using for leadership development, are the Me Edition: Emotional Intelligence Appraisal from TalentSmart (2007), and the Everything DiSC® – Classic 2.0 Edition self-assessment (Inscape Publishing, 2007). The DiSC® assessment was chosen by Phyogen, Inc. sales leadership, as it was felt to be a valuable tool for both identifying leadership behavioral style, and teaching leaders to communicate with individuals having different behavioral styles. The emotional intelligence (EI) assessment was added to sales leadership training at Phyogen, Inc. in 2009, based on the literature suggesting a connection between leader EI, and organizational success (Goleman, 1998). The decision as to which EI assessment to use, and whether to go with an ability-based model such as the Mayer-Solvey-Caruso Emotional Intelligence Test (MSCEIT), or a mixed or trait-based model such as the Bar-On EQ-i® or Emotional Intelligence Appraisal, was based on several factors. Sales Leadership wanted the participants to have the ability to complete the assessment in less than 30 minutes, so as to reduce their time out of the field, and the sales management training team wanted to use a tool that came with support and materials to develop those areas of emotional intelligence identified on the assessment. The Emotional Intelligence Appraisal was selected, as it only requires about 15 minutes to complete, and came with a plethora of developmental activities that could be accessed both via the Emotional Intelligence Quick Book (textbook) itself, as well as through a dedicated developmental internet website available from TalentSmart Inc.

In an effort to decipher if self-assessment tools for emotional intelligence and behavioral style, could be used to better identify staff members with leadership potential and based on the connection between leader emotional intelligence and organizational success, this study sought to identify if there was also a relationship between leader emotional intelligence and leader behavioral style. If such a relationship did exist, it would allow Phyogen, Inc. to more effectively and efficiently identify individuals to develop for future leadership positions within the organization. Currently, there is no known research linking the behavioral style of an individual, to their level of emotional intelligence. However, there is a fairly substantial amount of research that links elements of emotional intelligence to specific behaviors associated with effective leaders (Ruderman, Hannum, Leslie, & Steed, 2001).

Sales Leadership Development and the Bio-Pharmaceutical Industry

Ingram, LaForge, Locander, MacKenzie, and Podsakoff (2005) define sales leadership as, “activities performed by those in a sales organization to influence others to achieve common goals for the collective good of the sales organization and company” (p. 137). In addition, they point out that the sales environment is growing more and more complex, particularly in areas dealing with customer needs, competitive pressure, technological changes, and the ever changing legal landscape. Dubinsky, Yammarino, Jolson, and Spangler (1995) posit that there is added leadership complexity in that salespeople generally work alone, and are often geographically distanced from their managers by working in different cities or, as is sometimes the case in bio-pharmaceutical sales, completely different states. In the bio-pharmaceutical industry the legal and regulatory demands continue to change and become more challenging. According to David Verbaska, Vice-President at Pfizer pharmaceuticals, the global regulatory environment continues to grow more complex and this means that leaders in the bio-pharmaceutical industry need to remain flexible and nimble if they wish to be successful (Looney, 2010). Ingram et al. (2005) point out that the ability of sales leaders to achieve results in the midst of all of the changes and complexity presents challenges that are not usually associated with less dynamic and complex organizational areas.

Another dimension of sales leadership that is different from leadership in many areas is the fact that sales leadership is heavily targeted toward the achieving of both short and long-term revenue goals and success measured against the accomplishment of those goals. Schwepker and Good (2010) point out that salespeople are under heavy scrutiny to reach financial quotas and goals, which may lead to unethical behavior. They also cited Bryman (1992), “Often, contingent reward and punishment behaviors (called transactional leadership behaviors) are used in the sales setting” (p. 299). Dubinsky et al. (1995) also noted that sales leaders often need to employ transactional leadership to communicate and clarify for salespeople how they can receive organizational remuneration for the accomplishment of their sales goals and performance.

The pay-for-performance nature of sales makes transactional leadership a very natural fit for sales leadership in many industries. However, an alternative leadership approach that subsequently gained wide acceptance across many industries is transformational leadership. Dubinsky et al. (1995) in their investigative study of transformational leadership in a sales environment noted that transformational leadership appears to complement transactional leadership by adding charismatic and vision elements not associated with transactional leadership. While their study did not demonstrate an advantage for transformational leadership over transactional leadership within the sales organization of a medical product firm, Dubinsky, et al. suggested that transformational leadership might be significantly more valuable in companies and industries where there is more turbulence and change. Certainly the bio-pharmaceutical industry with its significant complexity and rapid regulatory change would appear to be a good setting for transformational leadership which will be discussed in a subsequent section.

In their look at new directions in research of leadership development Ingram et al. (2005) suggest that leadership styles that incorporate emotional intelligence as a construct could lead to increased sales leadership effectiveness. Specifically, they point to the work from Goleman (2000) stating, “The incorporation of six leadership styles would expand sales leadership research beyond the current focus on transformational and transactional leadership styles. Visionary, coaching, affiliate, and democratic leadership styles seem to be transformational approaches” (p. 151). The importance of emotional intelligence and transformational leadership will be discussed in more detail in a subsequent section. According to Ingram et al. (2005) “The need for more leadership from all sales organization positions is becoming increasingly important. Sales organizations will have to address the need for leadership skills through various sales management processes, such as recruiting and selection, training, and mentoring programs" (p. 149). This need for sales leadership development was also espoused by Riggio and Reichard (2008) who stated:

> We suggest that emotional intelligence and social skills can be targeted for assessment and development and can be an important component of a leadership development program. Research evidence suggests that emotional and social skills are both related to leader effectiveness and can be improved through training interventions. (p. 181)

Leadership Pipeline Development

George (2007) identified what he termed a leadership crisis, pointing out that while there is currently a vacuum of leadership in business and other areas, there is no shortage of people with the capacity and ability to lead. Delloitte Consulting (2007) reported that eighty percent of North American finance executives described the finance talent pipeline as inadequate. Charan, Drotter, and Noel (2001) posited that there are many reasons for the current dearth in leadership talent, they pointed to factors such as competition for talent, corporate downsizing, increased market complexity, and the retirement of many baby boomers. In addition to these factors, Ingram et al. (2005) alluded to the changing environment specifically facing sales organizations that includes dimensions of complexity, collaboration, and accountability, as being challenges in leadership development. Within sales environments Jones, Brown, Zoltners, and Weitz (2005) discussed the additional burden that the ethical and legal environment is putting on selecting the correct individuals for leadership positions, this is particularly important in industries that are highly regulated like bio-pharmaceuticals.

In a study specific to the healthcare industry, Groves (2007) studied 30 CEO's from best practice healthcare organizations on the integration of leadership development and succession planning. Groves found that organizations of every size were facing numerous leadership development challenges including mid-level management often robbing high-potential managers of important on-the-job experiences, cuts in development resources, an aging workforce, flattening of organizational structures, and baby-boomer retirees with far fewer college-educated workers to replace them. While Groves (2007) identified many activities for leadership development including; mentoring, leadership development activities, and leadership academies, one of the most important activities to emerge was using managers to identify and codify high potential employees. This need to identify, then develop high leadership potential individuals by looking at leadership style and emotional intelligence, is the focus of this study.

Emotional Intelligence Theory

The study of emotional intelligence has evolved from the early concept of social intelligence, which was first defined by Thorndike in 1920. In 1912 Thorndike was a Harvard and Columbia educated psychologist and past President of the American Psychological Association. He is best known for developing the *Law of Effect*, which states that responses to a situation that lead to satisfaction are strengthened, and those that lead to discomfort are less likely to be repeated (Cooper, 2009).

Thorndike (1920) also extensively studied the measurement of intelligence in humans, and differentiated intelligence into broad categories; abstract intelligence, mechanical intelligence, and social intelligence. Thorndike framed social intelligence as an individual's ability to recognize the feelings and emotions of others, as well as their own, and to act appropriately based on this recognition. While Thorndike - felt that observing and defining social intelligence was not difficult, measuring it with traditional psychometric measures was more challenging (Hughes, Thompson, & Brandford Terrell, 2009). The first of these social intelligence measurement tools was the George Washington Social Intelligence Test (GWSIT; Hunt, 1928; Moss, Hunt, Omwake, 1949; Moss, Hunt, Omwake, & Ronning 1927; Moss, Hunt, Omwake, & Woodward, 1955). However, much like the controversy later with EI measurement, there was a question as to whether social intelligence should be correlated with personality measures such as sociability and extraversion (Thorndike & Stein, 1937). Furthermore, Thorndike and Stein stated that the GWSIT, "is so heavily loaded with ability to work with words and ideas, that differences in social intelligence tend to be swamped by differences in abstract intelligence" (p. 282).

The pioneering work done by Thorndike (1920) on Social intelligence was expanded upon over time by a number of other theorists (See Appendix A). The first theorist to significantly add to the work of Thorndike was Howard E. Gardner, a Harvard professor and social psychologist, who has authored twenty-five books. Howard Gardner (1983) built on the Thorndike concept of social intelligence in his book *Frames of Mind*, where he first suggested his theory of multiple intelligences (MI). Specifically, Gardner described eight different types of intelligence including: intra- and interpersonal, kinesthetic, linguistic, logical, musical, naturalist, and spatial, as well as possibly existential awareness, and moral awareness (Hughes, et al., 2009). His descriptions of intra- and interpersonal intelligence broadly included understanding self and others, and looked at emotions and feelings, the precursor to what is now called emotional intelligence. Gardner (2006) discussed his theories on MI, but also pointed to the works of Goleman and Mayer and Salovey on emotional intelligence. Gardner noted that over the last decade MI concepts have come to the attention of business leaders and managers, stating, "Part of this interest [in MI] stems from the widespread attention being paid to emotional intelligence, thanks to the pathbreaking (sic) writings of Daniel Goleman" (Gardner, 2006, p. 243).

The first real definition of emotional intelligence came from two prominent academic psychologists Salovey and Mayer (1990). They defined emotional intelligence as, "the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and actions" (p. 189). Mayer, Salovey, and Caruso (2002) slightly adjusted their definition of emotional intelligence by defining it as, "The ability to perceive emotions, to assess and generate emotions so as to assist thought, to understand emotions and emotional meanings, and to reflectively regulate emotions in ways that promote emotional and intellectual growth" (p. 17). One of the most important parts of the emotional intelligence theory of Mayer, Salovey, and Caruso is their belief that to measure emotional intelligence it is critical to both identify and measure the actual abilities necessary to use emotional intelligence to solve problems of an emotional nature (Hughes, et al., 2009). This focus on actual application is the primary reason that Mayer, Salovey, and Caruso developed the MSCEIT, the only currently available ability-based emotional intelligence assessment. The MSCEIT uses several methods including pictures, faces, and the solving of emotional problems by test subjects rather than just self-assessment of pattern questions to derive an ability-based emotional intelligence score.

The ability-based focus of the MSCEIT was a significant change from the first and most researched emotional intelligence assessment, the Bar-On EQ-i®. The Bar-On EQ-i® was developed by Dr. Reuven Bar-On, and is considered a trait-based or mixed-model assessment as it incorporates a large number of factors that range all the way from empathy to problem solving. It is a self-assessment that is not ability-based. Subsequent assessments such as the Goleman ECI 2.0 are also mixed-method models, leaving the MSCEIT as the only current ability-based emotional intelligence assessment. In addition to their initial description of emotional intelligence, Mayer and Salovey (1993, 1995) published many articles on the concept of emotional intelligence; however, very little organizational uptake of the concept of emotional intelligence happened, until Goleman (1995) published his first best seller, *Emotional Intelligence: Why It Can Matter More Than IQ*.

Daniel Goleman is a Harvard educated psychologist and author, and was a science journalist for the *New York Times* for several years. It is Goleman who is widely credited for taking the largely academic concept of emotional intelligence that Reuven Bar-On, and Mayer, Salovey, and Caruso had been researching, and brought it to the forefront of corporate America. Goleman has the unique blend of being both a Ph.D. psychologist and an acclaimed science journalist. He used this combination to write several best-selling books dealing with emotional intelligence, which really brought the concept from academia to mainstream acceptance in corporate leadership (Hughes, et al., 2009). Goleman along with his associate Richard Boyatzis developed both the ESCI (Emotional and Social Competence Inventory) and ECI 2.0 (Emotional Competence Inventory) emotional intelligence assessments. The ECI 2.0 was one of the first emotional intelligence assessments that is a multi-rater form of assessment, as opposed to a pure self-assessment. It was also Goleman (1995) who first looked at whether emotional intelligence or IQ was more important in determining the professional success of an individual.

Emotional Intelligence versus Intelligence Quotient

It was in this his best-selling book, *Emotional Intelligence: Why It Can Matter More Than IQ* where Goleman (1995) first posited, “IQ and emotional intelligence are not opposing competencies, but rather separate ones” (p. 44). He noted that IQ and emotional intelligence did in fact overlap to a small extent, but he felt that the shared aspects were not enough to keep them from being looked at as separate intelligences. Up until that point in time, IQ was often looked at as the factor most tied to success of individuals, and was even used for things like college admittance screening via the Scholastic Aptitude Test (SAT), which Gardner (1993) described as a more sophisticated version of an IQ test. The question then became how truly correlated is IQ to the future success of individuals in the workplace. Goleman (1995) stated, “IQ alone at best leaves 75 percent of job success unexplained, and at worst 96 percent – in other words, it does not determine who succeeds and who fails” (p. 19). While Goleman does not directly state exactly what does account for the majority of job success, he clearly feels that emotional intelligence is the largest component. In fact, Goleman, Boyatzis, and McKee (2002) declared:

> While the precise ratio of EI to cognitive abilities depends on how each is measured and on the unique demands of a given organization, our rule of thumb holds that EI contributes 80 to 90 percent of the competencies that distinguish outstanding from average leaders – and sometimes more. (p. 251)

Gibbs (1995) agreed with Goleman that IQ was not the dominant factor contributing to success stating:

> Among the ingredients for success, researchers now generally agree that IQ accounts for about 20%; the rest depends on everything from class, to luck, to the neural pathways that have developed in the brain over millions of years of human evolution. (p. 63)

Lam and Kirby (2002), studied whether emotional intelligence would increase an individual's cognitive-based performance at a level greater than that attributed to traditional intelligence. They found that overall emotional intelligence, perception, and regulation did increase cognitive-based performance above the level attributed to general intelligence. In a study of the relationship between leader performance, emotional intelligence, and managerial competencies, Hawkins and Dulewicz (2007) found that EI was positively correlated to leader performance at every level of police service, and partial support for the proposition that EI explains more variance in leadership performance than either IQ or managerial competence.

Emotional Intelligence Assessments

While Goleman (1995) is associated with popularizing the concepts and theory about emotional intelligence, and developed the Emotional Competence Inventory (ECI) in 1999, it was Reuven Bar-On (1997, 2006) who contributed greatly to the operationalization of emotional intelligence (Matthews, Zeidner, & Roberts, 2004). Reuven Bar-On (1997) developed the Emotional Quotient Inventory (EQ-i), which was the first commercially available assessment of emotional intelligence. Bar-On's conceptualization of emotional intelligence is very similar to that of Goleman, and appears to center around a set of established personality traits (Matthews, et al., 2004). Two psychologists, Mayer and Salovey (1993, 1995) were first responsible for formulating the concept of emotional intelligence; however, they were not the first to formulate an emotional intelligence assessment. After Reuven Bar-On developed his EQ-i in 1997, Mayer and Salovey along with Caruso (1997) developed the Multifactor Emotional Intelligence Scale (MEIS). Mayer, Salovey, and Caruso believed that emotional intelligence should be similar to other types of abilities, in relation to concepts and assessment. This led to the development of the MEIS, and their most recent assessment, the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) which were the first emotional intelligence assessments with ability-based scales (Mayer, Salovey, Caruso, & Sitarenios, 2003). This current study explores the relationship between emotional intelligence and behavioral style of District Sales Managers, in an effort to establish if they can be used to help identify and develop potential future District Sales Managers. To accomplish this goal it was first necessary to examine the domains and scales of the leading emotional intelligence models and assessments, and determine the best fit for this study.

MSCEIT. Is the assessment that emerged from the work of Mayer, Salovey, and Caruso (2003), and was intended to be an improvement on the MEIS, which was their first ability-based model and assessment, and suffered from low reliability and scoring problems (Conte, 2005; Matthews, et al., 2004). The MSCEIT was designed to be an EI model whose construct was distinct from existing personality dimensions, and thus, different from the trait and mixed-model EI assessments of other researchers. The MSCEIT is designed to measure mental abilities, skills, and/or capacities, and was also designed to measure EI as an intelligence system used for the processing of emotional information (Matthews, et al.). According to Caruso (2004), the MSCEIT measures EI through the use of four related abilities:

1. *Perceiving emotions,* based on the ability to accurately assess how other people are feeling.
2. *Using emotions to facilitate thinking*, this involves processing and creating emotions with the objective of integrating ones feelings into their thought processes and problem solving.
3. *Understanding emotions* is the ability to cognitively process and understand the various causes of emotion.
4. *Managing emotions* consists of the ability to self-manage emotions and create strategies to accomplish goals without being emotion driven.

The MSCEIT is one of the most complex EI assessments, being longer than most EI assessments (141 questions), and employing expert and consensus scoring opinion (Matthews et al., 2004). Based on this complexity, as well as, its cognitive approach and predictive and concurrent validity studies, the MSCEIT is preferred by many academic researchers and felt to hold the most promise for EI research (Conte, 2005; Daus & Ashkanasy, 2005; McEnrue & Groves, 2006). While the MSCEIT is a very popular assessment for EI research, it is actually the theoretical model of Goleman (1995, 1998) that truly popularized EI and brought the measurement of EI to the forefront in the United States (Matthews, et al., 2004).

Goleman model. In the original work of Goleman (1998), he identified 5 primary EI domains, and 25 separate competencies clustered under those domains. However, in subsequent works (Boyatzis, Goleman, & Rhee, 2000; Bradberry & Greaves, 2003; Goleman, Boyatzis, & McKee, 2002), the 5 primary domains were simplified to 4, and the 25 competencies were reduced to 18. The final 4 domains and constituent 18 competencies are:

1. *Self-awareness* which includes the following three competencies; emotional self-awareness, accurate self-assessment, self-confidence.
2. *Self-management* which includes the following six competencies; self-control, transparency, adaptability, achievement, initiative, optimism.
3. *Social awareness* which includes the following three competencies; empathy, organizational awareness, service.
4. *Relationship management* which includes the final six competencies, inspiration, influence, developing others, change catalyst, conflict management, teamwork and collaboration.

The theoretical framework of Goleman (1995) is the basis for his Emotional Competence Inventory (ECI), in which he attempts to identify EI domains and their ability to be translated to on-the-job performance (Matthews, et al., 2004). This attempt is most likely one of the reasons why this model has become popular in organizations. However, in research circles, the model espoused by Goleman is seen as too broad, too loosely defined, and too overlapping of current personality model constructs to be used for research purposes (Conte, 2005; Landy, 2005; Locke, 2005; McEnrue & Groves, 2006; Matthews, et al., 2004). According to Matthews, et al. (2004), Reuven Bar-On was responsible for the operationalization of EI, and his model was not significantly different in concepts from the Goleman theoretical framework.

Bar-On EQ-i®. Was the first commercially available EI assessment, and is a 133-question, self-reporting instrument, that is considered a trait-based model of EI. According to Bar-On and Parker (2000), the EQ-i consists of five higher order domains, and contains fifteen subscales as follows:

1. *Intrapersonal*: This domain consists of both self-awareness and self-expression, and subscales are; self-regard, emotional self-awareness, assertiveness, independence, and self-actualization.
2. *Interpersonal*: Consisting of social awareness and interpersonal relationship, with subscales including; empathy, social responsibility, and interpersonal relationship.
3. *Stress-management*: Consisting of emotional management and regulation, and includes the subscales of; stress tolerance, and impulse control.
4. *Adaptability:* Revolves around change management, and subscales are; reality-testing, flexibility, and problem-solving.
5. *General mood*: Is seen as facilitating EI through self-motivation and the two subscales are; optimism and happiness.

The EQ-i is the most extensively studied trait-based model, has been linked to its ability to predict for human performance, and with the possible exception of construct validity, has demonstrated acceptable validity and reliability across several studies

(Dawada & Hart, 2000; McEnrue & Groves, 2006, Matthews, et al., 2004). The extensive research around the EQ-i, combined with its link to human performance and ease of administration and comprehension, are the reasons that it was chosen for this study looking at human behavior of District Sales Managers.

Emotional Intelligence as a Construct

While there is a great deal of research on the importance of emotional intelligence as a concept and standard intelligence, (Bar-On, 2006; Ciarrochi, Chan, Caputi, 2000; Gardner, 1993, 1998; Goleman, 1995, 1998; Goleman, Boyatzis, McKee, 2002; Mayer & Salovey 1993, 1995), not all researchers uniformly agree with its constructs. There are different measurements of emotional intelligence, including the ability-based models like the Multifactor Emotional Intelligence Scale (MEIS; Mayer, Caruso, & Salovey, 2000) and Mayer-Salovey-Caruso emotional Intelligence Test (MSCEIT, Mayer, Salovey, & Caruso, 2002), as well as numerous trait-based or mixed-models such as the Bar-On Emotional Quotient instrument (EQ-i; Bar-On, 1997) and the Goleman-model Emotional Competence Inventory (ECI; HayGroup Inc., 1999). One study looked at both the EQ-i and the MSCEIT in terms of susceptibility to faking by subjects in a job interview situation. According to Day and Carroll (2007) the study demonstrated, "support for the notion that the EQ-i was more susceptible to faking than was the MSCEIT, extending past research that has shown this same susceptibility in personality tests" (p. 776). Thus, pointing out a standard well-known concern for virtually all self-reporting instruments. In addition, the difference between these various emotional intelligence measurement tools and their ability to measure a common construct has also been an issue (Austin, 2010). Matthews et al. (2004) state, "Despite some promising advances in test development, there are also some basic problems for the *construct validity* of tests of emotional intelligence, highlighted by issues relating to convergent and discriminant validity" (p. 227).

Emotional Intelligence as a Standard Intelligence

Several investigators have questioned the broad definitions of what emotional intelligence is, and challenged recognizing it as a form of intelligence, largely based on questions around the predictive value of emotional intelligence (Locke, 2005). In a study by Newsome, Day, and Catano, (2000), emotional intelligence as measured with the EQ-i was found to not have predictive validity in relation to academic achievement. This view was also maintained by Landy (2005) who claimed that not enough validity studies existed to show that emotional intelligence is predictive of academic or work success. His feeling is that emotional intelligence is misrepresented as a construct of intelligence, and is better labeled as a skill. Additionally, researchers have questioned the validity of ability-based emotional intelligence tools to control for variables such as personality and general intelligence (Antonakis, 2004; Fiori, & Antonakis, 2011; Maul, 2010; Roberts, Schulze, O'Brien, MacCann, Reid, & Maul, 2006; Rode, Mooney, Arthaud-Day, Near, Rubin, Baldwin, Bommer, 2008). While the representation of emotional intelligence as a valid form of intelligence has been challenged by some researchers, it has also been defended by many others.

In determining if emotional intelligence should be legitimately defined as a traditional form of intelligence, Mayer, Caruso, and Salovey (2000) outlined three standard criteria for determining that emotional intelligence should be considered a standard form of intelligence. The three determinants they pointed to were:

(a) emotional intelligence should be capable of being operationalized as a set of abilities, (b) the abilities should meet specified correlational criteria, and (c) the abilities should grow and develop with age and experience. Mayer, Caruso, and Salovey (2000) analyzed two separate studies and found that, “The present studies show that emotional intelligence, as measured by the MEIS, meets the above criteria of a standard intelligence (p. 267).” Roberts, Zeidner, and Matthews (2001) challenged the conclusions of Mayer, Caruso, and Salovey (2000) as to the measurement, theory, and validity of emotional intelligence as a traditional form of intelligence. Mayer, Salovey, Caruso, and Sitarenios, (2001) responded to this inquiry by presenting more data around the convergence of their scoring methods, reliability testing, and theoretical explanations. Other researchers also found the ability-based model of emotional intelligence to be scientifically sound and defensible (Ashkanasy & Duas, 2005; Daus & Ashkanasy, 2005). Additionally, the reliability and validity of the trait-based Bar-On EQ-i® was investigated by multiple researchers (Bar-On, 2006; Dawada & Hart, 2000) and the assessment was found to be reliable, valid, and predictive of human performance and behavior.

Emotional Intelligence Development

If in fact emotional intelligence is a strong contributor to the success of outstanding leaders, the question becomes whether or not emotional intelligence unlike IQ, can be learned and developed. From an organizational perspective, the ability to develop and increase the level of a leader’s emotional intelligence could prove to be a competitive advantage over competitors who do not focus on the development of emotional intelligence. Many researchers have looked into the question of whether or not emotional intelligence can be learned and developed, and the answer appears to be that emotional intelligence can unequivocally be learned and developed (Bradberry & Greaves, 2003; Cooper, 1997; Dulewicz & Higgs, 2000; Dulewicz & Higgs, 2004; Goleman, 1998; Groves et al., 2006). Before emotional intelligence can be developed, it is important to first assess baseline emotional intelligence in potential leadership candidates, to identify what areas of emotional intelligence on which to focus development.

Application of Emotional Intelligence to Leadership

There is a lack of data about the relationship between emotional intelligence and behavioral style; however, the MSCEIT has been utilized in a variety of studies looking at the relationship between emotional intelligence and leadership effectiveness (Kerr et al., 2005; Rosete, & Ciarrochi, 2005). Rosete and Ciarrochi, (2005) investigated the relationship between emotion intelligence, personality, cognitive intelligence and leadership effectiveness in senior executives in Australia using the MSCEIT assessment, and the Wechsler abbreviated scale of intelligence (WASI) cognitive assessment. Through the use of correlational and regression analyses, they found that emotional intelligence was associated with the ability to achieve business outcomes associated with leadership effectiveness. They also concluded that emotional intelligence explained variance not explained by either personality or IQ.

Kerr et al. (2005) investigated the relationship between managerial emotional intelligence using the MSCEIT, and leadership effectiveness as determined by subordinate ratings. Their findings suggested that the emotional intelligence of an individual may determine his/her leadership effectiveness. They also found that employee perceptions of leader effectiveness were strongly related to the emotional intelligence level of the manager. The leadership model most studied in relationship to emotional intelligence is transformational leadership, where the ability to effectively employ the emotional intelligence domain of self-awareness enhances the behavioral aspects of transformational leadership (Sosik & Megerian, 1999).

Emotional Intelligence and Transformational Leadership

Transformational leadership as attributed to Burns (1978) is differentiated by the fact that a transformational leader raises the level of motivation and moral actions of both the leader and their followers. Bass (1985) identified four factors characteristic of transformational leaders:

- Idealized influence
- Inspirational influence
- Intellectual stimulation
- Individual consideration

According to Harms and Crede (2010) idealized influence is attributed to a leader’s social charisma and being perceived as confident and committed to important ideals, as well as referring to a leaders charismatic behaviors that are based on ideals, values, and beliefs. Inspirational influence is the level to which leaders inspire followers and both set challenging goals and communicate optimistically in an effort to achieve those goals. Intellectual stimulation is based on how leaders motivate followers to take risks, challenge assumptions, and engage intellectually. Individual consideration is the way in which a leader supports the needs and concerns of their followers, mentors, encourages, and empowers followers to act. Sivanathan and Fekken (2002) theorized that the four factors associated with transformational leaders rely heavily on the personal and social skills that make up EI.

Clarke (2010) suggested that many authors and studies have linked higher levels of motivation in followers and activation of follower-needs associated with transformational leadership, with the emotional attachment of followers to a leader who possesses emotional intelligence. Similarly, Daus and Ashkanasy, (2005) posited that the emotional management component of EI appears to have both a compelling and intuitive relationship to transformational leadership. The authors quote findings from Coetzee and Schaap, (2004) who found that transformational leadership was tied to both overall EI, as well as two individual dimensions (identifying and managing emotion). Several studies have been conducted looking at transformational leadership, as well as the relationship between transformational leadership and EI.

Rubin, Munz, and Bommer (2005) conducted a study of 145 managers in a large biotechnology/agricultural firm and looked at how emotional recognition ability and personality affected transformational leadership behavior. The authors found that there was a positive link between emotional recognition and transformational leadership behavior. Rubin, Munz, and Bommer stated, “This study contributes much-needed empirical evidence in support of one aspect of emotional intelligence and its relationship to transformational leadership behavior” (p. 854). They go on to point out that those leaders in the study who were best able to accurately recognize emotions in others, were also rated highest on transformational leadership behavior. In another study of 164 pharmaceutical companies assessing the influence of transformational leadership on organizational innovation and performance depending on the level of organizational learning, Garcia-Morales, Matias-Reche, and Hurtado-Torres (2008) found a positive relationship between both transformational relationship and organizational innovation. Several additional studies outside of the bio-pharmaceutical industry have found similar relationships between transformational leadership and EI.

Barling, Slater, and Kelloway (2000) studied 49 managers and 187 subordinates to determine whether EI was associated with transformational leadership. Through multivariate analysis of covariance, they found that three aspects of transformational leadership (idealized influence, inspirational influence, and individualized consideration) were associated with emotional intelligence. Palmer, Walls, Burgess, and Stough, (2001) explored the relationship between emotional intelligence using the Trait Meta Mood emotional intelligence assessment, and effective leadership as measured by scores on the Multifactor Leadership Questionnaire (MLQ). They found that, "Collectively, the findings of the current study suggests that emotional intelligence as measured by the ability to monitor and manage emotions within oneself and others may be an underlying competency of transformational leadership" (p. 8). In a similar result, Brown and Moshavi (2005) found a possible relationship between EI, transformational leadership, and effective individual/organizational results. Harms and Crede, (2010) employed a meta-analysis to evaluate claims that EI, and transformational and other leadership behaviors were significantly related. They found that trait measures of emotional intelligence were more strongly associated with transformational leadership for both self-source and multiple-source ratings than were ability-based measures. In addition, the Bar-On EQ-i$^{®}$ had the highest validity estimate for both of the methods investigated. While many studies have reported a strong link between EI and transformational leadership, there have been some serious reservations raised about this relationship by a few investigators.

Antonakis (2003) questioned the relationship between EI and transformational leadership on a number of issues; in particular, he criticized many of the studies reporting a relationship between EI and transformational leadership for their failure to avoid Common Method Variance (CMV). According to Doty and Glick (1998) CMV happens when the technique used for measurement introduces a systematic variance of some type into the measure. Since both EI and transformational leadership intrinsically contain emotion elements there is a concern that they could be subject to CMV. In addition, the fact that many studies used a self-report method for measuring both EI and transformational leadership led Lindebaum and Cartwright (2010) to posit that there might be a further multiplicative effect on CMV. In an effort to account for CMV Lindebaum and Cartwright (2010) employed a study design that included three separate streams. Stream one included studies that collected data on trait EI and transformational leadership using self-report assessments. Stream two was based on studies that measured EI and transformational leadership using multiple different raters. Stream three used ability-based EI assessment and collected transformational leadership data from a different source. The results of the study showed that there was indeed a relationship between trait EI and transformational leadership in stream one where same-source data was used. However, when non-same-source data was evaluated, there was a lack of significant correlations. Lindebaum and Cartwright (2010) pointed out that collection of research variables from different sources is the best way to avoid CMV, and that a significant correlation from non-same-source ratings would demonstrate a valid relationship between two variables. However, a significant correlation was not substantiated in the findings of their study.

In a similar study, Barbuto and Burbach (2006) did find a significant correlation between EI and transformational leadership, but their results also demonstrated that the significant correlation decreased substantially when non-same-source data was examined. Harms and Crede (2010) found in their meta-analysis that the validity estimate of .59 when EI and leadership behaviors were derived from the same source. However, the validity estimate dropped to .12 when ratings were provided from different sources. Just as with the construct validity for EI there are a large number of both proponents and critics of the link between EI and transformational leadership, including a very poignant exchange between Antonakis (2003) who is skeptical of EI and Ashkanasy and Dasborough who are proponents of the tenets of EI (Antonakis, Ashkanasy, & Dasborough, 2009).

Additional studies looked at the importance of emotional intelligence in relation to motivating groups and group performance, and found that group satisfaction was tied to emotional intelligence, and that like individual emotional intelligence, group emotional intelligence could be developed (Druskat & Wolff, 2001; Zampetakis & Moustakis, 2010). In addition to the cited studies, several other studies did not clearly demonstrate a link between emotional intelligence and transformational leadership, and suggested that further research is warranted (Brown & Moshavi, 2005; Moss, Ritossa & Ngu, 2006). While the majority of studies and researchers agreed that the concepts associated with emotional intelligence should correlate with transformational leadership behaviors, the current tools and measurements did not always confirm this.

Measuring Behavioral Style and Personality

Behavioral style profiling and personality type profiling, have become popular in management development and training curriculums, across many industries (Psychometric Success, 2009). The primary reason for using these profiling assessments is that they are designed to give individuals knowledge about themselves, and their communication and decision making styles. Three of the most common assessments used by corporations today are Myers-Briggs Type Indicator (MBTI), Big Five Personality, and DiSC. Myers-Briggs is the most widely used and researched of the tools, according to Psychometric Success (2009). The MBTI is taken by two and a half million people a year, and is used by 89 of the fortune top 100 corporations in the United States. According to CPP (2009), “The Myers-Briggs Type Indicator (MBTI) assessment is the best-known and most trusted personality assessment tool available today” (p. 1). They estimate that as many as two million assessments are administered every year, and include employees from most Fortune 500 companies.

The MBTI is based on the theories and teachings of psychologist Jung. The MBTI is a complex psychometric tool, and was created by Katherine Cook Briggs and her daughter Isabel Briggs Myers, in 1962. The MBTI is broken down into four separate pairs of preferences, introversion or extroversion, sensing or intuition, thinking or feeling, and judging or perceiving. According to Hirsh and Kummerow (1993), “When you take the Indicator, the four preferences (one from each pair you identify as being most like you) are combined into what is called a type” (p. 1). There are 16 separate types in the MBTI, which are all described based on the combination of preferences from the assessment. Based on the investigation of the four primary scales in the MBTI, and the theoretical domains of the DiSC model, Inscape (2008) hypothesized that the Introversion/Extraversion (I/E) scale of the MBTI would have a strong correlation to *i* domain of DiSC, and that the Thinking/Feeling (T/F) scale in the MBTI would have a moderate to weak relationship to the DiSC domains of *i* and *S* scales. A study of 103 participants was administered using both the MBTI and DiSC, and the results were much as expected, the *i* scale of DiSC correlated positively (r=.65) with the I/E scale of MBTI. Additionally, there was an expected positive correlation between the T/F scale in the MBTI and the DiSC domains of *i* and *S*. There was also an unexpected positive correlation between the *C* domain of DiSC and the T/F scale in MBTI; however, it was not statistically significant (Inscape, 2008). This research demonstrates that there is some linkage between the concepts of MBTI and DiSC, but not a complete convergence of concepts.

Emotional Intelligence and Behavioral Style or Personality Studies

Meyers-Briggs Type Indicator. There is limited empirical research specifically looking at the relationship between emotional intelligence and personality type using the MBTI. One such study was conducted by Bohrer (2007) who examined the relationship between leader emotional intelligence using the Mayer, Salovey, Caruso, Emotional intelligence Test (MSCEIT), and MBTI in a population of 111 members of the United States intelligence community. Of the 111 participants only 74 completed the MBTI instrument, and were valid for analysis. The results of the study showed that while some of the MBTI types had higher emotional intelligence scores than others, an ANOVA statistical analysis did not reveal any statistically significant differences.

Similar results were seen by Huntington (2008) in a study that looked at the correlation between emotional intelligence and specific personality traits in 30 professionals working in the nonprofit sector in the Northwest. Personality traits were measured through the administration of the MBTI instrument, and emotional intelligence was measured using the BarOn EQ-i self-assessment. While some positive and negative correlations were identified, no significant correlations were discovered. In the findings, Huntington stated, “There was not a significant correlation between personality scores and measured emotional intelligence scores” (p. 60).

One study that did find a correlation between aspects of the MBTI and emotional intelligence was conducted by Higgs (2001). The research study involved 177 managers, and looked at the relationship between emotional intelligence as measured by the managerial self-assessment version of the EIQ (Dulewicz & Higgs, 1999), and Form G of the MBTI instrument. The results of the study showed “strong positive relationships between the MBTI dominant function of Intuition (and strong negative relationships with Sensing)” (Dulewicz & Higgs, p. 530). A weakness of this study was that it looked at four main parts of each MBTI style (sensing, intuition, thinking, and feeling, and not just the overall MBTI style). In addition to the studies looking at the relationship between emotional intelligence and MBTI, there are numerous studies that examined the correlation between MBTI and leadership effectiveness. This is important because Goleman (1995) pointed to the fact that almost 90% of leadership success was driven by emotional intelligence. The studies that have been conducted to date show a mixed result when looking at the correlation of personality to leadership effectiveness.

Rasor (1995) conducted one of the largest studies looking at the relationship between personality using MBTI, and leadership practices utilizing the Leadership Practices Inventory (LPI). The study involved 279 law enforcement officers and 53 corrections officers (n = 332). While results of the study demonstrated similarities between personality traits of law enforcement and corrections officers, no correlation was found between personality traits and leadership effectiveness. Rasor stated, “None of the five regression analyses indicated a significant relationship between the eight preference categories of MBTI and the ratings of supervisors and subordinates within each of the five categories of the LPI” (p. 71).

Other investigators (Flores, 1987; Vanover, 1998; Wittstruck, 1986) investigated the relationship between personality traits and emotional intelligence using MBTI to measure personality. In each study, the investigators found no significant correlation between personality and emotional intelligence. However, two studies did report a correlation between a couple of MBTI styles and leadership effectiveness. Anderson (1996) studied eighty Texas school administrators, and investigated the relationship between four selected MBTI personality styles (ISTJ, ESTJ, INTP, and ESFJ) and leadership effectiveness, as measured using the Leader Behavior Analysis II (LBAII). Anderson (1996) reported a significant difference in leader effectiveness for the extrovert, sensing, thinking, judging (ESTJ) personality type. In another study, Kroeger and Thuesen (1992) suggested that the extroverted, intuition, thinking, judging (ENTJ) personality style appeared to be the most effective leaders. The personality traits that were common between the two studies in linking to leadership effectiveness to personality via the MBTI were extroversion, thinking, and judging. In addition to the

MBTI instrument, some studies have also looked at the correlation between personality traits and other factors using the Big Five Personality Model.

Big Five Personality model. The Big Five Personality model was created by Digman (1990), and consists of five main personality factors (openness, conscientiousness, extroversion, agreeableness, and neuroticism), with several traits falling under each of the big five factors.

- *Openness Scale:* Contrasts an individual who is open to new, unconventional and novel ideas, versus those who are more conservative and conventional in their thinking and approach.
- *Conscientiousness Scale:* Individuals who score high on this scale are organized, planning, and careful, versus those who score low on this domain are more disorganized, inefficient, and careless.
- *Extroversion Scale:* People who score high on this trait are sociable, outgoing, talkative, energetic, and those who score low are more quiet, shy, reserved, and solitary.
- *Agreeableness Scale:* Individuals who score high on this are warm, kind, compassionate, and trusting, and those who score low tend to be more antagonistic and untrusting.
- *Neuroticism:* People who score high on this trait are seen as comfortable with themselves, self-satisfied, and calm, and those who score low are seen as emotional and self-conscious.

The Big Five model is very closely related to the MBTI, and was linked to the MBTI scoring system by Harvey, Murry, and Markham (1995). A study by Hurlic (2009) looked at the relationship between emotional intelligence, personality structure, ethnic identity, organizational context and perceptions of organizational diversity. The study looked at 182 business and education program students from three separate Southern California Universities who worked for either profit or not-for-profit organizations. The researcher used the Emotional Intelligence Self-Description Inventory (EQSDI) to measure emotional intelligence, and the Big Five Inventory Test to identify personality structure. The findings of the study showed positive correlations between agreeableness, facilitating thinking, understanding emotions, regulating emotions and diversity and affirmative action (DA). Openness was significant as well, but negatively correlated to DA. Since both the Big Five model and the MBTI are based on personality constructs previously studied, rather than behavioral styles, they were not selected for this study.

DiSC® model. The behavioral style model that was selected for this study was the DiSC four-quadrant behavioral model, which is based on the foundational work of William Moulton Marston (1928). Unlike the MBTI and the Big Five model, the DiSC model is more of a behavioral style indicator, than a personality type indicator; although, some investigators (Green, 2005; Jackson, 2008) did refer to DiSC as a personality assessment. According to Furlow (2000), “This model is the oldest and most researched of the behavioral models” (p. 107), which makes it ideal for this study, looking at what relationship, if any at all, there is between emotional intelligence and behavioral style. The DiSC behavioral model is based on four primary styles (dominance, influence, steadiness, and conscientiousness), which is where the DiSC acronym was derived. Marston (1928) never employed his four *primary emotions* as a means to type an individual; However, Inscape (2008) did apply an analytical statistical factor model to the adjectives that Marston outlined in his work to arrive at the original DiSC model (See Appendix B). The statistical analysis produced a mathematical model containing two major dimensions labeled by Inscape (2004) as "Perception of personal power in the environment and perception of relative favorableness of that environment" (p. 2-1). The vertical dimension of the model is described in terms of perceived power of the individual, with both the *D* and *i* styles perceiving that their personal power is greater than that of the environment they find themselves in, and the *S* and *C* styles perceiving themselves as less powerful than the environment. This translates into the *D* and *i* styles as being more proactive and assertive to an environment they feel they control, and the *S* and *C* styles being more cautious and reactive to an environment in which they perceive themselves less powerful.

The horizontal dimension of the DiSC model is delineated in terms of perceived favorability of the environment. The *D* and *C* styles identify the environment as less favorable (i.e. challenging or resistant), and the *i* and *S* styles view the environment as favorable (i.e. welcoming, accepting, agreeable; Inscape, 2004). Thus; overall, the *D* individuals feel that they are more powerful than an unfavorable environment (dominance), the *i* individuals feel they are more powerful than a positive environment (influence), the *S* style individuals perceive themselves as less powerful than a positive environment (steadiness), and the *C* style individuals see themselves as less powerful than an unfavorable environment (conscientiousness). Through this model, Inscape (2004) stated, "In reviewing the literature and conducting our own research, we found a more contemporary language that supports the Marston model and is far more effective in conveying meaningful behavior that is easily put into practice" (p. 2-2). In an effort to take the original Marston model behaviors and make the language more useful and contemporary, Inscape (2004) updated the descriptive language of the vertical and horizontal axis of the DiSC model (See Appendix C).

DiSC® Assessment. Each of the four primary DiSC styles has a list of traits that are hallmarks of that style, and are assessed via the Everything DiSC Classic 2.0 assessment. From this assessment, an individual will be given a plotted score for each of the four style domains (*D, i, S, C*) additionally, one of the 15 separate DiSC classic patterns will be identified. The fifteen DiSC classic patterns are derived from the combination of scores for a respondent in each of the four primary styles, as everyone has at least some level of traits within each of the four styles.

There is very limited empirical research at this point looking at the relationship between behavioral style using the DiSC instrument, and either emotional intelligence, or leadership effectiveness. Hogan, Curphy and Hogan, (1994) looked at personality and leader effectiveness, and discussed that the personality traits of hard working, responsible, and inner work standards would be described as *conscientiousness*, and link to leader effectiveness. *Conscientiousness* is one of the behavioral preferences identified in the DiSC model.

Jackson (2008) investigated the relationship between the emotional intelligence and personality of principals in a case study involving two Texas elementary schools. The study was very small, and included only two principals and six teachers. The MSCEIT was used to determine the emotional intelligence scores of the principals, and DiSC was used as the personality instrument. The findings showed that both principals scored high in influencing and conscientiousness, and low on dominance, and possessed above average emotional intelligence. Due to the small sample size it was not possible to do any correlation statistics. A study by Green (2005) examined the relationship between leadership effectiveness and personality in 161 participants from the FBI National Academy. As a part of the survey design, DiSC was used to measure personality, and LAB II was used to assess leadership effectiveness. The study did not find any significant relationships between personality and leadership effectiveness. The findings led the researcher to speculate that personality assessments may not be effective in predicting for leadership success among officers. While some researchers (Green, 2005; Jackson, 2008) described the DiSC assessment as a personality measure, this was not shown to be the case in the study of correlation looking at MBTI and DiSC (Inscape, 2008).

Summary

With the difficult economic and political climate surrounding the bio-pharmaceutical industry, it is critical to both retain outstanding performers, and identify individuals with leadership potential that can provide a competitive advantage to their organizations going forward. Phyogen, Inc., like most organizations in the industry, has charged management development with looking at ways to identify, retain, and develop, the next generation of leaders for the company, beyond just the use of performance evaluations and sales results. Based on all of the research suggesting that emotional intelligence is a predictor of leadership and organizational success, the decision was made to use an emotional intelligence assessment in the management development training arena, and look at whether there may be a relationship between emotional intelligence, and the behavioral style assessment already being conducted within Phyogen, Inc. The emotional intelligence assessment employed by Phyogen, Inc. was the

TalentSmart Emotional Intelligence Appraisal, based on its ease of administration and numerous developmental resources post assessment.

The concept of emotional intelligence measurement as a standard intelligence and predictor of leadership success has run into several of the same challenges from investigators that its predecessor social intelligence encountered. Many researchers have stated that the concept of emotional intelligence is too broad, encompassing many important attributes like personality and general cognition that are already well known and established, and lacks good construct validity from a psychometric construct perspective. However, many other researchers have studied emotional intelligence, particularly using the Bar-On EQ-i® or the MSCEIT, and find them to have acceptable reliability and validity. The one point that does not appear to be in contention is that many of the intra- and interpersonal skills that are linked to emotional intelligence do appear to be linked to positive leadership skills, particularly transformational leadership.

Assessing emotional intelligence brings some very important benefits to an organization. First, it may distinguish who from a pool of prospective leaders has the highest level of baseline emotional intelligence. Since emotional intelligence has been linked to leadership performance, it could possess a leadership pipeline identification benefit. Second, a great deal of research points to the fact that emotional intelligence can be developed and improved. Therefore, it may confer a competitive advantage to those organizations that do the best job of training and developing their leaders on emotional intelligence.

Chapter 3: Research Design and Methodology

The purpose of this study was to identify to what extent, if at all, there is a relationship between District Sales Managers (DMs) emotional intelligence and their behavioral style. The research questions to address this purpose are the following:

1. To what extent, if at all, is there a relationship between District Sales Manager DiSC® classic pattern, and the 6 primary Bar-On EQ-i® scores (total EQ, intrapersonal awareness, interpersonal awareness, adaptability, stress management, and general mood)?
2. To what extent, if at all, are there significant correlations between District Sales Managers 4 DiSC® quadrant scores (dominance, influence, steadiness, and/or conscientiousness), and the 6 primary EQ-I scores?
3. To what extent, if at all, are there significant correlations, after taking into account demographic characteristics (age and gender), between District Sales Managers 4 DiSC quadrant scores and the 6 primary EQ-I scores?

This chapter discusses the methodology that the researcher used to study the relationship between the behavioral style and level of emotional intelligence of District Sales Managers (DMs) at Phyogen, Inc. A description of the research design and rationale for choosing the study population is included, along with a review of the sampling method and data collection process employed. The chapter concludes with a review of the instrumentation and analytical techniques employed in the study.

Research Design and Rationale

The purpose of this study was to identify to what extent, if at all, there is a correlation between the level of emotional intelligence of biopharmaceutical DMs at

Phyogen, Inc. and their corresponding behavioral style. This study is a relational, cross sectional, single group study, and was conducted in April, 2012. Participants for the study were DMs from Phyogen, Inc. with at least 1 year of DM experience, and who were either currently enrolled in, or graduated from, the management development program at Phyogen, Inc. A 1-year time frame was selected as DMs, at that point of their development, have completed the initial phases of manager training, including coaching, performance management, and talent selection. However, they have not been introduced to emotional intelligence concepts or training, and hence satisfy the criterion for a baseline emotional intelligence study.

Data regarding the overall level of emotional intelligence (EI) of the participants, as well as, EI's five domain scores (intrapersonal awareness, interpersonal awareness, adaptability, stress management, and general mood) were measured using the Bar-on EQ-i® self-assessment tool. The individual DM's behavioral style (dominance, influence, steadiness, conscientiousness), was measured prospectively using the DiSC® Classic, self-assessment (self-report) questionnaire. It should be noted that extant data for all of the DMs already existed, as both the emotional intelligence and behavioral style assessments are part of the mandatory training that DMs at Phyogen, Inc. must complete. The extant DiSC® information used in this study was obtained from Phyogen, Inc. The data from the EQ-i emotional intelligence and extant DiSC behavioral style questionnaires were matched and analyzed for correlation between emotional intelligence and behavioral style. Both emotional intelligence and behavioral style data were collected via self-reported survey questionnaires. Analysis of variance (ANOVA) and Pearson's

Correlations were used to identify any possible relationships between behavioral style and emotional intelligence variables in this study.

Population, Sampling Method, Sample, and Participants

This quantitative, quasi-experimental, relational, cross-sectional study was conducted via a census sampling of District Sales Managers (DM's) working for Phyogen Inc., who have been DM's for a minimum of 1 year. There are currently 172 district sales mangers employed at Phyogen Inc. Phyogen, Inc. is divided into four separate business units which are geographically dispersed across the United States. The number of DM's in each business unit is determined by the ratio of DM's to the sales representatives they manage. A ratio of one DM for every 6-10 sales representatives is the formula employed. The breakout of district sales managers per business unit is as follows: Bone Health (75 DM's), Oncology (51 DM's), Nephrology (20 DM's), Inflammation (26 DM's). All District Sales Managers attend mandatory Field Manager Onboard Phase I training within the first 8 weeks of being hired or promoted to District Manager at Phyogen, Inc. This Onboard training includes talent and selection training, coaching, performance management, and HR and employment law training. This initial training is designed to prepare DM's for their role, and transfer the necessary skill sets and expectations for managing and leading at Phyogen, Inc.

Immediately after completing Field Manager (FM) Onboard Phase I training, all DM's are enrolled in computer-based Field Manager Phase II training, which they must complete over the next 6-8 months, and which reinforces the key learning from Field Manager Onboard Phase I training. In the 8-12 month timeframe for new DM's, they attend their second round of face-to-face training, which focuses on advanced coaching and presentation skills. At this point they have been in the DM role for approximately 1 year, and have fulfilled the basic training requirements for the DM position. After completing Field Manager Phase III training, the DM's are assigned computer-based Field Manager Phase IV training, which reinforces concepts from FM Phase III, and prepares them for the final face-to-face training. The final face-to-face training for DMs is Field Manager Phase V, and takes place at 18 months to 2 years; it consists of emotional intelligence training, and how to conduct difficult conversations. All of the essential training for DMs takes place in FM Phase I-IV training, and Phase V is considered advanced training. Therefore, including only DMs with 1 year or more of DM experience allows for selection of only those DMs who have been through all of their essential training, and who should be fully installed into the job.

Within Phyogen, Inc. there is generally about 20% of DMs who are new to the role and who have less than 1 year of DM experience, and these DMs were not included in the sample frame for this study. Given this 20% reduction in the total population of DMs, there were approximately 138 DMs who met the criteria for taking part in this study. However, the final DM count for this study was 148. According to Patten (2010), with a population of 148 DMs, a sample size of at least 106 DMs was required for the study. In order to achieve the sample size required by Patten (2010), 70% of the available DMs needed to take part in the study. A census sample of the 148 DMs eligible for the study was employed to achieve the target participant count of 106. The final participant count for the study was 112 DMs and the sample size recommended by Patten was achieved.

The Phyogen Management Development Training database was used to identify and target the appropriate DM participants because all DMs are tracked in the database from promotion/hire into the DM role to termination from the role. The database includes all role specific data, all demographic data, and contact information for all DMs employed at Phyogen, Inc..

The DM participants in the study were informed about the nature and purpose of the study, were notified that their participation was completely voluntary, and also that they were free to withdraw from the study at any time. Also they were informed that the research was not affiliated in any way with Phyogen, Inc., and the data collected would not be shared with any individuals employed at Phyogen, Inc. Thus, the individual participant data would not be used in any manner to identify respondents or evaluate their individual leadership potential.

Methodology

The census data was collected by the researcher from the Bar-On EQ-i® survey instrument. All participants were asked to fully complete the Bar-on EQ-i® self-assessment tool by clicking on a link included in the invitation e-mail sent from the researcher. Participants were informed that the Bar-on EQ-i® self-assessment should take no longer than 30-40 minutes to complete and that they needed to complete the questionnaire during the same session. After completing the EQ-i survey, the participants would simply click on the submit button at the end of the survey, and the results were automatically sent via e-mail to the researcher's primary e-mail account. Participants were sent the survey in April, 2012, and given 30 days to complete the instrument. If the response rate had been less than the necessary 106 respondents, all non-respondents would have received subsequent e-mails at 15 and 30 days post-deadline encouraging them to take part in the study (Israel, 1992).

It was believed that the non-response rate would be very low, since Phyogen, Inc. requires that all DMs complete both the DiSC and a TalentSmart Emotional Intelligence Appraisal, as part of their training for the DM role. Also participants were given the option of receiving an individual, confidential, full report from the instrument vendor for a nominal $38 charge.

The second instrument was the DiSC Classic 2.0 behavioral style questionnaire. Because all DMs at Phyogen, Inc. take the DiSC Classic 2.0 behavioral style assessment as a part of their existing management training, those extant DiSC assessment results were used in the study. Those extant results were used because that reduced the burden on participants to complete an additional assessment and reduced the overall cost of purchasing and processing additional instruments. In addition, the test-retest reliability of the DiSC Classic 2.0 instrument is high enough to warrant the use of the extant data.

Human Subjects Consideration

Phyogen, Inc. mandates that all District Sales Managers participate in both a DiSC (behavioral style), and Talent Smart Emotional Intelligence self-assessment as a part of their DM training. Permission to run the Bar-On EQ-i® assessment was formally required by Phyogen, Inc. Further, since this research was not Phyogen-sponsored, prior to the initiation of the research surveys and collection of data, formal permission for the research and use of DiSC® extant data was secured from the Executive Vice-President of sales at Phyogen, Inc. The researcher also applied for, and was granted, Pepperdine IRB approval prior to conducting the research (See Appendix D). Participants in the research were given written guarantee within the informed consent process that their names and Bar-On EQ-i® survey results would be kept confidential and private.

To minimize any risk or adverse consequences that could be associated with participating in this study, assurance was also given that individual participant EQ-i® data and results would not be shared either within or outside Phyogen, Inc. Risk was also mitigated by informing participants that their participation in the survey was completely voluntary. All participants were e-mailed a link to the EQ-i assessment, and instructed that those who do not wish to take part did not need to click on the link. This eliminated the risk of being socially identified as a non-responder by either the researcher or the other participants. Minimal risk to the participants was identified as "the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests (45 CFR 46.102(h)(i))" (Pepperdine University, 2011).

The benefits of this study were conveyed to the participants as adding to the body of knowledge about leadership and the correlations of components such as behavioral style and emotional intelligence. Additionally, participants received full disclosure about the nature of research and their participation in the study, the disclosure informed participants of all study pertinent information according to federal guidelines including; (a) a description of the research, (b) possible risks and benefits of the study, (c) confidentiality, (d) the right to not participate, (e) researcher contact information, and (f) any and all alternatives. The disclosure and link to the EQ-i assessment were sent together to participants and contained instructions for completing the assessment. The e-mail disclosure also included the implied informed consent. All data will be kept on a secured hard drive, locked in a cabinet on the researchers' property. Compensation for voluntary participation in the survey was not offered.

Data Collection Setting and Procedures

District Sales Managers employed by Phyogen, Inc. with a minimum of 1 year experience in this role were identified through the management development training database at Phyogen, Inc. in March, 2012. A Pepperdine IRB application and request for exempt review was completed prior to any data collection to gain permission to administer the Bar-On EQ-i® emotional intelligence appraisal questionnaire to the research participants. After gaining Pepperdine IRB and Phyogen, Inc. organizational approval, the researcher provided an overview of the study and invited the participants via e-mail to take part in the study. The survey instrument was tracked via a unique assessment password assigned to each participant.

The researcher collected all of the data from participants on a weekly basis. The data were stored in two separate databases (one each for the DiSC® and Bar-On EQ-i® data) on the primary researchers' laptop, and backed-up on a portable hard drive in the researcher's locked office. In order to ensure that there was as high a response rate as possible, a final collection of the data was made one-week after the deadline for the return of the questionnaires. No further recruitment took place after the 30-day deadline for return of questionnaires. A final date for recruitment of non-responders was four weeks after the original response date.

Emotional Intelligence Assessment Validity and Reliability

According to Matthews et al. (2004) the Bar-on EQ-i® and the MSCEIT both have enough validity and reliability data to be used as research instruments. Matthews et al. (2004) have also argued that reliable and valid measurement must be combined with solid process-based theory, and practical application in order to build the science of EI. He identified content validity, predictive validity, reliability, and construct validity as the four criteria that an EI assessment should satisfy to be considered psychometrically valid.

Content validity. This is determined by the items of the assessment accurately representing the construct that is being measured (Vogt, 2005). With respect to EI assessments, it is difficult to determine content validity when the trait being measured is ill-defined. Matthews et al. (2004) give the example of emotion perception in many of the EI models, and point to the fact that it is hard to clearly define everything that makes up emotion perception. According to Conte (2005) evidence for content validity of EI measures is lacking because of the nebulous theoretical development of several of the measures, and because of the difference in content across EI assessments. As an example, several researchers (Conte, 2005; Davies, Stankov, & Roberts, 1998; Schulte, Ree, & Carretta, 2004; Van Rooy & Viswesvaran, 2004) suggest that EI is predicted by other well-known personality constructs such as the Five-Factor Model (FFM) and the Myers-Briggs Type Indicator (MBTI). Content validity is not determined through statistical analysis, but rather through the consensus of experts in the field of study (Matthews et al., 2004; Vogt, 2005).

Predictive validity. For an EI assessment to have predictive validity, it should be able to predict future or successive performance or behavior (Bryman, 2008; Vogt, 2005).

Goleman (1995, 1998) suggested that EI was an important predictor of performance, greater than that of IQ alone. Several researchers (Conte, 2005; McEnrue & Groves, 2006; Van Rooy & Visewvaran, 2004) pointed to EI having some predictive validity with regard to performance in a variety of settings (job & academic), but not nearly as significant as Goleman espoused. Van Rooy & Viswesvaran (2004) conducted a meta-analysis of 69 independent studies and found that, "The overall predictive validity of EI appears to hold fairly constant across all performance domains" (p. 86). They found correlations ranged from a high of p=.24 for work performance to p=.10 for academic performance. McEnrue and Groves (2006) found that various EI assessments (MSCEIT, ECI-2, EQ-i, & EIQ) all demonstrated moderate predictive validity.

Reliability. This deals with the consistency or stability of a measure or test from one time to the next, and is sometimes referred to as test-retest reliability (Bryman, 2008; Vogt, 2005). Overall, Conte (2005) pointed out that EI measures appear to have adequate internal consistency and reliability. According to Bar-On and Parker (2000) the internal consistency reliability of the EQ-i was 0.76. The test-retest reliability was 0.85 after one month and 0.75 after four months. The internal consistency reliability of the ECI assessment scales were lower than those of the EQ-i, and ranged from 0.61 to 0.85, (Conte, 2005). According to Mayer, Salovey, Caruso, and Sitarenios (2001) the total scale and branch level reliabilities for the MSCEIT were above 0.75. In addition, the average internal consistency reliability was 0.68 for consensus scoring and 0.71 for expert scoring.

The reported internal consistency and test-retest reliability estimates for the

EQ-i® assessment appears to be adequate, as the instrument demonstrated an average internal consistency with Cronbach's alpha coefficients of .73 to .89. The test-retest reliability procedures were found for South African samples only. Average test-retest coefficients are .85 and .75 for 1- to 4-month time periods**.** The validity of the Bar-On EQ-i® instrument was looked at using four separate validity indicators (omission rate, inconsistency index, positive impression, and negative impression). The instrument has a built-in correction factor that adjusts the scale scores based on both the positive and negative impression scores (Bar-On, 1997).

Construct validity. This is the extent to which the variables of the measure or assessment accurately operationalize the construct being assessed (Vogt, 2005). Researchers will often use convergent and discriminant validity to test for overall construct validity. While the definition is not complex, applying it to a complex and highly theoretical model such as EI is difficult (Matthews et al., 2004). McEnrue and Groves (2006) identified that the ability-based MSCEIT demonstrated a high degree of construct validity based on the discriminate and convergent validity of the model compared to a series of cognitive ability and personality measures. In comparison the EQ-i demonstrated relatively low construct validity due to its high intercorrelations with both personality measures and other EI measures.

Instrumentation

The purpose of this quantitative, relational, cross sectional, single group study, was to identify if there is a relationship between the level of emotional intelligence of bio-pharmaceutical sales managers, and their corresponding behavioral style. Quantitative data were collected from all District Sales Managers at Phyogen, Inc. with one year or greater of District Manager experience. The Phyogen Management Development database was used to identify all District Sales Managers with the tenure criterion for the study. The study consisted of two separate self-reporting assessments; one to measure behavioral style (DiSC®) and one to measure emotional intelligence (BarOn EQ-i®).

The emotional intelligence assessment that was used in this study was the BarOn EQ-i® assessment, which was created in 1997 by Dr. Reuven Bar-On. The BarOn EQ-i® is a 133 question self-assessment, which yields scores on 5 composite scales, (intrapersonal, interpersonal, stress management, adaptability, and general mood) and 15 subscales under the 5 composite scales including: (a) intrapersonal subscale scores (*self-regard, emotional self-awareness, assertiveness, independence, and self-actualization*), (b) interpersonal subscale scores (*empathy, social responsibility, and interpersonal relationship*), (c) adaptability subscale scores (*reality testing, flexibility, and problem solving*), (d) stress management subscale scores (*stress tolerance and impulse control*), and (e) general mood subscale scores (*optimism and happiness*), plus 4 validity indicators (*omission rate, inconsistency, positive impression, and negative impression*). Raw scores on the EQ-I® are tabulated and then converted to standard scores based on a mean of 100 and standard deviations of 15. This method was used because it is similar to that used in cognitive intelligence tests; to generate IQ scores (BarOn, 1997). The assessment required approximately 30 minutes to complete, and is currently the most widely used and researched emotional intelligence self-assessment on the market, which is why it was selected to this study. Typical questions on the assessment include, *I have good relations with others*, *I'm fun to be with*, and *I like helping people*. Participants responded to the questions using a 5-point Likert scale as follows: 1-*Very seldom or not true of me*; 2-*Seldom true of me*; 3-*Sometimes true of me*; 4-*Often true of me*; and 5-*Very often true of me or true of me*.

The behavioral style model that was selected for this study was the DiSC® four-quadrant behavioral model, which is based on the 1928 work of William Moulton Marston. The DiSC® assessment was developed by Inscape Publishing Inc. The DiSC® behavioral model is based on four primary styles (dominance, influence, steadiness, and conscientiousness), which is where the DiSC® acronym was derived. Each of the primary styles has a list of traits that, are hallmarks of that style, and are assessed via the Everything DiSC® Classic 2.0 assessment. From this assessment, an individual receives a plotted score for each of the four style domains (*D, i, S, C*), additionally, one of the 15 separate DiSC® classic patterns is identified. The 15 DiSC® classic patterns are derived from the combination of scores for a respondent in each of the 4 primary styles, as everyone has at least some level of traits within each of the 4 styles. The Everything DiSC® Classic 2.0 assessment consists of 28 groups of 4 separate adjectives, where the respondent chooses which one of the 4 adjectives that is most like him or her at work, and which one of the 4 is least like him or her at work. Typical adjective groupings on the assessment include, enthusiastic, daring, diplomatic, satisfied, competitive, considerate, joyful, and private. Each of the adjectives matches to one of the DiSC domains, for instance, competitive = dominance, joyful = influence, considerate = steadiness, and private = conscientiousness. The scoring method used for the DiSC Classic instrument is a measurement technique called *forced-choice*, where the respondent is forced to choose which of the four adjectives is most like, and which is least like him or him. The most and least choices for each of the 28 questions are then placed on a graph from -28 to +28.The DiSC® assessment takes approximately 20-30 minutes to complete, and the full report is generated immediately upon completion. Test validity and reliability have been evaluated for the DiSC® assessment, and as with many psychometric instruments dealing with human behavior and emotion, the test-retest reliability declines the longer the interval between tests. With the DiSC® Classic assessment, Inscape Publishing (2008) reports, "The four scales of DiSC® Classic (*D-Dominance, i-Influence, S-Steadiness, C-Conscientiousness*) have been assessed for their test-retest reliability over varying periods of time, and the following coefficients were found. In a time interval ranging from 1 week to 14 months, the reliability coefficients for *D* were, .89-.79, for *i* were, .87-.80, for *S* were, .89-.76, and for *C* were, .89-.71" (p.1-3). According to Inscape Publishing reliability coefficients range between -1 and +1. The closer that the correlation coefficient is to +1, the more stable the instrument is considered to be. Researchers generally consider coefficients above .70 as acceptable, and coefficients above .80 are considered very good. Thus, the coefficients registered on the DiSC® instrument are considered quite stable over time. The DiSC® Classic has also demonstrated good-to-excellent internal consistency registering the following Cornbach's Alpha coefficients: *D*: .92, *i*: .87, *S*: .88, and *C*: .85. All of the coefficients are well above the .70 cutoff that is considered to be adequate according to Inscape Publishing.

The construct validity of the DiSC® assessment was examined using scale intercorrelations, multidimensional scaling, and factor analysis. In a study of 7,038 respondents, the assessment inter-correlations among the *D, i, S, and C* scales supported the overall model. In a study of 45,588 respondents a multidimensional scaling analysis demonstrated strong support for the DiSC® model, as well as, the ability of the DiSC® tool to measure that model. In addition, one factor analysis of 812 participants in the "DiSC® Classic developmental sample demonstrated that each of the *D, i, S, C* scales, items grouped together in the expected fashion" (Inscape, 2008, p.1-7). A factor analysis using a Varimax rotation on a sample of 45,588 respondents was conducted, and a two-factor solution specified. The results demonstrated, "Over 90% of the items loaded most highly on the appropriate factor. That is, *D* and *S* items loaded most highly on the first factor and *i* and *C* items loaded most highly on the second factor" (Inscape, 2008, p. 1-7).

Analytical Techniques

The data collected from both the behavioral style and emotional intelligence survey instruments were entered into Microsoft Excel®, with one spreadsheet dedicated to the BarOn EQ-i® data, and a separate spreadsheet for the DiSC® behavioral style data. The BarOn EQ-i® spreadsheet included the total emotional intelligence score, as well as, the scores for each of the five core domains, which were already tabulated in the instrument. The DiSC® behavioral spreadsheet included the DiSC® classic pattern for each participant, and their *D, i, S and C* domain scores, which also were already tabulated within the DiSC® instrument. Each participant was assigned a numerical code starting at 1 and continuing through 148, the total number of participants. Demographic data including gender and age, along with results from the two survey instruments were inputted into the Excel database. The database allowed for sorting and filtering, so that the researcher could analyze data relative to the four research questions posited in chapter one. The raw data were maintained in the Microsoft Excel® document, and were imported into SPSS statistical software for analysis.

Research questions one and two sought to determine whether or not there were correlations and relationships between behavioral style patterns and domains, and emotional intelligence scores. For analysis, a Pearson’s Correlation Coefficient (*r*) analysis was used to explore to what extent, if any, there is a relationship between the numeric variables. The scale employed for the Pearson’s Correlation Coefficient ranged from +1, representing a perfect positive correlation, to a -1, representing a perfect negative correlation, with a score of zero denoting no correlation. An analysis of variance (ANOVA) was employed to identify any possible differences between the behavioral styles (categorical) and emotional intelligence scores (numeric). Research question three sought to determine whether or not there were any correlations between EI and a DM’s behavioral style taking into account the DM’s age and gender. Partial correlations were used in the analysis of research question three. An alignment table summarizes the alignment of the study research questions to the descriptive statistics utilized (See Appendix E).

Chapter 4: Results and Analyses

This chapter presents the results of the analyses of the data collected for the purpose of identifying to what extent, if at all; there is a relationship between District Sales Managers (DMs) emotional intelligence (EI) and their behavioral style as indicated by their DiSC assessment at Phyogen, Inc. This relationship was examined both at the overall level of EI as well as among the five composite factors from the BarOn EQ-i® assessment (*intrapersonal scale, interpersonal scale, adaptability scale, stress management scale, and general mood scale*). The DiSC® self-assessment was employed to assess DM's overall behavioral style, which includes the four individual behavioral style domains of *Dominance*, *influence*, *Steadiness*, and *Conscientiousness*. The total population identified for the study was 148 DMs with 1 year or more of tenure in the DM position at Phyogen, Inc.

A total of 113 DMs completed the survey. One DM needed to be excluded on the basis that the results from that participant were identified as being so far outside the statistical limits of the rest of the population as to be identified as an outlier. The data from the remaining 112 DMs were analyzed for the purpose of answering the following three research questions:

1. To what extent, if at all, is there a relationship between District Sales Manager DiSC® classic pattern, and the six primary Bar-On EQ-i® scores (total EQ, intrapersonal awareness, interpersonal awareness, adaptability, stress management, and general mood)?

2. To what extent, if at all, are there significant correlations between District Sales Managers four DiSC® quadrant scores (dominance, influence, steadiness, and/or conscientiousness), and the six primary EQ-I scores?
3. To what extent, if at all, are there significant correlations, after taking into account demographic characteristics (age and gender), between District Sales Managers four DiSC quadrant scores and the six primary EQ-I scores?

Table 1 displays the frequency counts for selected variables. In this study, there were more men (56.3%) than women (43.7%). Twelve of the 15 total DiSC classic patterns were represented by the participants in this study. The most common DiSC classic pattern for the participants in this study was *Inspirational* (20.5%); followed by *Creative* (19.6%), *Persuader* and *Promoter* (each 13.4%), and Results Oriented (11.6%)

Table 1

Frequency Counts for Selected Variables

Variable	Category	*n*	%
Gender	Male	63	56.3
	Female	49	43.7
DiSC Classic Pattern	Appraiser	8	7.1
	Counselor	3	2.7
	Creative	22	19.6
	Developer	2	1.8
	Inspirational	23	20.5
	Investigator	1	0.9
	Objective Thinker	5	4.5
	Perfectionist	3	2.7
	Persuader	15	13.4
	Practitioner	2	1.8
	Promoter	15	13.4
	Results Oriented	13	11.6

(*N* =112)

As shown in Figure 1, the five most commonly observed DiSC® classic patterns in this study accounted for 78.5% of the total participant patterns. The remaining seven DiSC® classic patterns found in this study only accounted for 21.5% of the resulting patterns, with none of those seven accounting for more than 7.1% of the overall total.

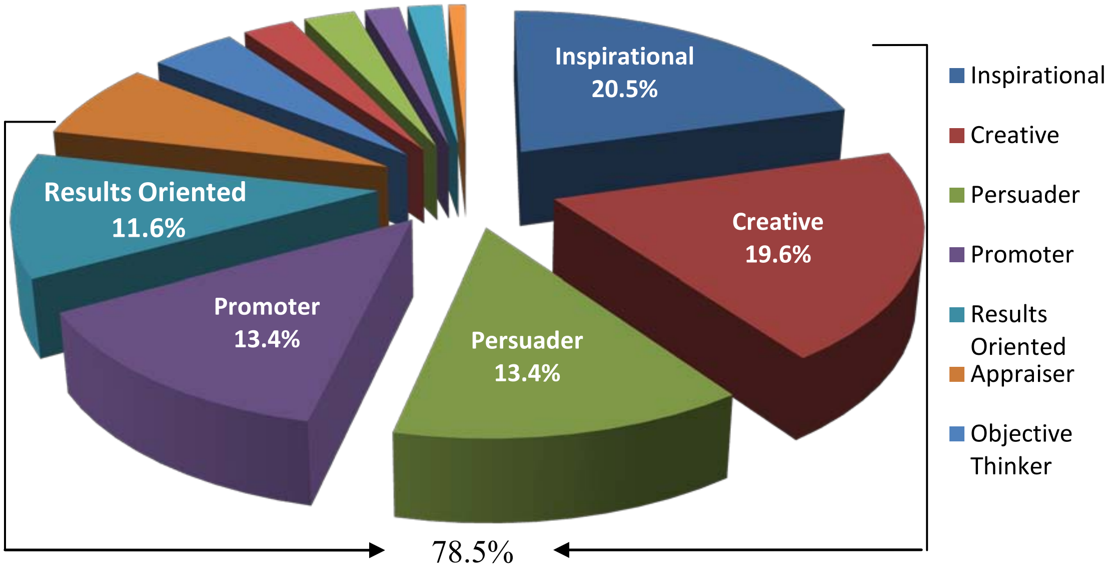

Figure 1. District sales manager DiSC® classic pattern distribution (N=112).

As shown in Figure 2, the highest DiSC® domain scores were *Dominance* (D) (M = 5.18), and *influence* (i) (M = 5.09).

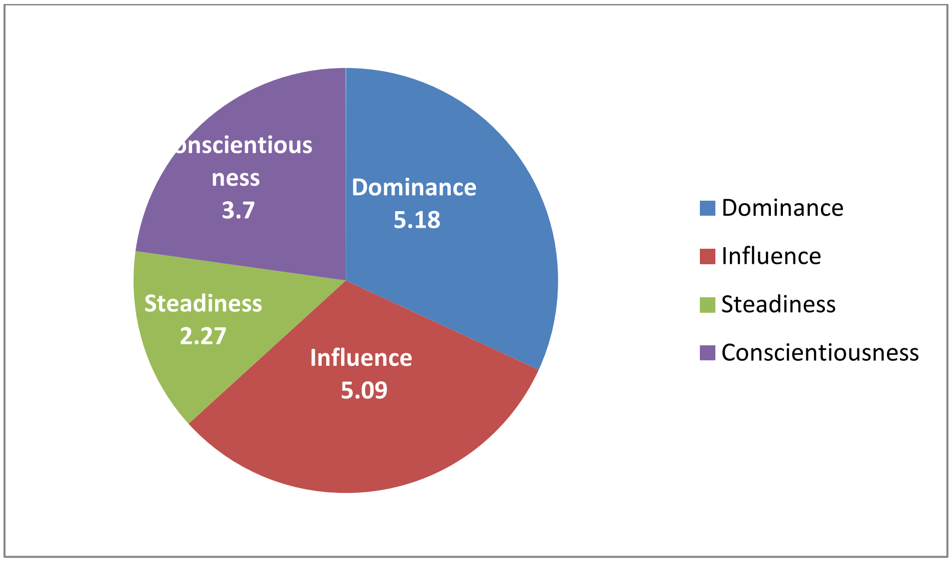

Figure 2. DiSC domain mean scores.

Table 2 displays the descriptive statistics for selected variables including age ($M = 44.67$ years), as well as the four DiSC domain scores (*Dominance, influence, Steadiness, Conscientiousness*) and the six Bar-On scores (*Total EQ, Intrapersonal, Interpersonal, Stress Management, Adaptability, General Mood*). The mean total EQ-i score was 105.96, with the highest component score being *Intrapersonal* ($M = 107.38$), and the lowest score being *Interpersonal* ($M = 102.60$).

Table 2

Descriptive Statistics for Selected Variables

Variable	*M*	*SD*	Low	High
Age	44.67	6.36	33	63
Dominance [a]	5.18	1.48	1	7
Influence [a]	5.09	1.97	1	7
Steadiness [a]	2.27	1.31	1	7
Conscientiousness [a]	3.70	1.88	1	7
Total EQ [b]	105.96	8.90	81	127
Intrapersonal [b]	107.38	10.03	81	128
Interpersonal [b]	102.60	9.90	76	123
Stress Management [b]	105.00	9.83	79	125
Adaptability [b]	103.42	9.42	83	126
General Mood [b]	104.62	8.43	74	123

Note. a = DiSC® score; b = Bar-on EQ-i® score; $N = 112$.

Research Question One

Research Question One asked: To what extent, if at all, there was a relationship between District Sales Manager DiSC® classic pattern, and the six primary Bar-On EQ-i® scores (total EQ, *intrapersonal*, *interpersonal*, *adaptability*, *stress management*, and *general mood*)? Table 3 displays the 6 one-way ANOVA tests comparing the respondents' classic DiSC pattern with each of the six Bar-on emotional intelligence scores. The analysis of the data found that none of the six ANOVA models was statistically significant at a $p < .05$ level. As a result of further analysis on the 15 original DiSC classic patterns, those 15 patterns were consolidated into six patterns (*Inspirational*, *Creative*, *Persuader*, *Promoter*, *Results Oriented*, *Other*) identified in this study population, and depicted in Table 4. Just as found previously, none of the six ANOVA models was found to be statistically significant.

Table 3

Relationship between DiSC Pattern and Primary Bar-On EQ-i Scores

EQ-i Score	DiSC Pattern	n	M	SD	η	F	p
Total EQ					22	0.47	.92
	Appraiser	8	105.88	6.18			
	Counselor	3	104.00	9.54			

(continued)

EQ-i Score	DiSC Pattern	n	M	SD	η	F	p
	Creative	22	107.00	8.35			
	Developer	2	103.50	6.36			
	Inspirational	23	105.96	8.09			
	Investigator	1	113.00	0.00			
	Objective Thinker	5	108.40	7.34			
	Perfectionist	3	108.33	13.05			
	Persuader	15	107.60	11.13			
	Practitioner	2	97.00	11.31			
	Promoter	15	105.00	9.20			
	Results Oriented	13	103.62	10.63			
Intrapersonal					.26	0.65	.78
	Appraiser	8	104.13	7.26			
	Counselor	3	102.00	12.00			
	Creative	22	108.41	11.03			
	Developer	2	101.50	2.12			
	Inspirational	23	109.48	9.48			
	Investigator	1	112.00	0.00			
	Objective Thinker	5	104.20	9.86			
	Perfectionist	3	109.00	14.53			
	Persuader	15	109.13	9.90			
	Practitioner	2	96.50	7.78			
	Promoter	15	106.27	10.93			
	Results Oriented	13	107.54	10.45			

(continued)

EQ-i Score	DiSC Pattern	n	M	SD	η	F	p
Interpersonal					.38	1.49	.15
	Appraiser	8	105.50	6.41			
	Counselor	3	109.67	2.52			
	Creative	22	100.41	10.70			
	Developer	2	90.50	9.19			
	Inspirational	23	101.52	9.72			
	Investigator	1	109.00	0.00			
	Objective Thinker	5	101.80	7.63			
	Perfectionist	3	101.33	7.10			
	Persuader	15	107.13	9.58			
	Practitioner	2	93.00	15.56			
	Promoter	15	106.07	5.81			
	Results Oriented	13	99.00	13.40			
Stress Management					.38	1.56	.12
	Appraiser	8	106.25	10.17			
	Counselor	3	99.67	10.26			
	Creative	22	109.00	7.90			
	Developer	2	107.50	12.02			
	Inspirational	23	103.52	8.51			
	Investigator	1	105.00	0.00			
	Objective Thinker	5	114.60	4.72			
	Perfectionist	3	110.33	12.58			
	Persuader	15	105.40	10.81			

(continued)

EQ-i Score	DiSC Pattern	n	M	SD	η	F	p
	Practitioner	2	101.50	4.95			
	Promoter	15	101.13	11.89			
	Results Oriented	13	100.54	9.72			
Adaptability					.28	0.79	.65
	Appraiser	8	105.88	6.62			
	Counselor	3	99.33	9.71			
	Creative	22	104.18	6.84			
	Developer	2	112.00	12.73			
	Inspirational	23	100.57	9.79			
	Investigator	1	112.00	0.00			
	Objective Thinker	5	110.20	5.50			
	Perfectionist	3	103.00	14.93			
	Persuader	15	103.93	12.33			
	Practitioner	2	100.00	4.24			
	Promoter	15	102.80	10.94			
	Results Oriented	13	102.77	8.73			
General Mood					.31	0.93	.51
	Appraiser	8	105.00	5.21			
	Counselor	3	107.00	6.25			
	Creative	22	103.77	9.54			
	Developer	2	97.50	2.12			

(continued)

EQ-i Score	DiSC Pattern	n	M	SD	η	F	p
	Inspirational	23	107.61	6.61			
	Investigator	1	113.00	0.00			
	Objective Thinker	5	106.20	6.87			
	Perfectionist	3	107.67	2.52			
	Persuader	15	104.33	11.62			
	Practitioner	2	98.50	14.85			
	Promoter	15	104.93	7.49			
	Results Oriented	13	100.00	11.67			

(*N* = 112)

Table 4

Relationship between Consolidated DiSC® Pattern and Primary Bar-On EQ-i® Scores

EQ-i Score	DiSC Pattern	*n*	*M*	*SD*	η	*F*	*p*
Total EQ					.13	0.37	.87
	Creative	22	107.00	8.35			
	Inspirational	23	105.96	8.09			
	Persuader	15	107.60	11.13			
	Promoter	15	105.00	9.20			
	Results Oriented	13	103.62	10.63			
	All Others	24	105.83	7.95			
Intrapersonal					.21	0.93	.46
	Creative	22	108.41	11.03			
	Inspirational	23	109.48	9.48			

(continued)

EQ-i Score	DiSC Pattern	n	M	SD	η	F	p
	Persuader	15	109.13	9.90			
	Promoter	15	106.27	10.93			
	Results Oriented	13	107.54	10.45			
	All Others	24	103.96	8.87			
Interpersonal					.27	1.66	.15
	Creative	22	100.41	10.70			
	Inspirational	23	101.52	9.72			
	Persuader	15	107.13	9.58			
	Promoter	15	106.07	5.81			
	Results Oriented	13	99.00	13.40			
	All Others	24	102.58	8.61			
Stress Management					.31	2.22	.06
	Creative	22	109.00	7.90			
	Inspirational	23	103.52	8.51			
	Persuader	15	105.40	10.81			
	Promoter	15	101.13	11.89			
	Results Oriented	13	100.54	9.72			
	All Others	24	107.33	9.46			
Adaptability					.19	0.81	.55
	Creative	22	104.81	6.84			
	Inspirational	23	100.57	9.79			
	Persuader	15	103.93	12.33			
	Promoter	15	102.80	10.94			
	Results Oriented	13	102.77	8.73			
	All Others	24	105.88	8.52			
General Mood					.24	1.31	.27
	Creative	22	103.77	9.54			
	Inspirational	23	107.61	6.61			
	Persuader	15	104.33	11.62			
	Promoter	15	104.93	7.49			
	Results Oriented	13	100.00	11.67			
	All Others	24	105.00	6.58			

(*N* = 112)

Research Question Two

Research Question Two asked: To what extent if at all, there were significant correlations between District Sales Managers four DiSC® quadrant scores (*Dominance*, *influence*, *Steadiness*, and/or *Conscientiousness*), and the six primary EQ-I scores? To answer this question, Table 5 displays the Pearson Product Moment correlation scores for the four DISC scores with the six EQ-i scores. Inspection of the resulting 24 correlations found 7 to be statistically significant. Specifically, DiSC *Dominance* (D) domain scores were positively correlated to respondents *intrapersonal* EQ score (r=.18, p<.05), and negatively related to their *interpersonal* EQ score (r=-.18, p<.05). *Influence* (i) was positively related to *interpersonal* EQ score (r=.26, p<.01), and negatively correlated to *stress management* EQ Score (r=-.29, p<.005). There was a negative correlation between *Steadiness* (S) and *intrapersonal* EQ score (r=-.18, p<.05). *Conscientiousness* was positively related to both *stress management* EQ score (r=.30, p<.001), and *adaptability* EQ score (r=.25, p<.01).

Table 5

Pearson Product-Moment Correlations for Four DiSC® Scores with Six EQ-i Scores

EQ-i Scores	D		i		S		C	
Total EQ	.02		-.04		-.01		.11	
Intrapersonal	.18	*	.01		-.18	*	.01	
Interpersonal	-.18	*	.26	**	.14		-.15	
Stress Management	-.01		-.29	***	.06		.30	****
Adaptability	-.03		-.16		.02		.25	**
General Mood	-.05		.10		-.09		-.05	

Note. * p < .05; ** p < .01; *** p < .005; **** p < .001; *N* = 112; D = *Dominance*; i = *influence*; S = *Steadiness*; C = *Conscientiousness*.

Figure 3 gives a pictorial representation of the DiSC® domains correlations with the emotional intelligence scales as shown in Table 5.

DiSC Domain	Intrapersonal EQ	Interpersonal EQ	Stress Management EQ	Adaptability EQ
Dominance	Positive*	Negative*		
influence		Positive**	Negative***	
Steadiness	Negative*			
Conscientiousness			Positive****	Positive**

Figure 3. DiSC® domains correlations with emotional intelligence scales (*N*=112).

Note. **p*<*.05*; ***p*<*.01*; ****p*<*.005*; *****p*<*.001*.

Figure 4 gives a graphic representation of the correlations between DiSC® domains and Bar-On EQ-i® scales.

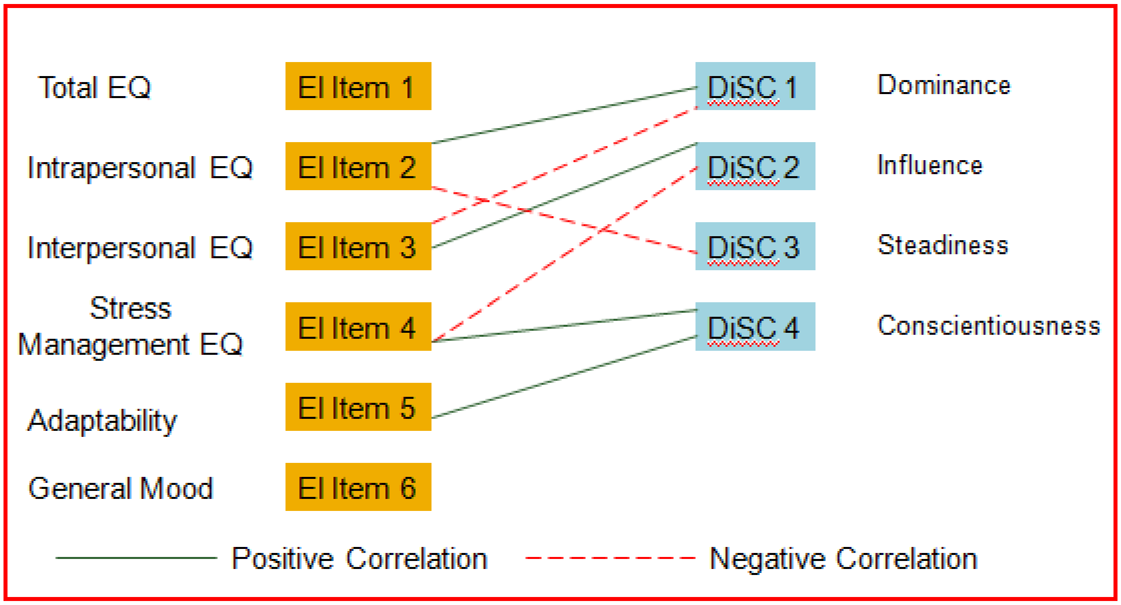
Total EQ
Intrapersonal EQ
Interpersonal EQ
Stress Management EQ
Adaptability
General Mood
EI Item 1
EI Item 2
EI Item 3
EI Item 4
EI Item 5
EI Item 6
DiSC 1
DiSC 2
DiSC 3
DiSC 4
Dominance
Influence
Steadiness
Conscientiousness
Positive Correlation
Negative Correlation

Figure 4. DiSC® domains correlations with Bar-On EQ-i® scales.

Research Question Three

Research Question Three asked: To what extent, if at all, are there significant correlations, after taking into account demographic characteristics (age and gender), between District Sales Managers four DiSC quadrant scores and the six primary EQ-I scores? Table 6 displays partial correlations for four DiSC scores with six EQ-i scores, controlling for both gender and age. As shown in Table 6, the analysis found that 6 of the 24 partial correlations were statistically significant. Dominance score was again positively correlated to intrapersonal EQ ($r_{ab.cd}$=.18, p<.05), and negatively correlated to intrapersonal ($r_{ab.cd}$=.20, p=.05). Influence was positively related to Interpersonal ($r_{ab.cd}$ =.25, p=.01), and negatively correlated to stress management ($r_{ab.cd}$=.26, p=.01). Steadiness was not related to any of the six EQ-i scores. Conscientiousness was positively related to both stress management ($r_{ab.cd}$=.27, p<.005) and adaptability ($r_{ab.cd}$=.24, p<.01). These results do align with the research from both Inscape (2008) on the DiSC® tool and Bar-On (1997) on his EQ-i assessment, both of which demonstrated only a few small magnitude changes as a result of either age or gender. In addition, the homogeneity of the District Sales Manager population at Phyogen, Inc. most likely also contributed to the lack of any large magnitude changes, which will be discussed further in Chapter 5.

In summary, responses for 112 District Sales Managers were studied to determine their DiSC® and EQ-i scores, and any possible correlations. For Research Question One (see Table 3) the one-way ANOVA tests comparing respondent DiSC classic pattern to their six Bar-On EQ-i® scores resulted in no statistically significant results at $p < .05$ level. In addition, the 15 original DiSC classic patterns were consolidated down to the 6 DiSC® classic patterns most represented by respondents in this study (see Table 4). Once again, the one-way ANOVA tests demonstrated that there were no statistically significant results between the most represented DiSC® classic patterns and their six Bar-On EQ-i® scores. For Research Question Two (see Table 5) Pearson Product Moment correlations were performed on respondents' four *D, i, S, C* scores and six EQ-i scores to ascertain any relationships. Of the 24 resulting correlations, 7 were found to be statistically significant. For Research Question Three (see Table 6 and Figure 5), the partial correlations between respondents' four *D, i, S, C* scores and six EQ-I scores to ascertain any significant relationships. Seven of the 24 resulting correlations were significant.

Table 6

Partial Correlations for Four DiSC® Scores with Six EQ-i® Scores Controlling for Gender and Age

EQ-i Scores	D		i		S		C	
Total EQ	.02		-.03		-.02		.10	
Intrapersonal	.18	*	.01		-.18	*	.00	
Interpersonal	-.20	*	.25	**	.15		-.13	
Stress management	.01		-.26	**	.04		.27	***
Adaptability	-.02		-.13		.01		.24	**
General mood	-.05		.10		.09		-.05	

Note. * $p < .05$; ** $p < .01$; *** $p < .005$; **** $p < .001$; $N = 112$; D = *Dominance*, i = *influence*, S = *Steadiness*, C = *Conscientiousness*.

DiSC Domain	Intrapersonal EQ	Interpersonal EQ	Stress Management EQ	Adaptability EQ
Dominance	Positive*	Negative*		
influence		Positive**	*Negative***	
Steadiness	Negative*			
Conscientiousness			*Positive****	Positive**

Figure 5. Partial correlations controlling for gender and age (N=112).

Note. *p<.05; **p<.01; ***p<.005; ****p<.001; italicized findings for stress management EQ both dropped one p-value level after controlling for age and gender.

Chapter 5: Discussion, Recommendations, and Conclusions

This study examined the relationship between emotional intelligence (EI) and behavioral style of District Sales Managers (DMs) of sales at Phyogen, Inc., to help pinpoint possible surrogate markers that might be helpful in identifying future leadership potential. Distinct correlations between EI and behavioral style might allow Phyogen, Inc. to better identify high-potential sales leaders earlier and institute training to better develop both current and future leaders for the organization. The rapidly changing business and legal, political environment of both the bio-pharmaceutical and overall healthcare industry make it challenging for DMs to guide their sales professionals and customers in delivering the best possible care to patients. The ability of those DMs to develop and maximize their EI and leadership style might help increase their success in this new healthcare environment.

This is the first study to explore the relationship between emotional intelligence and leadership style of DMs within the bio-pharmaceutical industry. This relationship was examined both at the overall level of EI as well as among the five composite factors from the Bar-On EQ-i® assessment (*intrapersonal emotional quotient(EQ) scale, interpersonal EQ scale, adaptability EQ scale, stress management EQ scale,* and *general mood EQ scale*). The DiSC® self-assessment was employed to assess DMs overall behavioral style, and their four individual behavioral style domains of *Dominance (D), influence (i), Steadiness (S),* and *Conscientiousness (C).*

A summary of the three study research questions and the corresponding results and links to the related literature are provided in this chapter. Also presented in this chapter are implications, limitations, and recommendations for future research. The chapter concludes with an overall summary of the study.

Research Question One

The first research question asked: To what extent, if at all, is there a relationship between District Sales Manager DiSC® classic pattern, and the six primary Bar-On EQ-i® scores (*total EQ, intrapersonal awareness, interpersonal awareness, adaptability, stress management,* and *general mood*)? To address this question an Analysis of Variance (ANOVA) was employed and resulted in finding no statistically significant relationships between District Sales Managers' (DMs) classic pattern and their level of emotional intelligence for the 112 DM's in the study. This finding is consistent with the extensive research including over 45,000 participants who have taken the online version of DiSC which demonstrated that most of the classic patterns consist of some combination of high scores in more than one domain area. Thus, the DiSC® leadership styles are not designed to be a typology of only four dominant styles (Inscape, 2008).

While individuals may exhibit different behaviors and have different styles, there are no best or worst styles and no style is better than another (Inscape, 2004). In fact, only 4 of the 15 classic patterns consist of a profile that is high in only one dominant domain and it is entirely possible that there were not enough individuals with those four classic patterns in this study as to demonstrate statistical significance. The *Developer* classic pattern is high in only the *D* domain; however, there were only 2 individuals out of the 112 participants (1.8%) with that pattern in this study. The *Promoter* classic pattern is high in only the *i* domain, and there were 15 individuals (13.4%) in this study with that pattern. The *Specialist* is high only in the *S* domain, and none of the DM participants in this study displayed that pattern. The *Objective Thinker* classic pattern is high only in the *C* domain, and there were only five individuals (4.5%) in the study with that classic pattern.

This study supports the findings of Green (2005) who did not find any statistically significant relationship between DiSC® pattern and leadership effectiveness. It also somewhat supports the findings of Jackson (2008) who employed the MSCEIT emotional intelligence test with DiSC® and found high scores on influencing and conscientiousness, but had too few study participants to achieve any type of statistical significance. Huntington (2008) and Bohrer (2007) found some positive and negative correlations when looking at the relationship between personality using the MBTI assessment and emotional intelligence, but like this study, there were no statistically significant correlations.

There were a few studies that did find statistically significant correlations between personality and emotional intelligence; however, those findings were not consistent between studies. Higgs (2001) explored the correlation between emotional intelligence and personality using the MBTI® assessment and found positive correlations between the MBTI® dominant function of intuition and a strong negative correlation with sensing. Anderson (1996) investigated the link between personality using the MBTI® instrument focusing on just four types (*ISTJ, ESTJ, INTP, ESFJ*) and leadership effectiveness and found that the *ESTJ* type scored significantly higher for leadership. Kroeger and Thuesen (1992) suggested that the *ENTJ* type appeared to be the most effective leaders. It should be noted that while the *ENTJ* style was not studied by Anderson, the *ENTJ* style does share the extroversion, thinking, and judging components with the *ESTJ* type that Anderson found most effective.

Research Question Two

The second research question asked: To what extent, if at all, is there significant correlations between District Sales Managers four DiSC® quadrant scores (*Dominance, influence, Steadiness,* or *Conscientiousness*), and the six primary EQ-I scores? To address this question a Pearson Product Moment Correlation Analysis was performed on the four DiSC® primary domain scores and six EQ-i assessment scores. Analysis of the resulting 24 correlations found 7 to be statistically significant. The DiSC® *Dominance* (*D*) domain was found to have a positive correlation to *intrapersonal* EQ, and a negative correlation to *interpersonal* EQ. Both of these results were not completely unexpected and align with previous descriptions of individuals who are high in the *D* domain. According to Inscape (2008) individuals who are high in the *D* domain are results and goal oriented, driven, competitive, fast- paced, and maintain high self-esteem.

These attributes all connect well with the traits from the *intrapersonal* EQ scale. According to Bar-On (1997) *intrapersonal* EQ is specifically comprised of subscales including self-regard, emotional self-awareness, independence, assertiveness, and self-actualization. Thus, those individuals with a high *D* DiSC score would share the same independent nature, high self-regard, and assertive/competitive approach as those individuals that score high on *intrapersonal* EQ.

Just as an individual scoring high in the *D* DiSC® domain shares many of the common traits as an individual high in *intrapersonal* EQ, just the opposite is true when the attributes of a high *D* person are compared to those traits associated with an individual high in *interpersonal* EQ. According to Bar-on (1997) those participants scoring high in *interpersonal* EQ display high levels of empathy and maintain good social skills in dealing with others. However, the individual who possesses a high *D* score tends to lack concern for others and be impatient when things do not go as they intend (Inscape, 2008). Therefore, it is not surprising that a negative correlation was found between those individuals displaying a high *D* score and their corresponding score on *interpersonal* EQ.

From a leadership perspective the ability of those individuals with a high *D* DiSC® score to be driven, confident and achievement oriented can be very important in an industry like biopharmaceutical sales where a transactional leadership type of results driven culture is found (Willink, 2009). On the other hand, the need to be able to inspire and motivate staff and customers is also an important aspect of the charismatic or transformational leadership style necessary to address the consistent changes in the biopharmaceutical industry. This need to achieve results through others rather than self-directed may be a challenge for a leader with a high *D* DiSC® score and no other corresponding strength in styles that have a more *other people focused* component, such as the *i* or *S* domain.

Analysis of the results of this study pointed to those individuals who are high in the *i* domain (*influence*), demonstrating a positive correlation to *interpersonal* EQ, and a negative correlation to *stress management* EQ. The positive relationship demonstrated between *interpersonal* EQ and those participants scoring high on the DiSC® *influence* domain is in complete alignment with the literature. According to Inscape (2008), individuals high in the *influence* domain are seen as outgoing, talkative, enthusiastic, sociable, and get energy from their interactions with other people. This focus on working and interacting with others is directly in alignment with the subscales that comprise the *interpersonal* EQ assessment domain. According to Bar-On (1997) the subscales of *interpersonal* EQ include empathy, interpersonal relationship, and social responsibility. Individuals who score high in *interpersonal* EQ tend to understand and interact well with others, and maintain good social skills.

The attributes associated with *interpersonal* EQ are closely related to the transformational leadership skills of idealized influence and inspirational influence identified by Bass (1985). Harms and Crede (2010) pointed to a transformational leader's ability to display social charisma (idealized influence) and charismatic behaviors as important to achieving corporate goals and objectives. Thus, the abilities of individuals possessing high influence may also have advantages in some key aspects of transformational leadership. This high *interpersonal* EQ component found in individuals with high influence scores is a counter to individuals high in the *D* (*Dominance*) domain. For sales leaders a combination of high *D* and high *i* leadership behavioral style might thus be a good balance for achieving results through the motivation and inspiration of others.

While a positive correlation was found between individuals high in the *i* domain and *interpersonal* EQ, a negative correlation was identified between individuals with a high *i* and their corresponding *stress management* EQ. This result, while not completely expected or founded in the literature it is not necessarily surprising either. According to Bar-On (1997), *stress management* EQ is comprised of both stress tolerance and impulse control subscales. Thus, individuals with strong *stress management* EQ have the ability to stay calm, resist impulsive behavior, and work well under stress. However, according to Inscape (2008), individuals who possess strength in the *i* domain are generally impulsive, disorganized, and may lack good follow-through skills. These traits centered on impulsiveness and disorganization may well be the reason that high *i* individuals do not score well on *stress management* EQ. This lack of skill regarding *stress management* EQ could be a factor that would limit the effectiveness of a high *i* leader in very complex, constantly changing, and technologically advanced industries such as biopharmaceuticals. Therefore, it would appear to be helpful for a leader who is high in the *influence* domain to also possess strength in other areas such as *Conscientiousness* that score much higher on *stress management*.

Individuals who are high in the *S* or *Steadiness* domain were found to also possess a positive correlation with *interpersonal* EQ, just as was seen with individuals high in *influence*. This positive correlation is not surprising, as the traits most associated with someone who scores high on *Steadiness* are in alignment with the attributes expected of individuals high in *interpersonal* EQ. According to Inscape (2008) those individuals high in *Steadiness* tend to like to cooperate with others, be good listeners, calm and diplomatic. Much like those individuals high in *influence*, the people who are high in *Steadiness* are very focused on accomplishing goals by working with others.

While the study participants who scored high in the *S* domain displayed a positive correlation with *interpersonal* EQ, they also possessed a negative correlation with *intrapersonal* EQ. This negative correlation is most likely a result of the fact, according to Bar-On (1997), that those individuals with high *intrapersonal* EQ tend to have high self-regard, be assertive, and maintain a high level of independence, which are traits not associated with individuals high in *Steadiness*. According to Inscape (2008), individuals with a *Steadiness* profile seek to work with others, maintain stability, stay calm, and put their needs behind those of others. In the very turbulent and changing biopharmaceutical sales industry, the need of those high in the *S* domain to not desire change, seek stability, and display patience are not consistent with the transactional and transformational traits of most sales managers. In this study the *S* domain had the lowest mean score of any of the four domains, and none of the 112 District Sales Managers in the study demonstrated the *Specialist* classic pattern of a pure *S* style without any other dominant domains.

Of the four individual DiSC® domains, the only one that had two positive correlations and no negative correlations was the *C* (*Conscientiousness*) domain. In this study those individuals scoring high in the *C* DiSC® domain demonstrated positive correlations to both *stress management* EQ and *adaptability* EQ. According to Inscape (2008), individuals who score high in *Conscientiousness* put a premium on quality and accuracy, have high standards, are detail oriented, and analytical in their approach to solving problems. Each of the attributes of a high *C* tends to match up with the traits in both *stress management* EQ and *adaptability* EQ, making the results from this study consistent with the literature.

According to Bar-On (1997), individuals scoring high in *adaptability* EQ are flexible and good at problem solving and reality testing. Therefore, an individual with a high *C* DiSC® score would share the problem solving and reality testing traits of those individuals high in *adaptability*. When looking at individuals who score high in *stress management* EQ, Bar-On (1997) points out that they lack impulsiveness, remain calm, and tolerate stress well. These traits associated with good *stress management* parallel those of a person scoring highly in *Conscientiousness*, as high *C* individuals are detail oriented and analytical, which prevents them from becoming too impulsive and allows them to tolerate stress by performing good analyses of problems.

With all of the complexity, political and regulatory demands, and healthcare reform currently going on in the biopharmaceutical industry, the ability to adapt to change and manage the stress of all of the competing factors should be a real benefit for sales leaders. In the current study, the second most common DiSC® classic pattern for the participant District Sales Managers was the *Creative* pattern (19.6%), which consists of both high *D* and high *C* domains. By virtue of the strengths of both the *D* and *C* domains this style should combine results achievement and drive with good *problem solving*, *adaptability*, and *stress management skills*. All of these skills should be helpful in leading teams in the highly technical and competitive biopharmaceutical sales industry.

Research Question Three

The third research question asked: To what extent, if at all, are there significant correlations after taking into account demographic characteristics (age and gender) between District Sales Managers' four DiSC® quadrant scores and the six primary EQ-i scores? Both the DiSC® assessment and the Bar-On EQ-i® assessment have been extensively studied with respect to both age and gender to analyze possible influences of those two demographic variables. According to Inscape (2008) a data analysis of 7,038 respondents demonstrated that older respondents (no specific age range was identified) displayed slightly lower scores in the *i* domain; However, the differences accounted for less than 1% of the total variation in scores. There did not appear to be any other age related effects to the DiSC® scores of study respondents.

From a gender perspective, according to Inscape (2008), there were small differences between men and women on the *D* and *S* scales. Women tended to score higher than men on the *S* scale, and men scored higher than women on the *D* scale. The differences between men and women on the *S* and *D* scales, while noticeable, were less than one segment difference and thus, not meaningful with regard to the overall profile of men and women. According to Inscape (2008), women scored higher on the *i* scale than did men, but the difference was not meaningful, and there was no gender difference on the *C* scale scores. Therefore, from a DiSC® perspective there was not expected to be any statistically significant influence on the DiSC® and EQ correlation scores based on either age or gender in this study.

According to Bar-On (1997) an Analysis of Variance (ANOVA) was employed to study any possible effects of age and gender on EQ-i scores. The analysis demonstrated significant main effects on both age and gender, but the effects were small in magnitude, with the majority of differences accounting for 1% or less of the variance. While the differences were small in magnitude, Bar-On pointed out that the research confirms the importance of computing EQ-i scores on the basis of age and gender.

The EQ-i gender research demonstrated that females appeared to have better *interpersonal* skills than males and males had higher *intrapersonal*, *adaptability*, and *stress management* scores (Bar-On, 1997). This finding of women having higher scores in the *interpersonal* EQ and men scoring higher on *intrapersonal* EQ matches up well with the findings from Inscape (2008) on gender differences on the *D* and *i* scales of DiSC®. The EQ-i analysis highlighted the small degree of variance between males and females, with the largest effect surfacing on the empathy portion of the *interpersonal* skills where women scored higher than men; however, gender only accounted for 6.7% of the effect on empathy. Just as the variances based on gender differences was relatively small, so were the variances in EQ-i scores based on age differences. Virtually all of the age-related differences in total EQ-i score, as well as the sub-class EQ-i scores, demonstrated higher scores for the age groups older than 30 years of age as compared to those groups younger than 30 years of age. Again, similar to the variances based on gender, the variances in EQ-i scores based on age ranged from a low of 0.6% to a high of 6.9%, and were thus small in magnitude. Age would therefore not be expected to play any type of significant role in this current study as none of the 112 participants was below the age of 30, and the mean age of the participants was 44.67 (See Table 2). In addition, Bar-On (1997) stated, “No age by gender interactions were revealed by any of the analyses, which means that when there were age differences, these differences were essentially the same for both sexes” (p. 82).

The current study employed partial correlations to look at the relationship between the four DiSC® scores and the six EQ-i scores while controlling for age and gender, and found results very similar to those of Bar-On (1997). Analysis of the results confirms that the same areas of EQ that correlated to the four individual domains of DiSC® (See Table 5) remained correlated even after controlling for age and gender (See Table 6). The *Dominance* (*D*) domain of DiSC® remained positively correlated to *intrapersonal* EQ scores and negatively correlated to *interpersonal* EQ scores at the same level of statistical significance. The *influence* (*i*) domain of DiSC® remained positively correlated to *interpersonal* EQ at the same level of statistical significance, and negatively correlated to *stress management* with only a minor change in statistical significance from a *p* value of <.005 to a level of <.01. Similarly, the *Conscientiousness* "*C*" domain of DiSC® remained positively correlated to *adaptability* at the same level of statistical significance, and also positively correlated to *stress management* where the level of statistical significance decreased slightly from a *p* value of <.001 to a value of <.005 (see Table 6). The negative correlation of the *Steadiness* (*S*) domain of DiSC® to *intrapersonal* EQ remained unchanged when controlling for both age and gender (See Tables 5 and 6). These results confirm the analysis of Bar-On (1997) that while there is some very small magnitude age and gender related differences, those differences do not have a significant impact on the correlation of District Sales Managers' behavioral style and their corresponding level of emotional intelligence.

While the results of this study do align closely with the individual results from both Inscape (2008) and Bar-On (1997) which demonstrated only small magnitude changes at most in correlations when adjusted for age and gender, the demographics of the relative homogeneity of the study population could also be a reason for the lack of difference in correlations when adjusting for gender and age. All of the District Sales Managers' in this study were employed at Phyogen, Inc. thus, they all worked in the same corporate culture with the same mission, vision, values, and processes. In addition, the job requirements for District Sales Manager's at Phyogen, Inc. including extensive travel (often 40% or greater), willingness to relocate, and extra hours (often 60+ per week), may attract individuals with similar career goals and aspirations. My belief is that because the District Sales Manager population at Phyogen, Inc. shares so many similarities, there was very little chance that the study results would demonstrate any significant changes based on age and gender.

Implications For Sales Leadership

One of the primary implications of this study relative to DMs' leadership style in the bio-pharmaceutical industry at Phyogen, Inc. is that there does not appear to be any one best DiSC® classic pattern behavioral style as correlated to level of emotional intelligence. This finding is consistent with Inscape (2004) that found that there was no best or worst classical DiSC® pattern. However, the one caveat to this finding is that there were not enough participants in the study that possessed one of the four classic DiSC® patterns (*Developer, Promoter, Specialist,* and *Objective Thinker*) that is high in only one domain. The cautionary note about the four patterns that contain strength in a single domain is that the analysis of the current study did find specific positive and negative correlations to the individual DiSC® domains of *D*, *i*, *S*, and *C* with some isolated sub-scales of EI.

While this study did not find any one individual DiSC® classic pattern to be optimal, the study results did demonstrate a very heavy weighting of the study participants styles towards both the *D* and *i* domains. An analysis of the results of this study demonstrated that of the 112 DM participants in the study, 5 of the 15 DiSC® classic patterns accounted for almost 79% of all respondents' DiSC® patterns. Of those five prevalent domains, four of them consisted of strength in either the *D* or *i* domains, or both. This could be an implication of a preferred style in the DMs' roles within either the biopharmaceutical industry, or just Phyogen, Inc. A further analysis of the study reinforces the theory of a DM's style preference by revealing that 71% of the participants in the study had a strength in the *i* domain, 68% of respondents maintained strength in the *D* domain, 37% possessed high scores in the C domain, and only 8% displayed strength in the *S* domain. Thus, there were more DMs in the study who scored high in the individual *D* and *i* domains, or both, than there were DMs who scored in the *C* and *S* domains combined.

The disproportionate number of DMs possessing strength in either the *D* or *i* domains or both, is consistent with the sales leadership studies that demonstrated that transactional (Dubinsky, et al., 1995; Schwepker & Good, 2010; Willink, 2009) and transformational leadership styles (Dubinsky, et al., 1995) are preferred in sales. The strong results driven component of the *D* style matches up well to the transactional nature of biopharmaceutical sales, where job performance and compensation is generally tied to the ability of an individual or team to meet or exceed specific targeted sales goals.

The short-term results measurement and orientation in the sales profession would appear to favor those individuals with a strong results driven style. When focusing specifically on sales leadership, the critical component is that strong results that are required must be achieved through the inspiration, motivation, and leadership of the sales leader's team of direct reports. This need to achieve the results through others tends to favor individuals who relate well to others and are able to connect and achieve results through others.

From a DiSC® perspective it is the *i* behavioral style that tends to be the most adept at working and connecting with others to achieve objectives, whereas, this ability to motivate others was a negative correlation for the *D* behavioral style. Therefore, it would appear that sales leaders who combine strength in both the *D* and *i* domains, would be well positioned for both the transactional and transformational leadership necessary to generate positive sales results through others. In this study, 46% of the participants possessed one of the three behavioral classic patterns that are high in both the *D* and *i* domains (*Inspirational, Persuader, and Results Oriented*). This is perhaps a key indicator of the importance of those traits associated with the *D* and *i* domains within the biopharmaceutical sales leadership field.

Clearly, the literature on the importance of both transactional and transformational leadership styles supports the behavioral traits of both the *D* and *i* domains in the sales leadership field. While the *C* domain did not appear nearly as often as the *D* and *i* domains in the profiles of the study participant DMs, there are possible implications as to the importance of this style to the future of biopharmaceutical sales DMs. As discussed in chapter two, the biopharmaceutical industry is dealing with tremendous legal, political, and regulatory change, as well as comprehensive healthcare reform. Therefore, a leadership behavioral style that is adaptable and deals well with both stress and change would appear to have significant advantages.

In this study, only the *C* domain behavioral style displayed a positive correlation with both *adaptability* EQ and *stress management* EQ, making it the most change adept of all of the DiSC® domains. In addition, the second most DiSC® common classic pattern in the study was the *Creative* pattern, which is a combination of both high *D* and high *C* domains. Since the biopharmaceutical industry is expected to see increased complexity and change over the foreseeable future, perhaps a combination style that includes a high *C* domain with either high *D* or *i* domain, or both, might prove to be the best sales leadership style. With the recent U.S. Supreme court ruling on Health Care Reform serving as an example, DMs will more and more be called upon to be adaptable at addressing the changes within the healthcare industry for patients, providers, and institutions, while continuing to motivate and inspire their sales representatives to grow their sales results.

This could have implications in the future for building a sales leadership pipeline for Phyogen, Inc. that includes behavioral styles displaying strength for the industry today as well as sustainability for the near future. Based on the results of this study, when identifying individuals for future sales leadership roles, it would appear appropriate to look for high performing individuals who have some combination of behavioral style domains such as *D*, *i*, and *C*. The *D* style would be important for driving the necessary ongoing sales results, the *i* style would confer advantages in motivating and inspiring sales representatives to work towards agreed upon goals in a changing industry, and the *C* style would be foundational for dealing with the complexity and change the industry is facing in light of events like comprehensive healthcare reform.

It is important to note that at Phyogen, Inc., almost 80% of all District Sales Managers are promoted upward internally from the Sales Representative position. This allows sales leadership training to give both the DiSC® behavioral style assessment and an EI assessment to all internal staff members identified for future sales leadership development. Staff members are currently identified for leadership development based on performance in their current role and leadership competencies. The legal department at Phyogen, Inc. will not allow individuals being hired from outside the company to be given any type of assessment as a condition of their employment; thus, neither a DiSC® assessment nor an EI assessment is administered to those individuals until they are already staff members at Phyogen, Inc. and identified for leadership development.

A final implication on biopharmaceutical sales leadership is the concept that emotional intelligence can be learned and developed, which has strong support in the literature (Bradberry & Greaves, 2003; Cooper, 1997; Dulewicz & Higgs, 2000; Dulewicz & Higgs, 2004; Goleman, 1998; Groves et al., 2006). Based on the literature, findings of this study, and my personal experience in leadership development, I feel it is prudent to include an emotional intelligence assessment at the very beginning of a sales leadership development program to identify the current strengths and development areas of each of the potential sales leaders. Based on the results of the initial assessment, a personalized individual development plan should be crafted for each participant focusing on strengthening the areas of EQ where he or she scored lowest initially. Subsequent assessments need to be implemented during the sales leadership development training curriculum to track progress. A final 360 degree multi-rater emotional intelligence assessment should be implemented 6 months after the end of the formal EI training to take the results of the participants' self-assessment and benchmark them against the perceptions of others with and for whom they work. This will allow individuals to see an actual growth in their EI development if it actually occurs.

After analyzing all of the literature around EI, behavioral style, and leadership, it is clear that there is no one magic bullet for leadership development. Certainly, it appears that Antonakis et al. (2009) make some good points when they argue that EI assessments lack a common agreed upon construct, and appear to include other factors such as personality and standard intelligence, which can be assessed separately. However, I have found that EI assessments, particularly 360 degree EI assessments are reasonably accurate at assessing a leader's skills both intra-personally and inter-personally, and the ability of leaders to understand, regulate, and manage their emotions to positive outcomes for themselves and those they work with is a critical skill. Therefore, from a practical perspective EI makes a valuable contribution to leadership development as it can be used to differentiate good leaders from less effective leaders, and importantly, EI components can be identified, trained, and developed, unlike IQ.

This may very well allow for the competitive leadership advantage that large companies like Phyogen, Inc. are looking to build, as I have seen many more leaders fail due to their lack of ability to lead, teach, motivate, and inspire their teams, than because of their lack of standard intelligence. As a final thought, in order to build this competitive advantage, it is critical that all at Phyogen, Inc., not just the sales department, use the same leadership development processes, tools, and training. The way to accomplish this is to have one corporate leadership function responsible for all leadership training throughout the company, and it should be headed up by a well-credentialed, successful leader, who has a firm grounding in organizational leadership, and the many resources and tools available to build leaders for the future.

Limitations of the Study

The initial limitation of this study is that it was conducted using only the District Sales Managers (DMs) in the sales department at Phyogen, Inc. Therefore, the results of this study should not be generalized to other staff members of departments at Phyogen, Inc. or to broader sales groups across the biopharmaceutical industry. While many of the traits necessary for leadership may transcend just one department or one industry, the population for this study was narrowly focused on one level (DMs) of sales leadership in one specific biopharmaceutical company.

The fact is that different companies across the biopharmaceutical industry have different hiring and promotion practices, as well as company visions, missions, and values; all of which could very well have an influence on behavioral style and EQ. For example, the youngest DM in this study was 33-years old and the mean age of the study population was almost 44-years of age. This age range is probably different from many other companies who hire their sales representatives directly out of college, and may thus promote them to the DM role earlier than at Phyogen, Inc. Phyogen, Inc. hires mostly seasoned sales professionals with at least 3-5 years of prior pharmaceutical sales experience. Since it has been shown that EQ grows with age and the Phyogen, Inc. DMs may well be older than the DMs at many other companies within the industry, the results from this study may not be transferrable to other companies.

Also, the results from this study do not determine the relative importance of behavioral style using the DiSC® assessment or emotional intelligence using the Bar-On EQ-i® assessment. The literature supports the fact that leadership styles such as transactional and transformational leadership appear to be dominant within the biopharmaceutical industry, and that certain behavioral traits based on the DiSC® model match up with those two leadership approaches. However, there is no direct correlation from the study to either transactional or transformational leadership beyond support from the literature. Additionally, the literature gives broad support to the fact that leaders higher in EQ produce superior results across industries; however, the direct correlation of DM EQ level to sales leadership was not the focus of the current study and should not be inferred.

Within the biopharmaceutical sales industry one of the primary roles of the DM is to drive growth in sales results. There are many factors that all play into sales results; these include geographic factors, product reimbursement factors, sales quotas, and change in the healthcare environment, to name just a few. While the literature supports that a leader's style and EQ level do drive his or her productivity and success (Gibbs, 1995; Goleman et al., 2002; Hawkins & Dulewicz, 2007; Kerr et al., 2005; Rosete & Ciarrochi, 2005), the correlation of EQ and leadership style to direct sales results is beyond the scope of this study.

The leadership style and level of emotional intelligence (EQ) of leaders in this study were measured with the DiSC® Classic 2.0 self-assessment and the Bar-On EQ-i® self-assessment respectively. Both of these assessments are self-reported measures and thus are subject to the same limitations as all self-assessments, including lack of honesty in responses, misunderstanding of questions, and self-perception errors of the participants. In addition, the results of this study are limited based on the use of the two self-assessments used in this study. There are many behavioral style and EQ assessments available, and a number of different formats; including self-assessment, ability-based assessment, and 360 degree multi-rater assessments. Different assessments have different validity and reliability indicators, different lengths, and different constructs all of which can affect the results obtained. Thus, the results of this study can only be viewed based on the constructs, validity, and reliability of the two assessments implemented (DiSC® and Bar-On EQ-i®).

Recommendations for Future Research

To increase the ability to generalize the results from this study to broader sales leader populations across the biopharmaceutical industry and other industries, it is recommended that studies be conducted including DMs across several companies within the biopharmaceutical industry. In addition, a study comparing DMs from the biopharmaceutical industry to DMs in other technologically challenging and changing industries, to look for similarities and differences, would help broaden applicability of the concepts from this study. These additional studies could help to further elucidate those specific traits most important to the role of a DM, and help inform organizations as to what traits to screen for in leadership candidates, as well as what type of ongoing training to offer current DMs.

It would be helpful to conduct this study or a similar study again in 2 to 3 years to measure the impact of rapid change on DMs' behavioral styles and EQ levels. With healthcare reform and all of the legal and regulatory processes changing constantly within the biopharmaceutical industry, there will be a need to analyze what changes in sales leadership are necessary to drive results in the context of all of the industry changes. This could have implications for not only DM hiring, but also the ongoing leadership training and development of current DMs.

There are currently no studies analyzing the relationship between DMs' level of EQ, their leadership behavioral style, and the sales results they produce over a multiple-year period. A multiple-year study could really help identify with more certainty what leadership styles drive the best sales results, as well as the direct correlation between DMs' level of emotional intelligence and their ability to achieve sales results. In addition, a study could incorporate either an Emotional Quotient (EQ) multi-rater, or some other form of coaching 360 degree survey to identify any possible links between perceived leadership effectiveness and actual sales results.

There is a great deal of controversy about the role of EQ, as well as the general construct of the various types of EQ assessments (Antonakis, et al., 2009; Matthews, et al., 2004). Therefore, it would be helpful to have a large scale study run comparing the most commonly used and researched EQ assessments such as the Bar-On EQ-i®, the Goleman Emotional Competence Inventory (ECI), and the Mayer, Salovey, and Caruso Emotional Intelligence Test (MSCEIT), in an attempt to identify one measurable construct for emotional intelligence testing. This study might also be helpful in identifying if in fact it is better to use an EQ self-assessment, or an ability-based assessment. The results of these studies might answer the ongoing arguments between the proponents and critics of the concept, construct, and importance of emotional intelligence in leadership roles.

One of the premises of this study was that improving EQ can improve leadership skills and thus productivity. Much of the literature points to the fact that EQ can be learned and improved through focus and training (Bradberry & Greaves, 2003; Cooper, 1997; Dulewicz & Higgs, 2000; Dulewicz & Higgs, 2004; Goleman, 1998; Groves et al., 2006). Possible future research could be implemented using a pre-training EQ assessment with DMs prior to conducting targeted EQ training in those developmental areas identified in the assessment, and then assessing the DMs again post training to see if there is any change in EQ level. This could help answer whether EQ level, given the healthcare industry setting and DM role, can in fact be developed and improved. If some type of analysis of sales results could also be included pre-training and post-training, a possible correlation to sales results might also be included.

Conclusions

The biopharmaceutical industry is a competitive industry that has very strong legal and regulatory oversight and one that is facing sweeping changes with the implementation of comprehensive healthcare reform. One of the biggest challenges facing organizations within the biopharmaceutical industry is how best to determine what leadership traits and skills are most important to be successful currently and in the near future given the rapid rate of change. In addition, companies want to identify individuals with future leadership potential, as well as develop current leaders to maximize their talents.

This study was designed to analyze the behavioral style of current District Sales Managers (DMs) and correlate their individual leadership behavioral style to their level of emotional intelligence. The literature has indicated that higher levels of emotional intelligence lead to improved leadership and productivity. Thus, if specific behavioral styles could be directly correlated to higher levels of emotional intelligence, it might help organizations like Phyogen, Inc. to better identify individuals with future leadership potential. Identification of what types of EQ strength and development areas are most correlated to each behavioral style could also be used in ongoing training of DMs to help them maximize their productivity with whatever behavioral style they possess.

This study did not find a direct correlation between leadership behavioral style using the DiSC® self-assessment to identify DM classic pattern, and the corresponding overall level of emotional intelligence of DMs using the Bar-On EQ-i® self-assessment.

However, this study did reveal that specific domains within the DiSC$^{®}$ behavioral classic pattern positively or negatively correlated to specific areas of emotional intelligence. The study also identified that the *D*, *i*, and *C* domains of DiSC$^{®}$ appear to confer EQ related advantages to DMs that may help them to be more effective today, as well as in the future, as they deal with such changing and complex issues as comprehensive healthcare reform. The information from this study does has applicability for Phyogen, Inc. in helping identify future sales leaders for the organization, and may also be useful in further developing their current team of District Sales Managers, as well as, possibly leading to a centralized leadership training function for all of Phyogen.

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APPENDIX A

Emotional Intelligence Theorists and Models

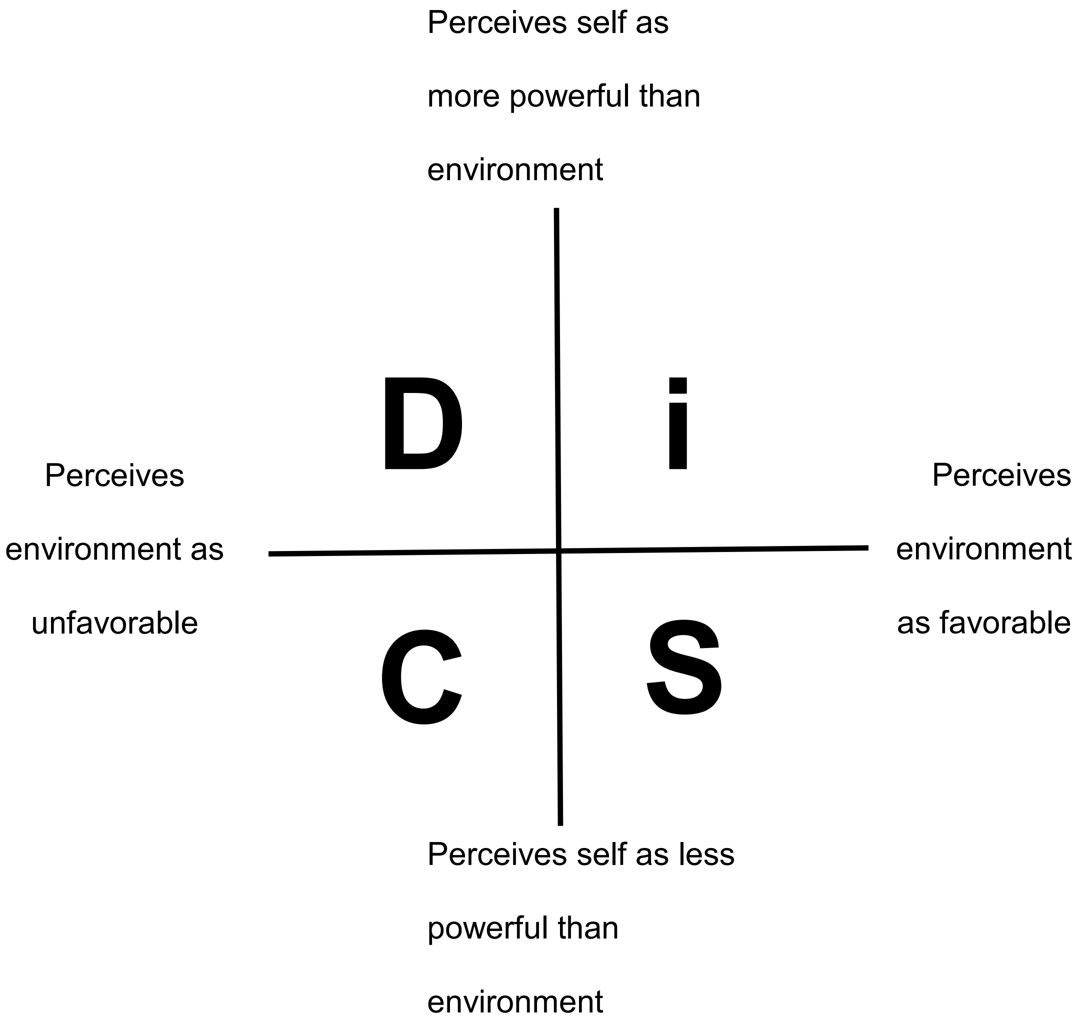
Theorist	Year	Model Components/Highlights	EI Assessments
Edward L. Thorndike	1920	• Social Intelligence first identified and defined • President of American Psychological Assoc. (1912) • Best known for “Law of Effect” • Felt that social intelligence was easy to observe, but hard to measure	GWSIT (1927)
Howard E. Gardner	1983	• Built on work from Thorndike • In his book: *Frames of Mind*, he identified multiple intelligences, two of which (inter and intrapersonal) became foundational to all subsequent emotional intelligence models	None
Reuven Bar-On	1997	• Credited with first operationalizing EI • First EI assessment • Trait-based emotional intelligence model	EQ-I (1997)
Peter Salovey, Jack Mayer, & David Caruso	1990	• Mayer and Salovey formed first definition of emotional	MEIS (Multi-Factor Emotional Intelligence Scale), (1997)

		intelligence in 1990 • Mayer, Salovey, and Caruso adjusted definition of emotional intelligence in 2002 • Believe that to measure emotional intelligence, one must measure actual ability to use EI to solve problems – different than trait-based assessments from Bar-On and Goleman • First ability-based assessment of emotional intelligence.	MSCEIT (2003)
Daniel Goleman	1995	• Brought emotional intelligence into the corporate environment • First multi-rater assessment of emotional intelligence (ECI 2.0) • PhD Psychologist, science journalist, best-selling author	ESCI ECI 2.0

للاستشارات المنارة

APPENDIX B

Original DiSC Dimensions Model


Perceives self as more powerful than environment
D
i
Perceives environment as unfavorable
Perceives environment as favorable
C
S
Perceives self as less powerful than environment

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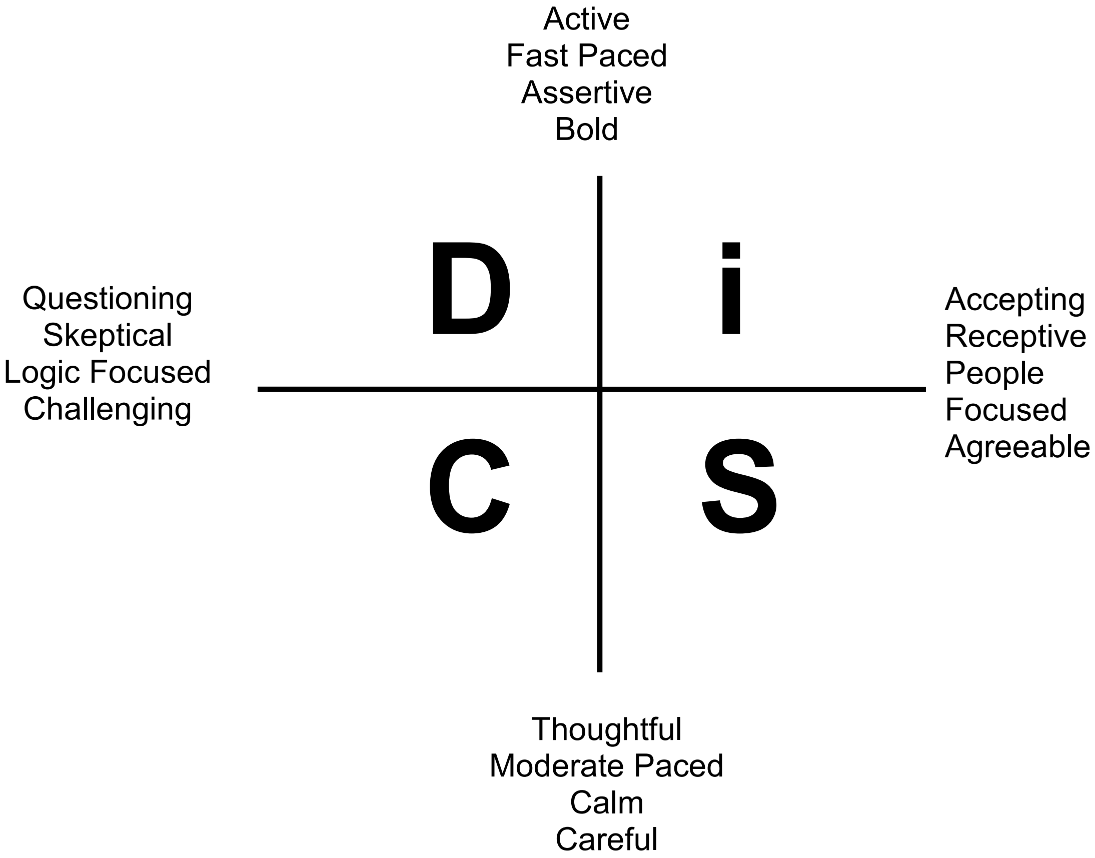
APPENDIX C

Contemporary DiSC Dimensions Model


Active
Fast Paced
Assertive
Bold
Questioning
Skeptical
Logic Focused
Challenging
D
i
C
S
Accepting
Receptive
People
Focused
Agreeable
Thoughtful
Moderate Paced
Calm
Careful

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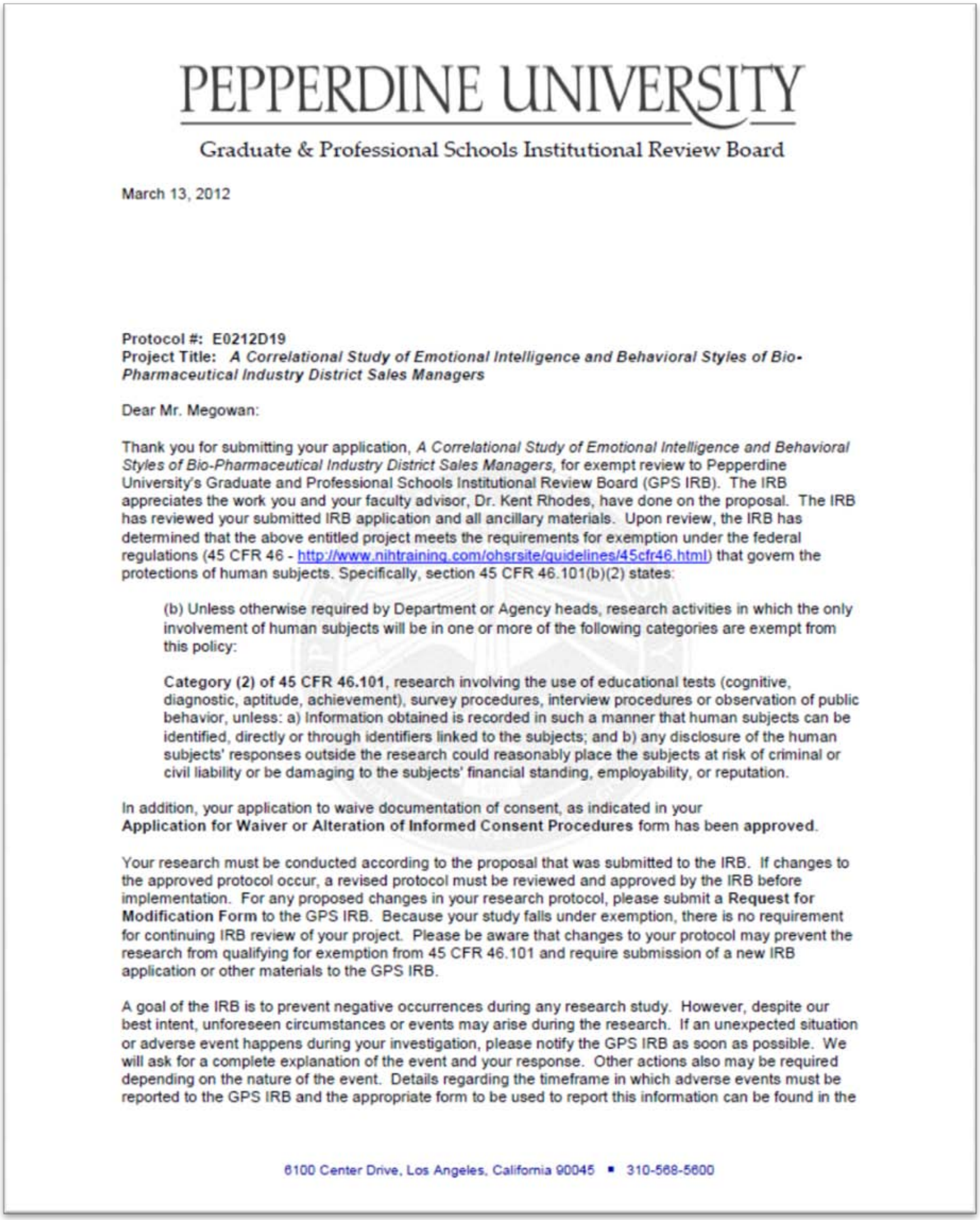
APPENDIX D

IRB Approval



PEPPERDINE UNIVERSITY
Graduate & Professional Schools Institutional Review Board

March 13, 2012

Protocol #: E0212D19
Project Title: ***A Correlational Study of Emotional Intelligence and Behavioral Styles of Bio-Pharmaceutical Industry District Sales Managers***

Dear Mr. Megowan:

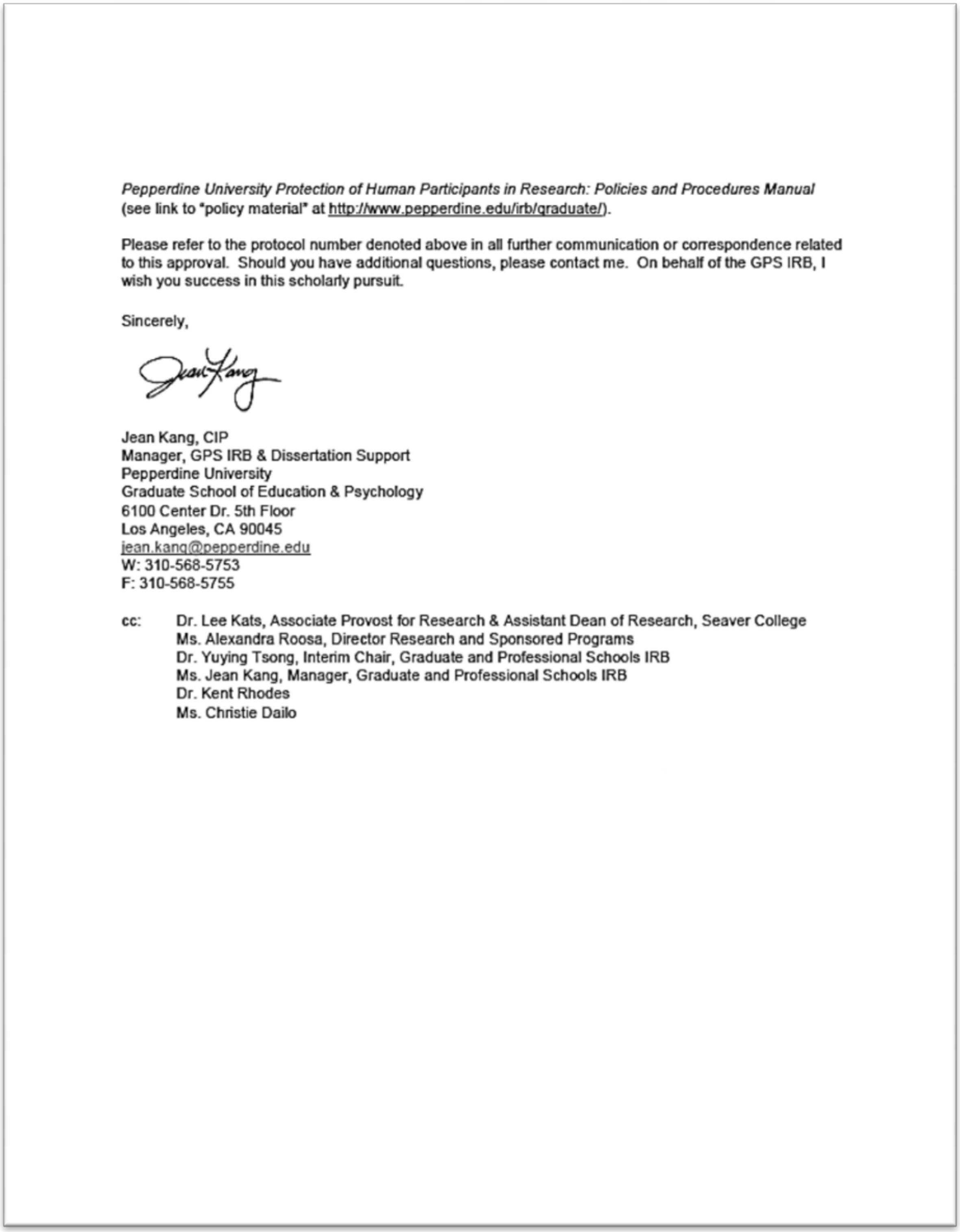
Thank you for submitting your application, *A Correlational Study of Emotional Intelligence and Behavioral Styles of Bio-Pharmaceutical Industry District Sales Managers*, for exempt review to Pepperdine University's Graduate and Professional Schools Institutional Review Board (GPS IRB). The IRB appreciates the work you and your faculty advisor, Dr. Kent Rhodes, have done on the proposal. The IRB has reviewed your submitted IRB application and all ancillary materials. Upon review, the IRB has determined that the above entitled project meets the requirements for exemption under the federal regulations (45 CFR 46 - http://www.nihtraining.com/ohsrsite/guidelines/45cfr46.html) that govern the protections of human subjects. Specifically, section 45 CFR 46.101(b)(2) states:

> (b) Unless otherwise required by Department or Agency heads, research activities in which the only involvement of human subjects will be in one or more of the following categories are exempt from this policy:
>
> **Category (2) of 45 CFR 46.101**, research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: a) Information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and b) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

In addition, your application to waive documentation of consent, as indicated in your **Application for Waiver or Alteration of Informed Consent Procedures** form has been **approved**.

Your research must be conducted according to the proposal that was submitted to the IRB. If changes to the approved protocol occur, a revised protocol must be reviewed and approved by the IRB before implementation. For any proposed changes in your research protocol, please submit a **Request for Modification Form** to the GPS IRB. Because your study falls under exemption, there is no requirement for continuing IRB review of your project. Please be aware that changes to your protocol may prevent the research from qualifying for exemption from 45 CFR 46.101 and require submission of a new IRB application or other materials to the GPS IRB.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite our best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the GPS IRB as soon as possible. We will ask for a complete explanation of the event and your response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the GPS IRB and the appropriate form to be used to report this information can be found in the



Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual (see link to "policy material" at http://www.pepperdine.edu/irb/graduate/).

Please refer to the protocol number denoted above in all further communication or correspondence related to this approval. Should you have additional questions, please contact me. On behalf of the GPS IRB, I wish you success in this scholarly pursuit.

Sincerely,

Jean Kang

Jean Kang, CIP
Manager, GPS IRB & Dissertation Support
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cc: Dr. Lee Kats, Associate Provost for Research & Assistant Dean of Research, Seaver College
Ms. Alexandra Roosa, Director Research and Sponsored Programs
Dr. Yuying Tsong, Interim Chair, Graduate and Professional Schools IRB
Ms. Jean Kang, Manager, Graduate and Professional Schools IRB
Dr. Kent Rhodes
Ms. Christie Dailo

APPENDIX E

Research Questions and Assessment Tools Alignment

Research Questions	EQ-i® Scores (total, intrapersonal, interpersonal, adaptability, stress-management, general mood) DiSC Scores (classic pattern, dominance, influence, steadiness, conscientiousness)	Analytical Approach
1. To what extent if at all, is there a relationship between District Sales Manager DiSC® classic pattern, and the 6 primary Bar-On EQ-i® scores?	Total EQ-i® score and DiSC classic pattern Classic Pattern is a 3-group nominal BarOn EQ-I is an interval Disc overall classic pattern and EQ-i® individual domain scores of intrapersonal awareness, interpersonal awareness, adaptability, stress management, and general mood	One-way ANOVA with eta coefficient Gives a measure of the strength of the relationship. Eta squared is the coefficient of determination. Cheffe post-hoc test to discern differences between classic patterns and EQ.
2. To what extent if at all, are there significant correlations between District Sales Managers 4 DiSC quadrant scores and the 6 primary EQ-I scores?	Bar-on EQ-i® total score, individual DiSC (D,I,S,C) quadrant scores	Pearson's Correlation

	Bar-On EQ-i® individual domain scores (intrapersonal awareness, interpersonal awareness, adaptability, stress management, and general mood) and DiSC primary behavioral style (dominance, influence, steadiness, conscientiousness)	
1. To what extent if at all, are there significant correlations, after taking into account demographic characteristics, between District Sales Managers 4 DiSC quadrant scores and the 6 primary EQ-I scores?	Bar-On EQ-i® individual domain scores (intrapersonal awareness, interpersonal awareness, adaptability, stress management, and general mood) and DiSC primary behavioral style (dominance, influence, steadiness, conscientiousness)	Partial correlations