



A Behavioral Approach to Understanding Leadership Effectiveness

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A Behavioral Approach to Understanding Leadership Effectiveness

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A Thesis in the Field of Psychology

for the Degree of Master of Liberal Arts in Extension Studies

Harvard University

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Abstract

Recent research has begun to examine how the effect of leader behaviors differs across subordinates and organizations. Thus far, leadership style has been one of the most discussed and debated factors associated with leadership effectiveness, as early research on its antecedents began with the search for specific attributes that differentiate leaders across the two labels represented by transformational and transactional leadership to explain individual differences in effectiveness. Specifically, leadership style has been linked to outcomes such as subordinate ratings of leadership potential and motivation to lead. This study tested whether certain behaviors contribute to individuals being particularly adept at either transformational or transactional leadership style, as rated by subordinates. 110 leaders from 12 countries engaged in this research, assessing their own leadership and requesting feedback from 337 subordinates. Using multiple linear regression, this study tested the hypothesis that relational-oriented and change-oriented behaviors predict a more transformational style of leadership. Conversely, this study also tested the hypothesis that task-oriented behaviors predict a more transactional style. The question of whether leaders' self-awareness of their behaviors (as measured by the congruence between leaders' and their subordinates' ratings of their behaviors) is associated with higher ratings of transformational leadership was also assessed. Extensive analyses revealed that transformational leadership was associated with higher ratings on the full spectrum of leadership behaviors, with specifically higher relational-oriented and change-oriented behavior ratings. Additional

quantitative analysis also showed a strong relationship between self-awareness and transformational leadership.

Dedication

To the love of my life,

Over the past five years, you have encouraged me to take risks, to venture into the unknown, and to go and travel across the oceans to pursue graduate studies at Harvard. In the beginning, you shared with me your interest in neuroscience during the time when you were attending med school and soon after your enthusiasm about the human brain became so contagious that I pursued it as my own. As I progressed, you shared with me stories and lessons about novel and genuine research ideas, and reminded me of the importance for coming up with a novel idea that truly advances science and deserves a chance to be pursued.

And before I knew it all of this was just not enough and I wanted to dive into neuroanatomy and behavioral pharmacology too!!! And I must confess, life is much more fun when you are reading diagrams about neurons and synapses and neurotransmitters and it is ok to want to do this all the time. And it is all because of you.

And you sacrificed. You sacrificed a lot.

You stood by me during my darkest hours...

I admit that the journey wasn't easy and that there were times where I was secretly tempted to give up. But whenever I had those thoughts, I also remembered all the high hopes that you had for me, and that made me more determined to face the challenges.

Your faith in me was my source of confidence through it all.

I will tell our children about the times when I came to you with a bunch of challenges, and about your calm, confident reassurance, and your words, “one challenge at a time”, and “good things come to those who wait”, and “you gotta keep the faith”. I dared to believe this was possible because of you. And, as I consider the road that unfolds before us, I will remember with humble gratitude all what you did for me. I honor, respect, and cherish you.

And above all, I love you.

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Table of Contents

Dedication.....	v
Acknowledgments.....	vii
List of Tables.....	x
List of Figures.....	xi
Chapter I. Introduction.....	1
Theoretical Background: Leadership Effectiveness Antecedents.....	2
The Importance of Follower Perceptions.....	10
Self-Other Agreement and Self-Awareness.....	11
The Relationship between Leader Behavior and Leadership Style.....	12
Chapter II. Research Method.....	17
Participants.....	17
Instruments.....	19
Procedure.....	20
Design.....	22
Chapter III. Results.....	24
Leadership Style, Country, Age, and Gender.....	24
Transactional Leadership Style and Leader Behaviors.....	28
Transformational Leadership Style and Leader Behaviors.....	29
Agreement between Leader-Follower Ratings and Transformational Leadership.....	31
Further Analyses of Interest.....	33

Relational Competencies.....	33
Task Competencies.....	34
Change Competencies.....	35
Chapter IV. Discussion.....	37
Hypothesis Tests.....	38
Gender Differences in Self-Awareness.....	41
Other Competencies of Interest.....	42
Limitations of the Study.....	45
Future Directions.....	47
Concluding Remarks.....	48
Appendix A. Leaders Questionnaire.....	50
Appendix B. Subordinate Questionnaire.....	53
Appendix C. Consent Form – Leaders.....	57
Appendix D. Consent Form –Subordinates.....	59
References.....	61

List of Tables

Table 1. Countries and Number of Leaders and Subordinates.....	24
Table 2. Means and Standard Deviations of MLQ and LLP Scores by Country.....	25
Table 3. Betas Predicting Transactional Leadership Style.....	27
Table 4. Betas Predicting Transactional Leadership Style.....	27
Table 5. Betas Predicting Transactional Leadership Style.....	28
Table 6. Means and Standard Deviations of Difference Scores between Subordinates’ Ratings and Leaders’ Self-Ratings of LLP Behavior Scales.....	29
Table 7. Means and Standard Deviations of Transformational Leadership Scores within Total Behavioral Difference Score Groups.....	30
Table 8. LLP Relational Competencies and MLQ Transformational Leadership Style...31	
Table 9. LLP Task Competencies and MLQ Transformational Leadership Style.....	32
Table 10. LLP Change Competencies and MLQ Transformational Leadership Style.....	32

List of Figures

Figure 1. Summary of Leadership Effectiveness Antecedents as Represented in the Literature.....	7
Figure 2. Summary of Research Question and Four Hypotheses.....	15
Figure 3. The Proposed Research Model for this Study.....	22
Figure 4. Difference Scores between Subordinates' Ratings and Leaders' Self-Ratings of LLP Behavior Scales Predict Transactional Leadership Ratings.....	32

Chapter I

Introduction

What behaviors distinguish effective leaders from less effective ones? The answer to this question can help determine what individuals and organizations can do to develop their leaders' ability to exhibit such behaviors. Organizations are often dynamic and complex, creating a broad range of challenges for leaders. To meet those challenges, leaders must not only possess the requisite know-how, attitudes, and capabilities, but also display the behaviors that enable them to effectively deploy their capabilities across turbulent and evolving contexts (Ewen, Wihler, Blickle, Oerder, Ellen, Douglas, & Ferris, 2013). The reason behavior matters is because a leader's behavior has formal and informal effects on follower attitudes and actions. Formally, leaders make decisions about follower promotions, determine work flows, establish patterns of communication, and enforce rules. From this perspective, leaders help build the systems by which organizations function and, when the systems are rational and fair, it is expected that their followers will thrive (Behn, 2006). Furthermore, a leader's behavior sets the informal norms for how other people within their organizations behave; as they act, they model particular behaviors for followers and set the tone for their organization's overall logic of appropriateness (March & Olsen, 2010). Although this area of power is more opaque, it is rooted in the understanding that organization leaders have a prominent symbolic status that goes beyond their contracted duties (Choi & Rainey, 2010; Epitropaki & Martin, 2013; Oberfield, 2012; To, Tse, & Ashkanasy, 2015).

Theoretical Background: Leadership Effectiveness Antecedents

Theory and research on the antecedents of leader effectiveness have provided a foundation for leadership-specific performance models. Campbell and his colleagues were the first to delineate a comprehensive theoretical model of leader effectiveness, suggesting that three proximal antecedents exhibit a direct influence on job performance: declarative knowledge, procedural knowledge and skills, and motivation. Declarative knowledge is concerned with knowledge about facts and things, or knowing what to do. Procedural knowledge and skill are attained when knowing what to do is combined with knowing how to do it. Lastly, motivation is the combined effect of the choice to expend effort, the choice of level of effort to expend, and the choice to persist in the expenditure of that level of effort (Campbell, 1990).

On the other hand, distal antecedents are also believed to affect performance indirectly through their influence on the proximal antecedents described above. Campbell and colleagues identified several distal antecedents, including abilities, personality traits, vocational interests, and training and education. However, the antecedents that have received the most research attention are cognitive ability and personality (Schmidt & Hunter, 1998).

Mumford and his colleagues (2000) tested aspects of this model. Their sample contained leaders who were at different points in their military careers at the US army. A total of 1160 lieutenants, 410 officers, and 220 colonels were asked to complete paper-and-pencil questionnaires ranging from standardized ability tests (e.g., verbal and numerical abilities, creative writing), personality tests (e.g., facets of the Big Five), problem-solving skills, social judgment skills, job knowledge, and performance (which

reflected self-reported career achievements). Regression analysis indicated that both distal and proximal antecedents were significantly related to leader achievement, with canonical correlations of 0.35 and 0.47, $p < 0.01$. However, the amount of variance in achievement that the distal antecedents, as a whole, accounted for decreased when the proximal antecedents were controlled. The researchers interpreted this finding as evidence that the effects of cognitive ability and personality on performance are not sufficient alone to explain effectiveness (Mumford, Zaccaro, Connelly, Marks, & Reiter-Palmon, 2000).

Chan and Drasgow (2001) also proposed a broad model of individual differences in leadership. Their model included interests, personality, and values as distal antecedents; leadership self-efficacy, motivation to lead, and leadership experiences as semi-distal antecedents; and general cognitive ability, domain-specific ability, participation in leadership roles/training, and social knowledge/skills and leadership style as proximal antecedents of leader performance. Chan and Drasgow (2001) tested aspects of this model, focusing primarily on the motivation to lead. Their study consisted of 1594 recruits, 81% of which were undergraduates and fresh recruits at the Singapore ministry of defense. A 50-item survey was used to measure Big Five personality measures to the recruits two weeks following their enlistment into the service and before any significant training was conducted (Chan & Drasgow, 2001). The results showed that general cognitive ability was not significantly related to leadership effectiveness ratings ($r = 0.09$, $p < 0.01$), whereas emotional stability and motivation to lead were both significantly predictive of leadership potential ratings ($r_1 = 0.39$, $r_2 = 0.17$, $p < 0.01$). A major shortcoming of this research is that the sample was comprised of non-leaders with a narrow age band

of 17 to 21 years, rendering the results somewhat limited in terms of understanding how these antecedents may affect the performance of actual leaders. Furthermore, it is possible that the relative weights of the relationships between the antecedents of leadership effectiveness examined in the survey may change with the passage of time as a result of experience, which calls for a follow-up study to be conducted to determine how those relationships change over the course of the respondents' careers.

More recently, researchers have proposed broader models that attempt to explain individual differences in effectiveness. Hendricks and Payne (2007) formulated a model of consisting of the Big Five personality factors as distal antecedents, goal orientation and leadership self-efficacy as semi-distal antecedents, and one behavioral element – the motivation to lead – as a proximal antecedent. 100 undergraduates enrolled in introductory psychology completed a Big Five personality factors survey, following which they participated in an experimental game which was designed as a two-hour lab-based teamwork simulation to measure leader behavior. During the experiment, each person was assigned a four-person team and was given the task of building a product and selling it for profit. The overall goal behind the experiment was to maximize the team profit by buying at low prices and selling at higher prices as market prices were changed during the simulation, and the leaders and their teams were rated by ten hypothesis-blind research assistants who were trained to follow a tightly-scripted protocol (Hendricks & Payne, 2007). The researchers monitored profit-orientation behavior as a determinant of motivation to lead. Consistent with expectations, motivation to lead was positively related to leadership efficiency, however, it did not account for a significant amount of variance beyond the personality variables ($\beta = 0.19$, $p = 0.058$). This might be due to the

fact that the leaders were assigned to their specific roles from the start of the experiment instead of being allowed to emerge, or be nominated by the group as the game unfolded. Also, despite the fact that the laboratory study allowed the researchers to examine a large number of leaders in a standardized environment, the short time-frame allocated to the study may not have been enough for leaders to demonstrate all the manifested behaviors for all leadership group processes to occur.

In 2008 Ng and colleagues tested whether another behavioral variable: leadership self-efficacy moderated the relationship between three of the Big Five personality factors (i.e., conscientiousness, neuroticism, agreeableness, openness to experience, and extraversion) and performance among new leaders in the Singapore military. Their study was conducted via surveys administered to 394 military recruits from Singapore's ministry of defense. Results provided support for the proposed model, whereby the effects of the personality variables on leader performance were partially or fully mediated by self-efficacy. The researchers also found some evidence that job demands and autonomy moderated these relations, such that self-efficacy tended to be a stronger mediating variable for leaders with low job demands and high autonomy. Given that their research design did not factor in the key psychological and behavioral processes that further explain this effect, the authors called upon future research to expand their moderated mediation model by adopting a more comprehensive behavioral focus, examining more specific leadership behaviors in relation to the personality traits used in the model. They argued that, for instance, that leaders who were assessed as neurotic could be less effective because they are unable to control their emotions publicly, and that leaders who were assessed as extraverted could be more effective because they

possess greater resources and build larger networks of relationships. Furthermore, leaders who were assessed as conscientious leaders could be more effective because their striving and organized nature predispose them to plan, set goals, and persist in their efforts to achieve a goal (Ng, Ang, & Chan, 2008).

Despite the increased attention to the behavioral determinants of leadership effectiveness, the research thus far has focused on a very narrow behavioral perspective (Figure 1), with most research focusing on very few behaviors. For example, in 2004 Judge and Piccolo meta-analyzed the literature on transformational and transactional leadership with reference to only two measures: initiating structure and consideration. Later on, Trépanier, Fernet and Austin studied leadership effectiveness with reference to only two leader behaviors: autonomous motivation and self-efficacy. Data were collected from 568 French-Canadian school principals who were contacted by mail to complete an online questionnaire (Trépanier et al., 2012). 71% of the variance in transformational leadership was predicted by a combination of autonomous motivation and self-efficacy. Neither of these studies integrated across leader behaviors or considered whether the effects of certain behaviors were independent, and in both studies the behaviors themselves were too broadly defined. Although both studies have established that leadership effectiveness is influenced by leader behaviors, it is not clear how certain behaviors complement or supplement each other, and how they can be incorporated into a more integrative model of leadership effectiveness. This lack of integration in leadership research is evident in the fact that research has generally focused on a very narrow behavioral perspective (Figure 1).

In summary, several models of leader effectiveness have been proposed in recent years, providing an indication of the 'what' of effectiveness. However, absent in such discussions were analyses of 'how' certain effectiveness tactics were selected for use

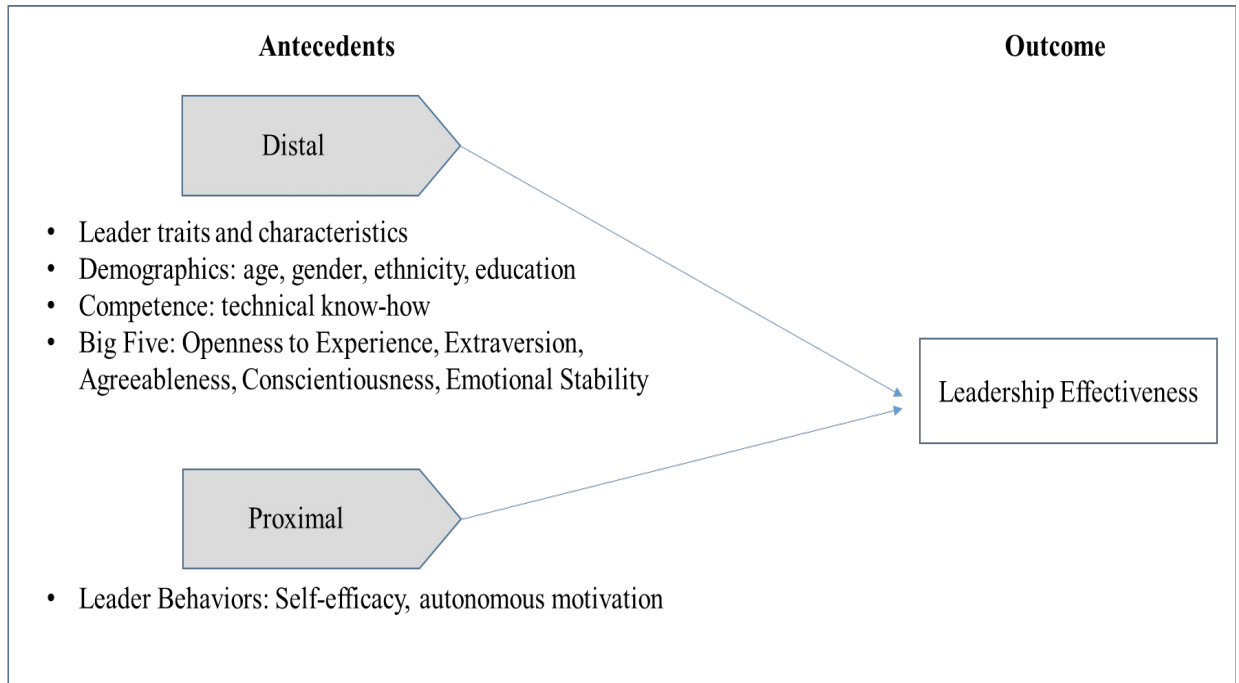


Figure 1. *Summary of Leadership Effectiveness Antecedents as Represented in the Literature*

differentially. In other words, one cannot simply exhibit a competency and expect it to result in leadership effectiveness; it has to be executed and delivered with appropriate savvy, style, and astuteness – more precisely, it has to manifest through a leader's behavior. In essence, this omission in the literature has left a large part of leadership effectiveness unexplained. The behavioral component can very well be the missing piece

and can more specifically characterize how leadership operates, and the role it plays in influence processes in organizations (Ewen et al., 2013).

Theoretically, there are several explanations on why leader behaviors can potentially exhibit a greater validity than leader traits in predicting leadership effectiveness. First, consistent with recent literature on the distal and proximal antecedents to leadership effectiveness (Van Iddekinge, Ferris & Heffner, 2009), leader behaviors are more proximal to the act of leadership than are traits and therefore will be more predictive of leadership effectiveness. Second, although traits reflect behavioral tendencies in people, the manifestation of those traits into behaviors can be affected by the situation. Drawing upon trait activation theory and related research (Tett & Burnett, 2003), traits manifest into the expected set of behaviors only when the situation makes the need for that trait behavior salient. When situations do not call for a particular trait, the trait does not manifest and its impact on outcomes is marginalized. Given the complexity and ambiguity of leadership contexts, it is likely that leadership situations will vary with respect to trait relevance. In other words, leaders' traits are at times latent and will not always manifest in ways that are observable to others. In contrast, assessments of leader behavior can be performed by measuring actual, observed behavior that has already manifested during the act of leadership.

Transformational leadership is a leadership style directed towards inspiring followers to share and pursue the leader's vision (Yammarino & Bass, 1990) and motivating followers to go beyond acting in their own self-interest. Transformational leadership aims to concentrate followers' efforts on long-term goals (Howell & Avolio, 1993). To meet those goals, leaders focus on developing vision and inspiring others to

pursue that vision (Tekleab, Sims, Yun, Tesluk, & Cox, 2007). Transformational leadership has been characterized as the most active and effective form of leadership (Bass & Avolio, 1994), which appeals to followers by providing a sense of purpose and mission, improving self-awareness, and articulating a vision that inspires followers towards a common goal (Lowe, Kroeck, & Sivasubramaniam, 1996). Transformational leaders aim to achieve performance beyond ordinary expectations as they transmit a sense of mission, stimulate learning experiences, and arouse new ways of thinking. In contrast, transactional leadership is a leadership style where performance is achieved by use of contingent rewards or negative feedback. The dynamics of a quid-pro-quo dominate the transactional exchange, in which the leader clarifies task requirements and rewards for compliance (Hater & Bass, 1988).

These styles also differ with regard to the process by which a leader motivates subordinates and the types of goals set. For example, a transactional leader may initiate structure and display consideration to increase subordinates' expectancies that if their efforts succeed, they will receive a merit increase. On the other hand, a transformational leader may use symbolism or imagery to elevate the importance of increased effort for an organizational mission, which serves as a motivator itself. And while working for the mission, the subordinate may enhance his or her own development (Hater & Bass, 1988).

Upon their initial introduction to the literature, transactional and transformational leadership were argued to represent opposite ends of the same leadership continuum (Burns, 1978). However, subsequent leadership researchers have argued that although transactional and transformational leadership are distinct constructs, they are actually compatible, and both could be displayed by the same leader. Later scholars have

proposed a hierarchy demonstrating that transformational leadership is more effective than transactional leadership, indicating that transactional leadership can be viewed as the basis of effective leadership, and transformational leadership can be viewed as adding to that base for greater leader effectiveness (Ewen et al., 2013).

This makes transactional leadership a necessary component of management, yet it is not by itself sufficient for an organization to achieve its full potential, in the sense that some researchers have labelled it lower order (Bass, 1996). To achieve higher performance standards, leaders must employ transformational leadership – they need to inspire followers and unlock their potential for creativity. Thus, transformational leadership augments transactional leadership to achieve higher levels of subordinate performance (Lowe, Kroeck, and Sivasubramaniam 1996; Oberfield, 2012).

The Importance of Follower Perceptions

How well leaders know themselves is also important, as research findings suggest that a leader's agreement with followers about his or her own leadership style is associated with higher degrees of leadership effectiveness (Atwater et al., 1998; Tekleab, Tesluk & Cox, 2007). Ziegenhagen (1964) suggested that concepts of the self can be at variance with the outside world and affect a leader's performance. He analyzed the autobiographies of 15 world-class political leaders and showed that those leaders' ethnocentric behavior, conformity to in-group norms, and hostility to out-groups correlated highly with inconsistencies in the leaders' self-conceptions. These inconsistencies were conceptualized as the gap between the conceptions leaders had of themselves and those that others had of them. The study concluded that such inconsistencies can be a cause of career derailment for leaders. Likewise, Wexley,

Alexander, Greenwalt and Couch (1980) have also suggested that consistencies between self and other evaluations was useful to manager-subordinate relationships, and that subordinates were more content with their managers when there were fewer discrepancies between each subordinate's description of the manager and the manager's self-description.

Self-Other Agreement and Self-Awareness

Among the possible factors that explain leadership style is the leader's self-perception (Roush, 1992). Research has shown that individuals with perceptions of their own leadership style that were similar to the perceptions of their followers were more successful (Roush & Atwater, 1992). In contrast, Webber (1980) found that supervisors who reported initiating more interaction with followers than had actually occurred were worse performers. Williams and Leavitt (1974a) found that the more successful leaders were less likely to overrate themselves, were rated as more transformational by their subordinates, and subsequently had perceptions of themselves that were closer to the perceptions their followers had of them. Similarly, Bass and Yammarino (1989) found that those leaders who were less transformational had greater differences between self and follower ratings.

Since the use of self-ratings of leadership alone to measure self-awareness has been found problematic due to the leniency bias (Harris & Schaubroeck, 1988), ratings provided by others (e.g. bosses, subordinates, and peers) have been recommended to obtain a more balanced perspective (Halverson et al., 2004). Traditionally, the differences between rating sources were thought of as measurement errors that should be eliminated or reduced. However, with the advent of multisource ratings, the extent of agreement

between different sources in itself has become of major interest (Fleenor et al., 2010). Self-other-agreement has been defined as the degree of congruence in perceptions between a leader's self-ratings and the ratings of others (Atwater, Wang, Smither, & Fleenor, 2009; Fleenor, McCauley, & Brutus, 1996). Subsequently, Berson et al. (2007) operationalized self-awareness in terms of agreement categories. In their study which examined the extent to which subordinate perceptions were associated with self-awareness, managers were categorized as over-estimators, under-estimators, in-agreement/poor or in-agreement/good based on the size of the difference between the manager and subordinate ratings of leadership style (Berson et al., 2007). The findings provided partial support for the hypothesis that managers who overestimated their leadership behaviors were perceived less favorably by their subordinates than those who underestimated their leadership behaviors.

The Relationship between Leader Behavior and Leadership Style

Recent research has begun to examine how the effect of leader behaviors differs across followers and organizations (Akdol & Arikboga, 2015; Effelsberg & Solga, 2013; Ewen et al. 2013; Mahsud, Yukl, & Prussia, 2010; Pelletier, 2010; Tsui, et al., 2010; Shaw, Erickson, & Nasirzadeh, 2015; Zhang & Chen, 2013). Thus far, leadership style has been one of the most discussed and debated factors associated with leadership effectiveness, as early research on its antecedents began with the search for specific attributes that differentiate leaders across the two labels represented by transformational and transactional leadership to explain individual differences in effectiveness. Leadership style specifically has been linked to outcomes such as subordinate ratings of leadership potential and motivation to lead (Chan, Uy, Chernyshenko, Ho, & Sam, 2015),

organizational commitment (Paglis, 2010), performance (Wood & Bandura, 1989), and overall leader effectiveness (Chemers, Watson, & May, 2000). A consistent theme is that those behaviors can be fit into three categories: task-oriented behaviors, relational-oriented behaviors, and change-oriented behaviors. These classifications have evolved largely independent of each other, and have not been studied enough empirically, in particular, with regards to their relative validities as predictors of leadership style (Byrne, Dik, & Chiaburu, 2008; O'Donnell, Yukl, & Taber, 2012). As a result, it is difficult to compare and contrast certain behaviors and their impact on leadership style in such a way that will enable a better understanding of the conceptual distinctions among those behaviors. Therefore, this study seeks to test whether certain behaviors contribute to individuals being particularly adept at either leadership style, as rated by a leader's subordinates. For example, effective leaders would be expected to interpret social interactions well, and to adapt their behavior to fit specific situations to elicit responses necessary for goal attainment. This combination of social astuteness and interpersonal influence suggests that effective leaders will be able to understand the needs of followers, and correctly identify the types of leader behaviors (i.e., transactional or transformational) most appropriate for the situation (Ewen et al., 2013).

In the literature, both task-oriented behaviors and transactional leadership describe leaders as being clear about expectations and standards for performance, and using these standards to shape follower commitment (DeRue, Nahrgang, Wellman, & Humphrey, 2011; Ewen et al., 2013; Hater & Bass, 1988). Therefore, task-oriented leader behaviors can be expected to ensure that followers have specific goals, an established group structure with clear roles, and specific metrics for measuring performance. Thus, to

the degree that a transactional leader aims to achieve task execution and performance, this study hypothesizes that task-oriented behaviors will be important predictors of a transactional style of leadership.

On the other hand, leaders who display relational-oriented behaviors act in a way that builds follower respect and enhances feelings of growth and development through constructive conversations. Prior research shows that individuals who feel that they are growing, developing, and making improvements over time feel more satisfied at work (Avolio & Hanna, 2009; DeRue, Nahrgang, Wellman, & Humphrey, 2011; Judge Piccolo, & Kosalka, 2009). Thus, to the extent that transformational leadership targets affective and relational elements, this study hypothesizes that relational-oriented leader behaviors are important predictors of a transformational style of leadership.

Furthermore, leaders who display change-oriented behaviors show interest in understanding the environment, and encourage their teams to find innovative ways to adapt to the changing status quo (Fitzgerald & Schutte, 2010; Gal-Arieli, Beeri, Vigoda-Gadot, & Reichman, 2015; Vigoda-Gadot & Beeri, 2011). Thus, to the extent that transformational leadership targets the capacity to survive and adapt, this study hypothesizes that change-oriented behaviors are important predictors of a transformational style of leadership.

Finally, given that the relationship between transformational leadership and self-awareness has received empirical support (Atwater, Wang, Smither, & Fleenor, 2009; Fleenor, McCauley, & Brutus, 1996), this study hypothesizes that leadership style can be predicted based on self-other-agreement(SOA) ratings of managerial performance. Following Atwater et al. (1998), it is expected that leaders with higher SOA levels will

have higher chances/odds of being rated as transformational leaders relative to leaders with lower SOA levels. A corollary of this argument is that leaders with lower SOA levels have higher chances of being rated transactional.

In order to test these hypotheses, data were collected from a large sample of leaders who occupy mid-to-senior managerial ranks, as well as from their subordinates.

Research Question (RQ): do certain behaviors contribute to individuals being particularly adept at transformational or transactional leadership style, as rated by team members /subordinates? Are certain behaviors more predictive of a particular leadership style than others?

Hypotheses:

H₁: task-oriented behaviors (quality standards, work allocation, team development, delegation, and objectives setting) will exhibit a stronger positive relationship with a transactional style of leadership than relational or change-oriented behaviors.

H₂: relational-oriented leader behaviors (active listening, communication, team relationships, problem solving and counseling, participative decision making, and interface management) will exhibit a stronger positive relationship with a transformational style of leadership than task-oriented behaviors.

H₃: change-oriented behaviors (motivation and strategy) will exhibit a stronger positive relationship with a transformational style of leadership than task-oriented behaviors.

H₄: higher scores on self-other-agreement will be related to higher transformational leadership ratings.

Figure 2. Summary of Research Question and Four Hypotheses

The survey was conducted in two stages. First, leaders evaluated their own behaviors using the Linking Leader Profile (McCann & Mead, 2010). Second, leadership style evaluations were provided by the subordinates of the above leaders using the Multifactor Leadership Questionnaire (MLQ) (Bass & Avolio, 1985, 1990, 1995, 1996, 2000, 2004), whereas behavioral evaluations were measured using the Linking Leader Profile (McCann & Mead, 2010). The leader behaviors were classified according to the 3 categories: task-oriented, relational-oriented, or change-oriented. The aggregate behavioral scores for each leader were then be calculated and averaged across the 5 raters, following which they were be analyzed in relation to leadership style as well as the leader's self-rating.

Chapter II

Research Method

The paragraphs below provide a discussion of the participants, instruments, procedure, and design.

Participants

This study consisted of two sets of participants, leaders and subordinates, who provided ratings for the leaders. A description of the procedure for each group follows.

Leaders included 110 (84 male, 26 female) upper-level managers and executives from a variety of enterprises primarily based in the Middle East. To be eligible for participation, leaders needed to have worked for a minimum of 3 years in their organizations, in addition to having at least 5 subordinates who have worked with them for at least one year, and for whom they were comfortable providing contact information. The leaders also needed to have completed a bachelor's degree or higher and speak English. There were no age or nationality restrictions on participation.

Subordinates included 337 (209 male, 122 female, 6 undisclosed) employees reporting directly to the leaders. There were no age or length of employment restrictions for participation.

Leaders were recruited by two means: from business conferences in the Middle East which I attended, and through announcements on Linked-In, where the researcher has a large business management following. The eligibility criteria were explained in a

draft email that was sent to the leaders. Upon showing interest study participation, the leaders received an email describing the study and requesting a list of at least five subordinates and their contact information. The email stated that all the information collected from the subordinates would be confidential and would not be shared with the leaders.

Subordinates whose names had been provided by leaders were also contacted by email or phone and invited to participate in the study. The process of data collection was designed to minimize any risks or discomfort pertaining to participation by subordinates. Their invitation stated that although their names had been provided by their leader, they were under no obligation to participate in the study and their information (including whether they decide to participate in the study or not) would not be shared with their leader. The leader who recommended them for the study did not receive information on which subordinates chose to participate.

While most participants completed the survey online, there were parts of the region where internet was less accessible. In such cases, direct visits were scheduled to businesses where leaders were recruited and administered paper and pencil versions of the surveys to leaders and their subordinates. It is important to note that leaders were not participating anonymously in the study (their subordinates understood that their leaders were participating). However, in order to preserve confidentiality among subordinates who chose to participate, surveys were administered to subordinates at a time and location outside of business hours.

In compensation for participants' time, pro-bono, 4-hour workshops were provided to participants summarizing the latest research in the field of leadership

development. In addition, following the completion of the study, the findings will be shared with the participant pool for the purpose of enhancing leadership development practices including recruitment, selection, training and development of future leaders.

Instruments

The Multifactor Leadership Questionnaire (MLQ – 6S; Bass & Avolio, 1992) was used to obtain ratings of leadership style for the focal leaders were conducted by the leader’s subordinates and measured using the Multifactor Leadership Questionnaire (MLQ – 6S), an instrument for assessing transformational and transactional leadership developed by Bass and Avolio (Bass & Avolio, 1992) and available from Mind Garden Inc. (www.mindgarden.com). For each of the 21 items, the raters judged how frequently or to what degree the target leader fit the description based on magnitude-estimation scales, using the following five options: 4= frequently, if not always; 3= fairly-often; 2= sometimes; 1= once in a while; and 0= not at all.

The MLQ provides a methodology by which practitioners can measure, explain, and demonstrate to leaders, in specific behavioral terms, the key factors that differentiate their leadership potential across a full range of leadership styles, including transformational and transactional styles (Bass & Avolio, 1997). Internal consistency of the MLQ instrument using Cronbach’s (1951) alpha coefficients for a 2004 sample of 27,285 US leaders and raters range from 0.69 to 0.83. Scales for transformational and transactional leadership styles are computed by summing the questions related to each style and dividing the sum by the number of questions.

The Linking Leader Profile (LLP; McCann, 2002) was used to conduct behavioral assessments of leaders based on the Linking Leader Profile developed by D.J. McCann

(2002) and available from Team Management Systems (www.tmsdi.com.au). The LLP identifies three categories of leadership behaviors that have differential effects on organizational outcomes such as satisfaction, effectiveness, results, and extra effort. The overall feedback scale for the instrument has 78 items, with three different types of skills: relational-oriented behaviors (6 scales, 36 items), task-oriented behaviors (5 Scales, 30 items), and change-oriented behaviors (2 scales, 12 items). Independent evaluations of the LLP have been conducted by the British Psychological Society in different cultural contexts including the United States, UK, Germany, Saudi Arabia, China, Brussels, Italy, Kuwait, France, and Lebanon and have supported its good psychometric properties (McCann & Mead, 2010). Internal consistency was assessed using Cronbach's (1951) alpha performed on data from 754 managers' ratings was 0.97 or above (Leslie, 2013).

Procedure

Following approval by the Harvard Committee on the Use of Human Subjects and the Ministers of Health for all countries in which the study was administered the participants were recruited as outlined above.

If leaders were participating online, they received an email with the URL for the study survey. The leaders' survey consisted of several demographic questions plus the Linking Leader Profile (LLP; McCann, 2002), a scale of 78 items in which leaders rated themselves across three different categories of skills: relational-oriented behaviors, task-oriented behaviors, and change-oriented behaviors. Leaders consented to the study online at the onset of the survey.

Consenting subordinates who were participating online received an email with their leader's ID code and the URL for the subordinates' survey. The subordinate survey

consisted of several demographic questions, an input field for the leader's name, plus the LLP, which subordinates filled out to rate their leader's behavior and skills. Subordinates also filled out an additional measure concerning their leader, the Multifactor Leadership Questionnaire (MLQ; Bass & Avolio, 1985). This scale measures leadership style. Subordinates did not enter any identifying information on their surveys with the exception of the leader's ID code. Their surveys were completely confidential.

For participants who were not taking the online surveys, meetings were arranged at a time and date of mutual convenience for the participants and myself. A survey consisting of the paper-based form of the instruments described above was used to collect data from the subordinates of the focal leaders. Prior to the data collection process, informed consent forms were shared with participants and returned to me upon signature. Questionnaires were then administered, collected, and stored appropriately. Participants were given full choice on whether to participate in the study, with the option of changing their minds and leaving the study at any time with no penalties for refusal. Incomplete questionnaires were excluded from the final analysis.

It had also been made clear to the participants that the collected data would be coded and saved with no identifying information. Names were replaced with ID codes and kept the key linking the names and ID codes in a secure location separate from the data. All data was secured via an encrypted and password-protected file. Hard copies were kept in a locked file to be stored for a period of 5 years following the completion of the study. The information will not be disclosed to respective companies, departments, managers or subordinates.

Design

In the current study the dependent variable is *leadership style* which has two levels: *transformational* and *transactional*. The independent variable is *behavioral evaluation* (Figure 3) for H₁, H₂, and H₃, and *self-other-agreement* for H₄. Following data collection and coding, data were entered into an Excel Spreadsheet for analysis. All data were exported to SPSS for analysis. Given that the aim of the study is to understand the relationship between transformational leadership and behavioral evaluation, a multiple linear regression was the main method of analysis.

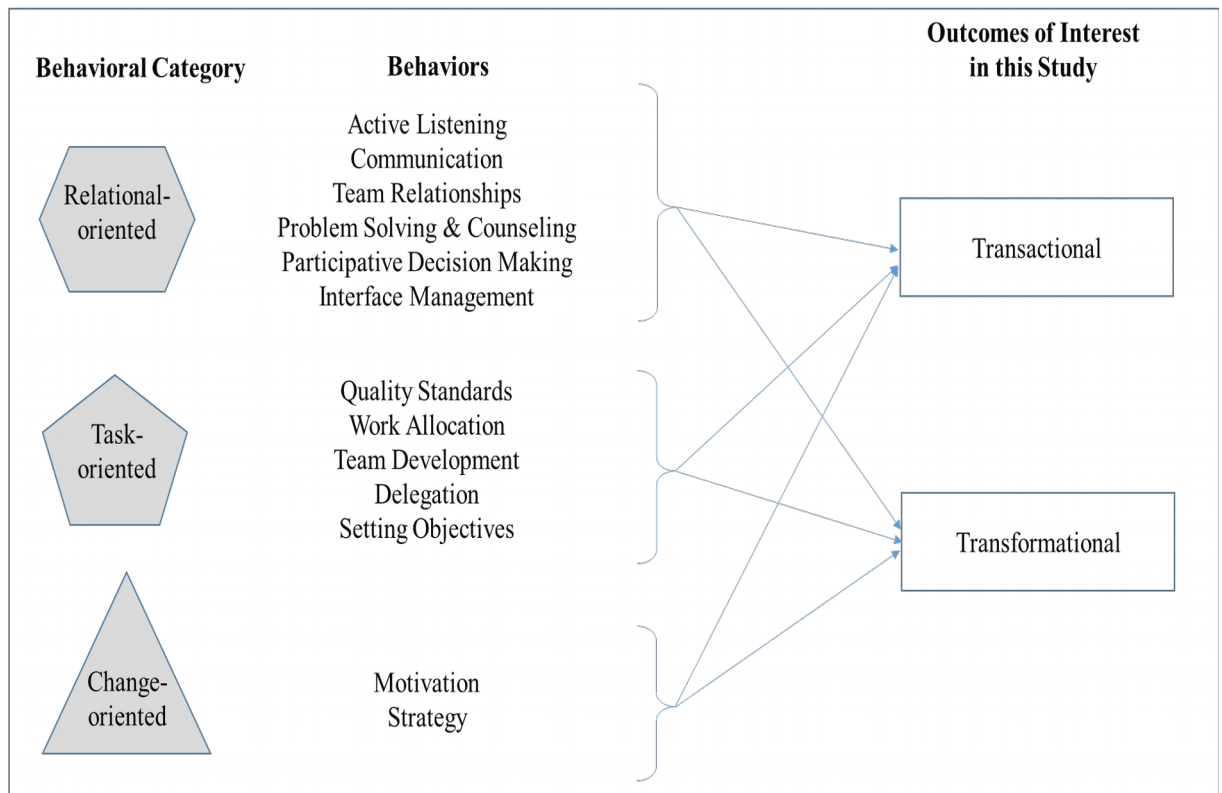


Figure 3. The Proposed Research Model for this Study

Based on the work of Peduzzi et al. (1996) regarding sample size calculation for multiple logistic regression, sample size was calculated using the formula $N=10k/p$ where p is the proportion of negative or positive cases, and k the number of covariates (Peduzzi, Concato, Kemper, Holford, & Feinstein, 1996). The minimum number of cases to include according to this formula is $N=10k/p$. In this case, there were 3 covariates to include in the model with two outcomes ($p=0.50$). Hence the sample size calculations would be $N=10/3/0.50 = 60$. Since the resulting number is less than 100 it was increased to 100 as suggested by Long (1997).

Chapter III

Results

Several key research questions drove this investigation. Those research questions are summarized below:

1. Are leaders who display task-oriented behaviors more likely to be rated transactional?
2. Are leaders who display relational and change-oriented behaviors more likely to be rated transformational?
3. Are leaders who are more self-aware more likely to be rated transformational?

Before addressing the above queries, descriptive statistics were via a *t*-test, Analysis of Variance (ANOVA), and subsequently regression analyses were conducted in order to determine if there were any significant differences by country, gender, and age. The results of these analyses are presented in the subsequent paragraphs, followed by detailed analysis by hypothesis.

Leadership Style, Country, Age, and Gender

Before testing any of the major hypotheses, it was important to determine whether country of origin, age, or gender had any influence over subordinate ratings of leadership styles and behaviors. Of the 146 leader participants who were included in this study, data were collected from subordinates for 110 of the leaders. Those leaders represented 12

countries and were rated by their subordinates, and the number of raters ranged between 1 and 5 raters each (see Table 1).

Table 1

Countries and Number of Leaders and Subordinates

Country	Leaders	Subordinates
Australia	1	3
Jordan	1	1
KSA	50	147
Kuwait	2	6
Lebanon	36	125
Oman	2	5
Pakistan	1	1
Qatar	2	8
Spain	6	18
UAE	6	16
UK	1	2
USA	2	5
Total	110	337

As a next step, ANOVAs were conducted in order to determine if there were differences by country in the way subordinates rated the leadership style of their leaders. Note that countries with two or fewer leaders were combined into a miscellaneous category in order to conduct the ANOVAs. There were no significant differences among

countries in the overall subordinate scores for leaders on the MLQ for transformational leadership qualities ($F_{(4,103)} = 1.323, p = .27, \eta^2 = .05$) or for transactional leadership qualities ($F_{(4,103)} = 1.357, p = .25, \eta^2 = .05$). (See Table 2 for means and standard deviations.)

ANOVAs were also conducted to determine if there were differences by country in the way leaders and subordinates rated leaders' behaviors as measured by the LLP. In reviewing the results, there were significant differences in several measures, including leaders' evaluations of their own relational-oriented behaviors ($F_{(4,105)} = 4.743, p = .001, \eta^2 = .15$), task-oriented behaviors ($F_{(4,105)} = 3.372, p = .01, \eta^2 = .12$), and change-oriented behaviors ($F_{(4,105)} = 2.651, p = .04, \eta^2 = .09$), as well as subordinated-rated evaluations of task-oriented behaviors ($F_{(4,105)} = 2.709, p = .03, \eta^2 = .09$). (See Table 2 for means and standard deviations.)

Furthermore, a comparison of means was conducted to determine if gender of the leader affected subordinate ratings in leadership style. A *t*-test revealed no significant difference between male and female leaders' ratings for either transformational leadership qualities ($t_{(163)} = .944, p = .35, d = .23$) or for transactional leadership qualities ($t_{(106)} = 1.655, p = .10, d = .22$).

ANOVAs also indicated that the age of the leader did not affect subordinate ratings in leadership style for either transformational leadership qualities ($F_{(4,85)} = 0.261, p = .80, \eta^2 = .01$) or for transactional leadership qualities ($F_{(4,85)} = 0.943, p = .44, \eta^2 = .04$).

Table 2

Means and Standard Deviations of MLQ and LLP Scores by Country*

Country	Leader Relation	Leader Task	Leader Change	Subord Relation	Subord Task	Subord Change	Transform	Transact
KSA	113.4 (13.4)	91.2 (11.2)	50.2 (4.8)	105.4 (17.5)	86.6 (14.4)	35.8 (6.8)	2.9 (0.7)	2.8 (0.5)
Lebanon	110.4 (17.8)	91.2 (13.3)	51.2 (5.6)	107.8 (21.6)	90.8 (14.4)	36.4 (6.6)	3.1 (0.6)	2.9 (0.5)
UAE	86.5 (29.5)	74 (23.3)	45.1 (5.8)	117.0 (14.5)	97.5 (8.4)	40.2 (2.5)	3.1 (0.7)	3.1 (0.3)
Spain	121.3 (6.1)	98.2 (5.1)	54.0 (3.7)	87.7 (32.4)	77.7 (6.0)	31.4 (9.6)	2.7 (0.6)	2.6 (0.2)
Misc.	107.7 (10.9)	88.8 (8.9)	49.5 (4.7)	113.5 (9.8)	93.4 (9.3)	37.1 (4.5)	3.1 (0.4)	2.8 (0.4)

Note. KSA = Kingdom of Saudi Arabia; UAE = United Arab Emirates.

Misc. = Miscellaneous countries (including USA, UK, Philippines, Oman, Jordan, Pakistan, Qatar, and Kuwait).

Leader Relation = Leader self-rated Relational-oriented behaviors subscale of the LLP;

Leader Task = Leader self-rated Task-oriented behaviors subscale of the LLP;

Leader Change = Leader self-rated Change-oriented behaviors subscale of the LLP;

Subord Relation = Subordinate rating of leader on the Relational-oriented behaviors subscale of the LLP;

Subord Task = Subordinate rating of leader on the Task-oriented behaviors subscale of the LLP;

Subord Change = Subordinate rating of leader on the Change-oriented behaviors subscale of the LLP;

Transform = Subordinate rating of leader on the Transformational leadership qualities subscale of the MLQ;

Transact = Subordinate rating of leader on the Transactional leadership qualities subscale of the MLQ.

*Standard Deviations are in parentheses

Of the 110 leader groups in the study, 75 completed the study using online questionnaires and 35 completed the study using paper and pencil questionnaires. Based on this observation, *t*-tests were run in order to determine whether there were significant differences in leadership style ratings between those who filled the online questionnaire vs. paper. The results revealed that there were no significant differences in the scores for transformational leadership style between the online group (mean = 3.05, s.d. = .66) and the paper and pencil group (mean = 2.85, s.d. = .61) ($t_{(106)} = 1.47, p = .15, d = .31$). However, the results revealed a significant difference in the transactional leadership scores ($t_{(106)} = 2.63, p = .01, d = .60$); where subordinates who filled out the questionnaire online gave higher scores (mean = 2.94, s.d. = .51) to leaders than those who filled out paper questionnaires (mean = 2.69, s.d. = .28).

Transactional Leadership Style and Leader Behaviors

To test whether transactional leadership style is associated more strongly with task-oriented behavior than with relational- or change-oriented behavior, a multiple linear regression was run with the transactional leadership scale of the MLQ as the dependent variable and the three behavior scales from the LLP as the independent predictors. The result was significant ($F_{(3,104)} = 33.998, p = .000, R^2 = .49$). However, only task-oriented behaviors significantly predicted transactional leadership style, accounting for all of the variance (see Table 3). Relational-oriented behaviors and change-oriented behaviors did not significantly predict transactional leadership style, confirming Hypothesis One (H_1).

Table 3

Betas Predicting Transactional Leadership Style

Variable	<i>Beta</i>	P-value
Task-oriented behavior	.651	.000
Relational-oriented behavior	.051	.76
Change-oriented behavior	.015	.93

Transformational Leadership Style and Leader Behaviors

To test whether transformational leadership style is associated more strongly with relational-oriented leader behavior than with task-oriented behavior, a multiple linear regression was conducted with the transformational leadership scale of the MLQ as the dependent variable and these two behavior scales from the LLP as the independent predictors. The result was significant ($F_{(2,107)} = 93.621, p = .000, R^2 = .641$). Both task-oriented behaviors and relational-oriented behaviors significantly predicted transformational leadership style (see Table 4). However, a stepwise regression method indicated that relational-oriented behaviors alone accounted for most (62%) of the variance, while task-oriented behaviors accounted for the remaining 2%. Thus, although both behavior types added significantly to the overall variance in transformational leadership, relational-oriented behaviors were far more significant, confirming Hypothesis Two (H_2).

Table 4

Betas Predicting Transactional Leadership Style

Variable	Beta	P-value
Task-oriented behavior	.204	.034
Relational-oriented behavior	.630	.000

To test whether transformational leadership style is associated more strongly with change-oriented leader behavior than with task-oriented behavior, a multiple linear regression was conducted with the transformational leadership scale of the MLQ as the dependent variable and these two behavior scales from the LLP as the independent predictors. The result was significant ($F_{(2,107)} = 77.49, p = .000, R^2 = .596$). Both task-oriented behaviors and change-oriented behaviors significantly predicted transformational leadership style (see Table 5). Change-oriented behaviors accounted for 54% of the variance and task-oriented behaviors accounted for 2%, thus confirming Hypothesis Three (H_3).

Table 5

Betas Predicting Transactional Leadership Style

Variable	Beta	P-value
Task-oriented behavior	.253	.018
Change-oriented behavior	.553	.000

Agreement between Leader-Follower Ratings and Transformational Leadership

In order to determine the agreement between leaders' and subordinates' ratings of leader behaviors, the total score for the leaders' self-ratings of was calculated by computing the sum of the three behavior scales of the LLP and then the result was subtracted from the sum of the subordinates' ratings of the three behavior scales. In addition, a separate difference score was created for each of the three behavior scales individually (see Table 4). Negative numbers indicate that leaders rated themselves higher than their subordinates; positive numbers indicate that subordinates rated their leaders higher than the leaders rated themselves; and scores closer to 0 indicate closer leader-subordinate agreement.

Table 6

Means and Standard Deviations of Difference Scores between Subordinates' Ratings and Leaders' Self-Ratings of LLP Behavior Scales

Scale	Mean (SD)
Relational-Oriented Behavior Difference	-3.9 (27.0)
Task-Oriented Behavior Difference	-1.7 (19.2)
Change-Oriented Behavior Difference	-14.3 (8.2)
Total Behavior Difference	-20.0 (52.5)

A regression analysis indicated that Total Behavior Difference predicted scores on the transformational leadership scale of the MLQ ($F_{(1,105)} = , p = .000, R^2 = .34$), and that a quadratic model ($R^2 = .42$) fit the data better than a linear model ($R^2 = .34$).

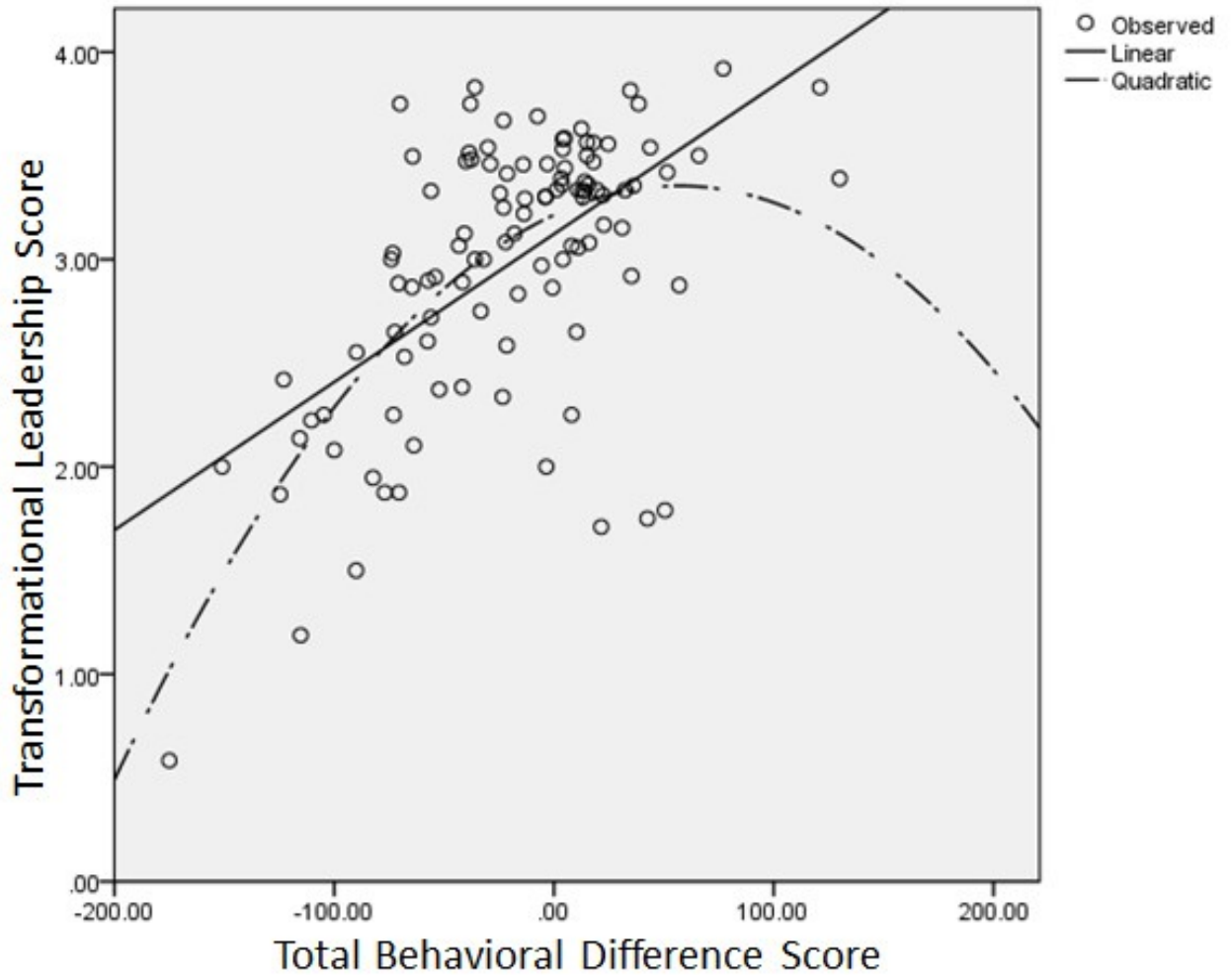


Figure 4. Difference Scores between Subordinates’ Ratings and Leaders’ Self-Ratings of LLP Behavior Scales Predict Transactional Leadership Ratings

To further illuminate this finding, the Total Behavioral Difference Scores was divided into three groups, with the middle group comprising the 33% of leaders whose scores hovered closest to 0. This provided a leader group who had rated themselves accurately (relative to subordinate ratings), a group who had overrated themselves (those with scores lower than the mid tertile), and a group who had underrated themselves (a “humble” group with scores above the mid tertile). As a next step, an ANOVA was conducted with Transformational Leadership scores as the dependent variable and Total

Behavioral Difference score groups as the independent factor. The analysis yielded a significant result ($F_{(2,104)} = 9.19, p = .000, \eta^2 = .15$), with both the “self-aware” group ($t_{(86)} = 4.17, p = .000, d = .93$) and the “humble” group ($t_{(69)} = 2.36, p = .02, d = .62$) yielding significantly higher scores transformational scores than the “overrated” group (see Table 7).

Table 7

Means and Standard Deviations of Transformational Leadership Scores within Total Behavioral Difference Score Groups

Group	N	Mean (SD)
Over-rated	52	2.73 (.69)
Self-Aware	36	3.25 (.37)
Underrated (Humble)	19	3.16 (.69)

Further Analyses of Interest

Each of the three behavior scales that make up the LLC is comprised of several subscales or competencies. In order to determine which of these competencies was most predictive of transformational leadership style, a series of multiple linear regressions was conducted for the competencies that are associated with each behavior scale.

Relational Competencies

A multiple linear regression was conducted with the transformational leadership scale of the MLQ as the dependent variable and the six relational competencies from the relational scale of the LLP as the independent predictors. The result was significant ($F_{(6,106)} = 29.446, p = .000, R^2 = .639$). However, only Team Relationships and Problem-Solving and Counselling behaviors significantly predicted transformational leadership style, accounting for all of the variance. Active Listening, Communication, Participative Decision Making and Interface Management did not significantly predict transformational leadership style (see Table 8).

Table 8

LLP Relational Competencies and MLQ Transformational Leadership Style

Competency	Beta	P-value
Active Listening	.153	.251
Communication	.264	.145
Team Relationships	.361	.039
Problem Solving and Counseling	.447	.024
Participative Decision Making	-.205	.168
Interface Management	-.209	.315

Note. Competencies with positive betas and p-values < .05 predicted transformational leadership style. Team Relationships and Problem Solving and Counseling were the competencies with the highest betas.

Task Competencies

A multiple linear regression was conducted with the transformational leadership scale of the MLQ as the dependent variable and the five task competencies from the task scale of the LLP as the independent predictors. The result was significant ($F_{(5,106)} = 18.999, p = .000, R^2 = .485$). However, only Delegation and Quality Standards competencies significantly predicted transformational leadership style, accounting for all of the variance. Objectives Setting, Work Allocation, and Team Development did not significantly predict transformational leadership style (see Table 9).

Table 9

LLP Task Competencies and MLQ Transformational Leadership Style

Variable	Beta	P-value
Objectives Setting	.032	.846
Quality Standards	.402	.013
Work Allocation	.306	.070
Team Development	-.326	.052
Delegation	.300	.024

Note. * Competencies with positive betas and p-values < .05 predicted transformational leadership style

Change Competencies

A multiple linear regression was conducted with the transformational leadership scale of the MLQ as the dependent variable and the two change competencies from the change scale of the LLP as the independent predictors. The result was significant ($F_{(2,106)} = 66.959, p = .000, R^2 = .563$). Both Motivation and Strategy competencies significantly predicted transformational leadership style (see Table 10).

Table 10

LLP Change Competencies and MLQ Transformational Leadership Style

Variable	Beta	P-value
Motivation	.489	.000
Strategy	.291	.016

Note. Competencies with positive betas and p-values < .05 predicted transformational leadership style

Chapter IV

Discussion

Over the years, transformational leadership has been linked to important outcomes such as organizational effectiveness and job satisfaction (Judge & Piccolo, 2004). However, the literature on transformational leadership has focused more on its outcomes than determinants (Avolio, Walumba, & Weber, 2009). Consequently, the aim of this research was to better understand the behavioral factors that influence transformational leadership. For instance, how do team perceptions of a leader's workplace relationships affect their perceptions of their transformational leadership behavior? Do certain behaviors matter in shaping how followers evaluate leader effectiveness? When leaders are more transformational, are they displaying a certain type of behavior more than another? The purpose of this research was to determine whether certain groups of behaviors are more predictive of transformational leadership style as rated by team members/subordinates.

Within the boundaries of empirical investigation, this study has a variety of intriguing findings. The results demonstrated that transformational leadership style is associated with higher ratings on both relational and change-oriented behaviors, a higher level of self-awareness, and a lower tendency to overrate oneself, whereas transactional leadership style is associated more strongly with task-oriented behavior.

Hypothesis Tests

Behavior scales were divided into three categories: relational-oriented, task-oriented and change-oriented. The relational-oriented category include behaviors that are aimed to building follower respect and encouraging the team to focus on the overall welfare. Those behaviors are Active Listening, Communication, Team Relationships, Problem Solving and Counseling, and Participative Decision Making. The task-oriented category refers to behaviors related to defining and distributing task roles and relationships among team members, such as coordinating team actions, setting quality standards and ensuring that the team perform up to those standards. Those behaviors are Quality Standards, Work Allocation, Team Development, Delegation and Objectives Setting. The change-oriented category describes behaviors that are designed to create and facilitate change in organizations, such as communicating a motivating vision for the future and sharing strategy to seek different inputs and perspectives from organizational members. The behaviors under this category are Motivation and Strategy.

The first hypothesis in this study was that task-oriented behaviors will exhibit a stronger positive relationship with a transactional style of leadership than relational or change-oriented behaviors. The results strongly support the proposed association; with only task-oriented behaviors significantly predicting transactional leadership style. Neither relational nor change-oriented behaviors significantly predicted transactional leadership style. Bass (1996) has delineated three components of transactional leadership: passive management by exception, active management by exception, and contingent reward. These components share a common principal logic about the leader-follower relationship: managers are responsible for communicating goals and instructions to

workers. As such, they tap into long-standing concerns about organizational coordination, shirking and control (Brehm and Gates, 1997). Thus, although not identical, transactional leadership shares much in common with task-oriented leader behaviors that emphasize monitoring and rewards, and that are thought to be what Bass termed lower-order behaviors in that they are fundamental to organizational functioning in the sense that they enable followers to get recognition for their work and enable managers to detect when a follower is not producing work.

The second hypothesis was that relational-oriented leader behaviors will exhibit a stronger positive relationship with a transformational style of leadership than task-oriented behaviors. The results indicated that both relational and task-oriented behaviors significantly predicted transformational leadership, but that relational-oriented behaviors were more significant. In other words, increases in transformational effectiveness were associated with improvements in follower ratings on both the task and relational scale, but the relational scale is more powerful: an increase of 1 point in transformational leadership is associated with approximately 0.20 of a point in task-oriented behavior, in comparison with 0.63 of a point in improvement in relational-oriented behaviors. Taken as a whole, this suggests that without lower-order results-oriented behaviors, it is not possible to develop higher-order leadership strategies which have the potential to unlock potential and creativity. However, the followers of those leaders are more inclined to pay attention and respond in kind to higher-order transformational strategies which inspire and stimulate them, and which appear to matter more for them. Therefore, dedicating time to relational oriented behaviors appears to be a more potent management strategy overall.

The third hypothesis was that change-oriented behaviors will exhibit a stronger positive relationship with a transformational style of leadership than task-oriented behaviors. The results showed that both change and task-oriented behaviors significantly predicted transformational leadership, however, change-oriented behaviors were more significant. This suggests that organizational leaders can generate the best outcomes when they combine attention to followers' "lower-level" and "higher-level" needs. Improvement is expected because followers understand that there will be a base level of fairness in how decisions are handled via task-oriented behaviors; however, they will also feel inspired and motivated to partake in the organization's strategy. As such, both parts can be complimentary in achieving effectiveness (Oberfield, 2012).

The fourth hypothesis was that higher scores on self-other-agreement will be related to higher chances/odds of being rated transformational for leaders. In line with earlier findings (Atwater & Yammarino, 1992; Bass & Yammarino, 1991) the results showed that leaders whose self-evaluations were close to those of their subordinates, referred to as the "self-aware" group, had significantly higher transformational scores than those who overrated their competencies relative to their subordinates. Interestingly, the leaders whose self-evaluations were lower than those of their subordinates; i.e. the "underraters" also had higher transformational scores. According to this finding, it seems that individuals who overrate themselves do not appear to be good judges of how they are seen by their subordinates, and as a result of being over-confident they misdiagnose their strengths and weaknesses which interferes with their leadership effectiveness. Fletcher (1999) examined differences in ratings and postulated that some of the contributing factors are due to feedback-seeking propensities. He suggested that those who are more

self-assured are less likely to seek feedback from others as opposed to those who are more self-critical, and as a result are less likely to monitor their effect on others (Fletcher & Perry, 2001). Thus, the investigation of differences between self-and others' ratings may have important developmental implications for leaders, regardless of their perceived accuracy. Leaders must take others' ratings seriously even if they disagree with them. Lastly, the findings also provide an interesting angle on leadership as an exercise in humility, self-reflection, and continuous self-improvement

Gender Differences in Self-Awareness

An examination of the differences in ratings relative to gender revealed that those differences were not explained by gender as there was no relationship between differences in gender and follower ratings. Although it can be postulated that some of the contributing factors might be due to personality differences and feedback-seeking propensities, this might also be due to the fact that there are fewer women than men in leadership positions. According to research in social psychology, if a group's representation falls below 20% in a given society, then it's going to be subjected to stereotyping whether it likes it or not (Goffee, 2006). Women in leadership positions try to avoid this dynamic by disappearing and making themselves invisible, or by blending in with men and acting tough. Consequently, their opinions and perceptions may not be a true reflection of what they authentically think and believe (Fletcher, 1999; Goffee & Gareth, 2011).

Other Competencies of Interest

Further examination of the diverse array of competencies underlying each behavioral scale showed that a number of competencies turned out to be highly correlated with transformational leadership. The implications of these outcomes of interest are discussed below.

Team relationships. The concern for individuals and interpersonal relationships and the display of behaviors that are related to employees' social and emotional needs as well as their development seem to be all highly valued leader behaviors. In the literature, collectivist attitudes, collective empowerment, and behaviors directed towards others, such as team potency, cohesion, team learning, team processes, collaboration, trust have been investigated (e.g., Boies & Howell 2009; Chi, Chung & Tsai, 2011) and found to contribute to favorable leadership outcomes. Similarly, Baumeister and Leary (1995) proposed that relationships that are characterized by meaningful interactions are the bases for well-being and adaptive functioning and as such are central to the concept of leadership. Trust, respect, and mutual support in workplace relationships are necessary foundations on which efficient leadership develops (Graen & Uhl-Bien, 1995). Therefore, creating an environment that nurtures and reinforces quality relationships between leaders and their teams would effectively facilitate perceptions of transformational leadership. Making sure that team members understand how their roles and responsibilities affect one another, and developing confidence and trust in team members to do their work with minimum supervision can have long-lasting performance improvement results. Indeed,

this study found that the team relationship skills subscale of relational-orienting behaviors was predictive of transformational leadership style.

Problem solving and counseling. Perhaps as other recent work suggests (Moynihan, Pandey and Wright, 2012), leadership has an indirect relationship with organizational behavior. This suggests that leaders, after establishing the routines, norms, traditions of transactional leadership, should consider how they might satisfy their followers' "higher-order" needs via by looking beyond their self-interest for the good of the group. Leaders need to get involved with staff in the problem-solving process, paying individualized attention, being available and responsive, and showing genuine interest in their subordinates' problems and concerns. Spending a significant amount of time counseling staff and giving them feedback can allow people to feel understood and this increases their confidence in their leaders. Effective handling of disagreements among team members and thinking ahead to see problems before they arise, as well as team involvement in the development of solutions to problems are all vital behaviors of effective leaders. The problem-solving and counseling subscale of relational-orienting behaviors was also predictive of transformational leadership style in this study.

Quality standards. Work quality is an outcome that is described as strongly connected to, if not definitive, of organizational performance (Rago, 1994; Scott, 2003; Swiss, 1992). There are varied challenges to focusing on quality and it is a major concern around the globe (Boyne and Walker, 2002). Although employee perceptions are not the only way to measure work quality, insiders are most intimately aware of how their organizations function (Brewer, 2006; Lipsky, 1980; Simon, 1997). This can refer to both internal organizational outcomes as well as external ones, such as those with customers and

suppliers. The evidence obtained from the data is that perceptions of work quality are tied to management effectiveness, as team members often look at their leaders who set high standards for quality as an example of quality to follow in their quest for excellence and outstanding results. This study found that the quality standards subscale of task-oriented behaviors was predictive of transformational leadership style, suggesting that expectation of high quality is congruent with exceptional leadership.

Delegation. Transformational leadership seems to shape an important component of organization performance – the availability and use of information. Leaders who use delegation strategies that provide autonomy support, quality information and instrumental help and structure, as well as more involvement with the employees have higher transformational leadership scores interventions that increase self-efficacy delegation style. Rather than merely pushing work downwards or telling others what they need to do, effective leaders get teams together to negotiate work assignments so that optimal outcomes can be achieved. In contrast, leaders who overload themselves with work when it should be delegated to others are perceived as less effective. Therefore, one way to promote transformational leadership perceptions would be to place emphasis on leaders' delegation behaviors. This could be achieved by providing teams with supportive and informative work settings that foster choice and solicit feedback, in addition to a mechanism by which they can follow up on delegated tasks to ensure objectives are met. In this study, the delegation subscale of task-oriented behaviors predicted transformational leadership style.

Motivation. The results suggest that subordinates of leaders who are motivated internally at work, and have a sense of enjoyment and trust with regards to their work are more

likely to perceive their leaders as transformational. As such, this study sheds light on the importance of motivation as a key factor in transformational leadership perceptions, and provides an additional explanation as to why certain leaders who are capable of inspiring their team members to perform are perceived to be more effective than others. This is consistent with earlier findings. For example, Wright et al (2012) suggested that transformational leadership is associated with high levels of follower motivation and goal clarity where they broaden and arouse the follower interest and generate awareness and acceptance of the purposes and mission of the collective. Leaders who are able to encourage teams and stimulate interest so that their teams engage in their jobs out of pleasure or from a sense of personal significance are viewed as more transformational. This study found that the motivation subscale of change-oriented behaviors predicted transformational leadership style.

Strategy. Business issues are complex, and survival depends on thinking and acting strategically. Leaders need to be able to stand back from the cut and thrust of daily life and examine the purpose of what they are doing. The challenge for a leader is to see the big picture and to understand the key interacting elements. Leaders who are perceived to have the ability to think ahead and see potential problems before they arise, conjuring up different images and scenarios and communicating their vision for the future are perceived to be more transformational. The strategy subscale of change-oriented behaviors predicted transformational leadership style in this study, indicating that subordinates found it important for leaders to be able to devise action plans to successfully achieve goals.

Limitations of the Study

Although this study offers important information on the behavioral determinants of transformational leadership, it has several limitations that should be noted. First, the research has been conducted primarily in the Middle East and with a predominantly Middle-Eastern population, and as such this may limit the ability to draw broader generalizations to other countries and ethnicities from the results. Second, transformational leadership behavior is complex, and factors other than behavioral ones (e.g. organizational, economic, political, psychological, and socio-cultural, etc.) can also influence perceptions of effectiveness. Perhaps future studies can address the impact of organizational factors such as working environment, stress, job satisfaction, and overall unit performance on transformational leadership perceptions. Third, this study incorporates self-report leader data, allowing for the possibility of common method bias (Fleenor, Smither, Atwater, Braddy, & Strum, 2010), where participants may sometimes provide less than accurate responses to the questions due to several reasons, among which are social desirability. For example, leaders might have wanted to be represented in a socially acceptable manner, or may not have recalled certain experiences as they occurred in objective reality. However, due to the interest in the differences in perspectives between leaders and followers, it was important to gather self-evaluations. To mitigate this bias, several procedural techniques that reduce evaluation apprehension were deployed in order limit common method bias, such as protecting respondents' confidentiality (Podaskoff, Mackenzie, Lee, & Podaskoff, 2003). Another factor that might contribute to the leniency bias is the fact that the raters were chosen by the leaders themselves as opposed to the human resources departments in their respective

organizations, and hence leaders might have been biased in choosing followers who would rate them more favorably. Although resorting to human resources departments for the selection of raters would reduce this bias, there are different challenges associated with this latter option such as the time it takes to navigate organizational networks, obtaining the needed approvals, and additional procedural measures pertaining to confidentiality. Given the timeframe allotted for the completion of this study, it was deemed best to have leaders nominate their own raters. Finally, this research relies on a hierarchical, leader-centric view of leadership that conceptualizes of leadership as a hierarchical, top-down process. Emerging forms of leadership research have started to explore the effect of collective influences that emerge from influence networks encompassing all organizational levels (DeRue & Karam, 2010), and has also begun to examine the differential effect of leadership behavior across organizations (Aime, Johnson, Ridge & Hill, 2010). Hence, perhaps a multiple domain approach that takes into consideration the superiors, colleagues, clients, and suppliers, as well as the reciprocal influence between subordinates and leaders might add further insight into the transformational leadership process.

Beyond these limitations, this study has several strengths that bolster its contribution to the transformational leadership literature. First, this study examines the relative importance of leader behaviors across a wide range of competencies, and, in contrast to prior studies, develops a theory for and tests how the differential effects of particular competencies can substantially influence perceptions of transformational leadership.

Future Directions

Transformational leadership has been found to be linked with higher levels of organizational productivity and efficiency in addition to well-being of employees, but the predictors of this leadership style have been questioned. The aim of this study was therefore to increase the understanding of the transformational leadership predictors, and to investigate behavioral factors that predict it. The results indicated that transformational leadership is related to relational and change-oriented behaviors, although improvements across the three behavioral domains can also predict higher effectiveness outcomes. On investigating the influence of self-awareness on follower ratings of transformational leadership, it was found that self-awareness and humility are important. This study integrates behavioral perspectives on leadership effectiveness and tests how different behaviors combine to predict transformational leadership as rated by subordinates. It is my hope that this study compliments the existing literature, and contributes to the development of an integrative understanding of leadership in organizations.

With the constant drive for innovation and the increasing demand for leaders who are more innovative contributors, there is a growing need for leaders with an entrepreneurial orientation who would lead transformations by supporting new ideas, seeking novelty and encouraging experimentation with creative processes that would result in new products, services and technologies. After evaluating the current research, it is somehow surprising that little is known when it comes to the link between transformational leadership and innovativeness. As such, there is a need for additional research in this area to address innovation orientation at the level of traits, skills and abilities. Future work should focus on the validation of socially-constructed model for

transformational innovativeness and the creation of evaluation instruments that would examine the relationship between innovation and transformational leadership.

Concluding Remarks

Notwithstanding the above limitations, this study may provide useful guidelines to organizations aiming to improve their leaders' transformational leadership behaviors and, consequently, perceptions. Creating environments that nurture and reinforce team relationships between leaders and their teams can facilitate better perceptions of transformational leadership. Also, through emphasizing the importance of supportive and informative work environments that foster positive feedback, provides choices, and acknowledges and accepts the perspectives of others, higher effectiveness scores can be achieved. By revealing the importance of motivational approaches and strategies and their link with perceptions of transformational leadership, this study offers valuable insights into what may contribute to the development of more efficient leaders. A third practical implication pertains to the improvement of leader selection, assessment, development and deployment processes. An enhanced understanding the relative importance of specific leader behaviors as predictors of organizational performance can help organizations make valuable enhancements to such practices, as the findings can stimulate and guide leadership development programs such as 360-degree feedback, action learning, coaching and mentoring, job assignments, and performance management and improvement.

The results suggest that leadership development initiatives need to target all three dimensions of leadership behavior: relational, task and change. Transformational leaders need to plan and manage work (task-oriented), care for and support their subordinates

(relational-oriented), and inspire and enable change (change-oriented). Accordingly, leadership development programs that target only one of these dimensions can result in effectiveness in one of those areas but not all. Although relational and change oriented behaviors seemed to be relatively stronger predictors of transformational leadership, it is recommended that leadership development programs cover all three dimensions of leader behavior sufficiently for optimal results.

Appendix A

Leaders Questionnaire

Code:

First Name..... Last Name.....

Title..... Age.....

Telephone Number..... Email.....

Gender F M

0 = Not at all 1=To a Little Extent 2 = To Some Extent 3 = To a Great Extent 4= To a Very Great Extent
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1. Listens well when others are speaking.
2. Contributes regularly to discussions at team meetings.
3. Is readily available to discuss problems.
4. Encourages others to develop their skills.
5. Articulates a compelling vision of the team's future.
6. Allocates tasks so that team members' abilities are used to meet organizational goals.
7. Makes sure team members understand how their roles and responsibilities affect one another.
8. Develops confidence and trust in others to do their work with minimum supervision.
9. Is a role model for 'quality' that others can follow.
10. Sets challenging but achievable targets for others.
11. Is an effective strategic thinker.
12. Coordinates and integrates the work of other team members.
13. Shares key problems and opportunities with other team members.
14. Encourages differing points of view to be put forward and discussed.
15. Ensures that team members regularly get together to discuss how well the team is working.
16. Involves the team in establishing key objectives.
17. Analyses situations clearly and logically.
18. Sets high standards.
19. Lets people plan their own way of achieving task outputs.
20. Ensures that team members value one another's contributions.
21. Matches the person to the job.
22. Recognizes the need for the team to gather information and develop new ideas.
23. Inspires team members to perform.
24. When he/she makes a commitment, it is delivered.

25. Communicates persuasively when speaking.
26. Asks questions rather than makes statements.
27. Summarizes well his/her understanding of what has been said.
28. Keeps others well informed.
29. Critically examines assumptions to discover potential weaknesses.
30. Is responsive to others' problems.
31. Encourages the team to explore new opportunities and promote itself to others
32. Positively addresses conflict issues that may arise among team members.
33. Determines own work priorities well.
34. Overloads himself/herself with work when it should be delegated to others.
35. Leads by example.
36. Is someone team members want to follow.
37. Establishes performance indicators against which outputs may be measured.
38. Encourages people to express their opinions and participate in discussions.
39. Communicates what is needed from other groups/teams in order to achieve team goals.
40. Interrupts others instead of listening.
41. Presses others effectively for improved performance.
42. Can make others feel optimistic about the future.
43. Develops high levels of trust with team members.
44. Effectively supports others when they are working on tasks which require new skills.
45. Ensures that the team is well organized to achieve its goals.
46. Is effective at communicating in writing.
47. Checks others' feelings on important matters.
48. Keeps in focus all elements of a complex issue.
49. Facilitates group discussions well.
50. Gathers and assesses information before making judgements.
51. Ensures that the team focuses on outputs as well as inputs.
52. Regularly reviews the performance of others to ensure that work allocation is optimal.
53. Focuses unwaveringly on clear goals.
54. Encourages the development of mutual respect.
55. Negotiates work assignments with team members.
56. Strives for excellence at work.
57. Gives recognition and establishes incentives to perform.
58. Effectively handles disagreements between his/her team and others.
59. Is able to think ahead and see problems before they arise.
60. Involves the team in the development of solutions to major problems and opportunities.
61. Organizes effective meetings so that team members can contribute to problem solving.
62. Encourages team members to co-operate with other groups which impact the team.
63. Encourages the establishment of goals that challenge the work group.
64. Positively helps others to learn from their mistakes.

65. Takes a stand on controversial issues affecting the team.
66. Knows what activities other team members prefer to be involved in.
67. Counsels team members to improve performance.
68. Engenders a good two-way discussion of issues.
69. Varies his/her communication style to match the needs of others.
70. Others feel confident about sharing their concerns with him/hers
71. Has a training and development plan for staff.
72. Knows 'where we are going' and 'how to get there'.
73. Allocates work so that team members have an opportunity to learn new skills.
74. Promotes loyalty and pride among team members.
75. Follows up on delegated tasks to gain results.
76. Has a focus towards client needs.
77. Represents the team well in discussions with senior management.
78. Asks for input from members of the team about matters that affect them.

Appendix B

Subordinate Questionnaire

Code:

Part 1

First Name(Optional)..... Last Name(Optional).....
Title..... Age

Telephone Number..... Email.....

Gender F M

You are answering questions about There is no time limit for completing the questionnaire, but it usually takes about 15 minutes. There are no right or wrong answers.

0 = Not at all 1=To a Little Extent 2 = To Some Extent 3 = To a Great Extent 4= To a Very Great Extent

1. Listens well when others are speaking.
2. Contributes regularly to discussions at team meetings.
3. Is readily available to discuss problems.
4. Encourages others to develop their skills.
5. Articulates a compelling vision of the team's future.
6. Allocates tasks so that team members' abilities are used to meet organizational goals.
7. Makes sure team members understand how their roles and responsibilities affect one another.
8. Develops confidence and trust in others to do their work with minimum supervision.
9. Is a role model for 'quality' that others can follow.
10. Sets challenging but achievable targets for others.
11. Is an effective strategic thinker.
12. Coordinates and integrates the work of other team members.
13. Shares key problems and opportunities with other team members.
14. Encourages differing points of view to be put forward and discussed.
15. Ensures that team members regularly get together to discuss how well the team is working.
16. Involves the team in establishing key objectives.
17. Analyses situations clearly and logically.
18. Sets high standards.

19. Lets people plan their own way of achieving task outputs.
20. Ensures that team members value one another's contributions.
21. Matches the person to the job.
22. Recognizes the need for the team to gather information and develop new ideas.
23. Inspires team members to perform.
24. When he/she makes a commitment, it is delivered.
25. Communicates persuasively when speaking.
26. Asks questions rather than makes statements.
27. Summarizes well his/her understanding of what has been said.
28. Keeps others well informed.
29. Critically examines assumptions to discover potential weaknesses.
30. Is responsive to others' problems.
31. Encourages the team to explore new opportunities and promote itself to others.
32. Positively addresses conflict issues that may arise among team members.
33. Determines own work priorities well.
34. Overloads himself/herself with work when it should be delegated to others.
35. Leads by example
36. Is someone team members want to follow
37. Establishes performance indicators against which outputs may be measured
38. Encourages people to express their opinions and participate in discussions
39. Communicates what is needed from other groups/teams in order to achieve team goals
40. Interrupts others instead of listening.
41. Presses others effectively for improved performance
42. Can make others feel optimistic about the future
43. Develops high levels of trust with team members
44. Effectively supports others when they are working on tasks which require new skills.
45. Ensures that the team is well organized to achieve its goals.
46. Is effective at communicating in writing.
47. Checks others' feelings on important matters.
48. Keeps in focus all elements of a complex issue.
49. Facilitates group discussions well.
50. Gathers and assesses information before making judgements
51. Ensures that the team focuses on outputs as well as inputs
52. Regularly reviews the performance of others to ensure that work allocation is optimal.
53. Focuses unwaveringly on clear goals
54. Encourages the development of mutual respect
55. Negotiates work assignments with team members
56. Strives for excellence at work
57. Gives recognition and establishes incentives to perform
58. Effectively handles disagreements between his/her team and others
59. Is able to think ahead and see problems before they arise

60. Involves the team in the development of solutions to major problems and opportunities
61. Organizes effective meetings so that team members can contribute to problem solving.
62. Encourages team members to co-operate with other groups which impact the team.
63. Encourages the establishment of goals that challenge the work group.
64. Positively helps others to learn from their mistakes.
65. Takes a stand on controversial issues affecting the team.
66. Knows what activities other team members prefer to be involved in
67. Counsels team members to improve performance
68. Engenders a good two-way discussion of issues
69. Varies his/her communication style to match the needs of others
70. Others feel confident about sharing their concerns with him/her
71. Has a training and development plan for staff.
72. Knows 'where we are going' and 'how to get there'.
73. Allocates work so that team members have an opportunity to learn new skills
74. Promotes loyalty and pride among team members.
75. Follows up on delegated tasks to gain results.
76. Has a focus towards client needs.
77. Represents the team well in discussions with senior management.
78. Asks for input from members of the team about matters that affect them.

Part 2

Judge how frequently the statements below fit
 The word 'others' may mean the team, clients, or group members.

0 = Not at All 1 = Once in a While 2 = Sometimes 3 = Fairly Often 4 = Frequently, if not Always

1. Makes others feel good to be around him/her.
2. Expresses with a few simple words what we could and should do.
3. Enables others to think about old problems in new ways.
4. Helps others develop themselves.
5. Tells others what to do if they want to be rewarded for their work.
6. Is satisfied when others meet agreed-upon standards.
7. Is content to let others continue working in the same ways always.
8. Others have complete faith in him/her.
9. Provides appealing images about what we can do.
10. Provides others with new ways of looking at puzzling things.
11. Lets others know how they are doing.
12. Provides recognition/rewards when others reach their goals.
13. As long as things are working, does not try to change anything.
14. Whatever others want to do is OK with him/her.

15. Others are proud to be associated with him/her.
16. Helps others find meaning in their work.
17. Gets others to rethink ideas that they had never questioned before.
18. Gives personal attention to others who seem rejected.
19. Calls attention to what others can get for what they accomplish.
20. Tells others the standards they have to know to carry out their work.
21. Asks no more of others than what is absolutely essential.

Appendix C

Consent Form – Leaders

Study Title: A Behavioral Approach to Understanding Leadership Effectiveness
Researcher: Niam Sinno
Version Date: <i>January 10, 2017</i>

- *Participation is voluntary*
It is your choice whether to participate in this research. If you choose to participate, you may change your mind and leave the study at any time. Refusal to participate or stopping your participation will involve no penalty or loss of benefits to which you are otherwise entitled.
- *What is the purpose of this research?*
The purpose of this research is to study the relationship between self and follower ratings and leadership style.
- *How long will I take part in this research?*
Your participation will involve filling an online or a paper questionnaire for the duration of 20 minutes.
- *What can I expect if I take part in this research?*
In addition to filling the online or paper questionnaire, you will be asked to discuss with your subordinates their willingness to participate on a voluntary basis, and to provide them with the details of the PI (both email and phone number). Using a random number generator, the PI will select 5 participants to fill two surveys (each survey will require approximately 20 minutes).
- *What are the risks and possible discomforts?*
There are no foreseeable risks or discomforts apart from providing the dedicated time.
- *Are there any benefits from being in this research study?*
We do not expect any direct benefits to you from your taking part in this research.
- *Will I be compensated for participating in this research?*
You will not be compensated for participating in this research.
- *If I take part in this research, how will my privacy be protected? What happens to the information you collect?*

The researcher will be replacing names with ID codes and keeping the key linking the names and ID codes in a secure location separate from the data. All data will be secured via an encrypted and password-protected file. Hard copies will be kept in a locked file cabinet. The researcher will be the only person viewing and analyzing the information in the questionnaires and this information will not be disclosed to your company, department, manager or subordinates.

➤ *If I have any questions, concerns or complaints about this research study, who can I talk to?*

The researcher for this study is *Niam Sinno Hayek* who can be reached at 009613827067, niamsinno@g.harvard.edu or orniamsinno@gmail.com. The thesis director is *Dr. Shelley Carson* who can be reached at 617-496-4967 or at carson@wjh.harvard.edu

- If you have questions, concerns, or complaints,
- If you would like to talk to the research team,
- If you think the research has harmed you, or
- If you wish to withdraw from the study.

This research has been reviewed by the Committee on the Use of Human Subjects in Research at Harvard University. They can be reached at 617-496-2847, 1350 Massachusetts Avenue, Ninth Floor, Suite 935 Cambridge, MA 02138, or cuhs@harvard.edu for any of the following:

- If your questions, concerns, or complaints are not being answered by the research team,
- If you cannot reach the research team,
- If you want to talk to someone besides the research team, or
- If you have questions about your rights as a research participant.

Appendix D

Consent Form –Subordinates

Study Title: A Behavioral Approach to Understanding Leadership Effectiveness
Researcher: Niam Sinno
Version Date: <i>January 10, 2017</i>

- *Participation is voluntary*
It is your choice whether to participate in this research. If you choose to participate, you may change your mind and leave the study at any time. Refusal to participate or stopping your participation will involve no penalty or loss of benefits to which you are otherwise entitled.
- *What is the purpose of this research?*
The purpose of this research is to study the relationship between self and follower ratings and leadership style.
- *How long will I take part in this research?*
Your participation will *involve filling an online or a paper questionnaire for the duration of 20 minutes.*
- *What can I expect if I take part in this research?*
You will be filling two online surveys, each for a duration of 15-20 minutes on behalf of the leader who nominated you. Your participation will be confidential.
- *What are the risks and possible discomforts?*
There are no foreseeable risks or discomforts apart from providing the dedicated time.
- *Are there any benefits from being in this research study?*
We do not expect any direct benefits to you from your taking part in this research.
- *Will I be compensated for participating in this research?*
You will not be compensated for participating in this research.
- *If I take part in this research, how will my privacy be protected? What happens to the information you collect?*
The researcher will be replacing names with ID codes and keeping the key linking the names and ID codes in a secure location separate from the data. All data will be secured via an encrypted and password-protected file. Hard copies will be kept in a locked file cabinet. The researcher will be the only person viewing and analyzing the information in the questionnaires and this information will not be disclosed to your company, department, manager or subordinates.

➤ *If I have any questions, concerns or complaints about this research study, who can I talk to?*

The researcher for this study is *Niam Sinno Hayek* who can be reached at 009613827067, niamsinno@g.harvard.edu or orniamsinno@gmail.com. The thesis director is *Dr. Shelley Carson* who can be reached at 617-496-4967 or at carson@wjh.harvard.edu

- If you have questions, concerns, or complaints,
- If you would like to talk to the research team,
- If you think the research has harmed you, or
- If you wish to withdraw from the study.

This research has been reviewed by the Committee on the Use of Human Subjects in Research at Harvard University. They can be reached at 617-496-2847, 1350 Massachusetts Avenue, Ninth Floor, Suite 935 Cambridge, MA 02138, or cuhs@harvard.edu for any of the following:

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- If you cannot reach the research team,
- If you want to talk to someone besides the research team, or
- If you have questions about your rights as a research participant.

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