BIG FIVE PERSONALITY AND LEADERSHIP DEVELOPMENTAL LEVELS AS PREDICTORS OF LEADER PERFORMANCE

by

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(Under the Direction of Karl Kuhnert)

ABSTRACT

There are many methods and theoretical frameworks used to predict leader performance, yet little is known about how these methods compare with one another. This study investigates and compares the predictive abilities of Big Five personality characteristics and Leadership Developmental Levels (constructive/developmental theory) in a model of leader performance. Leadership Developmental Level was found to predict leader performance and was also found to account for a unique component of the variance in leader performance, even above and beyond that which can be accounted for by personality.

INDEX WORDS: Big Five Personality, Five-Factor Model of Personality, Leadership Development, Leadership Ability, Constructive-Developmental Theory, CD Theory, Executive Leadership, Leader Performance, 360-Degree Feedback

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DEDICATION

To my parents, who gave me roots and wings.

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CHAPTER 1

INTRODUCTION

"Leadership" is a popular buzzword in today's corporate environment. Popular press business magazines and practitioner journals are regularly peppered with leadership fables and advice. Leadership in the workplace is the topic of many recent best-selling books, such as Lifton and Buckingham's (2001) *Now, Discover Your Strengths: How to Develop Your Talents and Those of the People You Manage*, Lencioni's (2002) *The Five Dysfunctions of a Team: A Leadership Fable*, and many, many others. Corporate spending on leadership improvement efforts such as executive coaching are estimated to be as high as one billion dollars per year and rising (Sherman & Freas, 2004). Given the business world's seeming enthusiasm for leadership, one may wonder, "Why all the fuss?" Does leadership in the workplace really matter?

Studies of leadership consistently report that leader support and leadership ability are directly linked to subordinate performance, behaviors, and reactions, including job satisfaction, positive mood, affective commitment to the organization, reduced turnover, reduced withdrawal behaviors, improved work performance, pursuit of more challenging goals, goal attainment, perseverance, greater resistance to stress, and value of progress (Bass, 1990; Garder & Schermerhorn, 2004; Hogan, Curphy, & Hogan, 1994; Hughes, Ginnett, & Curphy, 1993; Luthans, 2003; Yukl, 1989). Furthermore, subordinate reactions to inept leadership have been found to include turnover, malingering, insubordination, and industrial sabotage (Bass, 1990; Hughes, Ginnett, & Curphy, 1993; Hogan, Curphy, & Hogan, 1994). Due to the links between these types of subordinate reactions to individual-, team- and organizational-level performance

criteria, perhaps the corporate buzz surrounding the topic of leadership is justified (e.g., Rhoades & Eisenberger, 2002; Shaw, Duffy, & Johnson, 2005; Vandenberghe, Bentein, & Stinglhamber, 2004).

An organization with a specific goal or vision is most successful at reaching this goal when it establishes a human resource management system that integrates the goal into all human resource functions (Burt, 2005; Cohn, Khurana, & Reeves, 2005; Effron, Greenslade, & Salob, 2005). Despite this knowledge, leadership is most often viewed only from the perspective of career development; leadership ability is not yet commonly used as a criterion for other human resource functions, including leader selection systems (Day, Zaccaro, & Halpin, 2004; Effron, Greenslade, & Salob, 2005). For example, Hogan, Curphy, and Hogan (1994) found that first-line supervisors are often chosen from the workforce on the basis of their technical talent rather than their leadership skills, and middle managers are often chosen from the ranks of first-line supervisors on the basis of likeability and perceived ability to cooperate with senior management. Leaders who are not promoted from within the workforce are most frequently selected on the basis of personality characteristics (Lievens, Highhouse, & de Corte, 2005; Morgeson, Reider, & Campion, 2005; Pandey, 1976). The purpose of this study is to close the gap between leadership theory and practice by investigating Leadership Developmental Level as a predictor of leader performance. In this study, I have investigated and compared the predictive ability of a common leader selection tool, Big Five personality, with the predictive ability of leadership developmental level (constructive/developmental theory) in a model of leader performance.

Personality and the "Big Five" Model

Hogan, Hogan, and Roberts (1996) argue that "it is not *what* a person does, but *how* he or she does it (e.g., calmly, creatively, attentively, etc.) that determines effective performance" (p. 473). Perhaps one reason that personality is considered an acceptable predictor of job performance is because behavior is a function of personality—what people do is a function of who they are (Hogan, Hogan & Roberts, 1996; Mount & Barrick, 1998; Ployhart, Lim, & Chan, 2001; Smither, London, & Richmond, 2005). Perhaps another reason for the popularity of personality measures in selection procedures is because who we were 20 years ago predicts our performance now: short-term and long-term longitudinal studies of personality indicate that personality is consistent across adulthood and has longitudinal predictive power (Conley, 1984; Conley, 1985; Costa & McCrae, 1988; Finn, 1986; Gough & Heilbrun, 1983; Helson & Moane, 1987; Helson & Wink, 1992).

The "Big Five," or the five-factor model (FFM) of personality, is a well-established and frequently-used measure of normal personality. According to Goldberg (1992), the Big Five was first conceptualized by Tupes and Christal (1961) using Cattell's (1957) collection of bipolar variables. The Big Five is a comprehensive method for the systematic exploration of global personality; many personality researchers now agree that the existing personality inventories all measure essentially the same five broad dimensions with varying degrees of efficiency (Hogan, Hogan, & Roberts, 1996; McCrae & John, 1992). As stated by Digman (1990):

> At a minimum, research on the five-factor model has given us a useful set of very broad dimensions that characterize individual differences. These dimensions can be measured with high reliability and impressive validity. Taken together they provide a good answer to the question of personality *structure* (p.436).

The Big Five has been heavily researched and is consistently found to account for all of the significant variance in personality inventory responses, based upon either self-ratings or ratings by persons who know the target well (Costa & McCrae, 1992a; Goodstein & Lanyon, 1999; McCrae & Costa, 1987); these results are consistent regardless of which approach to factor analysis is taken (Goldberg, 1982; Goodstein & Lanyon, 1999). It has been demonstrated that results show convergent and discriminant cross-observer and cross-instrument validity for all five factors (McCrae & Costa, 1987). Furthermore, the Big Five can be profitably used in most applied settings (such as selection systems) and the results are efficient and straightforward, providing at least a general description of personality with as few as five scores (McCrae & John, 1992). The Big Five model of personality has been chosen in lieu of other conceptualizations of adult personality because its theoretical support, empirical strength, real-world utility, and wide-spread use in Human Resource functions make the Big Five a good fit for the needs and intentions of this study.

For the purposes of this study, I have used a common conceptualization of the Big Five, whereby the five personality dimensions are referred to as *Extraversion*, *Agreeableness*, *Conscientiousness*, *Neuroticism*, and *Openness to Experience*. Generally speaking, Extraversion is the extent to which a person is active, assertive, energetic, enthusiastic, outgoing, and talkative. Agreeableness is the extent to which a person is appreciative, forgiving, generous, kind, sympathetic, and trusting. Conscientiousness is the extent to which a person is efficient, organized, reliable, responsible, and thorough. Neuroticism is the extent to which a person is anxious, self-pitying, tense, touchy, unstable, and worrisome. Openness to Experience is the extent to which a person is artistic, curious, introspective, imaginative, insightful, original, and has a wide range of interests.

Over the years, many studies have investigated the predictive ability of the Big Five on the construct of job performance. In a widely-cited meta-analysis, Mount and Barrick (1991) found that Conscientiousness correlates positively with job performance in five broad occupational groups, which may indicate that individuals who are dependable, persistent, goal-directed, and organized tend to be higher performers on any job (Mount & Barrick, 1991). They also found that Extraversion correlates positively with job performance in two of the occupational groups—management and sales—where interactions with others make up a significant portion of the job (Mount & Barrick, 1991). Ployhart, Lim, & Chan (2001) found that Extraversion and Openness to Experience predict performance specifically in leadership contexts. Mount and Barrick (1991) also found Extraversion and Openness to Experience to be valid predictors of training proficiency across all five occupational groups, which may indicate that being active, social, and open to new experiences leads individuals to be more involved in and receptive to training and, as a result, learn more. Furthermore, Openness to Experience is thought to resemble intellect, and is notably correlated with general cognitive ability, which has been found to correlate with leadership emergence and perceptions of leadership (Bass, 1990; Bass, 1997; Judge & Bono, 2000; Lord, DeVader, & Alliger, 1986; McCrae & Costa, 1987). In short, research indicates that Conscientiousness, Extraversion, and Openness to Experience should be the factors of primary interest to those investigating the predictive ability of Big Five personality in a model of leader performance.

H1: I hypothesize that Conscientiousness, Extraversion, and Openness to Experience will significantly predict leader performance.

Leadership and Constructive/Developmental Theory

Over the years, there have been many conceptualizations of "leadership." Some have considered the role of personal characteristics, such as character, as the foundation of leadership; this philosophy is in accordance with the belief that leadership achievements are more shaped by an individual's collection of attitudes, dispositions, and habits (character) than by his/her skill or education (Barlow, Jordan, & Hendrix, 2003; Josephson, 1991). This conceptualization of leadership may be considered *charismatic leadership*, whereby leaders are successful due to their emotional appeal, or their ability to motivate followers on a personal/emotional level (Hollander & Offerman, 1990). Some of these personal characteristics may be captured by a measure of personality, which may be a reason for the popularity of personality inventories in leader selection systems.

Others may classify leaders as those who are able to identify the needs of their followers and exchange appropriate rewards for desired levels of effort and performance. This class of leaders may be referred to as *transactional leaders*. Transactional leadership operates according to the social exchange perspective, meaning that there exists an implicit social exchange or transaction between a leader and followers, including reciprocal influence and interpersonal perception (Bass, 1985; Burns, 1978; Bycio, Hackett, & Allen, 1995; Hollander & Offerman, 1990; Kellerman, 1984; Kuhnert & Lewis, 1987).

Still others suggest that leadership only occurs when others willingly adopt the goals of the group as their own, and for this reason, true leadership involves building cohesive, goal-oriented teams. In this case, leaders may be defined as those who draw upon followers' beliefs, ideas, and values and recycle them back into a distinct leadership framework; they are makers-of-meaning—people who manipulate symbols and add meaning to organizational ends (Bryman,

2004; Hogan, Curphy, & Hogan, 1994). This class of leaders may be called *transformational leaders*. Transformational leadership may be considered an extension of transactional leadership, whereby the leader actually induces a change in the followers' outlooks, goals, and beliefs, thus redirecting their behaviors (Bass, 1985; Burns, 1978; Bycio, Hackett, & Allen, 1995; Fielder & House, 1988; Hollander & Offerman, 1990; Kellerman, 1984; Kuhnert & Lewis, 1987). Transformational leaders are distinct from other types of leaders in that they operate out of deeply-held personal value systems, and when effective, they produce higher levels of performance among individuals because they are able to elevate and expand the followers' needs such that followers are encouraged to transcend their self-interests (Bass, 1985; Burns, 1978; Bycio, Hackett, & Allen, 1995). Thus, a transformation is the function of the ongoing changes in the ways leaders and followers organize and process information about the world; a transformation occurs when the personal standards and value system of the leader have become organizing processes for followers (Bycio, Hackett, & Allen, 1995).

The source of the distinction between transactional and transformational leadership may be found in constructive/developmental theory. Constructive/developmental (CD) theory explains individual differences as a function of the way individuals construct or organize experiences relating to themselves and their social/interpersonal environments (Kegan, 1982; Kuhnert & Lewis, 1987). According to Kegan (1982), individuals must compose and internally experience events and situations in order for them to exist psychologically. CD theory outlines six discrete stages of human development, each representing a different way of understanding the world; each stage results in a new way of making meaning of experiences and a new form of self-expression (Kegan, 1982; Kegan & Lahey, 1984; Merron, Fisher, & Torbert, 1987).

Kegan (1982) used two internal structures to define each CD stage: these structures are called *subject* and *object*. The subject is the process through which individuals organize and understand their experience; it is the lens through which the world is viewed and the rule by which it is defined (Kegan, 1982). The subject is very basic to human functioning—so basic, that people are typically unaware of it and unable to take perspective on it (Kuhnert & Lewis, 1987). The object is the content of the experience that is organized and understood by way of the subject (Kegan, 1982). As one develops from one stage to the next, what was previous subject becomes object. This means that one gains the ability to take perspective on what was previously an organizing process; as stated by Kuhnert and Russell (1990), "individuals are able to see and reflect upon the way that they previously organized their experience, rather than being defined by it" (p. 599) (see Table 1). CD theory conceptualizes the process of development as a life-long journey, contingent upon time, experience, change, and perspective. All individuals develop from one stage to the next without skipping stages, and it is not possible to regress from a higher level to a lower level because once a person is able to take perspective on his/her lens (subject), this lens can no longer be the framework for viewing the world. Although all individuals progress through the same stages in the same order, the rate and catalysis of development, as well as the capacity (maximum level) of development varies among individuals. In general, as individuals develop through the CD stages, their self-definition changes from externally-defined to internally-defined, their interpersonal focus changes from self to others, and their understanding of the world changes from simple to complex.

Kuhnert and Lewis (1987) applied CD theory to the study of leadership, arguing that a leader's CD stage (method of meaning-making) may be the source of transactional and/or transformational leadership behaviors. In a related study, Eigel and Kuhnert (2005) further

conceptualized the relationship between CD theory and leadership capacity. According to this conceptualization, CD stage is analogous to Leadership Development Level (LDL) and is defined as the "measurable capacity to understand ourselves, others, and our situations" (Eigel & Kuhnert, 2005; p. 359). For the purposes of this study, I use the same conceptualization of leadership employed by Eigel and Kuhnert (2005): LDL will be used to refer to a leader's CD stage and will serve as a measure of a leader's capacity to lead others.

Although Kegan (1982) outlines six LDLs (CD stages), only four of these (LDLs two through five) pertain to adult development, and are applicable to the study of leadership (Kuhnert & Lewis, 1987) (see Figure 1). At *LDL two*, the subject is personal goals and agendas; this means that for people in stage two, experiences, events, and feelings are evaluated in terms of whether or not their own personal goals are fulfilled. Kuhnert and Lewis (1987) argue that leadership at LDL two is low-level transactional leadership (*quid pro quo*). At *LDL three*, individuals are able to take perspective on their personal goals and agendas (this former subject becomes the object) and their new subject is interconnectedness. At LDL three, individuals have learned how to override their own goals in order to remain connected to others, and so for this group, mutual support, promises, and expectations are of key importance. Kuhnert and Lewis (1987) suggest that leadership at LDL three is higher-level transactional leadership, because there is still an exchange of behaviors and rewards, yet these leaders are not yet operating out of a deeply-held value system. At *LDL four*, individuals gain the ability to take perspective on their goals and interpersonal connections (these become the object), while operating out of a personal value system. Leaders operating at LDL four are able to transcend the personal needs of self and others (thus risking interpersonal harmony) in order to operate according to their personal value system. When these personal values are adopted by followers, this is transformational leadership.

At *LDL five*, individuals are able to take perspective on their own personal value systems from the vantage point of a new subject; this new subject is a value system with a wider base, composed less of personal values and more of values pertaining to the well-being of broader entities, such as an organization, an industry, or even a society (Kegan, 1982). Like LDL four, transformational leadership occurs when these values become the values of followers. Kuhnert and Lewis (1987) summarize the process of development:

> Throughout this developmental process (which extends into adulthood for most individuals), there is an expansion of people's abilities to reflect on and understand their personal and interpersonal worlds. This expansion is made possible by an increasing differentiation of oneself from others and by simultaneously integrating the formerly undifferentiated view into a more complex and encompassing view" (p. 651).

In short, transactional leaders (exchange) are operating at LDLs two and three, and transformational leaders (value system) are operating at LDLs four and five (Kuhnert & Lewis, 1987).

CD theory provides a framework for understanding the ways in which leaders construct meaning (for themselves and for others), through which we might gain a more complete understanding of the distinctions between leaders at different levels and how these differences affect performance. There is evidence that transformational and transactional leadership behaviors significantly predict various aspects of collective personality ("group personality"), and that collective personality is significantly related to collective (group) performance over time (Hoffman & Jones, 2005). More specifically, transformational leadership is positively related to collective Openness to Experience, Agreeableness, Extraversion, and Conscientiousness, even after controlling for work activity and transactional leadership behaviors (Hoffman & Jones,

2005). Furthermore, transformational leadership provides an inspirational vision for followers, such that expectations rise and followers are motivated to pursue this vision; over time, the existence of this vision results in high collective Conscientiousness and Extraversion (Hoffman & Jones, 2005). In turn, Hoffman and Jones (2005) found that collective Conscientiousness, Openness to Experience, and Agreeableness are significantly related to increased consistency in performance over time, even after controlling for work activity level. MacKenzie, Podsakoff, and Rich (2001) found that transformational leader behaviors influence followers to perform above and beyond the call of duty, and Rooke and Torbert (1998) found that the ego development stage (LDL) of a company's Chief Executive Officer and his/her senior advisors is a critical variable in successful organizational transformation.

The evidence supporting the connection between transformational leadership behaviors (LDLs four and five) and organizational-level performance suggests that LDL should be predictive of individual-level performance. Furthermore, Harris and Kuhnert (2006) found LDL to be predictive of 360-degree feedback.

H2: I hypothesize that LDL will significantly predict leader performance.

If LDL and personality both predict leader performance, then personality characteristics which are related to higher levels of leader performance should also be related to higher LDLs.

H3a: If the data support Hypotheses 1 and 2, then I hypothesize that leaders at LDLs four and five will have higher levels of Conscientiousness, Openness to Experience, and Extraversion than leaders at LDLs two and three.

Relevant literature suggests that Conscientiousness, Openness to Experience, and Extraversion are most closely associated with transformational leadership (e.g., Mount & Barrick, 1991; Judge & Bono, 2000; McCrae & Costa, 1987).

H3b: If the data support Hypotheses 1 and 2, then I hypothesize that leaders at LDLs two and three will have higher levels of Neuroticism and Agreeableness than leaders at LDLs four and five.

Once again, relevant literature suggests that Neuroticism and Agreeableness may be more closely associated with transactional leadership (e.g., Mount & Barrick, 1991; Judge & Bono, 2000; McCrae & Costa, 1987). Finally, because there are components of personality captured by LDL, and because LDL measures a quality that is distinct from personality (meaning-making framework) and is therefore a more fully-developed theory of the person, LDL should be better than personality at predicting those leaders who have real influence.

H4: I hypothesize that in a model including both LDL and personality as predictors, LDL will account for a unique component of variance in leader performance, beyond that which is accounted for by personality.

Summary

The purpose of this study is to close a gap between leadership theory and practice by investigating Leadership Developmental Level as a predictor of leader performance. In this study, I have investigated and compared the predictive ability of a common leader selection tool, Big Five personality, with the predictive ability of constructive/developmental theory (Leadership Developmental Level) in a model of leader performance. Consistent with the findings of previous literature, I predict that personality (specifically Conscientiousness, Extraversion, and Openness to Experience) and LDL will predictive of leader performance. In addition, I hypothesize that each of these predictors, both singly and in conjunction with one another, will account for a significant proportion of variance in a model of leader performance.

Table 1

Subject-Object Relations in Constructive/Developmental Theory[1]

CD Stage/ LDL	Subject (Organizing Process)	Object (Content of Experience)
Two	Personal goals and agenda	Immediate needs and feelings
Three	Interpersonal connections	Personal goals and agenda
Four	Personal standards and value system	Interpersonal connections
Five	Openness and paradox	Personal standards and value system

[1]From "Transactional and Transformational Leadership: A Constructive/Developmental Analysis," by K. W. Kuhnert & P. Lewis, 1987, *Academy of Management, 12*, p.652. Adapted with permission of the authors.

CHAPTER 2

METHOD

Sample

This study is based upon data collected from 58 management executives who have participated in an executive development program designed to increase self-awareness and develop general leadership skills through a consulting firm in Atlanta, GA. Participation in the program was paid for by the participants' employers, and all participants entered the program voluntarily for developmental purposes only. Males accounted for 65% of the sample and females represented 35% of the sample. Participants' mean age was 46.13 years (*SD* = 7.393). Of the 58 participants, seven held manager-level positions, 14 held director-level positions, 25 held vice president-level positions, one held a president-level positions, and 4 held officer-level (CEO, CFO, etc.) positions; for seven participants, job level was not recorded. [Note: Because all participants were not employed within the same company, job level is approximate.]

Measures

Personality. Each participant completed the Personality and Leadership Profile (PLP), a self-report measure of personality. The PLP is composed of 342 self-referent statements; participants indicate the degree to which the statement applies to them using a 4-point Likert scale. The coefficient alpha value for this scale is .87. Using a sample of 214 individuals, the dimensionality of the PLP items was analyzed using principal axis factor analysis. Three criteria were used to determine the number of factors to extract and rotate: the a priori hypothesis that the Big Five accounts for all significant variance in personality inventory responses (McCrae &

Costa, 1987; Costa & McCrae, 1992a; Goodstein & Lanyon, 1999), the scree test, and the interpretability of the factor solution. The scree plot indicated that the a priori hypothesis was probable; therefore, five factors were rotated using a Direct Oblimin rotation procedure. Careful inspection of item content revealed that the rotated solution yielded five interpretable factors: Conscientiousness, Neuroticism, Openness to Experience, Extraversion, and Agreeableness, accounting for 11.45%, 9.71%, 8.81%, 8.15%, and 4.58% of item variance, respectively. Eighty-eight items displayed significant complex loadings, indicating that these items did not measure a distinct facet of personality and were not well-designed items; thus, these items were not included in the analysis. The coefficient alpha for the reduced scale (254 items) is .79. The coefficient alphas for each subscale (dimension) are as follows: Conscientiousness (42 items), .80; Neuroticism (59 items), .90; Openness to Experience (73 items), .90; Extraversion (45 items), .87; and Agreeableness (35 items), .82 (see Table 2). Sample items from each of the five dimensions may be found in Appendix A.

Leadership Developmental Level. Each participant participated in a semi-structured interview conducted by a trained Industrial/Organizational Psychologist to determine his/her constructive-developmental (CD) stage, or LDL. Each interview lasted approximately one hour. The topics covered in the interview were loosely structured using five prompt cards, each printed with a single word from which the interviewer procured discussion about the participants' experiences and beliefs pertaining to the leadership. Participants chose one card at a time and were prompted to discuss their leadership experiences pertaining to the topic on the card. The words on the cards and the accompanying prompts are as follows: *Important*—what is important to you as a leader?; *Success*—tell me about a time you were successful as a leader; *Conflict*—tell me about a time when you experienced conflict as a leader; *Change*—tell me about a time you

experienced change as a leader; and *Strong Stand*—tell me about a time when you took as strong stand as a leader. While this structure is central to the interview process, it is important to note that the content was actually of minor importance in this interview process; instead, the interviewer's key focus was to extract the process by which the participant came to know what he/she knows. In fact, the interviewer scans the participant's speech, attending to the participant's subject (recall the discussion of CD theory), or lens—the way in which he/she views and organizes the world.

Each interview was audio-recorded and transcribed. After reviewing the transcription, the interviewer then provided an overall LDL rating for each subject. Traditionally, LDL ratings are assigned one of 20 distinct scores (each of the four levels includes five sub-levels); however, considering the small sample size used for this study, this method would result in very little variability among LDLs. To allow for more meaningful analysis, LDL ratings were not parsed into sub-levels. Because LDL actually exists on a continuum, most individuals are in transition from one level to the next at any given point in time. For these individuals, the dominant lens was used to classify LDL. For example, an individual who mostly operates from LDL 3 but who has occasional "moments" of LDL 4 thinking would be categorized as LDL 3. On the other hand, an individual who operates primarily at LDL 4 but who occasionally lapses into LDL 3 activities would be classified as LDL 4. To ensure reliability of LDL ratings, two trained Industrial/Organizational Psychologists reviewed the transcripts, with approximately 93% agreement. Discrepant ratings were discussed until consensus was reached.

Leader Performance. "Leadership effectiveness" is an elusive criterion that is difficult to capture using typical "hard" measures of performance; organizational success indicators are complex, and it may be difficult to trace these outcomes to specific leaders or specific leadership

behaviors. Furthermore, a leader's effectiveness may be influenced by any number of factors outside of the leader's control. Considering these constraints, Hogan, Curphy, and Hogan (1994) suggest that 360-degree feedback provides a well-rounded measure of performance and thus may serve as an adequate measure of leadership effectiveness. For the purposes of this study, leader performance is conceptualized as 360-degree feedback.

Also known as multisource feedback, 360-degree feedback refers to evaluations gathered from a "full circle" of rating sources, usually including self, supervisors, peers, subordinates, and even customers and suppliers (Dalessio, 1998; Smither, London, & Richmond, 2005; Dunnette, 1993; Tornow, 1993; London & Smither, 1995). The purpose of collecting ratings from multiple perspectives is to provide a more comprehensive, reliable picture of an individual's performance (Dyer, 2001). While 360-degree feedback is often used for developmental purposes such as leadership development programs, it is also used in conjunction with formal appraisal systems with administrative purposes (including, for example, promotion and compensation decisions) (Atwater & Waldman, 1998; Borman, 1997; Church & Waclawski, 1998). The use of 360-degree feedback in formal organizational decisions, such as promotion and compensation, suggests that for the purposes of this study, this measure of performance may serve as an acceptable proxy for "harder" measures of performance.

The efficacy and utility of 360-degree feedback systems rely on an understanding of the nature of rating differences observed across rater levels (Borman, 1997). It is important to consider the perspective of raters and the ability of rating sources to evaluate performance in certain contexts when deciding upon the uses of their feedback; raters provide more reliable ratings on dimensions for which they are in good position to make judgments of performance (Borman, 1974). Due to the high-level management positions of the participants in this study,

customer relations are more likely to be handled by subordinates; therefore, customer ratings are not likely to provide reliable evaluations of performance in this context, and are not included in this study. This decision is supported by Pollack and Pollack (1996), who suggest that customers provide better evaluations of products and services than individuals. Self-ratings have also been shown to be problematic: in general, self-ratings tend to be inflated, unreliable, and biased, and in management personnel, they may be systematically deflated (Yammarino & Atwater, 1997; Alimo-Metcalfe, 1998). In general, it is recommended that self-ratings should not be used for any purpose other than developmental purposes (Harris & Schaunbroeck, 1988); because this study utilizes these ratings as a proxy for "hard" measures of performance (as opposed to developmental feedback), self-ratings are not included in analysis. Superior ratings, peer ratings, and subordinate ratings have all been shown to be related to job performance, and ratings of the same individual from these three sources tend to be highly correlated with each other, indicating that these individuals may be best able to rate job performance (Sala & Dwight, 2002; Harris & Schaunbroeck, 1988; Church, 2000). For the purposes of this study, only the ratings of supervisors, peers, and subordinates are included in analysis.

The 360-degree feedback instrument used in this study was developed specifically for the purposes of the aforementioned executive development program (Hagberg Consulting Group, 2002). The instrument consists of 46 behaviors and characteristics which fall into eight dimensions of leader effectiveness, each considered to be a critical leadership competency. A description of the dimensions measured by the 360-degree feedback instrument, including sample items may be found in Appendix B. Raters indicated the participant's level of performance/ability on each of the 46 behaviors/characteristics using a 5-point Likert scale. A

mean of supervisor ratings, peer ratings, and subordinate ratings was calculated to create an overall performance score for each participant.

Procedure

Each participant completed the PLP and underwent the LDL interview. A 360-degree feedback assessment was conducted for each participant. In order to protect the identity of raters, with the exception of raters who are supervisors (due to the lack of supervision of these high-level employees), a minimum of three raters per rating source was collected. LDL remained confidential, privy only to the interviewer who scored the transcripts. The interviewer remained blind to 360-degree feedback results so that this information would not bias the evaluation of LDL.

Data Analysis

In order to test the predictive ability of personality (H1), a multiple regression was computed, including Conscientiousness, Neuroticism, Openness to Experience, Extraversion, and Agreeableness as predictors of leader performance. In order to test the predictive ability of LDL (H2), a simple regression was computed, including LDL as a predictor of leader performance. Independent samples *t*-tests were conducted in order to test for differences in leadership style means across specific personality dimensions (H3a and H3b). In order to test the incremental predictive ability of LDL (H4), a hierarchical multiple regression was computed including gender and age as control variables, as well as Big Five personality and LDL as predictors of leader performance. The proposed order of entry for each of these predictors was as follows: Conscientiousness, Neuroticism, Openness to Experience, Extraversion, Agreeableness, and LDL. Big Five personality dimensions were entered in order of the percentage of variance accounted for (see Table 2), followed by LDL. The Big Five dimensions were entered before

LDL because personality reaches stability at an early age, while LDL reaches stability later in life, if ever (e.g., Costa & McCrae, 1988).

Table 2

Summary of Principal Axis Exploratory Factor Analysis using Direct Oblimin Rotation (N=214)

Factor	α	Number Items	Eigenvalue	Percent Variance	Cumulative Percent Variance
1. Conscientiousness	.80	42	4.925	11.454	11.454
2. Neuroticism	.90	59	4.175	9.709	21.162
3. Openness to Experience	.90	73	3.789	8.812	29.974
4. Extraversion	.87	45	3.505	8.151	38.125
5. Agreeableness	.82	35	1.971	4.583	42.707

CHAPTER 3

RESULTS

A Power analysis revealed that a sample size of approximately 78 would be sufficient to detect significant effects ($\alpha = .05$) with Power of .80 (as suggested by Cohen, 1998); unfortunately the sample size available for this study was only 58. The expected Power for the current sample size is approximately .67. Due to restrictions on sample size and the specific nature of this sample, I have chosen to use a less stringent criterion for significance ($\alpha < .10$); this decision is supported by Keppel and Zedeck (1989), who suggest that this is an appropriate action when sample size and Power are limited. Readers should note that the use of this criterion for significance is controversial and increases the possibility of Type I error: I suggest that readers take this into account as they proceed. I do not intend to inflate the importance of these findings; I only wish to demonstrate trends that may be found in these data and provide readers with enough information that they might interpret the findings themselves. I have also reported Cohen's *d*, a measure of effect size, which is a more accurate estimation of the magnitude of effects than tradition significance testing (Cohen, 1994; Gigerenzer, 1993; Keppel & Zedeck, 1989).

Descriptive statistics for all study variables may be found in Table 3. Kendall's tau intercorrelations between study variables may be found in Table 4. Significant correlations between gender and Openness to Experience ($\tau = -.299$, $p = .007$) and gender and Extraversion ($\tau = .252$, $p = .023$) indicate that gender effects should be controlled in all analyses involving these

dimensions of the Big Five. Significant correlations between age and LDL ($\tau = .311$, $p = .005$) indicate that the effects of age should be controlled in all analyses involving LDL.

Hypothesis 1 was partially supported, $F(6, 51) = 1.986$, $p = .085$, $d = .26$ (see Table 5). When the criterion is a mean performance rating from all rater sources (superior, peer, and subordinate), Conscientiousness and Extraversion are significant predictors ($\beta = .377$, $p = .017$ and $\beta = -.259$, $p = .068$, respectively). Exploratory analysis revealed the same pattern of results when the criterion is a mean performance rating from subordinate raters only; interestingly, none of the personality dimensions was found to be a significant predictor of superior ratings or peer ratings.

For the purpose of exploratory analysis and to allow for a more complete understanding of these data and to allow for comparison to the wide body of existing leadership literature, LDL ratings were dichotomized and this dichotomized variable was investigated as a version, or an extension, of LDL. Leaders at LDL 2 and LDL 3 were combined to form one group of LDL 2/3 (transactional) leaders and leaders at LDL 4 and LDL 5 were clustered to form one group of LDL 4/5 (transformational) leaders. This conceptualization is consistent with the theories of transactional-versus-transformational leadership (e.g., Eigel & Kuhnert, 2005) and is referred to in this study as transactional/transformational leadership (TTL).

Hypothesis 2 received full support (see Table 6). LDL is a significant predictor of performance ratings from all raters and from subordinate raters, $F(2, 55) = 6.329$, $p = .003$, $d = .47$ ($\beta = .267$, $p = .050$) and $F(2, 50) = 3.588$, $p = .035$, $d = .37$ ($\beta = .322$, $p = .033$), respectively. Exploratory analysis investigated the predictive ability of TTL (a dichotomized version of LDL). TTL is a significant predictor of performance ratings from all raters and from subordinate raters, $F(2, 55) = 5.930$, $p = .005$, $d = .46$ ($\beta = .250$, $p = .074$) and $F(2, 50) = 3.152$, $p = .051$, $d = .35$ (β

= .300, p = .052), respectively. Exploratory analysis also revealed that LDL is a significant predictor of male leaders' performance ratings (from a mean of all rater sources), but not of female leaders' performance ratings, $F(2, 34) = 3.255$, p = .051, d = .43 (β = .402, p = .026) and $F(2, 18) = 14.680$, p = .000, d = 1.21 (β = .017, p = .918), respectively (see Table 6). Table 7 includes a summary of these analyses with the control variable (age) omitted.

There were no significant differences in levels of Big Five dimensions between transactional and transformational leaders (see Table 8); thus, hypothesis 3 was not supported.

Hypothesis 4 received minimal support. When the criterion is a mean performance rating from all rater sources, the increment of LDL above and beyond personality is non-significant (see Table 9). Exploratory analysis also revealed that when the criterion is a mean performance rating from subordinate raters, the increment of LDL above and beyond personality is non-significant (see Table 10). Exploratory analysis also investigated the predictive ability of TTL. When the criterion is a mean performance rating from all rater sources, the increment of TTL above and beyond personality is non-significant (see Table 11). However, when the criterion is a mean performance rating from subordinate raters, the increment of TTL above and beyond personality is significant, $F(8, 44) = 2.537$, p = .023, ΔR^2 = .065, ΔF = 4.186, p = .047, d = .31) (see Table 12).

Table 3

Descriptive Statistics

Variable	N	Mean	Standard Deviation	Minimum	Maximum
Gender	58	1.36	.485	1	2
Job Type	51	2.63	1.019	1	5
Age	58	46.13	6.496	34	64
LDL	58	3.55	.597	2	5
TTL	58	1.53	.503	1	2
Conscientiousness	58	114.724	10.394	82	134
Neuroticism	58	174.845	7.675	157	191
Openness to Experience	58	188.448	10.093	168	209
Extraversion	58	107.828	9.409	87	130
Agreeableness	58	80.259	4.245	70	90
Performance – All Raters	58	3.887	.309	2.77	4.46
Performance – Superior Raters	53	3.957	.508	1.76	4.71
Performance – Peer Raters	52	3.821	.309	3.16	4.61
Performance – Subordinate Raters	53	3.910	.379	2.76	4.51

Gender 1= male, 2= female. LDL= Leadership Developmental Level. TTL= Transactional/Transformational Leadership (1= transactional, 2= transformational).

Table 4

Kendall's Tau Intercorrelations Between Study Variables (N = 58)

Variable	1	2	3	4	5	6	7
1. Gender	1.0						
2. Job Type	-.276*	1.0					
3. Age	-.214	.329**	1.0				
4. LDL	-.086	.210	.311**	1.0			
5. TTL	-.160	.223	.333**	.953**	1.0		
6. Conscientiousness	-.007	.074	.033	.122	.065	1.0	
7. Neuroticism	-.004	.042	.028	-.065	-.099	.413**	1.0
8. Openness to Experience	-.299**	-.109	-.008	-.015	-.070	.180	.162
9. Extraversion	.252*	-.068	-.232*	-.186	-.188	.127	.178
10. Agreeableness	.010	.197	.134	.114	.131	-.045	.091
11. Leader Performance (All Raters)	.141	.095	.237*	.281*	.281*	.063	.032*
12. Leader Performance (Superior Raters)	.167	.030	.128	.123	.129	.094	.157
13. Leader Performance (Peer Raters)	-.050	.177	.241*	.218	.181	.132	.117
14. Leader Performance (Subordinate Raters)	.180	.124	.159	.298**	.287*	.126	.058

*$p < .05$, two-tailed. **$p < .01$, two-tailed.

Table 4, cont.

Variable	8	9	10	11	12	13	14
1. Gender							
2. Job Type							
3. Age							
4. LDL							
5. TTL							
6. Conscientiousness							
7. Neuroticism							
8. Openness to Experience	1.0						
9. Extraversion	.168	1.0					
10. Agreeableness	.078	.115	1.0				
11. Leader Performance (All Raters)	.114	-.085	.062*	1.0			
12. Leader Performance (Superior Raters)	.113	.021	.056	.493**	1.0		
13. Leader Performance (Peer Raters)	.018	-.151	-.034	.506**	.296**	1.0	
14. Leader Performance (Subordinate Raters)	.167	-.087	.034	.689**	.347**	.260**	1.0

*$p < .05$, two-tailed. **$p < .01$, two-tailed.

Table 5

Summary of Regression Analyses for Personality (Big Five) Traits Predicting Leader Performance (N= 58)

Rater Source	Variable	*B*	*SE B*	β	*p*	*F*	*d*
All	Gender	.119	.091	.186	.195		
	Conscientiousness	.011	.005	.377*	.017		
	Neuroticism	-.006	.006	-.155	.328		
	Openness to Experience	.003	.004	-.093	.519		
	Extraversion	-.009	.005	-.259†	.068		
	Agreeableness	.015	.010	.203	.135	1.986†	.26
Superior	Gender	.128	.169	.124	.452		
	Conscientiousness	.013	.008	.272	.109		
	Neuroticism	.003	.011	.040	.818		
	Openness to Experience	.000	.009	.005	.976		
	Extraversion	-.007	.008	-.133	.394		
	Agreeableness	.010	.018	.086	.570	.850	.17
Subordinate	Gender	.149	.113	.185	.194		
	Conscientiousness	.014	.006	.358*	.030		
	Neuroticism	-.005	.008	-.100	.560		
	Openness to Experience	.008	.006	.208	.162		
	Extraversion	-.012	.006	-.285	.055		
	Agreeableness	.007	.013	.078	.578	2.118†	.27

†$p < .10$, two-tailed. *$p < .05$, two-tailed.

Table 6

Summary of Regression Analyses for Leadership Developmental Level and Transactional/ Transformational Leadership Predicting Leader Performance: Controlling for Age Effects

Variable	Rater Source	*N*	*B*	*SE B*	β	*p*	*F*	*d*
LDL	All	58	.138	.069	.267*	.050	6.329**	.47
	Superior	53	.124	.123	.147	.319	2.394	.30
	Peer	52	.081	.073	.161	.272	4.213*	.41
	Subordinate	53	.214	.098	.322*	.033	3.588*	.37
	All (Males)	37	.192	.083	.402*	.026	3.255†	.43
	All (Females)	21	.009	.090	.017	.918	14.680**	1.21
TTL	All	58	.154	.084	.250†	.074	5.930**	.46
	Superior	53	.164	.151	.162	.281	2.487†	.31
	Peer	52	.034	.092	.056	.711	3.588*	.38
	Subordinate	53	.228	.114	.300†	.052	3.152†	.35
	All (Males)	37	.242	.094	.456*	.015	3.868*	.62
	All (Females)	21	.078	.113	.104	.501	15.284**	1.24

†$p < .10$, two-tailed. *$p < .05$, two-tailed. **$p < .01$, two-tailed.

Table 7

Summary of Regression Analyses for Leadership Developmental Level and Transactional/ Transformational Leadership Predicting Leader Performance: Omitting Control for Age Effects

Variable	Rater Source	*N*	*B*	*SE B*	β	*p*	*F*	*d*
LDL	All	58	.191	.064	.369**	.004	8.816**	.56
	Superior	53	.190	.115	.226	.103	2.755	.33
	Peer	52	.141	.069	.279	.045	4.220*	.41
	Subordinate	53	.232	.087	.350**	.010	7.110**	.52
	All (Males)	37	.191	.074	.401*	.014	6.700*	.61
	All (Females)	21	.196	.120	.351	.119	2.672	.52
TTL	All	58	.222	.077	.361**	.005	8.392**	.54
	Superior	53	.248	.137	.245†	.077	3.249†	.35
	Peer	52	.127	.085	.207	.140	2.244	.30
	Subordinate	53	.250	.100	.330*	.016	6.224*	.49
	All (Males)	37	.227	.081	.428**	.008	7.830**	.66
	All (Females)	21	.259	.161	.346	.127	2.592**	.51

†$p < .10$, two-tailed. *$p < .05$, two-tailed. **$p < .01$, two-tailed.

Table 8

Summary of T-Test Analysis for Mean Differences in Leader Personality between Transactional and Transformational Leaders (N= 58)

Variable	N	Mean	Standard Deviation	SE Mean	*df*	*t*	*d*
Conscientiousness					56	-.950	.18
Transactional	27	113.33	10.99	2.12			
Transformational	31	115.94	9.86	1.77			
Neuroticism					56	1.106	.21
Transactional	27	176.04	8.04	1.55			
Transformational	31	173.81	7.32	1.31			
Openness to Experience					56	.386	.07
Transactional	27	189.00	10.35	1.99			
Transformational	31	187.97	10.01	1.80			
Extraversion					56	1.401	.26
Transactional	27	109.67	8.89	1.71			
Transformational	31	106.23	9.69	1.74			
Agreeableness					56	-.928	.17
Transactional	27	79.70	4.26	.82			
Transformational	31	80.74	4.24	.76			

Table 9

Summary of Hierarchical Regression Analyses for Variables Predicting Leader Performance (All Raters): Increment of LDL (N= 58)

Variable	*B*	*SE B*	β	R^2	ΔR^2	*F*	ΔF	*d*
Step 1				.012	.012	.677	.677	.15
Gender	.070	.085	.109					
Step 2				.175	.163	5.837**	10.877**	.62
Gender	.144	.081	.226†					
Age	.020	.006	.421**					
Step 3				.241	.066	5.703**	4.659*	.40
Gender	.155	.079	.243†					
Age	.020	.006	.416**					
Conscientiousness	.008	.004	.257*					
Step 4				.259	.018	4.629**	1.309	.21
Gender	.159	.079	.249*					
Age	.020	.006	.416**					
Conscientiousness	.010	.004	.340*					
Neuroticism	-.006	.006	-.159					
Step 5				.268	.009	3.805**	.638	.15
Gender	.135	.085	.212†					
Age	.020	.006	.416**					
Conscientiousness	.010	.004	.328					
Neuroticism	-.007	.006	-.179					
Openness to Experience	.003	.004	.106					

Table 9, cont.

Step 6				.282	.014	3.332**	.975	.18
Gender	.150	.086	.235†					
Age	.018	.006	.385**					
Conscientiousness	.010	.004	.322*					
Neuroticism	-.006	.006	-.143					
Openness to Experience	.004	.004	.119					
Extraversion	-.004	.004	-.132					
Step 7				.287	.006	2.882*	.412	.12
Gender	.155	.087	.243†					
Age	.017	.006	.357*					
Conscientiousness	.010	.004	.345*					
Neuroticism	-.006	.006	-.158					
Openness to Experience	.003	.004	.104					
Extraversion	-.005	.005	-.152					
Agreeableness	.006	.010	.086					
Step 8				.300	.012	2.621	.853	.17
Gender	.147	.087	.230†					
Age	.015	.007	.306*					
Conscientiousness	.009	.005	.297					
Neuroticism	-.005	.006	-.122					
Openness to Experience	.003	.004	.092					
Extraversion	-.004	.005	-.136					
Agreeableness	.006	.010	.077					
LDL	.068	.074	.132					

†$p < .10$, two-tailed. *$p < .05$, two-tailed. **$p < .01$, two-tailed.

Table 10

Summary of Hierarchical Regression Analyses for Variables Predicting Leader Performance (Subordinate Raters): Increment of LDL (N= 53)

Variable	*B*	*SE B*	β	R^2	ΔR^2	*F*	ΔF	*d*
Step 1				.031	.031	1.633	1.633	.25
Gender	.142	.111	.176					
Step 2				.101	.070	2.796†	3.867†	.33
Gender	.204	.113	.253†					
Age	.015	.008	.275†					
Step 3				.172	.071	3.390*	4.217*	.36
Gender	.210	.109	.261†					
Age	.015	.008	.267†					
Conscientiousness	.010	.005	.267*					
Step 4				.181	.010	2.659*	.559	.32
Gender	.216	.110	.268†					
Age	.015	.008	.267					
Conscientiousness	.013	.006	.333*					
Neuroticism	-.006	.008	-.118					
Step 5				.217	.035	2.601*	2.122	.32
Gender	.167	.114	.208					
Age	.015	.008	.270*					
Conscientiousness	.013	.006	.334*					
Neuroticism	-.009	.008	-.176					
Openness to Experience	.008	.005	.207					

Table 10, cont.

Step 6				.251	.034	2.563*	2.073	.31
Gender	.012	.008	.215					
Age	.013	.006	.338*					
Conscientiousness	-.005	.008	-.109					
Neuroticism	.008	.005	.222					
Openness to Experience	-.008	.006	-.209					
Extraversion	.182	.114	.226					
Step 7				.251	.000	2.149†	.000	.29
Gender	.012	.008	.215					
Age	.013	.006	.338*					
Conscientiousness	-.005	.008	-.109					
Neuroticism	.008	.005	.222					
Openness to Experience	-.008	.006	-.209					
Extraversion	.000	.014	.001					
Agreeableness	.164	.113	.203					
Step 8				.291	.041	2.258*	2.514	.29
Gender	.006	.009	.113					
Age	.011	.006	.277†					
Conscientiousness	-.002	.008	-.048					
Neuroticism	.008	.005	.211					
Openness to Experience	-.008	.006	-.193					
Extraversion	.000	.013	-.004					
Agreeableness	.155	.098	.234					
LDL	.068	.074	.132					

†$p < .10$, two-tailed. *$p < .05$, two-tailed.

Table 11

Summary of Hierarchical Regression Analyses for Variables Predicting Leader Performance (All Raters): Increment of Transformational/Transactional Leadership (N= 58)

Variable	*B*	*SE B*	β	R^2	ΔR^2	*F*	ΔF	*d*
Step 1				.012	.012	.677	.677	.15
Gender	.070	.085	.109					
Step 2				.175	.163	5.837**	10.877**	.45
Gender	.144	.081	.226					
Age	.020	.006	.421**					
Step 3				.241	.066	5.703**	4.659*	.45
Gender	.155	.079	.243†					
Age	.020	.006	.416**					
Conscientiousness	.008	.004	.257*					
Step 4				.259	.018	4.629**	1.309	.40
Gender	.159	.079	.249*					
Age	.020	.006	.416**					
Conscientiousness	.010	.004	.340*					
Neuroticism	-.006	.006	-.159					
Step 5				.268	.009	3.805**	.638	.37
Gender	.135	.085	.212					
Age	.020	.006	.416**					
Conscientiousness	.010	.004	.328*					
Neuroticism	-.007	.006	-.179					
Openness to Experience	.003	.004	.106					

Table 11, cont.

Step 6				.282	.014	3.332**	.975	.34
Gender	.150	.086	.235†					
Age	.018	.006	.385**					
Conscientiousness	.010	.004	.322*					
Neuroticism	-.006	.006	-.143					
Openness to Experience	.004	.004	.119					
Extraversion	-.004	.004	-.132					
Step 7				.287	.006	2.882*	.412	.32
Gender	.155	.087	.243†					
Age	.017	.006	.357*					
Conscientiousness	.010	.004	.345*					
Neuroticism	-.006	.006	-.158					
Openness to Experience	.003	.004	.104					
Extraversion	-.005	.005	-.152					
Agreeableness	.006	.010	.086					
Step 8				.314	.027	2.805*	1.900	.31
Gender	.158	.086	.247†					
Age	.013	.007	.276†					
Conscientiousness	.009	.004	.292†					
Neuroticism	-.004	.006	-.100					
Openness to Experience	.003	.004	.102					
Extraversion	-.005	.004	-.148					
Agreeableness	.005	.010	.071					
LDL	.118	.086	.193					

†$p < .10$, two-tailed. *$p < .05$, two-tailed. **$p < .01$, two-tailed.

Table 12

Summary of Hierarchical Regression Analyses for Variables Predicting Leader Performance (Subordinate Raters): Increment of Transformational/Transactional Leadership (N= 53)

Variable	*B*	*SE B*	β	R^2	ΔR^2	*F*	ΔF	*d*
Step 1				.031	.031	1.633	1.633	.25
Gender	.142	.111	.176					
Step 2				.101	.070	2.796†	3.867†	.33
Gender	.204	.113	.253†					
Age	.015	.008	.275†					
Step 3				.172	.071	3.390*	4.217*	.36
Gender	.210	.109	.261†					
Age	.015	.008	.267†					
Conscientiousness	.010	.005	.267*					
Step 4				.181	.010	2.659*	.559	.32
Gender	.216	.110	.268†					
Age	.015	.008	.267†					
Conscientiousness	.013	.006	.333*					
Neuroticism	-.006	.008	-.118					
Step 5				.217	.035	2.601*	2.122	.32
Gender	.167	.114	.208					
Age	.015	.008	.270*					
Conscientiousness	.013	.006	.334*					
Neuroticism	-.009	.008	-.176					
Openness to Experience	.008	.005	.207					

Table 12, cont.

Step 6				.251	.034	2.563*	2.073	.31
Gender	.182	.113	.226					
Age	.012	.008	.215					
Conscientiousness	.013	.006	.338*					
Neuroticism	-.005	.008	-.109					
Openness to Experience	.008	.005	.222					
Extraversion	-.008	.006	-.209					
Step 7				.251	.000	2.149†	.000	.29
Gender	.182	.114	.226					
Age	.012	.008	.215					
Conscientiousness	.013	.006	.338*					
Neuroticism	-.005	.008	-.109					
Openness to Experience	.008	.005	.222					
Extraversion	-.008	.006	-.209					
Agreeableness	.000	.014	.001					
Step 8				.316	.065	2.537*	4.186*	.31
Gender	.179	.110	.222					
Age	.004	.009	.073					
Conscientiousness	.011	.006	.289†					
Neuroticism	-.001	.008	-.027					
Openness to Experience	.009	.005	.225					
Extraversion	-.009	.006	-.225					
Agreeableness	.000	.013	-.002					
LDL	.226	.110	.298*					

†$p < .10$, two-tailed. *$p < .05$, two-tailed.

CHAPTER 4

DISCUSSION

There are some notable findings among the Kendall's Tau correlations. LDL and TTL are each significantly correlated with age; this is expected and validates the tenet of CD theory suggesting that leadership development is contingent upon time and life experience (Kegan, 1982; Kuhnert & Lewis, 1987). It is also important to mention that the Big Five are not significantly correlated with LDL or TTL; this suggests that personality measures a personal characteristic which is distinct from leadership capacity.

Hypothesis 1 investigated the predictive ability of personality, as personality is a common tool used to predict leader performance, as in leader selection (Lievens, Highhouse, & de Corte, 2005; Hogan, Curphy, & Hogan, 1994; Morgeson, Reider, & Campion, 2005). In a multiple regression where the criterion is a mean performance rating of all rater sources (superiors, peers, and subordinates), Conscientiousness and Extraversion were found to be important predictors. This finding reflects the same pattern suggested by the Big Five literature (e.g., Barrick & Mount, 1991). In order to better understand this finding, exploratory analyses were conducted using performance ratings from each rater source, separately. When only supervisor ratings were used as a criterion, not one of the Big Five dimensions was a significant predictor. Although the results of this exploratory analysis were not significant, this finding is actually important. If personality is often used to select today's leaders and supervisor ratings are most frequently used in performance appraisals, but leader personality does not predict performance as rated by superiors, what does this suggest about the current state of affairs? A

second interesting finding emerged when subordinate ratings were used as a criterion; in this case, Conscientiousness and Extraversion were important predictors. This finding also represents the patterns seen in the Big Five literature (e.g., Barrick & Mount, 1991). Most striking about this finding, however, is that it was subordinate ratings which were best predicted by personality, as opposed to superior or peer ratings. Because leader performance influences subordinates more than any other group, perhaps personality (Conscientiousness, in particular) is a good criterion for leader selection; this finding indicates that this leader personality characteristic matters in the eyes of those directly affected/led by it. The use of personality as a criterion for identifying leadership potential merits further investigation. While these findings have important implications, this study is by no means comprehensive enough to draw conclusions for best practices in the workplace.

Hypothesis 2 was a replication of Harris and Kuhnert (2006) and investigated the predictive ability of leadership capacity. LDL was found to predict leader performance as reported by all raters and also by subordinate raters. These findings are a primary indication that LDL may be an effective predictor of leader performance. This is an encouraging step toward understanding the connection between what leadership is "made of" and how to quantitatively measure/predict these intangible qualities. It is curious, however, why LDL is not predictive of superior and peer ratings. Upon further investigation, it became clear that this is likely due to the content of the 360-degree feedback instrument (see Appendix); the items composing this instrument are geared toward leadership behaviors at work as opposed to general work performance, thus those in position to most accurately perceive and rate these behaviors are subordinates (Borman, 1974, 1997). Once again, subordinate ratings emerge as an important criterion when investigating leadership characteristics.

A surprising exploratory finding merits further discussion at this point: LDL was found to be a significant predictor of male leader performance, but not of female leader performance. Exploratory investigation was conducted in an effort to understand this finding. A *t*-test of male-female differences in LDL was not significant: there are no mean differences in LDL between men and women (see Table 13). A *t*-test of male-female differences in the Big Five dimensions showed some gender differences (see Table 14): females exhibit higher levels of Openness to Experience and Extraversion than males. It seems possible that these personality differences lead to systematic differences in performance ratings of men and women. However, a t-test of male-female differences in the eight dimensions of the 360-feedback instrument was not significant (see Table 15): raters do not systematically rate males and females differently. Next, the bivariate correlations between males' LDL and the eight performance dimensions of the 360-degree feedback assessment were compared with those of females' LDL and performance (see Table 16). Several of the performance dimensions were significantly correlated with LDL for males, but none of the performance dimensions was significantly correlated with LDL for females. At first glance, it appears that the males in this sample must be better leaders; however, female leaders are actually rated higher than men on six of the eight dimensions (see Table 15). In this sample, females tend to have higher LDLs, higher ratings of performance and lower job types than males, suggesting that in order to rise to this level of management as a female, one must have excellent leadership and technical skills. Graphical comparison of the distributions of males' and females' LDL (see Figure 1) and job level (see Figure 1) confirmed this conclusion. As a group, the females in this study may not exhibit sufficient variability in performance, explaining the inability of LDL to predict female leader performance. Initially, this appears to be a manifestation of the "glass ceiling" effect (Morrison, White, Van Velsor, & the Center for

Creative Leadership, 1987), but this warrants further investigation, as this lack of variability could simply be attributed to the small number of females included in this sample ($N = 21$). Future research might also investigate the possibility of a gender moderation effect on the relationship between LDL and leader performance.

Hypothesis 3 investigated the possibility of differences in leader personality between transactional and transformational leaders. The rationale behind this hypothesis was that leaders at higher LDLs (transformational leaders) should be the same leaders that possess the personality characteristics associated with high levels of leader performance; transformational leaders, in theory, should be distinct from transactional leaders not only in terms of their LDL, but in their personality characteristics as well (Judge & Bono, 2000). There was no support for this hypothesis. This is an important step in the study of the application of CD theory to the domain of leadership, because it implies that leadership capacity is not redundant with personality. Because it captures some aspect of the person which is distinct from personality, leadership capacity again emerges as an important topic for the understanding of leadership, worthy of further investigation.

Hypothesis 4 investigated the predictive ability of LDL above and beyond personality. The increments of LDL and TTL were not significant when the criterion was a mean performance rating from all rater sources. However, effect sizes are moderate; this may suggest that a true effect is at play. Due to the restricted sample size, it is not unusual that a lack of Power would make this effect undetectable using traditional significance testing. Exploratory analyses revealed that the increment of TTL was significant when the criterion was a mean of subordinate ratings. Once again subordinate ratings emerge as an important criterion; this pattern is consistent with the findings for hypotheses 1 and 2 (predictive ability of personality and LDL).

The significance of the increment of TTL is very encouraging, especially considering the small sample size used in this study. This is another preliminary indication that LDL/TTL is a notable predictor of leader performance, worthy of further investigation. Future research should replicate this study using a larger sample size; there was not sufficient Power to detect an effect in this study, but the significance of one test may suggest the existence of a true effect, given a larger sample size with more Power. A significant increment of LDL/TTL would indicate that CD theory can be used as a framework to explain a significant proportion of variance in leader performance; this would have important implications for workplace practices, including the selection and evaluation of workplace leaders.

The importance of subordinate ratings/feedback in the study of leadership was an unintended finding that emerged throughout this study: subordinates appear to be in a unique position to rate leaders *as* leaders. While superiors and peers might be able to effectively rate other aspects of work performance, subordinates are most directly affected by leadership and thus would be the source to most acutely detect it, as these findings repeatedly demonstrate (Borman, 1974, 1997; Herold & Fields, 2004).

This study demonstrates that LDL is an important, albeit imperfect, predictor of leader performance. The construct appears to capture an aspect of leadership distinct from that which is attributable to personality. In general, this study demonstrates the potential utility of CD theory as a framework for understanding the nature and composition of a unique aspect of leadership.

Limitations

In order to fully consider the potential implications of this study, there are three major limitations that must be addressed. The first and most critical is the sample size. Although small sample sizes are not atypical for interview-based data collection methods (e.g., D'Abate, 2005),

the small sample size used in this study is likely to have limited statistical Power, or the ability to detect a significant effect. However, considering this limitation, the fact that any significance was obtained is impressive and suggests that these effects may be more important than is detected using this limited sample. A second limitation of this study is sample variability. It is possible that individuals who pursue and/or are selected for leadership positions may tend to have a certain *ethos*, or pattern of personality characteristics; a lack of variability in leader personality in this sample may be the cause for some of the undetectable differences and effects. A third limitation for this study is the ability of this sample to represent the general population of workplace leaders. All participants are enrolled in a formal leadership development program, which may be an indication that this is a sample of individuals who are already strong leaders and who have the potential to be even better. One may wonder if, in the real world, all leaders would be receptive to a personal improvement endeavor of this sort, and if that means this sample represents a specialized subsection of leaders.

Suggestions for Future Research and Practice

Future research should replicate the comparison between the predictive abilities of personality and leadership ability using well-established personality measures, including, for example, a validated measure of Big-Five personality characteristics, such as the NEO Personality Inventory-Revised (Costa & McCrae, 1992b) or other personality measures that are commonly used in selection, such as the California Psychological Inventory (CPI) (Gough & Bradley, 1996). This research should also be replicated using "hard" measures of performance, such as financial gain, number of sales, customer retention, and so forth. Future research should consider the predictive ability of LDL above and beyond other established measures/predictors of leader effectiveness, such as experience and cognitive ability (e.g., Avery, Tonidandel,

Griffith, & Quiñones, 2003; Csoka, 1974). Because leadership capacity implies a potential for growth, it will be important, in the future, to investigate the change in performance as leaders grow from one LDL to the next. Furthermore, it would be informative to conduct a longitudinal study of individuals who are not already in positions of leadership: would there be differences in the LDLs of those who *become* workplace leaders? What would be the relationship between LDL and performance for those who became workplace leaders over time and those who did not? Will LDL also predict performance for those who are not in formal positions of leadership, and if so, are those individuals seen by their peers and superiors as "emergent leaders"?

This study is an attempt to demonstrate the utility of CD theory in the workplace: future research could continue to investigate this possibility. For example, on an individual level, CD theory could be formally conceptualized as a leadership development tool. CD theory could also be utilized on an organizational level as a framework for the design of organizational culture/vision or structure, where these entities are designed such that employees undergo the most developmental work experience possible.

Conclusions

Leadership developmental level has emerged as an important predictor of leader performance. The construct appears to capture an aspect of leadership distinct from that which is attributable to personality. In general, this study consistently demonstrates the potential utility of CD theory as a framework for understanding the nature and structure of a specific facet of leadership. It is my hope that through this study and future related research, we might gain a more complete understanding of the popular mystery that is Leadership.

Table 13

Summary of T-Test Analysis for Mean Differences in Leadership Developmental Level between Male and Female Leaders (N= 58)

Variable	N	Mean	Standard Deviation	SE Mean	*df*	*t*	*d*
LDL					56	.266	.07
Male	37	3.57	.555	.091			
Female	21	3.52	.680	.148			

Table 14

Summary of T-Test Analysis for Mean Differences in Big Five Personality between Male and Female Leaders (N= 58)

Variable	N	Mean	Standard Deviation	SE Mean	*df*	*t*	*d*
Conscientiousness					56	.528	.15
Male	37	115.270	8.359	1.374			
Female	21	113.762	13.438	2.933			
Neuroticism					56	-.009	.00
Male	37	174.838	8.352	1.373			
Female	21	174.857	6.506	1.420			
Openness to Experience					56	-2.795**	.78
Male	37	185.811	9.966	1.638			
Female	21	193.095	8.717	1.902			
Extraversion					56	-2.209*	.61
Male	37	105.838	8.255	1.357			
Female	21	111.333	10.461	2.283			
Agreeableness					56	.347	.10
Male	37	80.405	4.343	.714			
Female	21	80.000	4.159	.908			

*$p < .05$, two-tailed. **$p < .01$, two-tailed.

Table 15

Summary of T-Test Analysis for Mean Differences in Leader Performance between Male and Female Leaders (N= 58)

Variable	N	Mean	Standard Deviation	SE Mean	*df*	*t*	*d*
Managing Performance					56	.015	.00
Male	37	4.003	.297	.0488			
Female	21	4.001	.598	.130			
Leading Change					56	-.789	.22
Male	37	3.828	.340	.056			
Female	21	3.913	.473	.103			
Catalyzing Teams					56	.466	.13
Male	37	3.991	.337	.055			
Female	21	3.942	.444	.097			
Cultivating and Retaining Talent					56	-.018	.01
Male	37	4.036	.309	.051			
Female	21	4.038	.428	.093			
Inspiring Commitment					56	-1.002	.28
Male	37	3.718	.403	.066			
Female	21	3.838	.501	.109			

Table 15, cont.

Creating a Compelling Vision					56	-.887	.25
Male	37	3.762	.327	.054			
Female	21	3.859	.506	.110			
Contextual Grounding					56	-.458	.13
Male	37	3.800	.340	.056			
Female	21	3.847	.441	.096			
Personal Grounding					56	-.276	.08
Male	37	3.930	.360	.059			
Female	21	3.961	.494	.108			

Table 16

Kendall's Tau Correlations Between LDL and Leader Performance: A Comparison Between Males (N = 37) and Females (N = 21)

Variable		1	2	3	4	5	6	7	8	9
1. LDL	Male	1.0								
	Female	1.0								
2. Managing Performance	Male	.247	1.0							
	Female	.100	1.0							
3. Leading Change	Male	.322*	.685**	1.0						
	Female	.031	.606**	1.0						
4. Catalyzing Teams	Male	.188	.335**	.332**	1.0					
	Female	.287	.390*	.558**	1.0					
5. Cultivating and Retaining Talent	Male	.359**	.351**	.288*	.449**	1.0				
	Female	.050	.676**	.730**	.543**	1.0				
6. Inspiring Commitment	Male	.251	.670**	.685**	.233**	.303**	1.0			
	Female	.075	.800**	.597**	.381*	.724**	1.0			
7. Creating a Compelling Vision	Male	.334*	.577**	.628**	.242*	.396**	.673**	1.0		
	Female	.225	.562**	.558**	.352*	.676**	.571**	1.0		
8. Contextual Grounding	Male	.267*	.634**	.559**	.323**	.363**	.640**	.607**	1.0	
	Female	.062	.533**	.453**	.324*	.571**	.619**	.590**	1.0	
9. Personal Grounding	Male	.096	.339**	.324**	.329**	.381**	.297**	.426**	.447**	1.0
	Female	.050	.257	.368*	.371*	.429**	.381*	.390*	.571**	1.0

*$p < .05$, two-tailed. **$p < .01$, two-tailed.

Figure Caption

Figure 1. A comparison of the distributions of male LDL and female LDL.

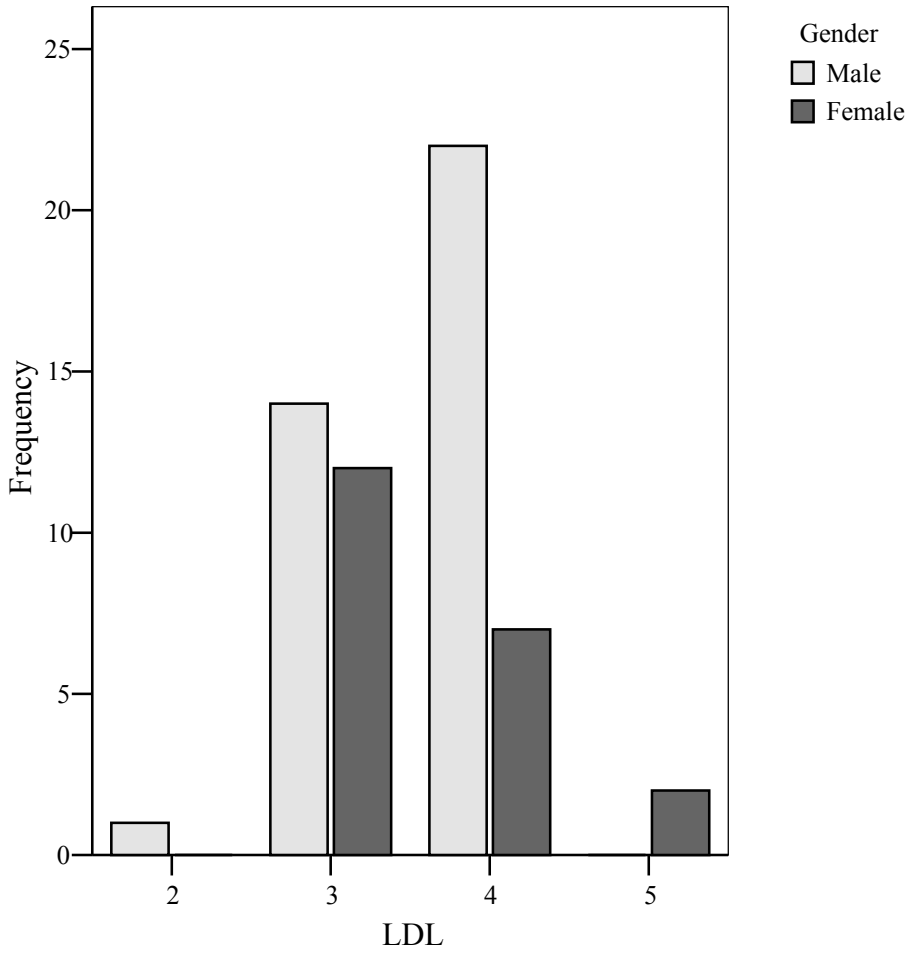
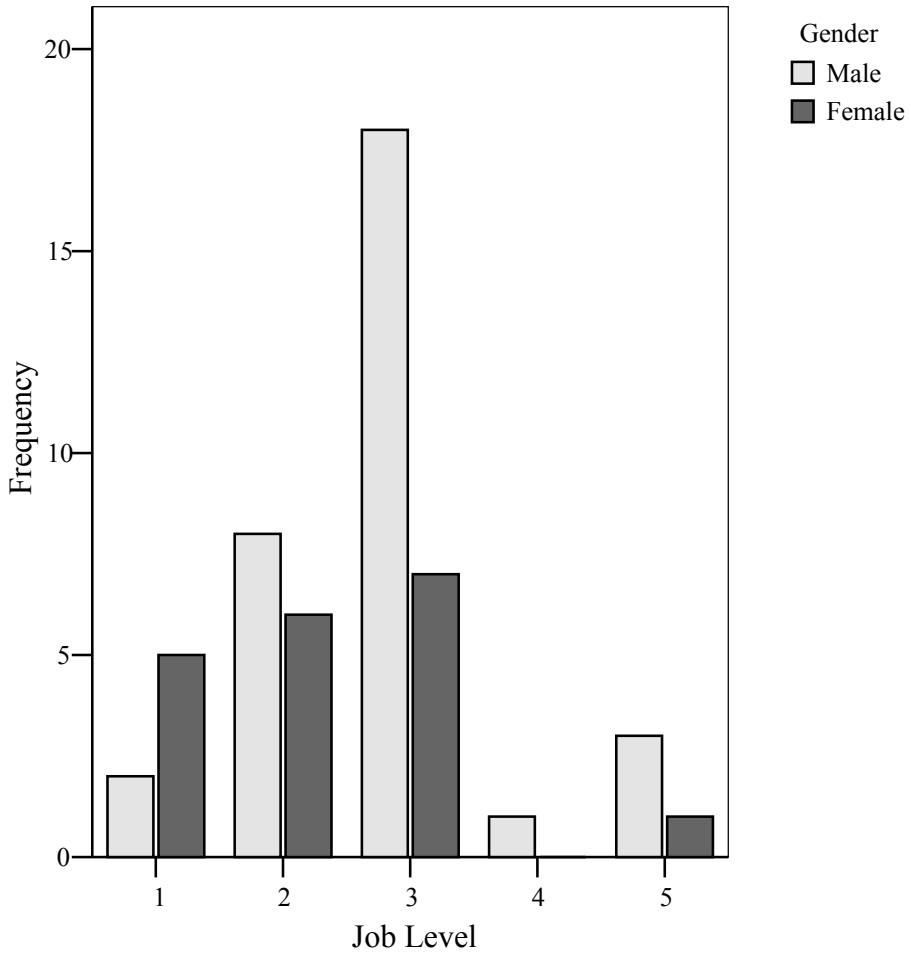

Gender
Male
Female
Frequency
25
20
15
10
5
0
2
3
4
5
LDL

Figure Caption

Figure 2. A comparison of the distributions of male Job Level and female Job Level.


Gender
Male
Female
Frequency
20
15
10
5
0
1
2
3
4
5
Job Level

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Appendix A

Sample PLP Items Composing Big Five Personality Dimensions

Conscientiousness

I seldom set standards which are difficult for me to reach. (R)
When trying to solve a problem, I always persist until I find a solution.
I like to be constantly active.
I sometimes rush through meals so that I can return to work.
I find it difficult to relax on weekends because I am thinking about work.

Neuroticism

I don't worry very much about the future. (R)
My coworkers think of me as a cynical person.
I am more optimistic than most of my coworkers. (R)
My job performance is sometimes affected because I am upset.
People usually do what they say they will do. (R)

Openness to Experience

In most situations, I usually agree with the opinions of the group. (R)
I get along best with people who share my views on important matters. (R)
I spend a lot of time keeping my belongings in order. (R)
When I take a vacation, I like to go without detailed plans.
My values may seem a little old-fashioned by modern standards. (R)

Extraversion

I would feel lost and lonely traveling the world alone. (R)
I tend to get strongly attached to people.
I am very selective about who I choose to open up to. (R)
I like to ask other people's opinions concerning my problems.
I don't need the company of others to be happy. (R)

Agreeableness

I see no useful purpose in pretending to like things that I really do not. (R)
I prefer to play games for fun rather than competitively.
It is important to me to receive credit for my ideas. (R)
I am very careful not to litter in public places.
Many people have hidden agendas. (R)

(R) Reverse-scored item.

Appendix B

360-Degree Feedback Dimensions and Items

	Managing Performance
1.1 Dependability	Can be counted on to meet commitments and deadlines.
1.2 Results and Productivity	Gets results, accomplishes objectives, and sees projects to completion.
1.3 Decisiveness	Makes clear-cut decisions without unnecessary delay, even in tough situations.
1.4 Holding People Accountable	Clarifies expectations and holds people accountable for getting results; objectively measures outcomes against established goals while rewarding achievement and confronting poor performance.
1.5 Planning, Prioritizing and Maintaining Focus	Establishes short-term goals, clarifies roles and responsibilities, sets priorities and milestones and is not distracted by unimportant details or activities.
1.6 Developing Structures, Systems, and Processes	Designs and establishes structures, systems, and processes to most effectively achieve the organization's objectives.
1.7 Re-engineering Processes	Identifies inefficiencies and recurring problems and restructures the organization to maximize effectiveness.
	Leading Change
2.1 Adaptability	Adapts to rapidly changing situations and priorities, tolerates ambiguity, and develops new ways of behaving in order to achieve objectives and get around obstacles.
2.2 Agent of Change	Challenges the status quo, supports fresh perspectives, tries out new approaches and enlists support for change initiatives.
2.3 Handling Resistance to Change	Identifies sources of resistance to change and effectively deals with them before they undermine change initiatives.
2.4 Taking Initiative	Takes the initiative to identify problems and opportunities and assumes a leadership role by taking action without being asked.
2.5 Delegation and Empowerment	Places trust in others by moving decision-making close to the level where the work is done and by giving others the responsibility, authority, independence and support they need to

	succeed.
2.6 Creating Buy-in	Effectively builds commitment and wins support for initiatives through personal and professional credibility, trustworthiness, persuasive communication, stakeholder involvement, and by aligning expectations.
2.7 Culture Management	Proactively aligns the organization's/workgroup's culture to support its strategy and core values.
	Catalyzing Teams
3.1 Building Teams	Models and encourages teamwork by fostering cooperation, communication, trust, shared goals, interdependency, and mutual accountability and support.
3.2 Facilitating Conflict Resolution	Facilitates conflict resolution between coworkers by surfacing and clarifying areas of disagreement and by creating an environment where resolution is possible.
3.3 Relationship Building	Is friendly, open, and approachable; cultivates trusting relationships that are maintained over time.
3.4 Social Astuteness	Accurately reads and responds astutely and diplomatically in dealing with others; understands the social dynamics of the work group and the larger organization.
3.5 Building Partnerships	Works effectively with other groups and functions, shares information across the enterprise, and considers the impact of decisions on other departments and groups.
3.6 Negotiation	Negotiates win-win outcomes by being well prepared, gaining trust, searching for creative and mutually beneficial solutions, and being willing to compromise when appropriate.
	Cultivating and Retaining Talent
4.1 Finding and Attracting Talent	Commits time and energy to the hiring process and makes good hiring decisions. Identifies talented, high-quality job candidates and successfully brings them into the organization.
4.2 Coaching	Facilitates career development of subordinates by providing regular coaching. Helps them change behavior, improve performance and sustain commitment through encouragement, support, collaborative problem solving, goal setting and feedback.

4.3 Emphasizing Excellence	Sets challenging goals and high standards of excellence, while refusing to accept mediocre or substandard performance.
4.4 Praise and Recognition	Recognizes, praises, and rewards others for good performance.
4.5 Sensitivity and Consideration	Shows respect for others and is sensitive to their needs, concerns, and perspectives.
4.6 Leveraging Diversity	Actively builds and manages a workforce that is diverse in ideas, backgrounds, culture, ethnicity, gender, and disciplines.
Inspiring Commitment	
5.1 First Impression	Creates a positive first impression through social confidence, dress, sincerity, and a professional self-presentation.
5.2 Formal Presentation	Delivers poised, interesting, high-impact, informative, and organized presentations that meet the expectations and needs of the audience.
5.3 Creating Meaning	Ties day-to-day actions of individuals to a higher meaning and to the broad strategic priorities of the organization, giving a more expansive significance to work activities.
5.4 Model of Commitment	Consistently sets a standard of dedication, hard work, energy and commitment.
5.5 Inspirational Role Model	Gives others within the organization hope and inspiration by displaying optimism, energy, confidence, enthusiasm, determination and commitment, especially in tough times.
Creating a Compelling Vision	
6.1 Creativity and Innovation	Personally generates new or improved ideas, approaches, products or solutions.
6.2 Strategic Focus	Thinks strategically, creates an ongoing, dynamic strategic planning process, and communicates the organization's long-term direction.
6.3 Visionary Thinking	Creates and communicates a clear, coherent and compelling image of what the organization strives to become; enthusiastically presents a target for the future that is energizing and inspiring and provides a sense of future direction.
6.4 Self-Confidence	Demonstrates strong, realistic confidence in oneself and one's powers and abilities.

	Contextual Grounding
7.1 External Focus	Keeps up on developments outside the organization that may have an impact on the business, such as trends in the industry, new technologies, and events in the larger economic and political environments.
7.2 Information Sharing	Openly shares information with colleagues, keeping them in the loop about plans, activities, objectives, recent developments, and progress towards goals.
7.3 Listening	Listens attentively, doesn't interrupt, accurately hears what is said, asks questions to clarify meaning, communicates understanding, and shows interest.
7.4 Organizational Awareness	Is alert to events and trends within the organization and considers how they might influence the long-term performance of the organization.
	Personal Grounding
8.1 Assertiveness	Makes requests and expresses beliefs, feelings, and needs in a direct, honest, and appropriate way that respects the rights of others.
8.2 Emotional Control and Composure	Maintains composure during times of stress, pressure, or disagreement; avoids unproductive confrontation and maintains a positive outlook in the face of adversity.
8.3 Resilience and Stress Management	Copes well with the stress and the demands of the job, maintaining energy, strength and endurance; rebounds quickly from setbacks and perseveres in the face of adversity.
8.4 Forthrightness	Is sincere, genuine, open and direct with others. Has no hidden agenda.
8.5 Judgment and Reasoning	Effectively diagnoses problems, identifies core issues, exercises common sense, sees critical connections and ramifications, and analyzes alternatives.
8.6 Openness to Input	Solicits and is open to feedback and differing ideas and views. Avoids intimidation or domination, and welcomes suggestions.
8.7 Model of Values	Engenders respect from others through consistent moral and ethical behavior, high standards of personal conduct, and promoting and modeling the principles and values that are central to the success of the organization.