A STUDY OF THE RELATIONSHIP BETWEEN SELF-CATEGORIZATION AND LEADERSHIP STYLES OF ROTC STUDENTS

by

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Abstract

This quantitative, non-experimental, explanatory, cross-sectional, survey research study explains the relationship between full range leadership theory and self-categorization theory. The target population of this study includes military leadership students of the United States Army Reserve Officer Training Corps (ROTC). Forward stepwise multiple linear regression was used to explain the relationship between the three full range leadership theory leadership styles and self-categorization theory trait variables. Three dependent variables of Transformational, Transactional, and Laissez-Faire Leadership Style Indexes were tested with nine independent variable indices of Conservatism, Patriotism, Warriorism, Charismatic/Value-Based, Team Oriented, Self-Protective, Participative, Humane-Oriented, and Autonomous. The results of this study support that a statistically significant relationship exists between full range leadership theory and self-categorization theory. A clear relationship was established between Transformational Leadership Style and the cross-cultural leadership attribute Humane-Oriented. A clear relationship was also established between Transactional Leadership Style and the Future Officer Survey value of Warriorism. No statistical significance was established between Laissez-Faire Leadership Style and the nine independent variables used in this study. These findings suggest that group values can be used as a predictor of leadership style within a group. Implications of this result are that scholars and practitioners can use group value and traits to predict leadership styles of the members of their groups. The ability to predict effective group leadership styles can improve organizational influence on organization members based on an understanding of leadership expectations by group members.

Dedication

"Wisdom is the principle thing; therefore, get wisdom: and with all thy getting, get understanding" (Proverbs 4:7). I would like to thank my Heavenly Father for the untold number of blessings he provides my family, to include the pathways that have been provided to complete my education!

I could not have completed my dissertation and doctoral degree without the support and patience of my wife. She has lovingly supported my career as an officer in the Army, deployment, moving around the globe, and the occupation of my free time with a formal education. Now is the time to reap the rewards of patience.

I pray that my dedication to a life of learning continues to inspire my children to improve their lives through education and understanding.

Finally, I would like to thank my mentor who had to deal with me. His constant push for completion and 24-hour support was instrumental in the completion of this dissertation! He has made the short list of people who have significantly influenced my life.

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CHAPTER 1. INTRODUCTION

Background of the Problem

The topic of this research study is to explain the relationship between self-categorization theory and full range leadership theory. Full range leadership theory identifies three leadership styles: (a) Transformational Leadership, (b) Transactional Leadership, and (c) Laissez-Faire Leadership Styles. Transformational Leadership "moves followers beyond their self-interest to the interests of a group, corporation, and society" (Golla & Johnson, 2013, p.338). Transactional Leadership "focuses on individual self-interests and motivates individuals through rewards" (Golla & Johnson, 2013, p.338). Laissez-Faire Leadership is described as "abdicates responsibilities avoid making decisions" (Robbins, Judge, & Sanghi, 2007, p.475). According to self-categorization theory, "individuals structure their social world in terms of *salient group* memberships" (Rabinovich & Morton, 2011) and their *comparative fit* to those salient groups (Reynolds, Turner, Branscombe, Mavor, Bizumic, & Subašić, 2010). Further, "self-perception is *depersonalized*, behavior becomes regulated by the norms and standards associated with the salient group membership" (Rabinovich, Morton, Postmes, & Verplanken, 2012).

Self-categorization theory states that "Human beings are both individuals and group members and therefore have both personal identity and social identity" (Turner & Reynolds, 2012, p.400). Social identity theory of leadership states, "organizations tend to

prefer leaders who are similar to a typical member rather than extraordinary" (Moss, 2011). This study explains the relationship between full range leadership theory indexes of Transformational Leadership Style Index (DV), Transactional Leadership Style Index (DV), and Laissez-Faire Leadership Style Index (DV) and self-categorization theory, indexes of Charismatic/Value-Based Index (IV), Team Orientation Index (IV), Participative Index (IV), Humane-Oriented Index (IV), Autonomous Index (IV), Self-Protective Index (IV) (House, Hanges, Javidan, Dorfman, & Gupta, 2010), Conservatism Index (IV), Patriotism Index (IV), and Warriorism Index (IV) (Franke, 2001). The target population of this study was students of the United States Army Reserve Officer Training Corps (ROTC).

The significance of this quantitative, non-experimental, explanatory, cross-sectional, survey research study to the field of Organization and Management is that this study will provide additional knowledge of self-categorization theory and self-categorization theory's relationship with leadership styles within a self-categorized group. This study explains a university student's comparative fit to a set of prototypical cross-cultural leadership attributes (House et al., 2010; Perkins, 2009; Sokoll, 2011) of self-categorization and group specific values of ROTC students (Franke 2001), and then juxtaposing these similarities next to the student's Transformational, Transactional, or Laissez-Faire Leadership style. Findings empirically extend the body of knowledge of self-categorization theory and full range leadership theory as effective tools to study organizations, organizational membership, and leadership styles of organizational members.

Statement of the Problem

The research literature on the relationship between self-categorization and leadership styles indicates that we know:

- A relationship exists between leadership styles and a leaders self-categorized comparative fit to a group (Hogg, 2001; Moss, 2011; Steffens et al., 2014; Quaquebeke, Knippenberg, & Eckloff, 2011).
- Full range leadership theory categorizes leadership styles as Transformational, Transactional, or Laissez-Faire and is based on leadership personality traits (Avolio & Bass, 2004).
- Self-categorization theory states that group membership is a function of self-categorization, a psychological function of the individual or self (Rabinovich et al., 2012; Wyer, 2010). Members associate themselves with groups based on their comparative fit to group attributes, values and attributes. The stronger the comparative fit of the individual to group attributes, and values, the greater the level of participation within the group (Connelly, 2010).
- Individuals not only cognitively determine fit to a group through alignment of attributes and values, but also assign expected leadership values and attributes to that of their leaders (Hogg, 2001; Moss, 2011; Steffens et al., 2014). Group members use existing developed mental images of an ideal leader, or prototype leader, to judge the quality and legitimacy of the assigned leader (Quaquebeke, Graf, & Eckloff, 2014; Quaquebeke et al., 2011). Group members use these self-categorized cognitive perspectives to legitimize the

leadership of a group (Quaquebeke et al., 2014; Quaquebeke, & Knippenberg, 2012; Quaquebeke et al., 2011; Sokoll, 2011).

However, what we do not know is how are attributes and values of self-categorization (House et al., 2010) related to the leadership styles of students of a military leadership program? More specifically, what explains the relationship of self-categorization attributes and values to a person's full range leadership style of Transformational, Transactional, and Laissez-Faire among a group of students that are self-categorized as students of a military leadership program?

A limited number of research studies exist on the relationship between self-categorization theory and leadership (Hogg, 2001; Steffens et al., 2015). But, no studies exist that explain the relationship of self-categorization theory to leadership styles of full range leadership theory. This gap in the literature indicates an area of study where research is needed.

Purpose of the Study

The purpose of this quantitative, non-experimental, explanatory, cross-sectional, survey research study is to explain the relationship between self-categorization theory cross-culture leadership constructs of Charismatic/Value-Based, Team Oriented, Participative, Humane-Oriented, Autonomous, and Self-Protective, as measured by the GLOBE Culture and Leadership Scales (House, Hanges, Javidan, Dorfman, & Gupta, 2006), self-categorization theory constructs of Conservatism, Patriotism, and Warriorism, of students of a military leadership development program as measured by the Future Officer Survey (Franke, 2001), and full range leadership theory leadership styles of Transformational, Transactional, and Laissez-Faire (Bass & Avolio, 1995). Findings of

this research contribute to the body of knowledge by answering the research problem and explaining a relationship that exists between full range leadership styles and self-categorization in-group values (Bergh, Akrami, & Ekehammar, 2011). Results of this study will provide practitioners and scholars with a benchmark for future group leadership studies by explaining how emphases of group self-categorization values are related to the salience of group membership. By understanding what leadership styles are more effective with a known set of self-categorized group values, scholars and practitioners can more effectively design studies to understand group leadership choices, and align groups with leadership styles that are more effective for the needs of a group.

Research Questions

Research Question 1

To what extent does the Charismatic/Value-Based Index (IV), Team Oriented Index (IV), Participative Index (IV), Humane-Oriented Index (IV), Autonomous Index (IV), and Self-Protective Index (IV), as measured by the GLOBE Culture and Leadership Scales (House et al., 2006), and the Conservatism Index (IV), Patriotism Index (IV), and Warriorism Index (IV), as measured by the Future Officer Survey (Franke, 2001), explain the variation in Transformational Leadership Style Index (DV) as measured by the MLQ 5X Leader/Self Form (Bass & Avolio, 1995)?

Research Question 2

To what extent does the Charismatic/Value-Based Index (IV), Team Oriented Index (IV), Participative Index (IV), Humane-Oriented Index (IV), Autonomous Index (IV), and Self-Protective Index (IV), as measured by the GLOBE Culture and Leadership Scales (House et al., 2006), and the Conservatism Index (IV), Patriotism Index (IV), and

Warriorism Index (IV), as measured by the Future Officer Survey (Franke, 2001), explain the variation in Transactional Leadership Style Index (DV) as measured by the MLQ 5X Leader/Self Form (Bass & Avolio, 1995)?

Research Question 3

To what extent does the Charismatic/Value-Based Index (IV), Team Oriented Index (IV), Participative Index (IV), Humane-Oriented Index (IV), Autonomous Index (IV), and Self-Protective Index (IV), as measured by the GLOBE Culture and Leadership Scales (House et al., 2006), and Conservatism Index (IV), Patriotism Index (IV), and the Warriorism Index (IV), as measured by the Future Officer Survey (Franke, 2001), explain the variation in Laissez-Faire Leadership Style Index (DV) as measured by the MLQ 5X Leader/Self Form (Bass & Avolio, 1995)?

Significance of the Study

The significance of this study to the field of Organization and Management is that this study provides additional knowledge of self-categorization theory and full range leadership style within a self-categorized group. This study explains a university student's comparative fit to a set of prototypical cross-cultural leadership attributes (House et al., 2010; Perkins, 2009; Sokoll, 2011) of self-categorization and group specific values of ROTC students (Franke 2001), and then juxtapose these similarities next to the ROTC student's full range leadership style. Findings will empirically extend the body of knowledge of self-categorization theory and full range leadership theory as effective tools to study organizations, organizational membership, and leadership styles of organizational members.

Definition of Terms

Autonomous is characterized by an independent, individualistic, and self-centric approach to leadership (Hoppe, 2007).

Charismatic/Value Base stresses high standards, decisiveness, and innovation; seeks to inspire people around a vision; creates a passion among them to perform; and does so by firmly holding on to core values (Hoppe, 2007).

Conservatism is a commitment to traditional values and ideas, and the degree of government involvement in individual lives (Franke, 2001). Specific to this study, conservatism is defined as a respondent's attitudes toward government involvement in individuals' lives.

Humane-Oriented stresses compassion and generosity; and is patient, supportive, and concerned with the well-being of others (Hoppe, 2007).

Laissez-Faire Leadership Style is non-transactional, addressing problems by procrastination or waiting until the problem is self-address. (Bass & Avolio, 2000).

Participative encourages input from others in decision-making and implementation; and emphasizes delegation and equality (Hoppe, 2007).

Patriotism is a "degree of agreement with a series of statements concerning allegiance and loyalty to their respective home country and their attitudes toward serving and fighting for that country" (Franke & Guttieri, 2009). Specific to this study, Patriotism is defined as a respondent's level of agreement concerning their allegiance and loyalty to the United States and their attitudes towards fighting for their country.

Self-Protective (and group-protective) style emphasizes procedural, status-conscious, and face-saving behaviors; and focuses on the safety and security of the individual and the group (Hoppe, 2007).

Team Oriented instills pride, loyalty, and collaboration among organizational members; and highly values team cohesiveness and a common purpose or goals (Hoppe, 2007).

Transformational Leadership Style intrinsically influences subordinates to accomplish beyond what is reasonably expected of them (Deconinck & Beth, 2013, p. 205). The Transformational Leadership model used in this study follows the currently supported five factor model: (a) idealized influence - attributes, (b) idealized influence - behaviors, (c) inspirational motivation, (d) intellectual stimulation, and (e) individualized consideration (Watkins, 2013).

Transactional Leadership Style uses societal exchanges and compensation, such as (a) contingent rewards and (b) active management-by-exception, (Bass & Avolio, 2000) to influence others to accomplish goals through extrinsic motivation.

Warriorism is the "attitudes toward war fighting, expectations about fighting in a war or combat, and the degree of personal satisfaction expected from participating in combat" (Johansen, Laberg, & Martinussen, 2013). Specific to this study, warriorism is defined as a respondent's attitudes toward the military's warfighting and peacekeeping roles, and the personal satisfaction they expect U.S. soldiers to gain from participating in warfighting and peacekeeping missions.

Assumptions and Limitations

Assumptions

In this section assumptions are made about the respondents and their relationship to this study. Some of the assumptions are based on information found in the literature and some are based on demographics of the respondents, such as time in the ROTC and gender. The results of these assumptions are discussed in Chapter 5 and are as follow:

1. Individuals choose the groups to which the associate (Turner & Reynolds, 2012). Within self-categorization theory this research project assumes that people are free to choose the groups to which they belong. This assumption loses credibility with the formation of groups at higher echelons, such as citizenship, and minority groups (Armenta, Knight, Carlo, & Jacobson, 2011). But, for this research project the assumption is made that group membership is made by choice.
2. Individual leadership style can be associated with full range leadership model constructs of Transformational Leadership Style, Transactional Leadership Style, and Laissez-Faire Leadership Style. Full range leadership theory assumes that leadership styles are tied to the characteristic of an individual and the assumption of this research is that characteristic is related to group values and attributes. Theoretical framework exists that leaders are made of the same values and attributes of their followers (Moss, 2011; Quaquebeke et al., 2014; Quaquebeke, & Knippenberg, 2012; Quaquebeke et al., 2011; Salter, Harris & McCormack, 2014).

3. ROTC students associate themselves with the values of Conservatism, Patriotism, and Warriorism (Franke, 2001).
4. ROTC students as aspiring military leaders will associate with cross-culture leadership attributes of Charismatic/Value-Based, Team-Oriented, Self-Protective, Participative, Humane-Oriented, and Autonomous (House et al., 2010).
5. The Military Science Level and the seniority of an ROTC student affect the comparative fit of ROTC students to the values and attributes of the group (Reynolds et al., 2010).
6. A gender expectation difference exists within ROTC students based on social gender roles (Athenstaedt, Heinzle, Lerchbaumer, 2008).

Limitations

Although the participants of this group are of legal age and held accountable by law for their decisions as adults, some members of the group under study only recently crossed the threshold to adulthood. Those survey respondents that recently crossed the right of passage into adulthood may have an experience base maturation that affects their opinions and decision-making process. For some of the respondents, their cognitive processes are still transitioning from the values, traditions, and thought process of their parents and friends into their own independent thought. Lack of life experience increases the possibility respondents may have engaged in hypothesis guessing (Bender, Rothmund, & Gollwitzer, 2013).

The newness of the younger students to this study is a limitation to this research study but provides useful information to self-categorization theory. Anticipated is the

fact that over time the ROTC group members *depersonalize* and conform to the values and attributes of the group. The primary purpose of this research is to explain the relationship of leadership styles to self-categorized group values and attributes. The ability to show changes to this relationship as students progress from freshmen to seniors enhances the richness of the information provided to the leadership body of knowledge. However, this immaturity of thinking has the potential to introduce statistical outliers.

Organization of the Remainder of the Study

Gaps are present in the existing study of leadership and how leaders share commonalities within their group. This study researched and examined the framework of self-categorization values of a group of leadership students enrolled in a military leadership program, and the relationship of their values and attributes to their full range leadership styles. The research effort was focused on better defining the relationship of leaders to the groups to which the lead and expanding the body of knowledge on leadership.

The literature review in Chapter 2 is organized around the following two theories and their sub-components:

Full range leadership theory

1. Transformational Leadership Style
2. Transactional Leadership Style
3. Laissez-Faire Leadership Style

Self-categorization theory

1. Comparative Fit
2. In-Group/Out-Group

3. Group Salience

4. Depersonalization

Literature was also reviewed to help understand the relationship between these two theory's and the ROTC group that would be used to study the relationship.

The literature review begins with an explanation of the two theories to include some of the history that lead to their current understanding. Following this definition, the gap in the literature is discussed along with how the gap is not discussed within current leadership models. The literature gap leads into discussion of how the body of knowledge acknowledges that the gap exists and is trying to close the gap with research into grounded theory that includes implicit leadership theory. The remainder of the literature review discusses how this research will explain the relationship between self-categorization theory and full range leadership theory to close the gap from a different paradigm than is currently explained by leadership theory.

Chapter 3 will define the methodology of how this study will explain the relationship between full range leadership theory and self-categorization theory using a student body of ROTC students. Chapter 4 will explain the results of the study and the effectiveness of the research tool in explaining the relationship between full range leadership theory and self-categorization theory. Chapter 5 will summarize the survey finding and provide concluding remarks about the application of the survey results. Chapter 5 conclusions will provide thoughts and discussion on the application of the survey results to theory and praxis, and then make recommendation on where future studies could continue to improve on explaining the relationship of full range leadership theory and self-categorization theory.

CHAPTER 2. LITERATURE REVIEW

The decision to study the full range leadership and full range leadership's relationship to self-categorization theory started from a paper written by Dr. Volker Franke (1997). Prior to the events of 9/11 the Cold War had ended, the United States military was drawing down forces and the American Armed Forces were increasingly involved in operations-other-than-war. Since Dr. Franke wrote *Warriors for Peace: The Next Generation of U.S. Leaders* (1997) the United States has been in two major conflicts in the Middle East and continues to fight terrorism globally. The question that came from this paper was, "Did the same values and traits that Franke tested in 1995 still exist within the initial-entry-officers that were entering the military in 2016?" Developing this question, and applying the question to leadership studies, the question evolved into, "What leadership characteristics of traits, values, attributes and behaviors exist within a group of future officers?" In the interim of reviewing available literature, additional research lead to finding theory explaining that groups exist because of individual self-categorization (Turner & Reynolds, 2012), or self-stereotyping (Bennett & Sani, 2008; Veelen, Otten, & Hansen, 2013). Refining the question more to a question that could be quantitatively explored, the question morphed into "How are leadership, group categorization, and the choice of university students tied together to develop military officers?"

Using the question, "How are leadership, group categorization, and the choice of university students tied together to develop military officers?" literature was reviewed on available studies and instruments that could be used to measure leadership, values and attributes of a group, and why the study should use the Army Reserve Officer Training Corps (ROTC) as the sample population. The following theories, and the instruments that accompany these theories, were chosen on the basis of ready material, validated instruments, and constructs that were specific to leadership, and military officer training. From the literature two well-documented theories were chosen, full range leadership theory (Avolio & Bass, 2000) and self-categorization theory (Turner & Reynolds, 2012). In spite of the extensive testing and articles available on both theories, no literature exists connecting them together.

The literature revealed available instruments to be used that would study these two theories. The choice of a survey instrument to measure leadership attributes was based on attributes that were common in cross-culture leadership. The Global Leadership and Organizational Behavior Effectiveness (GLOBE) Project (House et al., 2006) is one of the largest, collecting data from 17,300 participants in 951 organizations across 62 countries, and is built on the ground breaking work of Geert Hofstede on Cultural Dimensions (House et al., 2006). The Future Officer Survey was chosen because of the Future Officer Survey's success in identifying values associated with cadets both from the ROTC and the United States Military Academy at Westpoint. Full range leadership theory is currently one of the most studied leadership theories covering a wide spectrum of leadership dimensions and is inseparably tied to the survey instrument, the Multifactor

Leadership Questionnaire (Avolio & Bass, 2000). Further information on these theories and their instruments are explained over the next several pages.

Methods of Searching

Literature used to define the background of this study and set the theoretical foundation was found through digital peer review articles and studies from multiple online libraries. EBSCOhost and ProQuest were the primary databases. Database searches were refined to find publications in the last seven years that discussed the topics of full range leadership theory, self-categorization theory, leadership traits, leadership and the military, leader categorization, Implicit Leadership Theories, and value and attribute orientation of students. The literature provides the following background details regarding the problem of explaining the relationship between self-categorization theory and full range leadership theory.

Full Range Leadership Theory

Western society has actively studied leadership since the 19th Century (Carlyle, 1907). Since the popularity of the Great Man Theories of Thomas Carlyle (1907) in 1840, many theorists have approached the study of leadership by looking at leadership through different lens, such as traits, attributes, behaviors, styles, situations, contingencies, followership and the list goes on. Key authors to the introduction of leadership through the lens of Transformational Leadership and Transactional Leadership were Max Weber (1947), James Burns (1978), and Bernard Bass (1981). James Burns (1978) in his book *Leadership,* built on Max Weber's Transactional Leadership theory and introduced the concept of Transformational Leadership and seeing the two leadership styles at opposite ends of the spectrum. Bernard Bass (1981) further expanded on Burn's

ideas and developed the idea that Transformational and Transactional Leadership were not at opposite ends of the spectrum but complement each other (Bass, 1990). Today Bass and Avolio are the contemporary leaders of Transformational and Transactional Leadership studies. Bass and Avolio's theory of full range leadership theory continues to expand the subject of Transformational and Transactional Leadership presenting the full range leadership model that includes the entire leadership spectrum from Transformational to Laissez-Faire Leadership (see Figure 2).

To understand the explanation of how full range leadership styles are related in this study requires an understanding of full range leadership theory's components. The components of full range leadership theory are divided into three leadership styles:

1. Transformational Leadership Style
2. Transactional Leadership Style
3. Laissez-Faire Leadership Style

Transformational leaders are able to inspire performance of individuals and organizations by influencing action through intrinsic motivation, improving follower work attitudes and performance (Zhu, Sosik, Riggio, & Yang, 2012). Transactional leaders influence the decision of others through extrinsic means, trading social transactions for social exchanges (Robbins, Judge, and Sanghi, 2007) and manifest these social exchanges through the use of contingent reward, and active and passive management by exception (Avolio, Bass, & Jung, 1999). Laissez-Faire leaders are non-transactional, avoid making decisions, and wait for problems to resolve themselves (Chaudry & Jarved, 2012).

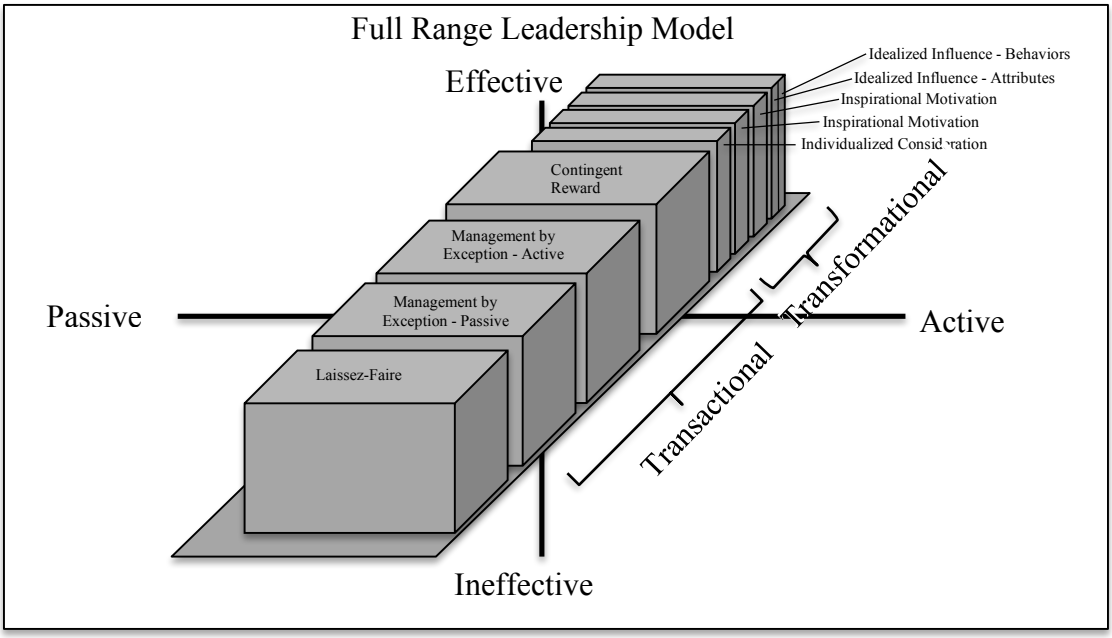

Figure 1. Full range leadership model (Bass & Avolio, 2007). An illustration of full range leadership theory.

Transformational Leadership Style

The full range leadership theory platform for Transformational Leadership Style initially consisted of four leadership constructs (Bass, 1999), (a) idealized influence (charisma), (b) inspiration, (c) intellectual stimulation, and (d) individualized consideration. Substantive criticism from numerous researchers prompted Bass and Avolio to revise the idealized influence construct from idealized influence related to the leader's behaviors, to idealized influence attributes and behaviors (Avolio & Bass, 2000). The current supported transformational leadership model has five factors: (a) idealized influence - attributes, (b) idealized influence - behaviors, (c) inspirational motivation, (d) intellectual stimulation, and (e) individualized consideration (Avolio & Bass, 2004). *Transformational Leadership Style* is a leadership style of inspiration, influencing subordinates to accomplish more than what is reasonably expected of them (Deconinck & Beth, 2013, p. 205) and is the basis for charismatic leadership (Bass & Avolio, 1993).

Transformational leaders are able to influence subordinates to accomplish beyond what is reasonably expected of them (Deconinck & Beth, 2013, p. 205). The Pseudo-Transformational Leader is a leader that transforms a group, but whose tenants cannot sustain the group for an extended period. A notorious example of Pseudo-Transformational Leadership is Adolph Hitler. His leadership tactics were questionable but his skills as a leader were influential enough to move an entire nation to act. "A central aspect of transformational leadership theory is that the actions of the leader will motivate followers to perform at a higher level" (Deconinck & Beth, 2013).

Most people identify more with the tenants of transactional leadership, but aspire to become those types of leaders that are seen as transformational (Golla & Johnson, 2013, p. 341). "Transformational Leadership has been the dominant leadership theory because of the vast number of studies showing its positive relationship to a variety of employee attitudes" (Deconinck & Beth, 2013). Transformational leadership is more effective in organizations where growth and motivation require creativity and guidance (Chaudry & Javed, 2012), and less effective when the organization is composed of highly skilled and intrinsically motivated employees (Chaudry & Javed, 2012).

Transactional Leadership Style

Transactional Leadership is a leader-follower relationship that is based on exchanges. Leadership influence instead of being based on an intrinsic drive to excel is instead based on a give-and-take relationship between leader and follower. The seminal work for Transactional Leadership began with Max Weber in 1947 and Bernard Bass in 1981. The grounded research that empirically gave credence to this leadership approach

was the "Ohio State studies, Fiedler's model, path-goal theory, and the leader participation model" (Robbins, 2005, p. 328).

Robbins described transactional leaders as, "leaders who lead primarily by using social exchanges for transactions" As cited by (Chaudry & Javed, 2012, p. 259). Influential powers of the transactional leader are limited to compensation with strategies including (a) contingent rewards (Avolio & Bass, 2004) and (b) active management-by-exception (Avolio & Bass, 2004). Contingent rewards include motivational tools, such as bonus and pay raises. In exchange for an employee's help, transactional leaders may offer additional time off the following week. Management-by-exception is a transactional leader's feedback system where they either actively or passively, support contingent rewards by identifying and correcting deficiencies. Managerial literature also refers to this process using the terms *supervise* and *refine*. When supported standards of work are violated or employees fail to meet organizational expectations, active transactional leaders take corrective action (Bass & Avolio, 2000). Passive transactional leaders procrastinate when making important decisions to let the problem self-address. (Bass & Avolio, 2000).

Laissez-Faire Leadership Style

Laissez-Faire Leadership is a passive style of leadership. Laissez-Faire leaders use an abstention form of leadership, delegating decision-making and task management to the follower (Bass & Avolio, 1995). Laissez-Faire leaders avoid taking action or involving themselves on important actions, maintaining a *laissez-faire*, or *leave to let happen* non-transactional management attitude (Bass, 1999). The Laissez-Faire leader expects followers to solve problems on their own and gives complete freedom to

members of the group to make decisions. This style can be effective when subordinates are highly skilled or capable of working out problems on their own (Chaudry & Javed, 2012). This style is less effective when followers are not motivated or do not have the experience to resolve situations with which they are unfamiliar (Chaudry & Javed, 2012).

Full Range Leadership Theory Use in Practice

Self-Categorization Theory

To understand the explanation of how self-categorization theory and full range leadership styles are related in this study requires an understanding of the components of each theory used in this study. The components of self-categorization theory used in this research project are divided into the following:

1. Comparative Fit
2. In-Group/Out Group
3. Group Salience
4. Depersonalization

Self-categorization theory acknowledges that people may see themselves as belonging to many groups at various levels of inclusiveness, none of which is automatically given primacy over others (Turner & Reynolds, 2012). The four components listed above contribute to how group members see themselves belonging to those groups.

Self-categorization theory, instead of being thought of as a theory of psychological and sociological group membership, argues that a member of a group belongs to a collective only to the degree to which they internally define themselves within that group, "a sort of sociological determinism" (Reynolds, Jones, & Subašić, 2013, p. 240). This is different from sociological categorization which assigns members

to groups based on shared values and commonalities (Reynolds et al., 2013) or psychological groups that are "psychologically significant for the members, to which they relate themselves subjectively for social comparison and the acquisition of norms and values" (Turner et al., 1987). Individuals determine levels of participation through *Self* using assumptions about behaviors, cognitions, and feelings.

Grouping, categorizing, and the use of taxonomies are a required human cognitive function (Smith & Ell, 2015). In a kitchen, a cook organizes and categorizes the contents of the kitchen for ease of food preparation. Pots and pans are stored on a shelf or cupboard. Fresh fruits and vegetables are stored in a refrigerator. Meats, fruits, vegetables, cheeses, liquids and spices are divided up into their respective groups. Traditional categorizations of groups have been completed in much the same way. Boy Scouts, Girl Scouts, 4H Club members, Military servicemen, lawyers, doctors, construction workers and so forth are recognized as groups by observed united commonalities. Even within the constructs of self-categorization, conformation of a group category according to the perceiver's knowledge base is termed *Normative Fit* (Haslam, Adarves-Yorno, Postmes, & Jans, 2013). However, unlike the fruits and vegetable of the kitchen, categorization of humans into groups is not normally based on the perceiver but the individual. A Boy Scout is a Boy Scout because he chooses to live the Scout Oath and Scout Law, not because he is a young man with a scout uniform that knows how to tie a square knot.

An argument exists that self-categorization theory loses theoretical strength in higher categorical echelons (Armenta et al., 2011). Examples include, citizens of Great Britain are members of the state and considered British because they were born in

England, not because they chose to be English (Cooper, 2013). Or, young men and women associate themselves with cultural social expectations of gender, boys are expected to be masculine and girls feminine (Athenstaedt et al., 2008; Bennett & Sani, 2008; Lee, Lee, Hu, & Kim, 2015). However, the truth that certain defined and non-self-imposed visual and state observed values and attributes place a person into a group based on the perceiver's observation, may not be the truth. The observed person may have been involuntarily introduced into different groups but not fit in with, be supported by, or see their national and gender identity as salient (Vedina & Baumane, 2008). Group participation is a personal cognitive commitment. At some point the Englishman may decide to naturalize with another nation, and the boy or girl to associate with the LGBTQ community.

Comparative Fit

Fit is the distance between characteristics of social inputs and their association with a person's self-categorization stimuli (Frain, 2014). Compatibility of social input and self-categorization stimuli is assessed through the *meta-contrast principle* (Frain, 2014). The meta-contrast principle is the idea that the dissonance between social stimuli is smaller within an in-group and greater with out-groups. Meta contrast can be illustrated by examining two persons. Person 1 and Person 2 when at a ball game associate themselves with opposing teams based on geographic location, but at work Person 1 and Person 2 are soldiers in the same unit, working side-by-side to complete complex tactical maneuvers. "A key idea here is that, to the extent that a given group membership is contextually salient or provides an ongoing basis for social identification, it provides a basis for self-categorization whereby the group becomes self" (Cruwys,

Haslam, Dingle, Haslam, & Jetten, 2014, p.218). Based on the stimuli that associate them with each group, people may see themselves at one moment as inclusive to opposing sports teams and then under different conditions see themselves as inclusive to the same military group.

The potential libraries of comparative fit social stimuli variables that associate a person to a group are plentiful. Comparative fit variables used in this research are two-fold. First the culture leadership attributes of the participants are measured by the variables of Charismatic/Value-Based Index, Team Oriented Index, Participative Index, Humane-Oriented Index, Autonomous Index, and Self-Protective Index, as measured by the Global Leadership and Organizational Behavior Effectiveness (GLOBE) Project Leadership Scales (House et al., 2006). Self-categorization theory constructs of Conservatism, Patriotism, and Warriorism, of students of a military leadership development program as measured by the Future Officer Survey (Franke, 2001) are used to identify the comparative fit of respondents to known group values of military students.

In-group/Out-group

As individuals align themselves with groups they accentuate their affiliation by polarizing in-group and out-group definitions (Passini & Battiselli, 2014; Rubin, 2012). Using the Future Officer Survey self-categorization value of Warriorism as an example, one would expect university students in an ROTC military leadership program to show a common high value index score demonstrating Warriorism as an in-group value. Establishing Warriorism as an in-group value of ROTC students, study results should show similar values scores across the board of participants. Commitment to the ROTC and the military lifestyle varies within the ROTC student population showing extreme in-

group alignment, while other ROTC students show a more conservative alignment. As ROTC student's progress in the ROTC program and depersonalization becomes a factor in student values, in-group values should become consistently stronger (Haslam & Ellemers 2011; Haslam et al., 2013). The exception to this would be first year cadets that may be attracted to the program because of a scholarship offer. Many of the first year students having recently graduated high school, and left the safety net of home, have relied on the value set of their parents. This brief time of self-discovery and their limited exposure to competing student groups within the university would allow for a variation from the excepted in-group values.

Evidence supports that in-groups work harder when they can compare themselves to a lower status out-group (Pettit & Lount, 2010). This is in line with research that stronger group salience equals higher performance (Dick, Stellmacher, Wagner, Lemmer, & Tissington, 2009; Zhao, Kessel, & Kratzer, 2014) and complies with research that in-group tolerance for out-group activities is lower when the in-group is threatened (Falomir-Pichastor, & Mugny, 2011). In opposition to the positive effects of high group salience, individual identification as a member of an out-group can negative impact a person's wellbeing, and societal utility (Schöb, 2013). Soldiers on a battlefield can be used as an extreme out-group/ in-group comparison. Soldiers are willing to go to battle to defend against those that they see as advisories to their way of life, and in defense of their patriotic in-group. Conflict and rivalry are strong reasons for humans to form groups (Ewing, Wagstaff, & Powell, 2013). So strong is the definition of the out-group and in-group that in-group members are labeled friendlies, and out-group members are enemies.

Group Salience

Salience of a group is the act of an individual making a group prominent (Haslam et al., 2013). According to self-categorization theory, "individuals structure their social world in terms of salient group memberships" (Rabinovich & Morton, 2011). Using the previous example of soldiers belonging to opposing ball teams, the Army is a salient group to both service members, however one service member may be a member of the Miami Marlins fan club, while the other service member a regular season pass holder for the New York Mets. In this scenario both Soldiers have two salient groups, however in one of the groups, both soldiers belong to the other soldier's out-group.

Relevance of group salience to leaders, managers, and organizers is that groups with higher salience achieve better results (Dick et al., 2009; Lam & Liu, 2014), overcoming demographic diversity (Schaffer & Riordan, 2011; Seong & Hong, 2013), and have a higher degree of self-governance (Goldman, Paddock, & Cropanzano, 2009). Even in emergency situations, survivors that bonded in response to dangerous events had a greater sense of fate with the group than those that practiced more solidaristic behaviors (Drury, Cocking, & Reicher, 2009). Within the political realm, if minority group salience with the majority authoritative figure is low, the minority collectively feels validated to challenge the authority of the majority (Subašić, Reynolds, & Turner, 2008). If salience is a key factor in increased group productivity, and effective group leaders are those that share common values and attributes with the group, one would expect highly effective groups to be those with strong salience to the group values and attributes.

Group salience increases with clarity of a group's established identity (Veelen et al., 2013), and can apply to groups within larger groups (Millward & Haslam, 2013). An

example of this would be a young Hispanic female who is a mechanical engineering student at an Ivy League university. Categorically this student is a student of a prominent university. However, within the university she may also align herself with several sub-groups, such as career bound women (Athenstaedt et al., 2008), becoming a member of an ethnic minority student group, a STEM student group, an intercollegiate robotics competition team, or a female student body organization. Self-categorization theory states that, "Human beings are both individuals and group members and therefore have both personal identity and social identity" (Turner & Reynolds, 2012, p.400).

Depersonalization

Depersonalization is the process of an individual accepting and internalizing group values and attributes. "Self-perception is depersonalized, behavior becomes regulated by the norms and standards associated with the salient group membership" (Rabinovich et al., 2012). Discussed earlier in Chapter 2 is, the concept that by the process of *comparative fit*, persons associate themselves with groups based on the similarities of their values and attributes to that of a group. As salience of the group becomes stronger to the individual, that individual will accept and assimilate other values and attributes of the group, that were not already part of their intrinsic values through the process of depersonalization (Haslam et al., 2013; Novelli, Drury, Reicher, & Stott, 2013; Sim, Goyle, McKedy, Eidelman, & Correll, 2014). As individual's commitment to a group becomes stronger, they are willing to accept group values and attributes that are not inherent to their own character. An example of how depersonalization takes place is through the social identity affirmations enforced through social media networks, such as Facebook (Chan, 2014; Mou, Miller, & Fu, 2015). An Individual who encounters a

problem they have never seen before, may ask their friends on Facebook how they would solve the problem. Instead of formulating a solution based on personal values and insight, that person will receive and use answers that are aligned with the groups thoughts and values.

Full Range Leadership Theory Viewed Through Self-Categorization Theory

The theoretical foundation of this study is based on self-categorization theory and full range leadership theory. Self-categorization theory is used to explain a relationship between self-categorized group values of group members to the leadership styles defined by full range leadership theory, which are Transformational, Transactional, and Laissez-Faire Leadership styles. Figure 1 provides an illustrated example of how these two theories interact. Each of the four circles contains values and attributes. The largest circle that envelops the other three circles represents the values and attributes of the group. The circles of Transformational, Transactional, and Laissez-Faire Leadership are the values and attributes of a leader and are placed at the center of the group, as the leader is the embodiment of the group with values and attributes that distinguish them as the leader. Although not discussed in this study the leadership circles overlap, as most leaders are not purely Transformational, Transactional, or Laissez-Faire Leaders but a combination of all three (Bass 1990). Together the two theories of self-categorization theory and full range leadership theory and the relationship between the two theories are the lens through which the research problem and research question were viewed.

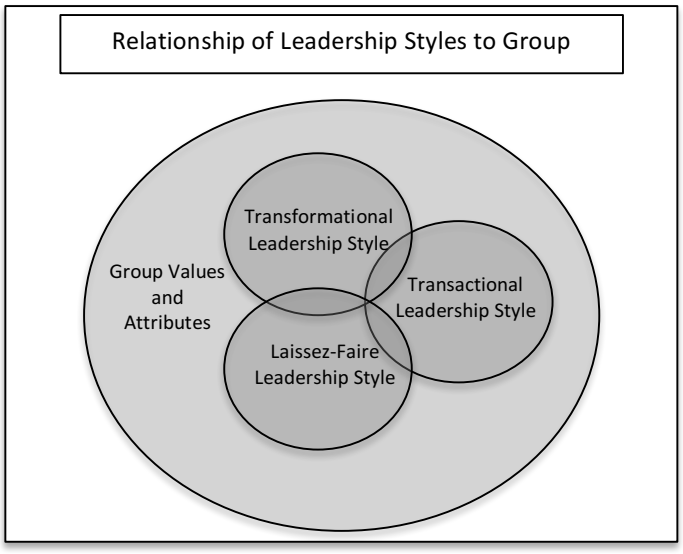

Figure 2. Relationship of Leadership Styles to Group Values and Attributes. This figure illustrates how full range leadership styles nest within self-categorized group values and attributes.

Self-categorization theory explains that group membership cannot be fully explained by traditional analytical categorizations, taxonomies, and typologies, but instead is a psychological function of the individual or self (Rabinovich, Morton, Postmes, &Verplanken, 2012; Wyer, 2010). "When a social identity is salient, people conceive of themselves as interchangeable with other members of the social in-group, and their focus shifts to in-group characteristics" (Wyer, 2010, p. 453). As individuals begin to focus on in-group characteristics, membership blurs the boundaries between the self and others participating in the group, and through the process of depersonalization individuals move beyond *comparative fit* and take on attributes, traits, values, and characteristics of the group (Bergh et al., 2012; Rabinovich & Morton, 2011).

The *comparative fit* component of self-categorization theory argues that a person will categorize themselves with an entity based on the number of the similarities, or stimuli, with that group compared to that of another group (Turner & Reynolds, 2012).

As individual's fit with salient groups, that individual self-stereotypes through a process called depersonalization (Turner & Reynolds, 2012). Through the process of depersonalization, individuals redefine themselves in terms of group membership, accentuating their similarities with the in-group and differences from out-groups (Wyer, 2010). For example, a person who believes in fighting for a country's ideologies as a civil duty may align themselves with a military group and distance themselves from anti-patriotic groups.

Understanding self-categorization components of comparative fit, depersonalization, in-group/outgroup, and group salience help answer ontological and epistemological questions of human interaction. How are groups defined? What explains the different participation levels within the group? Why do leadership styles differ within a group? Understanding self-category judgments is a required step in understanding the underpinning of group dynamics. The manner in which individuals develop groups through cognitive selection is connected to the process used to assign leaders, and make leadership decisions (Quaquebeke et al., 2014; Quaquebeke, & Knippenberg, 2012; Quaquebeke et al., 2011). An explanation into the relationship of the cognitive processes or decisions that individuals make towards group selection and individual leadership style choice is available through the use of self-categorization theory (SCT) and full range leadership theory.

Previous ROTC-Based Studies

In 2016 the Army Reserve Officer Training Corps celebrated 100 years as an organization. Requirements to be a member of the ROTC are:

1. One must be a college or university students aiming to complete a four year nationally accredited degree.
2. Agree to live by the seven Army Values of loyalty, duty, respect, selfless-service, honor, integrity, and personal courage.
3. Attend the Cadet Leadership Course summer training in their third year as a cadet.
4. Meet height, weight, medical, and physical fitness standards.
5. Complete four years of military science leadership training.
6. Be willing to accept a commission with the United States Army after graduation.

The requirement of this cohort of students to study leadership, live by a set of values, and at the end of four years accept a job in a leadership role with the United States Army, provides a good test bed for research studying the relationship between leadership and values.

In a 1995 study of cadets at the United States Academy at West Point, New York and non-military students at the University of Syracuse, New York, Dr. Volker Franke (1997) determined that significant differences were found in students' value orientation of patriotism, conservatism, warriorism, and Machiavellianism. These findings were consistent in Dr. Franke's later publications (1998, 1999, 2000, 2001; Franke & Guttieri, 2009). Excluded in this research project was the trait of Machiavellianism due to a low Cronbach's Alpha score and reliability.

Applying Dr. Frank's findings to self-categorization theory, the process of depersonalization would explain why cadet scores present similarities within their

categorical in-group. Individuals experience a cognitive redefinition of self when they align their social identity to meet the stimuli of social traits, values, attributes, and worldviews of an in-group (Kellen, Beckerman, & Moaz, 2013, Voci, 2006, Wyer, 2010). A group is expected to have a common end-state to commission as an officer in the military would share like in-group values and attributes when compared to students not looking for entry into the military. The distance to which this group of ROTC students perceives exists between their personal values and attributes to that of the group, compared to other non-ROTC groups, is defined as the meta-contrast principle (Turner & Reynolds, 2012). An example of this would be, the contrast between an individual ROTC student's conservatism, patriotism, and warriorism value and that of the group should be less than that of a non-ROTC student.

Meta-contrast stimuli in this study are attributes and values associated with the United States Army Reserve Officer Training Corps leadership development course. The meta-contrast stimuli are known cadet group values of patriotism, conservatism, and warriorism (Franke, 2001), and self-categorized cross-culture leadership attributes of Charismatic/Value-Based, Team Oriented, Participative, Humane-Oriented, Autonomous, and Self-Protective (House et al., 2010). Individual cognitive definitions are also used to assign leader attributes and values to leaders as a means to guide and conserve cognitive resources (Quaquebeke et al., 2011). Empirical studies of full range leadership theory state that leaders belong to three leadership styles, Transformational, Transactional and Laissez-Faire Leadership. Therefore, an explanatory relationship between leadership styles and self-categorization constructs and variables can be drawn as the object of the study.

Synthesis of the Literature Review

A relationship exists between self-categorization theory's concept of self-identity and the leadership styles of full range leadership theory (Hogg, 2001; Moss, 2011; Steffens et al., 2015). Self-categorization theory assumes that individuals' values and attributes are fit to a group through self-selection, and full range leadership theory assumes value and attributes are a component of ones' character traits (Salter et al., 2014). Full range leadership theory using the Multifactor Leadership Questionnaire is predictive of leadership styles based on values and attributes (Avolio & Bass, 2004). Bass (1990) suggests that Transformational Leadership is based on universal traits, which leads to the following argument. Group values and attributes are predictive of group leadership.

Although not a part of this study, implicit leadership theory makes the connection that group values and attributes are also tacit qualities of a group leader (Quaquebeke et al., 2014; Quaquebeke, & Knippenberg, 2012; Quaquebeke et al., 2011; Salter et al., 2014). Derue, Nahrgang, Wellman, and Humphrey (2011) validate that certain leader traits are more predictive of effective leadership than other traits. Otherwise said, members of a group have a preconceived image of a *good* leader and that prototypical image is based on their own values and attributes. This connection between values and leadership adds to the argument that values that can predict leadership style. This missing information is the object of this research project and is illustrated in Table 1.

Table 1
Comparison of Self-Categorization Theory Values to Full Range Theory Leadership

Style.

	Self-Categorization Theory Values and Attributes	Full Range Theory Leadership Style Values and Attributes	
Cross-Culture Leadership | ROTC Group	Charismatic/Value-Based	Unknown	Laissez-Faire | Transactional | Transformational
	Team Orientation	Unknown	
	Participative	Unknown	
	Humane-Oriented	Unknown	
	Autonomous	Unknown	
	Self-Protective	Unknown	
	Conservatism	Unknown	
	Patriotism	Unknown	
	Warriorism	Unknown	

Note: Table 1 visually demonstrates the research gap between leadership styles and their relationship to group values and attributes.

Collectivity and self-identity are essential to collective human interaction (Crocetti, Avanzi, Hawk, Fraccaroli, & Meeus, 2014; Steffens et al., 2015), are key elements leaders use to "mobilize and shape the energies of potential followers" (Steffens et al., 2015, p. 1001), and are a part of group leader preference (Moss, 2011; Quaquebeke et al., 2014; Quaquebeke, & Knippenberg, 2012; Quaquebeke et al., 2011). According to full range leadership theory, leaders participate in a style of leadership that is Transformational, Transactional, or Laissez-Faire, and according to self-categorization theory members of groups align themselves according to group values and attributes. Further, within self-categorized groups members develop prototypical leaders that match

the framework of the group (Moss, 2011; Quaquebeke et al., 2014; Quaquebeke, & Knippenberg, 2012; Quaquebeke et al., 2011). So within these groups an explanation can be drawn to explain how variations in individual inclusiveness or abstraction to the group equate to different leadership styles.

Following this frame of thought, self-categorization is based on comparative fit of personal values and attributes to that of a group. Full range leadership styles are based on personal values and attributes. The attributes and values that align a member with a group will also create predictive criteria to determine leadership style. The written formula is, self-categorization values, plus full range leadership style, equals the organizational leader. This would explain why one leadership style of full range leadership is not the only preferred leadership style with all groups. In the early stages of understanding Transformational Leadership, assumed was leadership progressed along linear framework from passive avoidance to transformational (Bass, 1981). However, later discussion explains that different leadership is advantageous in different situations (Golla & Johnson, 2013). Two studies help accentuate this concept:

1. Golla and Johnson's research in 2013 suggests that in commercial software companies Transformational Leadership Style optimized revenues from software innovation, but Transactional Leadership Style drove new products and assisted with innovation expenditures.
2. A 2011 study (Chaudry & Javed) of Pakistani bankers discovered that Pakistani bankers operated better under a transactional style of leadership. Study results showed that the bankers were more motivated by Contingent Reward and Management-by-Exception than Transformational Leadership

methods. Laissez-Faire Leadership Style also showed positive results with the banker population.

Laissez-Faire Leadership is most effective when an organization's faculty members are capable of being placed in decision making levels (Sternberg, 2013). Warren Buffett has spoken about the positive results that are produced from Laissez-Faire Leadership when employees are self-motivated and exceptional at their job (Sorkin, 2011). In these cases, Transformational Leadership is less effective when the workers are intrinsically transformational and desire freedom of maneuver. The point is, different group values and attributes equal a group desire for different types of leadership styles.

From an organizational standpoint, organizational leaders can benefit from understanding why certain individuals may not be right for their organization based on an alignment of values and attributes. Discussion into cognitive gaps and self-categorization identifies reasons people decide not to enter, or eventually leave, groups. If a person's values are not in line with the organization they belong to, they may have a cognitive gap that they are not able to bridge. In an effort to resolve the discomfort of how one is treated with how they expect to be treated, they will terminate their relationship with that group (Harmon-Jones, Harmon-Jones, & Levy, 2015). Take for example a military pilot who faithfully served his country, keeping his oath to support and defend the constitution, but after a firefight struggles with the knowledge that he killed another human being. Because of this life altering experience, the service member changes his belief window and consequently alters his value system. In order to resolve the new cognitive conflict, the service member may request for early release from service or decide to become a

conscientious objector. The service member makes one of these decisions in order to align his new values with that of a group with similar values.

Successful leaders can be successful only to the extent their values and attributes align with the group and, the leader meets the idealized prototypical leader of the followers (Moss, 2011). If leadership styles are out of line with group attributes and values, then members may not respond well to the less preferred leadership style. Not all leadership styles transcend all groups (Northouse, 2013). Leadership styles that are effective with one set of group values and attributes may be ineffective when the leader is moved to lead a group with dissimilar values and attributes (Harmon-Jones et al., 2015).

Critique of Previous Research Studies

Previous research studies have focused on the value and attributes of leaders (Crandell & Hazucha, 2012) without considering how those values and traits were to some extent asymmetrically associated with the group the leaders lead. Full range leadership measures an individual's leadership style, but not whether leader is the type of leader the group desires based on values and attributes of the group. Trait, skills, and style approaches, and path-goal theory to leadership focus on the leader. Situation approach and contingency theory discuss the environment that allows for leadership to exist. Leader-member exchange theory, Transformational Leadership, and Team Leadership begin to explore the importance of the group to the leader, and to some extent explain the role of the leader to the group, but do not complete the link that a portion of the leader's fundamental value and attributes are the same as the group's.

Several leadership approaches and theories apart from situational theory and contingency theory either imply or assume that leadership is transcendent. But, a leader

that appears to be able to lead in any situation or contingency may only appear to be effective because their values and attributes are in line with the value and attribute expectations of the various groups they lead (Chatman & Spataro, 2005). An individual who is a Transformational Leader with ABC Airlines, might be a Transformational Leader with XYZ pharmaceutical if both organizations share like values within their cultures. However, if an individual has an effective Transactional Leadership Style at HJK Weapons Manufacturing Company, this leader's leadership style may be less effective working with Guys-Against-Guns Advocates for Gun Control because the same individual's values and attributes are out of line with that of the group. The leader of a group is viewed as the model member of the in-group. When the leader's values are not in line with the group, they move from being the leader to a member of the out-group.

Summary

Research already provides evidence that leaders possess the same values and attributes as their followers (Quaquebeke et al., 2014; Quaquebeke, & Knippenberg, 2012; Quaquebeke et al., 2011; Salter et al., 2014). Research also provides evidence that individual leadership styles are Transformational, Transactional, or Laissez-Faire (Avolio & Bass, 2000). This research fills the gap that previous leadership models have not explained with group values and attributes as they apply full range leadership theory leadership styles.

Survey results from this research explain the relationship that exists between self-categorization theory (SCT) cross-culture leadership constructs of Charismatic/Value-Based, Team Oriented, Participative, Humane-Oriented, Autonomous, and Self-Protective, as measured by the Global Leadership and Organizational Behavior

Effectiveness (GLOBE) Culture and Leadership Scales (House et al., 2006), self-categorization theory constructs of Conservatism, Patriotism, and Warriorism, of students of a military leadership development program as measured by the Future Officer Survey (Franke, 2001), and full range leadership theory leadership styles of Transformational, Transactional, and Laissez-Faire (Bass & Avolio, 1995). Results of this explanation add to the leadership study body of knowledge, explaining the importance of values and attributes of a group to that of the group leader.

The ROTC is a long standing organization that provides researchers with a survey panel of student leaders. Within this group of leaders are students required to live by values, and that are aspiring to one-day lead platoons, companies, and battalions of people. Like all groups, the ROTC has in-group and out-group values, members with varying degrees of comparative fit, and internally regulation through group leadership expecting members to remain in line with values and attributes. ROTC students are influenced by the leadership styles of their group leaders and are motivated to live by group expectations and norms in order to maintain membership. The remaining chapters are used to explain the relationship of leadership styles of ROTC students to the group attributes and values. In Chapter 3 the research method and design of this study is explained. In Chapter 4 survey responses are analyzed and in Chapter 5 analysis of survey responses is discussed and conclusions are explained.

CHAPTER 3. METHODOLOGY

The purpose of this quantitative, non-experimental, explanatory, cross-sectional survey research study is to answer the research problem, add to the body of knowledge, and explain the relationship between the self-categorization theory cross-culture leadership constructs of Charismatic/Value-Based, Team Oriented, Participative, Humane-Oriented, Autonomous, and Self-Protective, as measured by the GLOBE Culture and Leadership Scales (House et al., 2006), self-categorization theory constructs of Conservatism, Patriotism, and Warriorism, of students of a military leadership development program as measured by the Future Officer Survey (Franke, 2001), and full range leadership theory leadership styles of Transformational, Transactional, and Laissez-Faire, as measured by the MLQ 5X Leader/Self Form (Bass & Avolio, 1995).

The design and methodology used to address the research problem is covered in this chapter. Discussion includes (a) the research design and methodology, the research questions used to solve the problem, (b) the survey instrument used to gather data, (c). The research population and why the population and sample population were chosen to help explain the problem is presented, along with the ethical considerations in choosing the sample population.

Research Design and Methodology

Research Design

This study uses a quantitative, non-experimental, explanatory, cross-sectional, survey research design. This study uses three survey instruments to collect data to explain the relationship between the Transformational Leadership Style Index (IV), the Transactional Leadership Style Index (IV), and the Laissez-Faire Leadership Style Index (IV), and the Conservatism Index (IV), the Patriotism Index (IV), and the Warriorism Index (IV): (a) Global Leadership and Organizational Behavior Effectiveness Culture and Leadership Scale (House et al., 2010), (b) the Future Officer Survey (Franke, 2001), and (c) the Multifactor Leadership Questionnaire (MLQ 5X Leader/Self Form), (Bass & Avolio, 1995). Participants were randomly chosen from a survey panel of ROTC cadets organized and managed by Qualtrics.

Viewing this study from an axiological view, the research directly questions respondents' traits, which are ubiquitously tied to a person's values (Parks-Leduc, Feldman, & Bardi, 2015). The axiological assumption therefore is that values and attributes of an individual are measurable. Values in this research are measured using a Likert scale. Respondents self-report views and opinions of how they feel values and attributes are important to group and leadership definitions. Respondent self-reported answers to group and leadership values and traits are then analyzed to see if statistical significance can explain the relationship between self-categorization theory and full range leadership theory.

Epistemologically this study questions student career decisions and the societal systems, or imposed identities that guide those decisions. The epistemological

assumption is that variables can be identified and differ between the transformational, transactional, and Laissez-Faire leadership styles of students in a leadership development program. Further, an epistemological assumption is that leadership and group organization can be learned. The self-categorization theory states that as an individual aligns themselves with a group, they will assume the values and attributes of the group they did not already possess through a process called *depersonalization* (Rabinovich et al., 2012).

Ontological arguments are related to the axiology of this study because this study looks at the nature of being and one's role in society. More specifically, this study investigates relationships in values and attributes of leadership students enrolled in an ROTC program, fulfilling commissioning requirements at the beginning of their career path in a military leadership commissioning source. Further ontological discussion includes the formation of groups as a component of nature of being and the idea that humans belong to groups as part of a self-derived, conscious our sub-conscious decision (Turner & Reynolds, 2012).

Research Methodology

Forward stepwise multiple linear regression was used to explain the relationship between the three full range leadership theory leadership styles and self-categorization theory trait variables. Three dependent variables of Transformational, Transactional, and Laissez-Faire Leadership Style Indexes were tested with nine independent variable indices of Conservatism, Patriotism, Warriorism, Charismatic/Value-Based, Team Oriented, Self-Protective, Participative, Humane-Oriented, and Autonomous. The forward stepwise approach to multiple linear regression was chosen to identify the

independent variables that were statistically significant predictors of the respective dependent variables.

Population, Sample Frame, Minimum Sample Size, and Sampling Plan

Population

The population for this study was ROTC students currently enrolled in colleges and universities in the United States. As of 2012, the ROTC student population enrolled in colleges and universities in the United States was about 33,000 (United States Government Accountability Office, 2013).

University students enrolled in an ROTC program were chosen for this survey because they represent a unique group with a 100-year history of defined values and attributes. ROTC university students, often referred to as *cadets*, are required to live by a military code of ethics while they attend school and prepare for a career in the military. The military science lessons they are required to study are focused on leadership and how to lead. This group provides a good test bed to study how values and attributes are part of leadership style choice. In addition, the age bracket of ROTC university students provides a progressive snapshot, from freshmen to seniors, of how these values change as the group matures.

Sample Frame

The sample frame for this study was ROTC students currently enrolled in colleges and universities in the United States who belong to a panel managed by Qualtrics, which is a third party survey company.

Minimum Sample Size

For this research study, G*Power 3.1.9.2 was used to determine the minimum sample size based on the nine predictors, a medium effect size ($f = 0.15$), $\alpha = 0.05$, and power (1-β) of 0.80. G*Power determined that a minimum of 114 responses was adequate to provide: (a) a medium effects size, (b) the probability of committing a Type I error (not supporting a true null hypothesis) of 0.05, and (c) the probability of committing a Type II error (supporting a false null hypothesis) of .2 (Cohen, 1988).

F tests - Linear multiple regression: Fixed model, R^2 deviation from zero			
Analysis: A priori: Compute required sample size			
Input:	Effect size f^2	=	0.15
	α err prob	=	0.05
	Power (1-β err prob)	=	0.80
	Number of predictors	=	9
Output:	Noncentrality parameter λ	=	17.1000000
	Critical F	=	1.9711129
	Numerator df	=	9
	Denominator df	=	104
	Total sample size	=	114
	Actual power	=	0.8043554

Figure 3. Protocol of power analyses from G*Power 3.1.9.2 based on the parameters of this study.

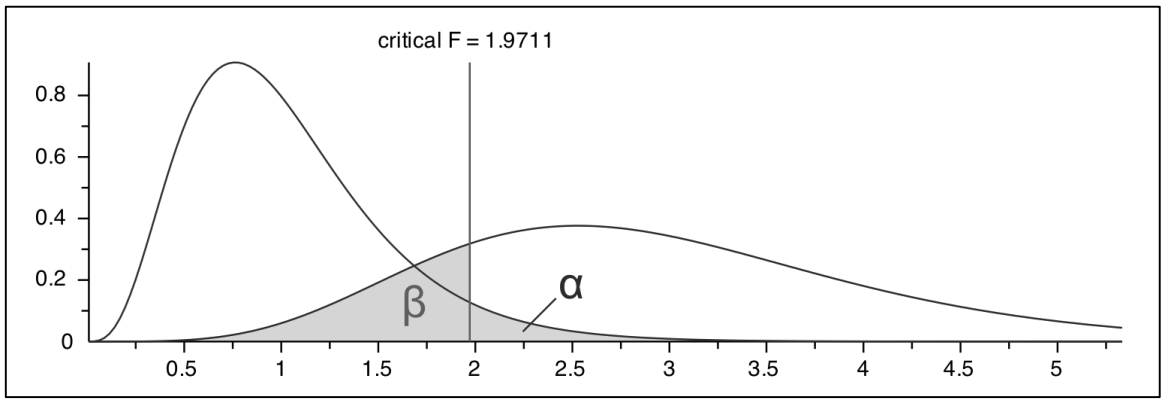

Figure 4. Plot of central and non-central distributions from G*Power 3.1.9.2 based on this study.

Sampling Plan

A simple random sample of 114 ROTC students was drawn from and managed by Qualtrics.

Instrumentation/Measures

The survey instruments used in this study to measure the research constructs were (a) Global Leadership and Organizational Behavior Effectiveness Culture and Leadership Scale (House et al., 2010), (b) the Future Officer Survey (Franke, 2001), and (c) the Multifactor Leadership Questionnaire (MLQ 5X Leader/Self Form), (Bass & Avolio, 1995). The Future Officer Survey measures indices of Conservatism, Patriotism, and Warriorism. The Global Leadership and Organizational Behavior Effectiveness Culture and Leadership Scale measures cross-culture leadership constructs of Charismatic/Value-Based, Team-Oriented, Self-Protective, Participative, Humane Oriented, and Autonomous. The and Multifactor Leadership Questionnaire measures the full range leadership theory style constructs of Transformational Leadership Style, Transactional Leadership Style, and Laissez-Faire Leadership Style.

Future Officer Survey

Description of the Future Office Survey. The Future Officer Survey is a validated instrument consisting of 16 questions that was developed by Dr. Franke in a 1995 research project to measure the (a) conservatism, (b) patriotism, and (c) warriorism, of university students in a military leadership course preparing to be leaders in the United States Army as commissioned officers. Questions from the Future Officer Survey used a five-point Likert scale ranging from *Strongly Agree* to *Strongly Disagree*. Questions were assigned to the indices of Conservatism, Patriotism, and Warriorism as follow:

1. *Conservatism Index* (IV). The Conservatism Index is the arithmetic mean of the five-point Likert-scale responses to questions 1 through 4 of the Future Officer Survey. Three questions (1, 3, and 4) were reversed-scored because the questions were written in the negative.
2. *Patriotism Index* (IV). The Patriotism Index is the arithmetic mean of the five-point Likert-scale responses to questions 5 through 10 of the Future Officer Survey.
3. *Warriorism Index* (IV). The Warriorism Index is the arithmetic mean of the five-point Liker- scale responses to question 11 through 16 of the Future Officer Survey. Two questions (11 and 15) were reversed-scored because the questions were written in the negative.

Validity and Reliability of the Future Office Survey. The Future Officer Survey was validated in a 1995pilot test conducted using ROTC students at Syracuse University before being administered to cadets at the United States Military Academy at West Point and non-ROTC students at Syracuse University. Since 1995, this instrument has been used by Dr. Franke and other authors in subsequent studies and publications (Franke 1998, 2000, 2001; Franke & Guttieri, 2009).

1. The Future Officer Survey measures the index of Conservatism with a Cronbach's $\alpha = 0.61$ (Franke, 2001).
2. The Future Officer Survey measures the index of Patriotism with a Cronbach's $\alpha = 0.75$ (Franke, 2001).
3. The Future Officer Survey measures the index of Warriorism with a Cronbach's $\alpha = 0.70$ (Franke, 2001).

The Cronbach's alpha value for two of the sub-scales is equal to or greater than the commonly accepted minimum value of .7 and Cronbach's alpha value for the third sub-scale is only marginally less than .7. Therefore, the survey instrument is considered to be reliable.

Global Leadership and Organizational Behavior Effectiveness (GLOBE) Culture and Leadership Scales

Description of the Global Leadership and Organizational Behavior Effectiveness (GLOBE) Culture and Leadership Scales. The Global Leadership and Organizational Behavior Effectiveness (GLOBE) Culture and Leadership Scales (House et al., 2006) was developed by House, Hanges, Javidan, Dorfman, & Gupta (2006) and consists of two sections of 56 questions each (112 total). The GLOBE was used in this research project to measure cross-culture leadership attributes of respondents. The 112 questions used a seven-point Likert-type scale: (a) Greatly Inhibits, (b) Somewhat Inhibits, (c) Slightly Inhibits, (d) Has No Impact, (e) Contributes Slightly, (f) Contributes Somewhat, and (g) Contributes Greatly. The 112 questions are organized into six scales that are further broken down into the 24 sub-scales listed below, with the exception of the Autonomous scale. The following scales are provided with corresponding sub-scales and the question numbers answered by respondents:

1. *Charismatic/Value-Based Index* (IV). The Charismatic/Value-Based Index is a computed score using formulas presented in Syntax for GLOBE National Culture, Organizational Culture, and Leadership Scales (House et al., 2006) from the arithmetic mean of seven-point scale responses. Questions used were V2_05, V2_11, V2_12, V2_13, V2_14, V2_15, V2_16, V2_20, V2_31, V2_32, V2_35, V2_44, V2_48, V2_56V, V4_08, V4_10, V4_11, V4_15,

V4_19, V4_20, V4_22, V4_24, V4_26, V4_30, V4_32, V4_35, V4_40, V4_42, V4_46, V4_47, and V4_51 (31 questions) of the original Global Leadership and Organizational Behavior Effectiveness Project Culture and Leadership Scales (House et al., 2006). The six sub-scales of the Charismatic/Value-Based Index and corresponding question number used in this survey are:

a. Sub-Scale: Charisma 1 (Visionary) (questions 131, 121, 172, 100, 78, 132, 77, 167, 140).
b. Sub-Scale: Charisma 2 (Inspirational) (questions 113, 70, 96, 97, 141, 147, 156, 163).
c. Sub-Scale: Charisma 3 (Self-Sacrifice) (questions 79, 151, 143).
d. Sub-Scale: Decisive (questions 153, 80, 85, 81).
e. Sub-Scale: Integrity (questions 168, 109, 129, 136).
f. Sub Scale: Performance-Oriented (questions 76, 145, 161).

2. *Team Oriented Index* (IV). The Team-Oriented Index is a computed score using formulas presented in Syntax for GLOBE National Culture, Organizational Culture, and Leadership Scales (House et al., 2006) from the arithmetic mean of seven-point scale responses. Questions used were V2_01, V2_03, V2_17, V2_18, V2_19, V2_21, V2_22, V2_25, V2_28, V2_30, V2_34, V2_39, V2_43, V2_45, V2_46, V2_50, V2_52, V4_02, V4_04, V4_05, V4_06, V4_07, V4_23, V4_27, V4_36, V4_38, V4_39, V4_49, V4_50, V4_52, and V4_53 (31 questions) of the Global Leadership and

Organizational Behavior Effectiveness Project Culture and Leadership Scales (House et al., 2006).

a. Sub-Scale: Team 1 (Collaborative Team), (questions 148, 95, 93, 110, 68, 104).
b. Sub-Scale: Team 2 (Team Integrator), (questions 144, 159, 125, 87, 90, 157, 117 [Reverse Score]).
c. Sub-Scale: Administratively Competent, (questions 84, 99, 123, 173).
d. Sub-Scale: Diplomatic, (questions 66, 82, 86, 83, 126).
a. Sub-Scale: Malevolent, (questions 171, 170, 115, 111, 160, 174 [Reverse Score], 128, 127, 108 [Reverse Score]).

3. *Self-Protective Index* (IV). The Self-Protective Index is a computed score using formulas presented in Syntax for GLOBE National Culture, Organizational Culture, and Leadership Scales (House et al., 2006) from the arithmetic mean of seven-point scale responses. Questions used were V2_02, V2_06, V2_23, V2_37, V2_38, V2_41, V2_47, V4_01, V4_09, V4_12, V4_16, V4_17, V4_25, V4_28, V4_29, V4_45, V4_56, (17 questions) of the Global Leadership and Organizational Behavior Effectiveness Project Culture and Leadership Scales (House et al., 2006).

a. Sub-Scale: Self-Centered (questions 88, 99, 123, 173).
b. Sub-Scale: Conflict Inducer (questions 133, 102, 71).
c. Sub-Scale: Face-Saver (questions 137, 166, 67).
d. Sub-Scale: Procedural/Bureaucratic (questions 177, 106, 138, 122, 146).

e. Sub-Scale: Status Conscious (questions 130, 149).

4. *Participative Index* (IV). The Participative Index is the arithmetic mean of the seven-point scale responses to questions V2_04, V2_36, V4_13, V4_14, V4_33, V4_37, V4_43, V4_44, V4_48, V4_54, (10 questions) of the Global Leadership and Organizational Behavior Effectiveness Project Culture and Leadership Scales (House et al., 2006).
    a. Sub-Scale: Autocratic (questions 69, 101, 154, 158, 169, 175).
    b. Non-Participative (questions 165 [Reverse Score], 164 [Reverse Score], 135 [Reverse Score], 134 [Reverse Score]).
5. *Humane-Oriented Index* (IV). The Humane-Oriented Index is a computed score using formulas presented in Syntax for GLOBE National Culture, Organizational Culture, and Leadership Scales (House et al., 2006) from the arithmetic mean of seven-point scale responses. Questions used were V2_26, V2_40, V2_42, V2_51, V4_18, V4_31, (6 questions) of the Global Leadership and Organizational Behavior Effectiveness Project Culture and Leadership Scales (House et al., 2006).
    a. Sub-Scale: Modesty (questions 91, 107, 139, 152).
    b. Sub-Scale: Humane-Oriented (questions 105, 116).
6. *Autonomous Index* (IV). The Autonomous Index is the arithmetic mean of the seven-point scale responses to questions V2_07, V2_08, V2_29, and V4_55, (4 questions) of the Global Leadership and Organizational Behavior Effectiveness Project Culture and Leadership Scales (House et al., 2006).
    a. Individualistic (Question: 176).

b. Autonomous (Question: 73).

c. Independent (Question: 72).

d. Unique (Question: 94).

- Thirteen questions of the GLOBE were answered by respondents but not assessed as part of this research study (questions 74, 75, 89, 92, 98, 114, 118, 119, 120, 124, 142, 155, 162)

Validity and Reliability of the Global Leadership and Organizational Behavior Effectiveness (GLOBE) Culture and Leadership Scales. The GLOBE survey is a validated survey instrument available through the University of Victoria Peter B. Gustavson School of Business (House et al., 2006)

- The GLOBE measures Charismatic/Value-Based Index with a Cronbach's α = 0.98 (House et al., 2006).
- The GLOBE measures Team Oriented Index with a Cronbach's α = 0.96 (House et al., 2006).
- The GLOBE measures Self-Protective Index with a Cronbach's α = 0.95 (House et al., 2006).
- The GLOBE measures Participative Index with a Cronbach's α = 0.93 (House et al., 2006).
- The GLOBE measures Humane-Oriented Index with a Cronbach's α = 0.87 (House et al., 2006).
- The GLOBE measures Autonomous Index with a Cronbach's α = 0.98 (House et al., 2006).

The Cronbach's alpha values for all six sub-scales are considerably greater than the commonly accepted minimum value of .7. Therefore, the survey instrument is considered to be reliable.

Multifactor Leadership Questionnaire

D**escription of the Multifactor Leadership Questionnaire.** The Multifactor Leadership Questionnaire 5X Leader/Self Form, consisted of 45 questions, and was used to measure an ROTC student's Transformational, Transactional, or Laissez-Faire Leadership Style. Transformational Leadership analysis is based on five factors: (a) idealized influence behavior, (b) idealized influence attribute, (c) inspirational motivation, (d) intellectual stimulation, and (e) individualized consideration. Transactional Leadership analysis is based on three factors: (a) management-by-exception active, (b) management-by-exception passive, and (c) contingent reward. Laissez-Faire Leadership analysis is self-based on one Laissez-Faire Leadership.

1. *Transformational Leadership Style Index* (DV). The Transformational Leadership Style Index is measured by the arithmetic means of the responses to questions 2, 6, 8-10, 13-15, 18-19, 21, 23, 25-26, 29-32, 34, and 36 (20 questions) of the Multifactorial Leadership Questionnaire, version 5X Leader/ Self form (Avolio & Bass, 2004). Transformational Leadership Style Index questions used in this research study represent the following questions by attribute:
    a. Idealized attributes (questions 30, 38, 41, 45)
    b. Idealized behaviors (questions 26, 34, 43, 54)
    c. Inspirational Motivation (questions 29, 33, 46, 56)

d. Intellectual Stimulation (questions 22, 28, 50, 52)

e. Individual Consideration (questions 35, 39, 49, 51)

2. *Transactional Leadership Style Index* (DV). The Transactional Leadership Style Index is measured by the arithmetic means of the responses to questions 1, 3-4, 11-12, 16-17, 20, 22, 24, 27, and 35 (12 questions) of the original Multifactorial Leadership Questionnaire, version 5X Leader/ Self form (Avolio & Bass, 2004). Transactional Leadership Style Index questions used in this research study represent the following questions by attribute:

    a. Contingent Reward (questions 21, 31, 36, 55)

    b. Management by Exception Active (questions 24, 42, 44, 47)

    c. Management by Exception Passive (questions 23, 32, 37, 40)

3. *Laissez-Faire Leadership Style Index* (DV). The Laissez-Faire Leadership Style Index is measured by the means of the responses to questions 5, 7, 28, and 33 (4 questions) of the Multifactorial Leadership Questionnaire, version 5X Leader/ Self form (Avolio & Bass, 2004). Laissez-Faire Leadership Style Index questions used in this research represent the following questions 25, 27, 37, and 40.

4. *Uncategorized Questions*. Nine questions of the MLQ were answered by respondents but not assessed as part of this research study (Questions 59, 62, 64, 57, 60, 63, 65, 58, 61

Validity and Reliability of the Multifactor Leadership Questionnaire. The Multifactor Leadership Questionnaire 5X Leader/Self form is a validated instrument available through Mind Spring (Avolio & Bass, 2004).

1. The MLQ measures Transformational Leadership Style with a Cronbach's α = 0.98 (Alsyed, Motaghi, & Osman, 2012).
2. The MLQ measures the Transactional Leadership Style with a Cronbach's α = 0.94 (Alsyed, Motaghi, & Osman, 2012). The measurement of Transactional Leadership Style is the mean of 3 scales.
3. The MLQ measures the Laissez-Faire Leadership Style with a Cronbach's α = 0.88 (Alsyed, Motaghi, & Osman, 2012).

The Cronbach's alpha values for the three sub-scales are considerably greater than the commonly accepted minimum value of .7. Therefore, the survey instrument is considered to be reliable.

Demographic Variables

This explanatory research study discusses the ROTC population as a whole and in terms of Military Science (MS) level I – IV and gender. Each Military Science level normally corresponds to the school year of the student, for example Military Science Level I equals a freshman and a Military Science Level IV equals a senior. Within the ROTC some Military Science Level IV cadets are referred to as Military Science Level V's to differentiate those cadets that are in their fifth year of study, but they are officially recognized as Military Science Level IVs with an extended contract. In this study results will combine Military Science Level IV and Vs as one cohort of Military Science Level IVs. Four demographic questions were asked of respondents:

1. What is your university school level? Possible responses were: Freshman, Sophomore, Junior, Senior.

2. What is your military science level? Possible answers were: MS1, MS 2, MS 3, MS 4, MS 5.
3. What is your age group? Possible answers were: 17, 18-19, 20-21, 22-23, 24-25, 26-30, 30+.
4. What is your gender? Possible answers were: Male, Female.

Data Collection

Data from the (a) Global Leadership and Organizational Behavior Effectiveness Culture and Leadership Scale (House et al., 2010), (b) the Future Officer Survey (Franke, 2001), and (c) the Multifactor Leadership Questionnaire (MLQ 5X Leader/Self Form), (Bass & Avolio, 1995), were collected using Internet-delivered electronic surveys. Random members of the sample frame were invited to participate by means of emailed invitations. The email invitations provided a link that was uniquely tied to the email address and only allowed participants to take the survey once. Participants were allowed to complete the survey in more than one sitting. Qualtrics provided the raw data from responses to the three instruments used in this research in a Microsoft Excel spreadsheet format.

Assumptions of the Multiple Linear Regression Model

Nine assumptions are associated with the use of multiple linear regression, which are discussed in this section.

Random Sampling

Multiple linear regression assumes that all of the data for the dependent and independent variables is collected using random sampling (Laerd, 2016). This assumption was tested using the sampling plan for this research study.

Properties of Dependent Variables

Multiple linear regression assumes that the dependent variables are measured on a continuous scale; that is, the values of the data for dependent variables are either interval or ratio measurement scale (Laerd, 2016). This assumption was tested using the definitions of the dependent variables.

Properties of Independent Variables

Multiple linear regression assumes that the model includes two or more continuous (the values of the data for independent variables are either interval or ratio measurement scale) or categorical independent variables (the values of the data for independent variables are either nominal or ordinal measurement scale) (Laerd, 2016). This assumption was tested using the definitions of the independent variables.

Independence of Residuals

Multiple linear regression assumes an independence of the residuals (Laerd, 2016). This is assumption is typically of concern only with time-series data. Since this research study does not involve time series data, this assumption should not be of concern. However, to be safe, a Durbin-Watson test was conducted to test for the independence of residuals.

Linearity

Multiple linear regression assumes the existence of a linear relationship between the dependent variable and both the collection of independent variables and each independent variable (Laerd, 2016). This assumption was tested examining (a) partial regression plots and (b) Pearson linear correlation coefficients. The partial regression plots will be examined visually to identify linear as opposed to curvilinear relationships.

The Pearson's linear correlation coefficients will be examined to verify that they do not show a strong linear relationship, which is typically indicated by an r-value less than .7.

Homoscedasticity

Multiple linear regression assumes that the residuals are homoscedastic (Laerd, 2016). This assumption was tested by visually examining scatterplots of the regression standardized residuals and regression standardized predicted values. The residuals were considered to be homoscedastic when the data points in the scatterplots does not increase or decrease across the predicted values. When the data points on the scatterplots form a pattern that appears to be an increasing or decreasing funnel shape or in the shape of a fan, then the residuals are said to be heteroscedastic, which violates the assumption of homoscedasticity.

Multicollinearity

Multiple linear regression assumes that the data for the independent variables must not show significant multicollinearity (Laerd, 2016), where collinearity is when (a) pairs of independent variables are highly correlated and (b) the independent variables are jointly highly correlated. This two-part assumption was tested (a) the pairwise assumptions were tested using Pearson's linear correlation coefficients and (b) the jointly highly correlated assumption was tested using tolerance/Variance Inflation Factor (VIF) values.

Outliers

Multiple linear regression assumes that outliers, high leverage points, or highly influential points are not present (Laerd, 2016). This assumption is important because outliers have the potential to incorrectly influence the slope of the regression line,

presenting results that are not representative of the trend. For this study, data points that were more than ±3 standard deviations from the regression line were considered to be outliers. Significant outliers were tested for using box-and-whisker plots. When outliers were detected, a Casewise Diagnostic was produced. High leverage points can be detected using SPSS. Highly influential points can be detected using Cook's distance, which is generated in the Casewise Diagnostics.

Normality

Multiple linear regression assumes that residuals are approximately normally distributed (Laerd, 2016). This assumption will be tested using (a) histograms of standardized residuals with superimposed normal curves, (b) Normal P-P plots, and (c) Kolmogorov-Smirnov and Shapiro-Wilk tests. The histograms and Normal P-P plots are visual tests, while the Kolmogorov-Smirnov and Shapiro-Wilk tests use statistical inference.

Data Analysis and Hypothesis Testing

Data analysis was conducted using IBM's Statistical Package for the Social Sciences (SPSS) version 24.

Multiple Linear Regression Model

The statistical model used for the hypotheses for RQ1-RQ3 is a multiple linear regression equation of the form:

$$y_i = b_0 + b_1x_{1i} + b_2x_{2i} + b_3x_{3i} + b_4x_{4i} + b_{5X5i} + b_6x_{6i} + b_7x_{7i} + b_8x_{8i} + b_9x_{9i} + e_i$$

where:

1. $i = 1, 2, \ldots, n$, where n is the sample size.
2. y is the dependent variable for each of the RQs as follows:

a. For RQ1 - *Transformational Leadership Style Index.*

b. For RQ2 - *Transactional Leadership Style Index*.

c. For RQ3 - *Laissez-Faire Leadership Style Index*.

3. b_0 is the sample regression coefficient for the y-intercept;
4. b_1 is the sample regression coefficient for the independent variable *Charismatic/Value-Based Index* (x_1).
5. b_2 is the sample regression coefficient for the independent variable *Team Oriented Index* (x_2).
6. b_3 is the sample regression coefficient for the independent variable *Participative Index* (x_3).
7. b_4 is the sample regression coefficient for the independent variable *Humane-Oriented Index* (x_4).
8. b_5 is the sample regression coefficient for the independent variable *Autonomous Index* (x_5).
9. b_6 is the sample regression coefficient for the independent variable *Self-Protective Index* (x_6).
10. b_7 is the sample regression coefficient for the independent variable *Conservatism Index* (x_7).
11. b_8 is the sample regression coefficient for the independent variable *Patriotism Index* (x_8).
12. b_9 is the sample regression coefficient for the independent variable *Warriorism Index* (x_9).
13. e is the error term.

Hypothesis Testing and Analysis

The statistical analysis was conducted using forward stepwise multiple linear regression in which the nine independent variables were linearly regressed against each of the three dependent variables. The overall predictive validity of the multiple linear regression model (i.e., that at least one of the population regression coefficients $\beta_i \neq 0$) was tested for statistical significance using the following null and alternative hypotheses and a level of significance of $\alpha = 0.05$:

H_0: $\rho^2 = 0$

H_A: $\rho^2 > 0$

where ρ^2 is the population coefficient of determination.

If the above null hypothesis (H_0: $\rho^2 = 0$) was supported, then the multiple linear regression has no predictive validity (i.e., all of the population regression coefficients $\beta_i = 0$) and no further analysis was warranted. If the above null hypothesis (H_0: $\rho^2 = 0$) was not supported, then each of the population regression coefficients were tested to determine which of them were statistically significant predictors using the following null and alternative hypotheses and a level of significance of $\alpha = 0.05$:

H_0: $\beta_i = 0$

H_A: $\beta_i \neq 0$

for i=0, 1, …, 9 and where: (a) β_0 was the population regression coefficient for the y-intercept, (b) β_1 was the population regression coefficient for the independent variable *Charismatic/Value-Based Index* (x_1), (c) β_2 was the population regression coefficient for the independent variable *Team Oriented Index* (x_2), (d) β_3 was the population regression coefficient for the independent variable *Participative Index* (x_3), (e) β_4 was the population

regression coefficient for the independent variable *Humane-Oriented Index* (x_4), (f) β_5 was the population regression coefficient for the independent variable *Autonomous Index* (x_5), (g) β_6 was the population regression coefficient for the independent variable *Self-Protective Index* (x_6), (h) β_7 was the population regression coefficient for the independent variable *Conservatism Index* (x_7), (i) β_8 was the population regression coefficient for the independent variable *Patriotism Index* (x_8), *and* (j) β_9 was the population regression coefficient for the independent variable *Warriorism Index* (x_9).

SPSS also generates values for model fit that provide useful information about the overall predictive validity of the multiple linear regression model. Some of these values are R, R^2, and adjusted R^2. The R values are the multiple correlation coefficients that measure the linear relationship between the predictor variables and the outcome variable (Field, 2013). The R^2 values (the coefficients of determination) measure the proportion of the variance in the dependent variable that is explained by the independent variables (Field, 2013). The adjusted R^2 is the R^2 value adjusted for the influence the independent variables have on the value of R^2 (Field, 2013).

Ethical Considerations

Limited special considerations are required for this research. The data is not traceable to the students that were asked to participate in the survey and the results are not of a nature that the results are likely to affect changes in the student or the direction of ROTC programs. The data results presented by this research is anticipated to be useful to future studies and as benchmark data. The likelihood of ethical wrong-doing is low, yet to ensure the protection of the respondents the following ethical considerations for this research include:

- Anonymity so that results cannot interfere with the accession process of ROTC students and the degree completion of student participants.
- The survey cannot be administered in a manner that shows bias towards or against ROTC service.

Risk mitigation:

- The survey instrument and research design was reviewed by Capella University's Institutional Review Board for ethical concerns with the study.
- No names or individual identification information is to be included with surveys.
- The surveys are not to be reviewed by personnel other than the administrator.

Data collection for this research was electronic through a third party service for a period of 23 days. At the end of the survey period, data collected from individual respondents was placed on a USB drive and kept with the research administrator. Individual responses are to be kept for seven years and then destroyed. Results of this research are to be published in order to add to the body of leadership knowledge, however individual data will not be released.

Protection of Participants

Before data-collection started a dissertation research plan was presented to the Capella University Institutional Review Board. The plan outlined the steps to take place during data collection and the manner in which the data would be anonymous and secure. Participants of this survey were required to give consent before they began the survey and participation did not require personal identification information. Published results of the survey are presented in organizational terms where individual contributions are not linked

to individual respondent's data. Approval was granted by the Capella Institutional Review Board and because the participating body of respondents in this research were U.S. Army ROTC Cadets, the United States Army Cadet Command, G8, was also contacted. Approval was granted.

Summary

Chapter 3 discussed the quantitative research design to describe the relationship of full range leadership theory with self-categorization theory. Included were the overview of the instruments used and the process used to prepare respondent data. This quantitative research design used a forward stepwise multiple linear regression model to explain the link between individual values and attributes to leadership styles. Data collected through the described research methodology will be used in Chapter 4 to analyze and answer the research questions. The end-state of this research is a better understanding of the value and attribute relationship leaders have to the groups they lead.

CHAPTER 4. RESULTS

The purpose of this chapter is to review the collected data, explain the statistical analysis, and present a summary of the results of the study. The previous chapters provided the background and history of the theories that support the current research and described the methodology used to research the relationship between full range leadership theory and self-categorization theory. This chapter will address the research questions presented in Chapter 1 and the null and alternative hypotheses related to them

Research Questions

Research Question 1

To what extent do the Charismatic/Value-Based Index (IV), Team Oriented Index (IV), Participative Index (IV), Humane-Oriented Index (IV), Autonomous Index (IV), and Self-Protective Index (IV), as measured by the GLOBE Culture and Leadership Scales (House et al., 2006), and the Conservatism Index (IV), Patriotism Index (IV), and Warriorism Index (IV), as measured by the Future Officer Survey (Franke, 2001), explain the variation in the Transformational Leadership Style Index (DV) as measured by the MLQ 5X Leader/Self Form (Bass & Avolio, 1995)?

Research Question 2

To what extent do the Charismatic/Value-Based Index (IV), Team Oriented Index (IV), Participative Index (IV), Humane-Oriented Index (IV), Autonomous Index (IV), and Self-Protective Index (IV), as measured by the GLOBE Culture and Leadership

Scales (House et al., 2006), and the Conservatism Index (IV), Patriotism Index (IV), and Warriorism Index (IV), as measured by the Future Officer Survey (Franke, 2001), explain the variation in the Transactional Leadership Style Index (DV) as measured by the MLQ 5X Leader/Self Form (Bass & Avolio, 1995)?

Research Question 3

To what extent do the Charismatic/Value-Based Index (IV), Team Oriented Index (IV), Participative Index (IV), Humane-Oriented Index (IV), Autonomous Index (IV), and Self-Protective Index (IV), as measured by the GLOBE Culture and Leadership Scales (House et al., 2006), and Conservatism Index (IV), Patriotism Index (IV), and the Warriorism Index (IV), as measured by the Future Officer Survey (Franke, 2001), explain the variation in the Laissez-Faire Leadership Style Index (DV) as measured by the MLQ 5X Leader/Self Form (Bass & Avolio, 1995)?

Population, Sample, and Power Analysis

Population and Sample

The population for this study was ROTC students currently enrolled in colleges and universities in the United States. The sample for this study consisted of 114 ROTC students selected through random sampling from a Qualtrics survey panel of ROTC students currently enrolled in colleges and universities in the United States. The survey panel provided 135 respondents, 114 of which provided qualified responses. Eighteen of these samples were rejected due to incomplete surveys. One survey was removed because the participant completed the survey in less than 6 minutes, which would not have provided the participant adequate time to read and answer questions appropriately. Two respondents disagreed with the consent form and did not continue with the survey.

The median time to complete the 173-question survey was 39 minutes with 16 students taking more than one day to complete the survey.

Power Analysis

A power analysis was performed using G*Power 3.1.9.2. The results appear in Figure 5, while Figure 6 contains a plot of the central and non-central distributions for the power analysis.

F tests - Linear multiple regression: Fixed model, R^2 deviation from zero

Analysis:	Post hoc: Compute achieved power		
Input:	Effect size f^2	=	0.15
	α err prob	=	0.05
	Total sample size	=	114
	Number of predictors	=	9
Output:	Noncentrality parameter λ	=	17.1000000
	Critical F	=	1.9711129
	Numerator df	=	9
	Denominator df	=	104
	Power (1-β err prob)	=	0.8043554

Figure 5. Protocol of power analysis from G*Power 3.1.9.2 based on post hoc.

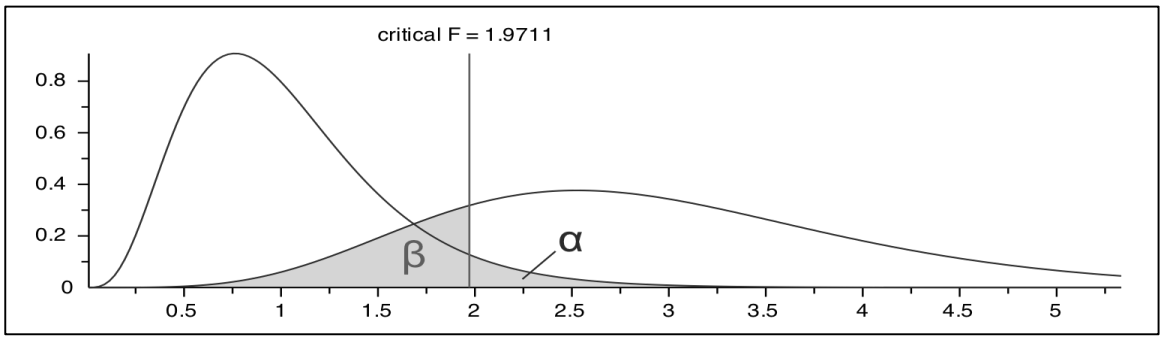

Figure 6. Plot of central and non-central distributions from G*Power 3.1.9.2 based on post hoc.

Demographics of the Sample

The age group responses of this survey are what might be expected of college age adults. The majority of respondents (93.8%) were between the ages of 18-23 (see Table 2), which corresponds with the ages of typical university undergraduate students. One respondent was younger than 18, which is reasonable for a new freshman at the beginning of a Fall semester. One respondent was over the age of 30. To qualify for federal service in the United States Army after the age of 30, a student requires a waiver or must have active prior federal service time. The number of respondents in this latter category is in line with what one might expect from a typical ROTC program.

Table 2
Age Ranges of Respondents

Age Range	Number of Participants	Pct. of Participants
17	1	0.9%
18 - 19	56	49.1%
20 - 21	35	30.7%
22 - 23	16	14.0%
24 - 25	5	4.4%
26-30	0	0.0%
30+	1	0.9%

The number of respondents by Military Science Level (see Table 3) was what is typical for an ROTC program. Attrition is expected of students in an ROTC program as they proceed from Military Science Level I to Military Science Level IV. The freshman class available to this study was much larger than the senior class, which is typical for ROTC student populations. In this study, the Military Science Level IV class includes both seniors from four-year and five-year degree programs. Of the 32 Military Science

Level IV respondents, 19 were in a four-year degree program and 13 were in a five-year degree program.

Table 3
Military Science Level of Respondents

MS Level	Number of Participants	Pct. of Participants
MS I	42	36.8%
MS II	21	18.4%
MS III	19	16.7%
MS IV	32	28.1%

Survey results produced a good response rate from both male and female students (see Table 4). Male respondents outnumbered females 63.2 percent to 36.8%.

Table 4
Gender of Respondents

Gender	Number of Participants	Pct. of Participants
Male	72	63.2%
Female	42	36.8%

Assumptions of the Multiple Linear Regression Model

Nine assumptions are associated with the use of multiple linear regression. These nine assumptions are tested in this section.

Random Sampling

Multiple linear regression assumes that all of the data for the dependent and independent variables is collected using random sampling (Laerd, 2016). This assumption was satisfied because the sampling plan for this research study specified that data would be collected using a simple random sample. When Qualtrics was

commissioned to collect the date, they agreed that participants selected to be included in the sample would be chosen using simple random sampling.

Properties of Dependent Variables

Multiple linear regression assumes that the dependent variables are measured on a continuous scale; that is, the values of the data for dependent variables are either interval or ratio measurement scale (Laerd, 2016). This assumption was satisfied because the values of the three dependent variables are all arithmetic means of groups of Likert-type data, and, by definition, arithmetic means are interval or ratio measurement scale.

Properties of Independent Variables

Multiple linear regression assumes that the model includes two or more continuous (the values of the data for independent variables are either interval or ratio measurement scale) or categorical independent variables (the values of the data for independent variables are either nominal or ordinal measurement scale) (Laerd, 2016). This assumption was satisfied because the values of all nine of the independent variables are arithmetic means of groups of Likert-type data, and, by definition, arithmetic means are continuous because they are interval or ratio measurement scale.

Independence of Residuals

Multiple linear regression assumes an independence of the residuals (Laerd, 2016). This is assumption is typically of concern only with time-series data. Since this research study does not involve time series data, this assumption should not be of concern. However, to be safe, a Durbin-Watson test (Table 15-17) was conducted to test for the independence of residuals. The values of the Durbin-Watson statistics are provided in the Model Summary Tables, which appear in Tables 15, 16, and 17. The Durbin-Watson statistics for (a) the Transactional Leadership Style Index was 1.927, (b) for the Transformational Leadership Style Index was 1.922, and (c) for the Laissez-Faire Leadership Style Index was 1.553. Since all of the values are close to 2.0, the assumption that the residuals are independent (i.e., do not display any first-order autocorrelation) is satisfied.

Linearity

Multiple linear regression assumes the existence of a linear relationship between the dependent variable and both the collection of independent variables and each independent variable (Laerd, 2016). This assumption was tested examining (a) partial regression plots and (b) Pearson's linear correlation coefficients. The partial regression plots were examined visually to identify linear as opposed to curvilinear relationships. The Pearson's linear correlation coefficients were examined to verify that they do not show a strong linear relationship, which is typically indicated by Pearson's linear correlation coefficient r-value that are less than .7.

Testing using partial regression plots. The partial regression plots in Figures 7 through 33 were used to test the null and alternate hypotheses H_0: $|\rho| = 0$ and H_A: $|\rho| > 0$

for the relationship between the predictor variables (the Conservatism Index, Patriotism Index, Warriorism Index, Charismatic/Value-Based Index, Team-Oriented Index, Self-Protective Index, Participative Index, Humane-Oriented Index, and Autonomous Index) and the outcome variables (Transformational Leadership Style Index, Transactional Leadership Style Index, and Laissez-Faire Leadership Style Index). Note that (a) bold circles in each of the scatterplots below equal multiple data points at the same coordinates and (b) a linear line has been fitted to each graph to provide a perspective regarding a possible linear relationship. Visual inspection for linearity was conducted using the partial regression plots in Figures 7 through 33, with all of the partial regression plots indicating a linear relationship between the pairs of independent and dependent variables.

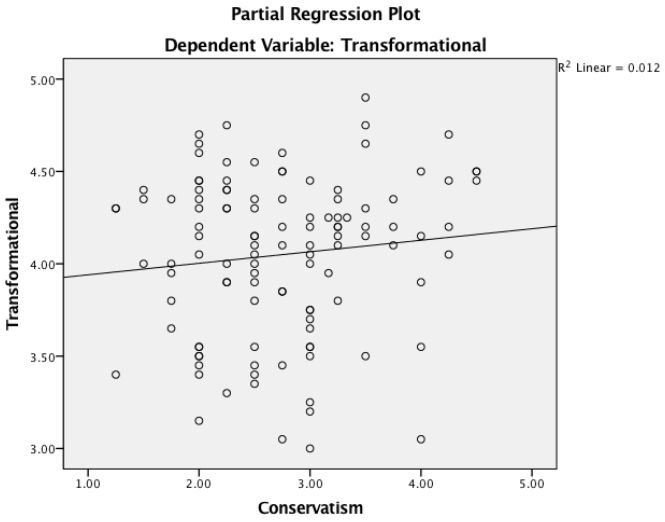

Figure 7. Scatter plot of dependent variable: Transformational Leadership Style, independent variable: Conservatism Index.

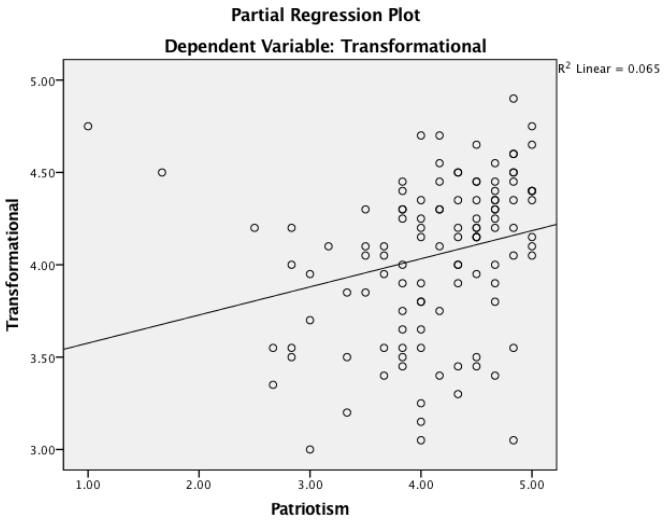

Figure 8. Scatter plot of dependent variable: Transformational Leadership Style, independent variable Patriotism Index.

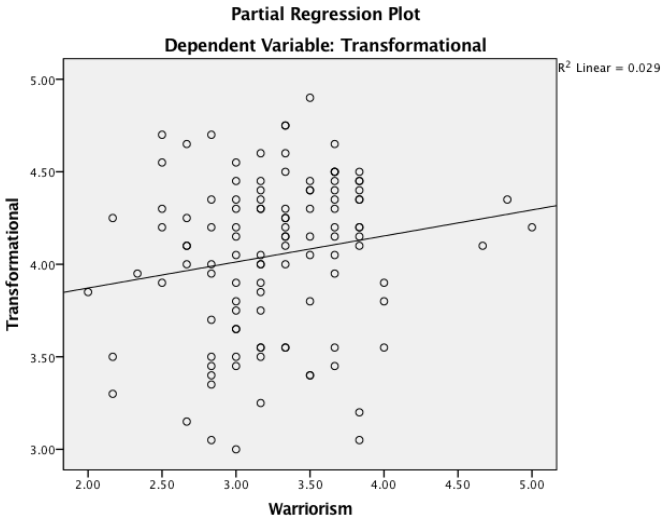

Figure 9. Scatter plot of dependent variable: Transformational Leadership Style, independent variable: Warriorism Index.

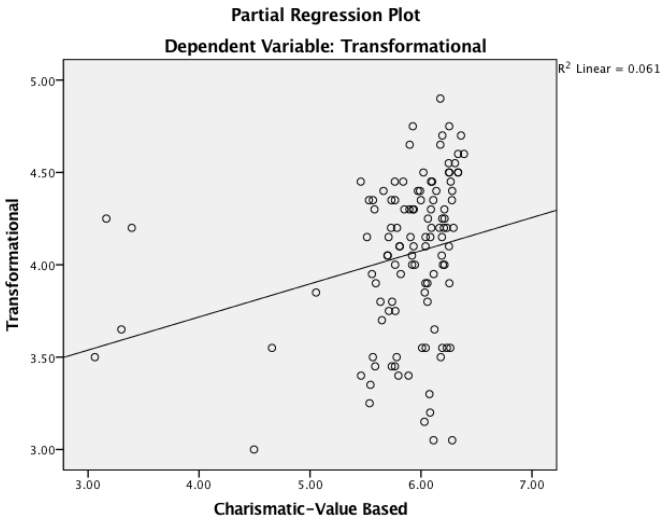

Figure 10. Scatter plot of dependent variable: Transformational Leadership Style, independent variable: Charismatic/Value-Based Index.

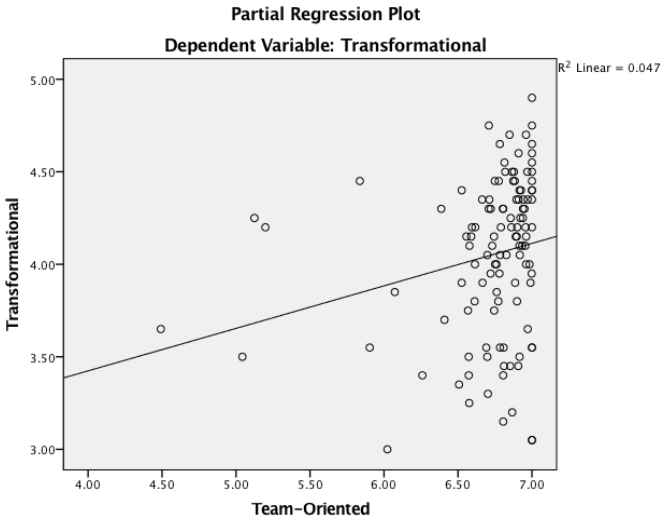

Figure 11. Scatter plot of dependent variable: Transformational Leadership Style, independent variable: Team-Oriented Index.

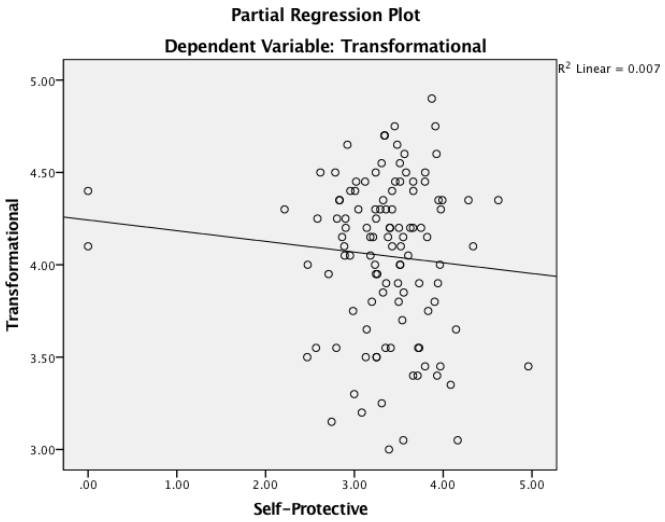

Figure 12. Scatter plot of dependent variable: Transformational Leadership Style, independent variable: Self-Protective Index.

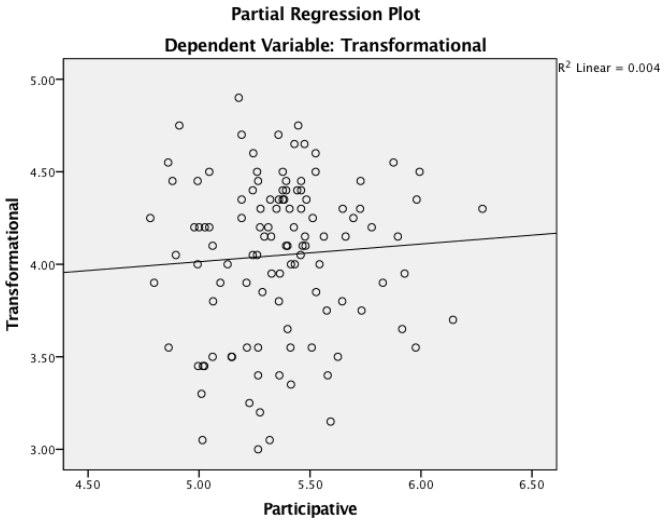

Figure 13. Scatter plot of dependent variable: Transformational Leadership Style, independent variable: Participative Index.

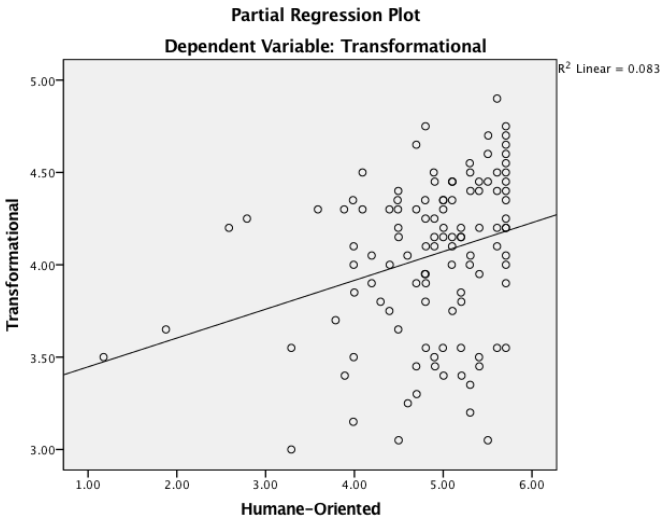

Figure 14. Scatter plot of dependent variable: Transformational Leadership Style, independent variable: Humane-Oriented Index.

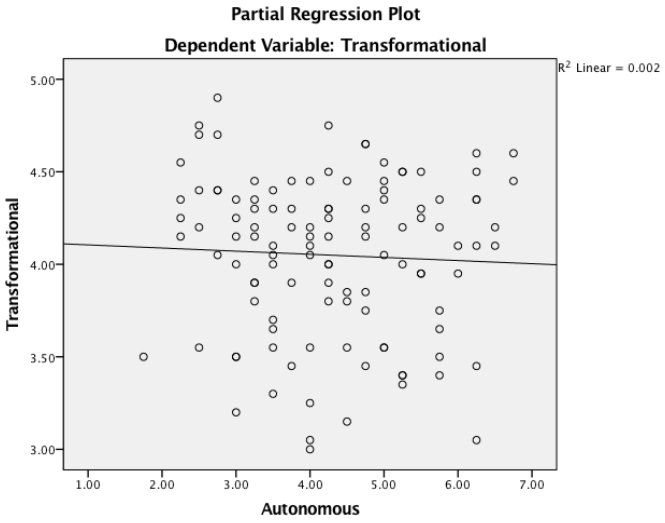

Figure 15. Scatter plot of dependent variable: Transformational Leadership Style, independent variable: Autonomous Index.

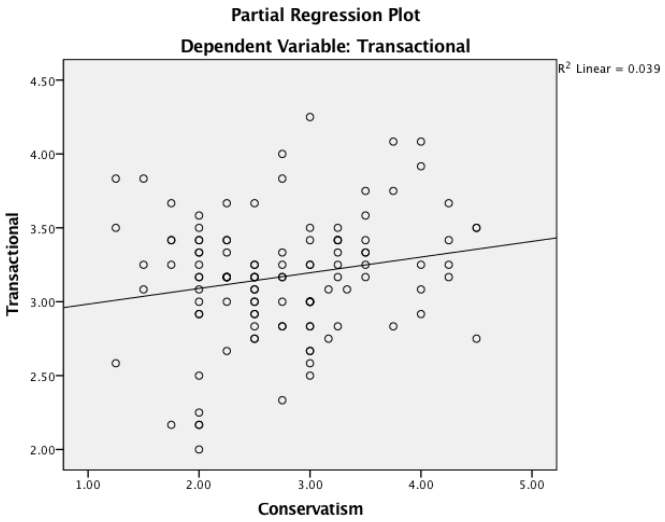

Figure 16. Scatter plot of dependent variable: Transactional Leadership Style, independent variable: Conservatism Index.

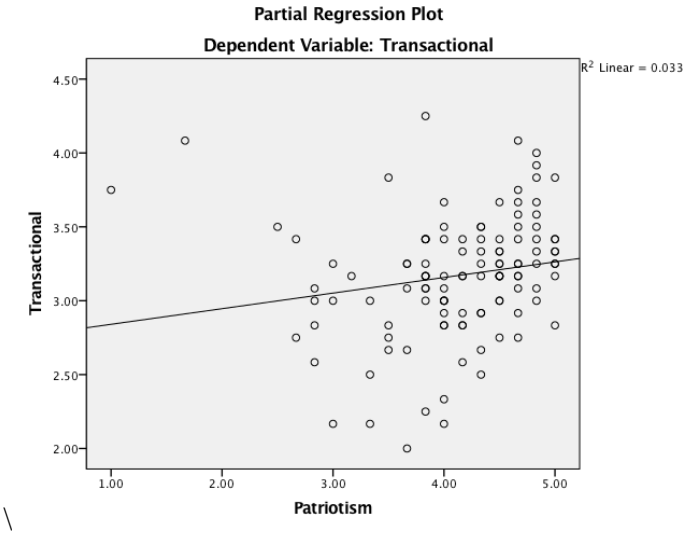

Figure 17. Scatter plot of dependent variable: Transactional Leadership Style, independent variable: Patriotism Index.

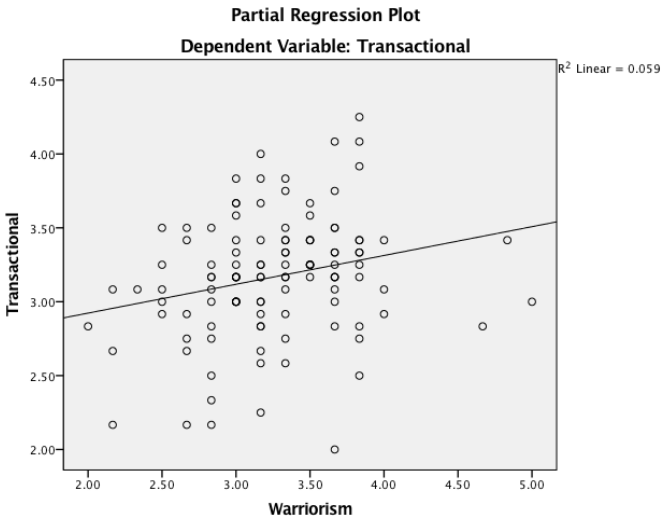

Figure 18. Scatter plot of dependent variable: Transactional Leadership Style, independent variable: Warriorism Index.

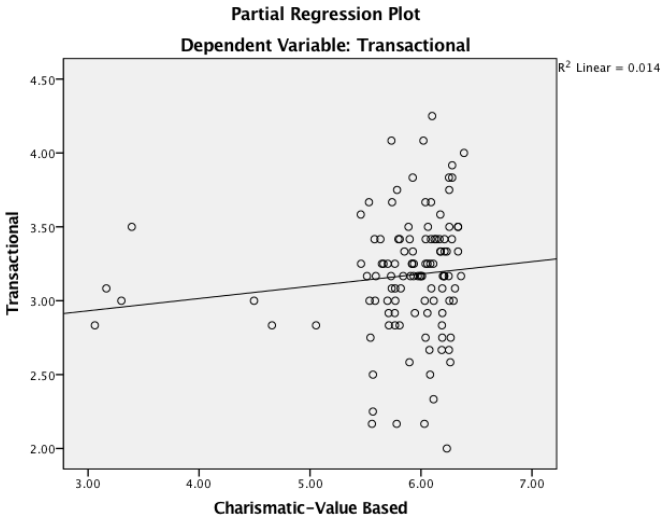

Figure 19. Scatter plot of dependent variable: Transactional Leadership Style, independent variable: Charismatic/Value-Based Index.

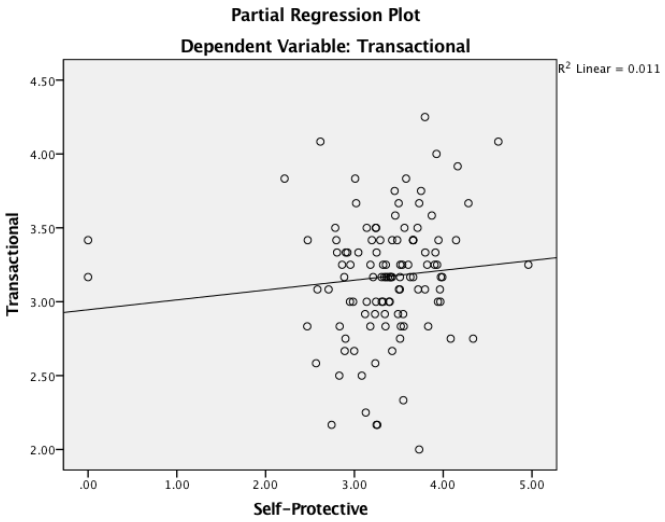

Figure 20. Scatter plot of dependent variable: Transactional Leadership Style, independent variable: Self-Protective Index.

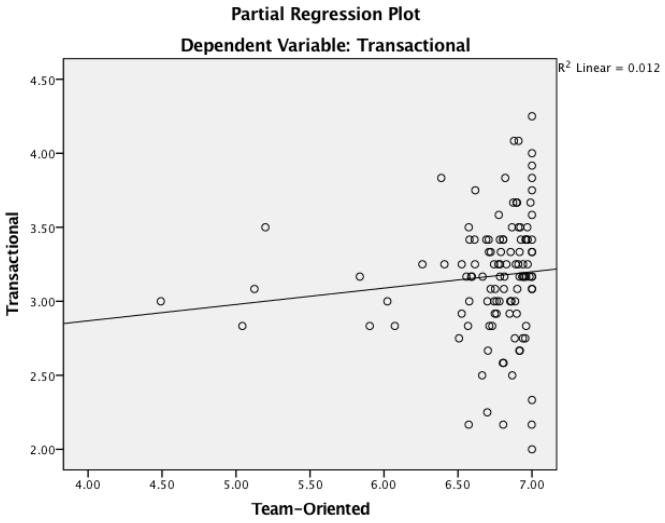

Figure 21. Scatter plot of dependent variable: Transactional Leadership Style, independent variable: Team-Oriented Index.

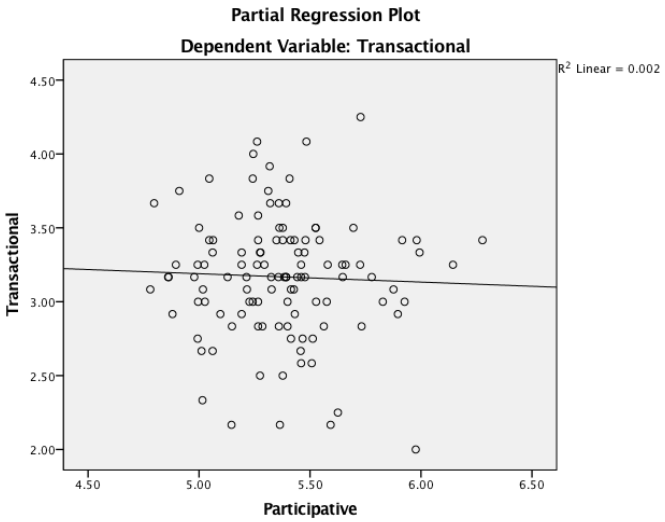

Figure 22. Scatter plot of dependent variable: Transactional Leadership Style, independent variable: Participative Index.

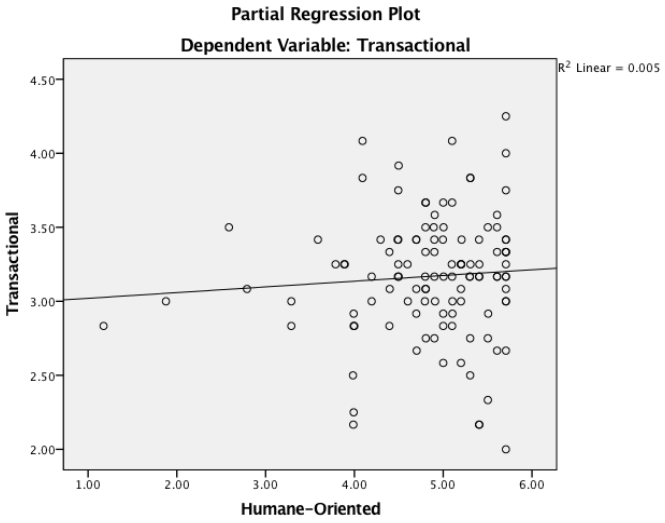

Figure 23. Scatter plot of dependent variable: Transactional Leadership Style, independent variable: Humane-Oriented Index.

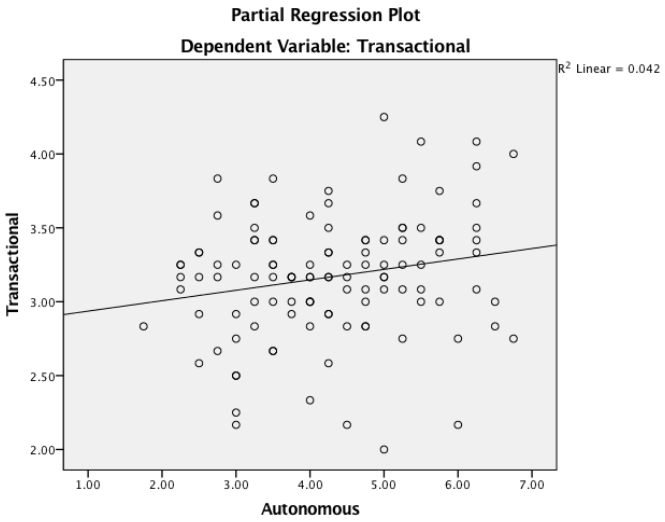

Figure 24. Scatter plot of dependent variable: Transactional Leadership Style, independent variable: Autonomous Index.

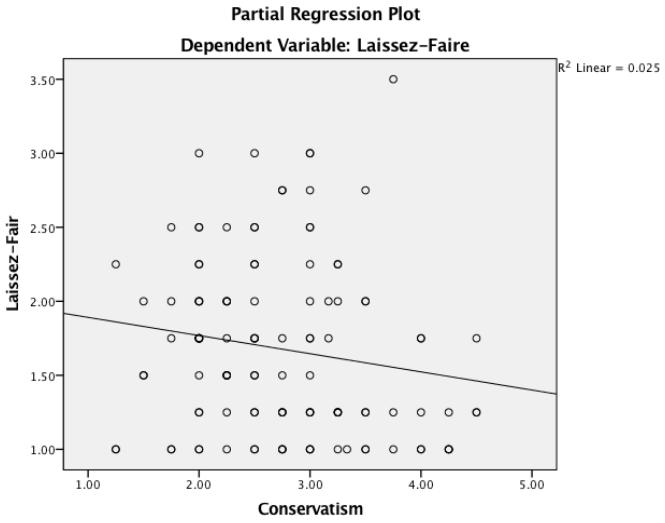

Figure 25. Scatter plot of dependent variable: Laissez-Faire Leadership Style, independent variable: Conservatism Index.

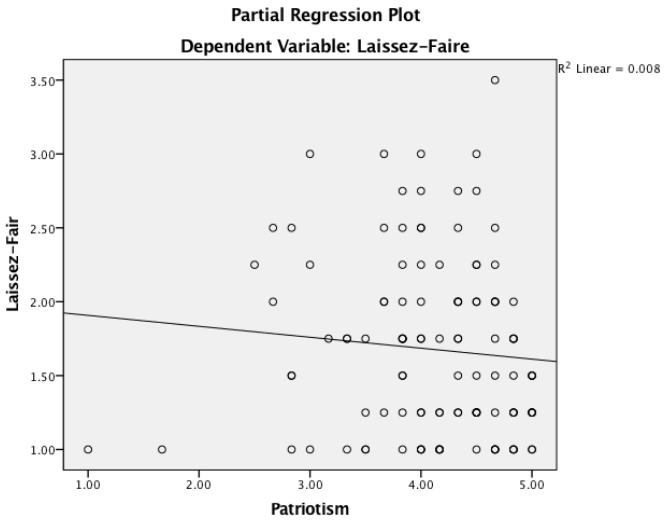

Figure 26. Scatter plot of dependent variable: Laissez-Faire Leadership Style, independent variable: Patriotism Index.

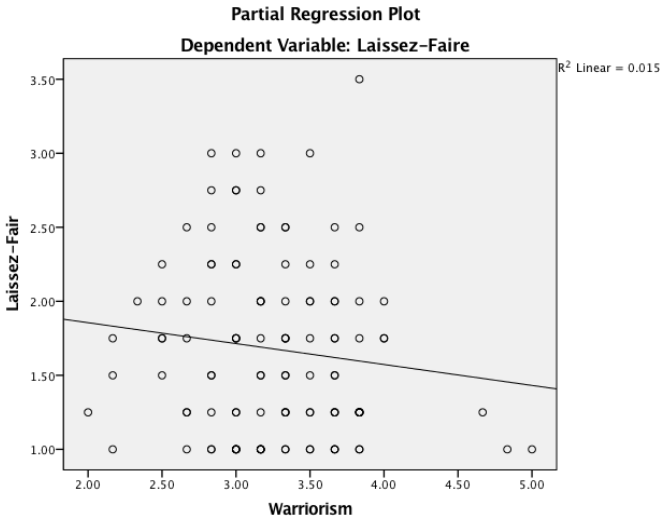

Figure 27. Scatter plot of dependent variable: Laissez-Faire Leadership Style, independent variable: Warriorism Index.

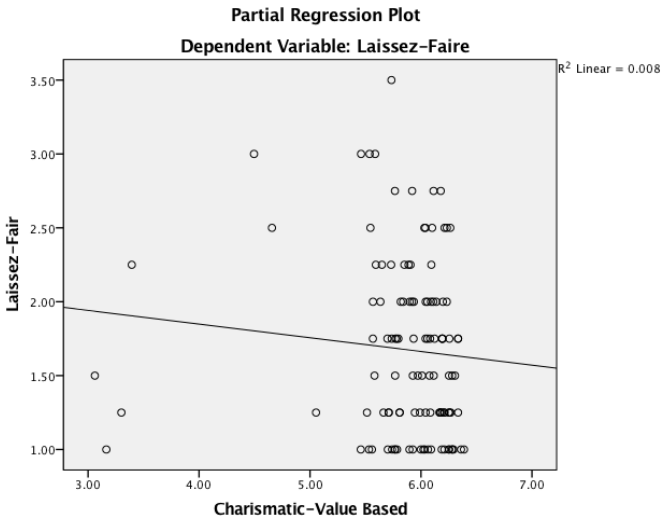

Figure 28. Scatter plot of dependent variable: Laissez-Faire Leadership Style, independent variable: Charismatic/Value-Based Index.

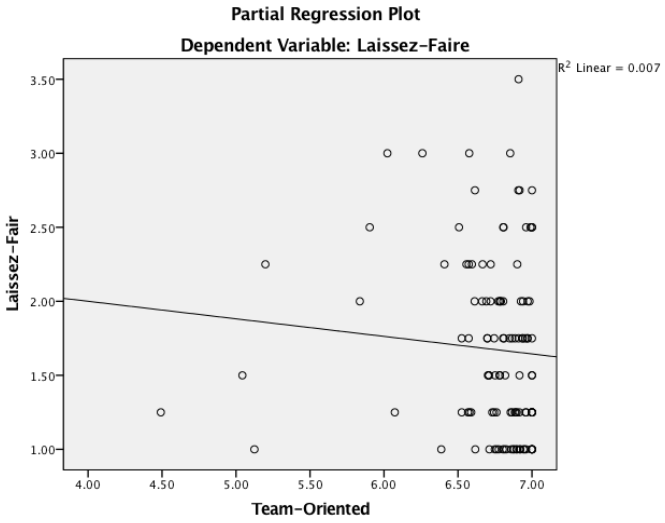

Figure 29. Scatter plot of dependent variable: Laissez-Faire Leadership Style, independent variable: Team-Oriented Index.

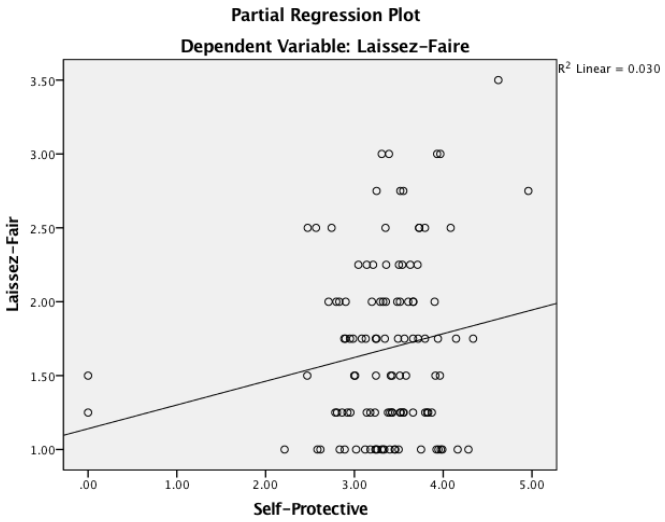

Figure 30. Scatter plot of dependent variable: Laissez-Faire Leadership Style, independent variable: Self-Protective Index.

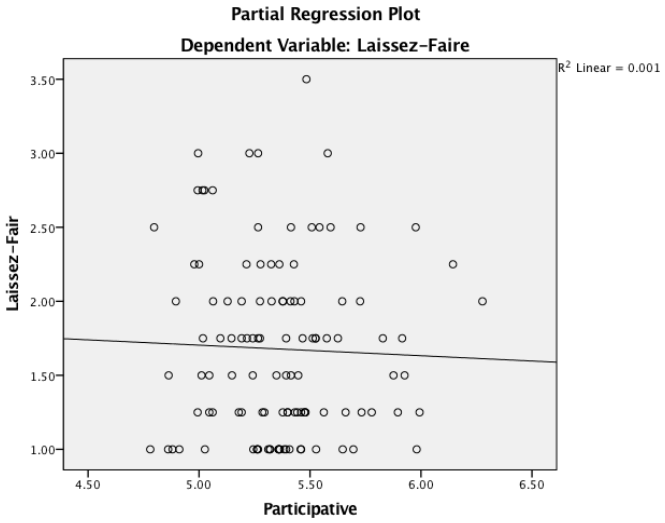

Figure 31. Scatter plot of dependent variable: Laissez-Faire Leadership Style, independent variable: Participative Index.

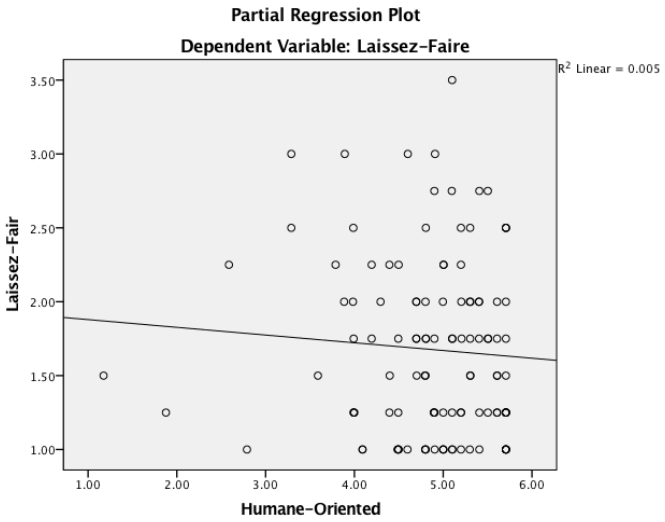

Figure 32. Scatter plot of dependent variable: Laissez-Faire Leadership Style, independent variable: Humane-Oriented Index.

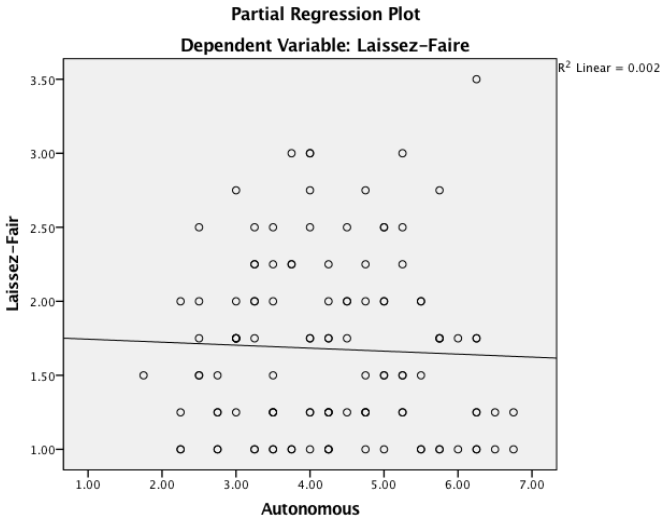

Figure 33. Scatter plot of dependent variable: Laissez-Faire Leadership Style, independent variable: Autonomous Index.

Testing using Pearson's linear correlation coefficients. Following the visual inspection of the partial regression plots, a Pearson's linear correlation coefficients analysis was conducted to test the null and alternate hypotheses H_0: $|\rho| = 0$ and H_A: $|\rho| > 0$ for the relationship between the predictor variables (the Conservatism Index, Patriotism Index, Warriorism Index, Charismatic/Value-

Based Index, Team-Oriented Index, Self-Protective Index, Participative Index, Humane-Oriented Index, and Autonomous Index) and the outcome variables (Transformational Leadership Style Index, Transactional Leadership Style Index, and Laissez-Faire Leadership Style Index). The Pearson's linear correlation coefficients generated by SPSS appear in Table 5. They were analyzed by dependent-independent variable pairs.

Table 5
Pearson Correlation Coefficients Between Dependent and Independent Variables

		Transformational	Transactional	Laissez-Faire
Conservatism	Pearson Correlation	0.112	0.197*	-0.158
	Sig. (2-tailed)	0.237	0.036	0.093
	N	114	114	114
Patriotism	Pearson Correlation	0.254**	0.183	-0.089
	Sig. (2-tailed)	0.006	0.052	0.346
	N	114	114	114
Warriorism	Pearson Correlation	0.169	0.243**	-0.122
	Sig. (2-tailed)	0.072	0.009	0.195
	N	114	114	114
Charismatic-Value Based	Pearson Correlation	0.247**	0.119	-.092
	Sig. (2-tailed)	0.008	0.209	0.331
	N	114	114	114
Team-Oriented	Pearson Correlation	0.217*	0.108	-0.081
	Sig. (2-tailed)	0.020	0.252	0.393
	N	114	114	114
Self-Protective	Pearson Correlation	-.086	0.103	0.172
	Sig. (2-tailed)	0.361	0.276	0.067
	N	114	114	114
Participative	Pearson Correlation	0.065	-0.040	-0.035
	Sig. (2-tailed)	0.493	0.675	0.713
	N	114	114	114
Humane-Oriented	Pearson Correlation	0.289**	0.074	-0.070
	Sig. (2-tailed)	0.002	0.435	0.462
	N	114	114	114
Autonomous	Pearson Correlation	-0.048	0.206*	-0.041
	Sig. (2-tailed)	0.614	0.028	0.666
	N	114	114	114

The Transformational Leadership Style Index and independent variable pair analyses produced the following conclusions.

1. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Transformational Leadership Style Index and the Conservatism Index is supported because $[(p = 0.237) > (\alpha/2 = 0.025)]$. The Pearson's linear correlation coefficient for Conservatism Index $r = 0.112$ is less than 0.7, which indicates a very weak linear relationship between the variable pair.
2. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Transformational Leadership Style Index and the Patriotism Index is not supported because $[(p = 0.006) < (\alpha/2 = 0.025)$. The Pearson's linear correlation coefficient for the Patriotism Index $r = 0.254$ is less than 0.7, which indicates a weak linear relationship between the variable pair.
3. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Transformational Leadership Style Index and the Warriorism Index is supported because $[(p = 0.072) > (\alpha/2 = 0.025)]$. The Pearson's linear correlation coefficient for the Warriorism Index $r = 0.169$ is less than 0.7, which indicates a very weak linear relationship between the variable pair.
4. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Transformational Leadership Style Index and the Charismatic/Value-Based Index is not supported because $[(p = 0.008) < (\alpha/2 = 0.025)]$. The Pearson's linear correlation coefficient for the Charismatic/Value-Based Index $r = 0.247$ is less than 0.7, which indicates a very weak linear relationship between the variable pair.

5. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Transformational Leadership Style Index and the Team-Oriented Index is not supported because [$(p = 0.020) < (\alpha/2 = 0.025)$]. The Pearson's linear correlation coefficient for the Team-Oriented Index r = 0. 217 is less than 0.7, which indicates a very weak linear relationship between the variable pair.
6. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Transformational Leadership Style Index and the Self-Protective Index is supported because [$(p = 0.361) > (\alpha/2 = 0.025)$]. The Pearson's linear correlation coefficient for the Self-Protective Index r = -0.086 is less than 0.7, which indicates a very weak linear relationship between the variable pair.
7. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Transformational Leadership Style Index and the Participative Index is supported because [$(p = 0.493) > (\alpha/2 = 0.025)$]. The Pearson's linear correlation coefficient for the Participative Index r = 0. 065 is less than 0.7, which indicates a very weak linear relationship between the variable pair.
8. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Transformational Leadership Style Index and the Humane-Oriented Index is not supported because [$(p = 0.002) < (\alpha/2 = 0.025)$]. The Pearson's linear correlation coefficient for the Humane-Oriented Index r = 0. 289 is less than 0.7, which indicates a very weak linear relationship between the variable pair.
9. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Transformational Leadership Style Index and the Autonomous Index is supported because [$(p = 0.614) > (\alpha/2 = 0.025)$]. The Pearson's linear

correlation coefficient for the Autonomous Index r = -0.048 is less than 0.7, which indicates a very weak linear relationship between the variable pair.

In conclusion, the tests using Pearson's linear correlation coefficients to test the pairwise linear relationships between the Transformational Leadership Style Index and the nine independent variables indicated that the pairwise linear relationships are very weak.

The Transactional Leadership Style Index and independent variable pair analyses produced the following conclusions.

1. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Transactional Leadership Style Index and the Conservatism Index is supported because $[(p = 0.036) > (\alpha/2 = 0.025)]$. The Pearson's linear correlation coefficient for the Conservatism Index r = 0. 197 is less than 0.7, which indicates a very weak linear relationship between the variable pair.
2. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Transactional Leadership Style Index and the Patriotism Index is supported because $[(p = 0.052) > (\alpha/2 = 0.025)]$. The Pearson's linear correlation coefficient for the Patriotism Index r = 0. 183 is less than 0.7, which indicates a very weak linear relationship between the variable pair.
3. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Transactional Leadership Style Index and the Warriorism Index is not supported because $[(p = 0.009) < (\alpha/2 = 0.025)]$. The Pearson's linear correlation coefficient for the Warriorism Index r = 0. 243 is less than 0.7, which indicates a very weak linear relationship between the variable pair.

4. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Transactional Leadership Style Index and the Charismatic/Value-Based Index is supported because [$(p = 0.209) > (\alpha/2 = 0.025)$]. The Pearson's linear correlation coefficient for the Charismatic/Value-Based Index $r = 0.119$ is less than 0.7, which indicates a very weak linear relationship between the variable pair.
5. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Transactional Leadership Style Index and the Team-Oriented Index is supported because [$(p = 0.252) > (\alpha/2 = 0.025)$]. The Pearson's linear correlation coefficient for the Team-Oriented Index $r = 0.108$ is less than 0.7, which indicates a very weak linear relationship between the variable pair.
6. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Transactional Leadership Style Index and the Self-Protective Index is supported because [$(p = 0.276) > (\alpha/2 = 0.025)$]. The Pearson's linear correlation coefficient for the Self-Protective Index $r = 0.103$ is less than 0.7, which indicates a very weak linear relationship between the variable pair.
7. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Transactional Leadership Style Index and the Participative Index is supported because [$(p = 0.675) > (\alpha/2 = 0.025)$]. The Pearson's linear correlation coefficient for the Participative Index $r = -0.040$ is less than 0.7, which indicates a very weak linear relationship between the variable pair.
8. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Transactional Leadership Style Index and the Humane-Oriented Index is

supported because [(p = 0.435) > (α/2 = 0.025)]. The Pearson's linear correlation coefficient for the Humane-Oriented Index r = 0. 074 is less than 0.7, which indicates a very weak linear relationship between the variable pair.

9. The null hypothesis H_0: |ρ| = 0 for the linear relationship between the Transactional Leadership Style Index and the Autonomous Index is supported because [(p = 0.028) > (α/2 = 0.025)]. The Pearson's linear correlation coefficient for the Autonomous Index r = 0. 206 is less than 0.7, which indicates a very weak linear relationship between the variable pair.

In conclusion, the tests using Pearson's linear correlation coefficients to test the pairwise linear relationships between the Transactional Leadership Style Index and the nine independent variables indicated that the pairwise linear relationships are very weak.

The Laissez-Faire Leadership Style Index and independent variable pair analyses produced the following conclusions.

1. The null hypothesis H_0: |ρ| = 0 for the linear relationship between the Laissez-Faire Leadership Style Index and the Conservatism Index is supported because [(p = 0.093) > (α/2 = 0.025)]. The Pearson's linear correlation coefficient for the Conservatism Index r = -0.158 is less than 0.7, which indicates a very weak linear relationship between the variable pair.
2. The null hypothesis H_0: |ρ| = 0 for the linear relationship between the Laissez-Faire Leadership Style Index and the Patriotism Index is supported because [(p = 0.346) > (α/2 = 0.025)]. The Pearson's linear correlation coefficient for the Patriotism Index r = -0.089 is less than 0.7, which indicates a very weak linear relationship between the variable pair.

3. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Laissez-Faire Leadership Style Index and the Warriorism Index is supported because [$(p = 0.195) > (\alpha/2 = 0.025)$]. The Pearson's linear correlation coefficient for the Warriorism Index r = -0.122 is less than 0.7, which indicates a very weak linear relationship between the variable pair.
4. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Laissez-Faire Leadership Style Index and the Charismatic/Value-Based Index is supported because [$(p = 0.331) > (\alpha/2 = 0.025)$]. The Pearson's linear correlation coefficient for the Charismatic/Value-Based Index r = -0.092 is less than 0.7, which indicates a very weak linear relationship between the variable pair.
5. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Laissez-Faire Leadership Style Index and the Team-Oriented Index is supported because [$(p = 0.393) > (\alpha/2 = 0.025)$]. The Pearson's linear correlation coefficient for the Team-Oriented Index r = -0.081 is less than 0.7, which indicates a very weak linear relationship between the variable pair.
6. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Laissez-Faire Leadership Style Index and the Self-Protective Index is supported because [$(p = 0.067) > (\alpha/2 = 0.025)$]. The Pearson's linear correlation coefficient for the Self-Protective Index r = 0. 172 is less than 0.7, which indicates a very weak linear relationship between the variable pair.
7. The null hypothesis H_0: $|\rho| = 0$ for the linear relationship between the Laissez-Faire Leadership Style Index and the Participative Index is supported because

[(p = 0.713) > (α/2 = 0.025)]. The Pearson's linear correlation coefficient for the Participative Index r = -0.035 is less than 0.7, which indicates a very weak linear relationship between the variable pair.

8. The null hypothesis H_0: |ρ| = 0 for the linear relationship between the Laissez-Faire Leadership Style Index and the Humane-Oriented Index is supported because [(p = 0.462) > (α/2 = 0.025)]. The Pearson's linear correlation coefficient for the Humane-Oriented Index r = -0.070 is less than 0.7, which indicates a very weak linear relationship between the variable pair.
9. The null hypothesis H_0: |ρ| = 0 for the linear relationship between the Laissez-Faire Leadership Style Index and the Autonomous Index is supported because [(p = 0.666) > (α/2 = 0.025)]. The Pearson's linear correlation coefficient for the Autonomous Index r = -0.041 is less than 0.7, which indicates a very weak linear relationship between the variable pair.

In conclusion, the tests using Pearson's linear correlation coefficients to test the pairwise linear relationships between the Laissez-Faire Leadership Style Index and the nine independent variables indicated that the pairwise linear relationships are very weak.

Homoscedasticity

Multiple linear regression assumes that the residuals are homoscedastic (Laerd, 2016). This assumption was tested by visually examining scatterplots of the regression standardized residuals and regression standardized predicted values. The residuals were considered to be homoscedastic when the data points in the scatterplots does not increase or decrease across the predicted values. When the data points on the scatterplots form a pattern that appears to be an increasing or decreasing funnel shape or in the shape of a

fan, then the residuals are said to be heteroscedastic, which violates the assumption of homoscedasticity.

Homoscedasticity of the variance of the residuals was tested using scatterplots of the regression standardized residuals and regression standardized predicted values of the dependent variables Transformational Leadership Style Index, Transformational Leadership Style Index, and Laissez-Faire Leadership Style Index. The scatterplots for both the Transformational Leadership Style Index (Figure 7) and the Transactional Leadership Style Index (Figure 8) appear to be homoscedastic because the data points in the two scatterplots do not increase or decrease across the predicted values. That is, the scatterplots of the regression standardized residuals and regression standardized predicted values of the dependent variables appear to be randomly distributed. In contrast, the scatterplot for the Laissez-Faire Leadership Style Index (Figure 9) shows positive heteroscedasticity of variance because the pattern of data points forms a cone shape. Therefore, visual evidence provided by the scatterplots in Figures 7, 8, and 9 indicate that the variances of the residuals are (a) homoscedastic for the dependent variables Transformational Leadership Style Index and Transformational Leadership Style Index and (b) heteroscedastic for the dependent variable Laissez-Faire Leadership Style Index.

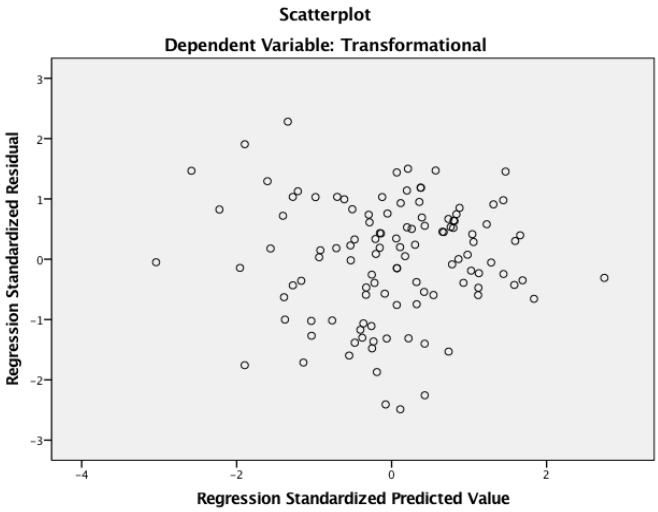

Figure 34. Scatterplot of Regression Standardized Residuals vs. Regression Standardized Predicted Values for the Transformational Leadership Style Index.

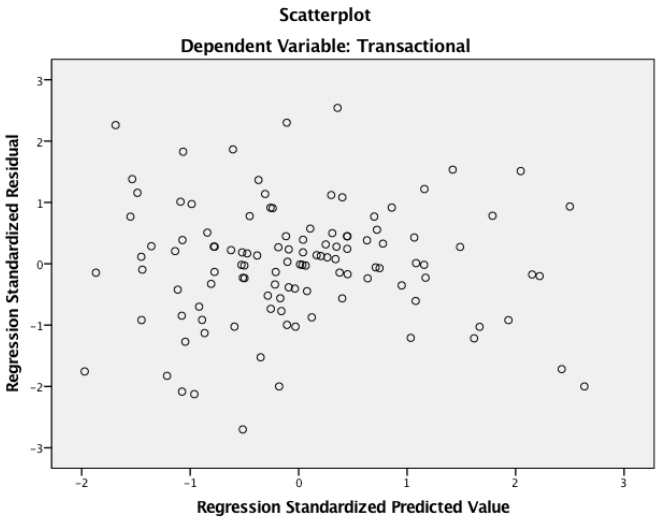

Figure 35. Scatterplot of Regression Standardized Residuals vs. Regression Standardized Predicted Values for the Transactional Leadership Style Index.

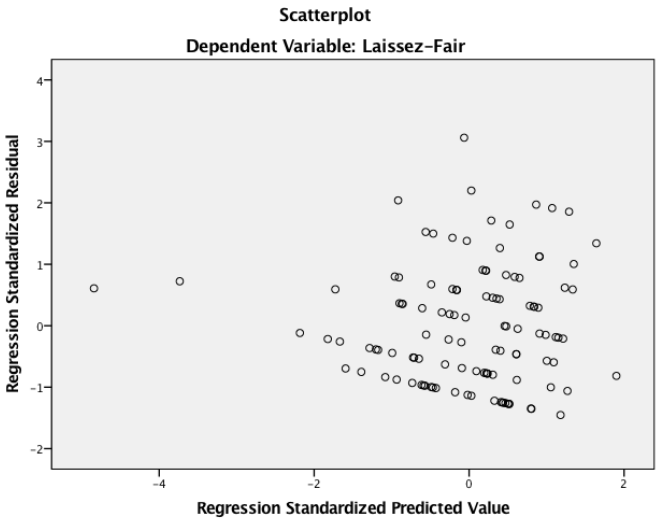

Figure 36. Scatterplot of Regression Standardized Residuals vs. Regression Standardized Predicted Values for the Laissez-Faire Leadership Style Index.

Multicollinearity

Multiple linear regression assumes that the data for the independent variables must not show significant multicollinearity (Laerd, 2016), where collinearity is when (a) pairs of independent variables are highly correlated and (b) the independent variables are jointly highly correlated. This two-part assumption was tested (a) the pairwise assumptions were tested using Pearson's linear correlation coefficients and (b) the jointly highly correlated assumption was tested using tolerance/Variance Inflation Factor (VIF) values.

Testing using Pearson's linear correlation coefficients. The SPSS results of the tests for multicollinearity using Pearson's linear correlation coefficients appear in Table 6. Examining the results in Table 6 indicates that none of the independent-variable pairs have a significant collinear relationship because the values of all of the correlation coefficients, r, are less than 0.7. Thus, the assumption that no collinearity exists among the values of the independent-variable pairs has been satisfied.

Table 6

Pearson's Linear Coefficients Matrix of the Independent Variables

Correlations

		Conservatism	Patriotism	Warriorism	Charismatic -Value	Team-Oriented	Self-Protective	Participativ	Humane-Oriented	Autonomou
Conservatism	Pearson Corr.	1	.029	.329**	.014	-.028	-.035	-.099	-.049	.071
	Sig. (2-tailed)		.756	.000	.881	.764	.711	.294	.601	.452
	N	114	114	114	114	114	114	114	114	114
Patriotism	Pearson Corr.	.029	1	.189*	.281**	.260**	.034	.105	.215*	.050
	Sig. (2-tailed)	.756		.044	.002	.005	.717	.267	.022	.598
	N	114	114	114	114	114	114	114	114	114
Warriorism	Pearson Corr.	.329**	.189*	1	.315**	.263**	-.012	.082	.223*	.272**
	Sig. (2-tailed)	.000	.044		.001	.005	.900	.384	.017	.003
	N	114	114	114	114	114	114	114	114	114
Charismatic-Value Based	Pearson Corr.	.014	.281**	.315**	1	.910**	.117	.204*	.816**	.230*
	Sig. (2-tailed)	.881	.002	.001		.000	.214	.029	.000	.014
	N	114	114	114	114	114	114	114	114	114
Team-Oriented	Pearson Corr.	-.028	.260**	.263**	.910**	1	.162	.170	.776**	.258**
	Sig. (2-tailed)	.764	.005	.005	.000		.085	.071	.000	.006
	N	114	114	114	114	114	114	114	114	114
Self-Protective	Pearson Corr.	-.035	.034	-.012	.117	.162	1	.031	.110	.294**
	Sig. (2-tailed)	.711	.717	.900	.214	.085		.741	.244	.001
	N	114	114	114	114	114	114	114	114	114
Participative	Pearson Corr.	-.099	.105	.082	.204*	.170	.031	1	.019	.149
	Sig. (2-tailed)	.294	.267	.384	.029	.071	.741		.838	.114
	N	114	114	114	114	114	114	114	114	114
Humane-Oriented	Pearson Corr.	-.049	.215*	.223*	.816**	.776**	.110	.019	1	.142
	Sig. (2-tailed)	.601	.022	.017	.000	.000	.244	.838		.133
	N	114	114	114	114	114	114	114	114	114
Autonomous	Pearson Corr.	.071	.050	.272**	.230*	.258**	.294**	.149	.142	1
	Sig. (2-tailed)	.452	.598	.003	.014	.006	.001	.114	.133	
	N	114	114	114	114	114	114	114	114	114

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Testing using Tolerance/Variation Inflation Factors. The SPSS output of the tests for the jointly highly correlated assumption appear in Table 7. Notice that none of the Variance Inflation Factor (VIF) values in Table 7 are greater than 10. Therefore, the assumption that the independent variables are not jointly highly correlated has been satisfied.

Table 7
Variance Inflation Factors and Tolerance Statistics

Coefficients: Dependent Variables	Transformational, Transactional, Laissez-Faire	
	Collinearity Statistics	
Independent Variable	Tolerance	VIF
Conservatism	0.852	1.174
Patriotism	0.904	1.106
Warriorism	0.741	1.349
Charismatic-Value Base	0.127	7.860
Team-Oriented	0.162	6.164
Self-Protective	0.888	1.126
Participative	0.864	1.157
Humane-Oriented	0.299	3.341
Autonomous	0.799	1.252

Outliers

Multiple linear regression assumes that outliers, high leverage points, or highly influential points are not present (Laerd, 2016). This assumption is important because outliers have the potential to incorrectly influence the slope of the regression line, presenting results that are not representative of the trend. For this study, data points that were more than ±3 standard deviations from the regression line were considered to be outliers. Significant outliers were tested for using box-and-whisker plots. When outliers were detected, a Casewise Diagnostic was produced. High leverage points can be detected using SPSS. Highly influential points can be detected using Cook's distance, which is generated in the Casewise Diagnostics.

The box-and-whisker plots for the three dependent variables and the nine independent variables appear in Figures 37 through 48. An examination of these box-and-whisker plots indicated that outliers were detected for nine of the twelve variables. No outliers were found for the Transformational Leadership Style Index (Figure 37), the

Conservatism Index (Figure 40), and the Autonomous Index (Figure 48). One outlier was found for the Laissez-Faire Leadership Style Index (case 64) (Figure 39). Two outliers were found for (a) the Transactional Leadership Style Index (cases 93 and 97) (Figure 38) and (b) the Warriorism Index (cases 10 and 44) (Figure 42). Three outliers (cases 8, 52, and 85) were found for the Patriotism Index (Figure 41) and (b) the Participative Index (cases 42, 63, and 71) (Figure 46). Four outliers were found for the Humane-Oriented Index (cases 2, 8, 67, and 109) (Figure 47). Five outliers were found for the Self-Protective Index (cases 13, 64, 69, 105, and 106) (Figure 45). Seven outliers were found for the Charismatic/Value Index (cases 2, 8, 38, 67, 77, 86, and 109) (Figure 43). Nine outliers were found in the Team-Oriented Index (cases 1, 2, 8, 38, 67, 77, 86, 103, and 109) (Figure 44).

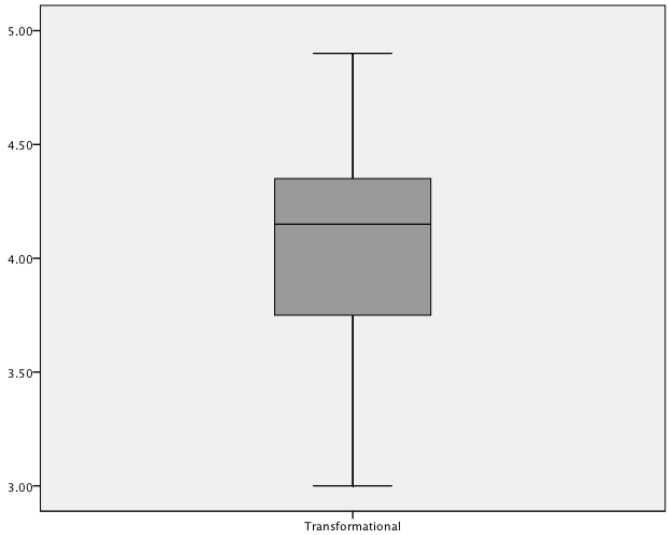

Figure 37. Box-and-whisker plot of Transformational Leadership Style Index

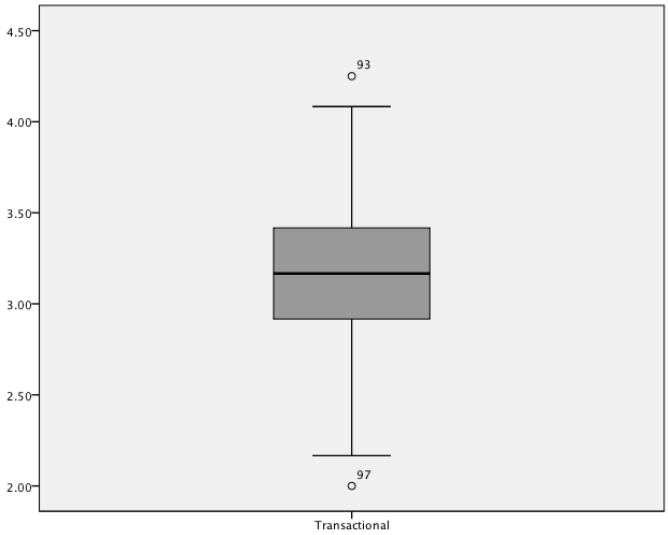

Figure 38. Box-and-whisker plot of Transactional Leadership Style Index

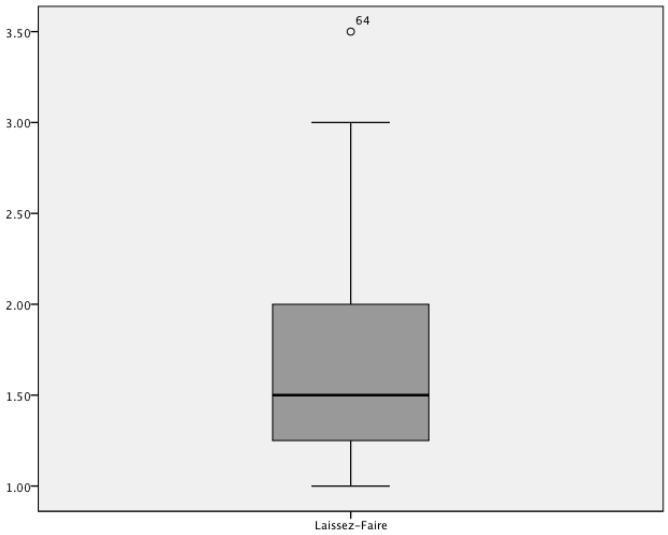

Figure 39. Box-and-whisker plot of Laissez-Faire Leadership Style Index

Figure 40. Box-and-whisker plot of Conservatism Index

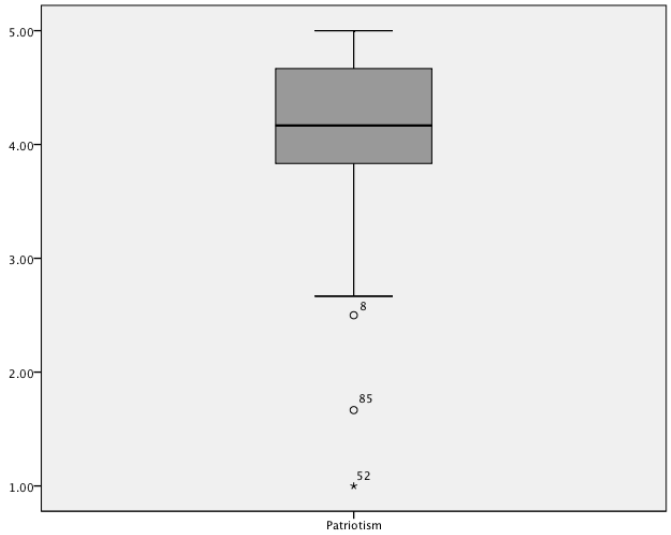

Figure 41. Box-and-whisker plot of Patriotism Index

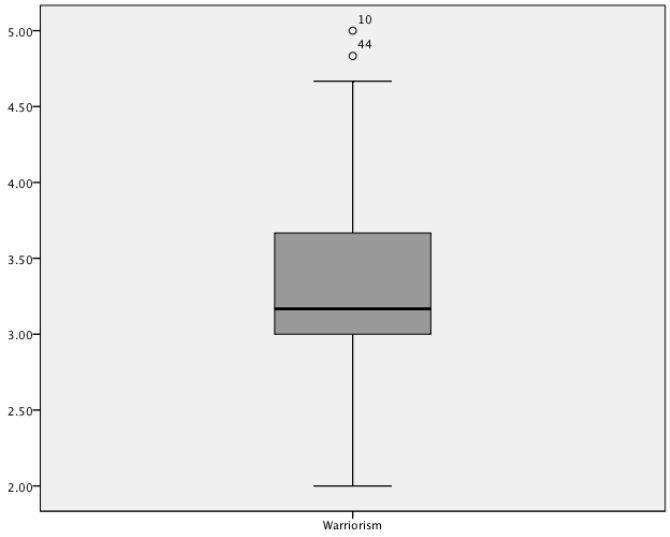

Figure 42. Box-and-whisker plot of Warriorism Index

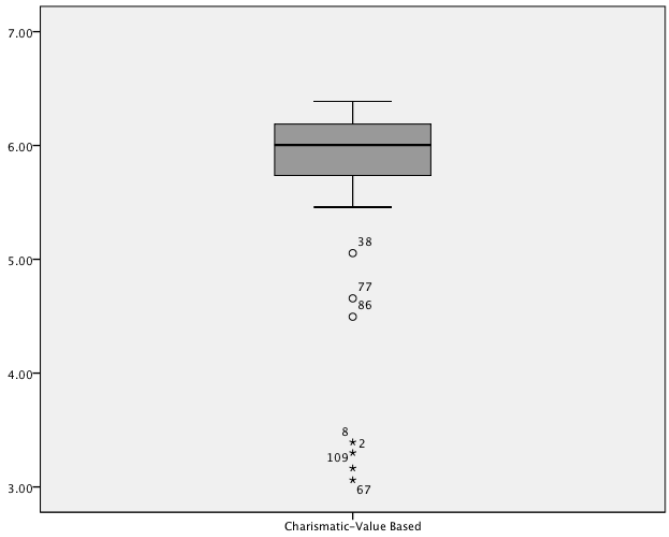

Figure 43. Box-and-whisker plot of Charismatic-Value Based Index

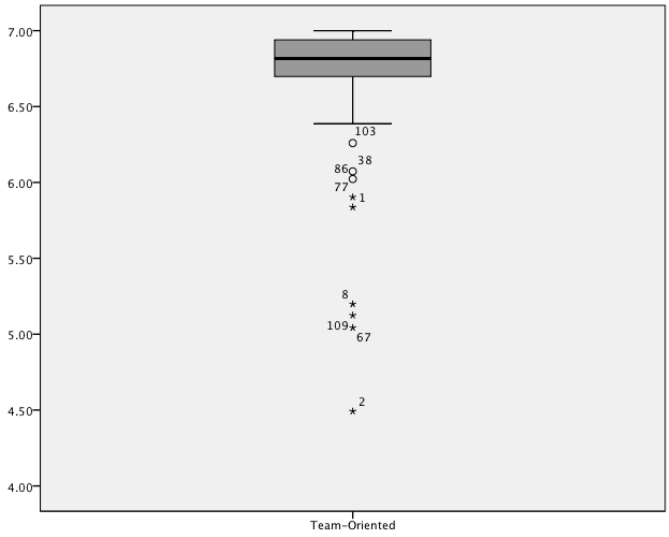

Figure 44. Box-and-whisker plot of Team-Oriented Index

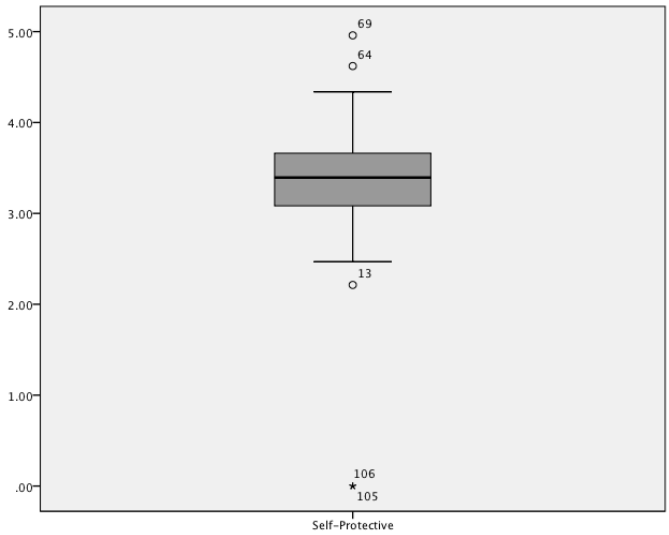

Figure 45. Box-and-whisker plot of Self-Protective Index

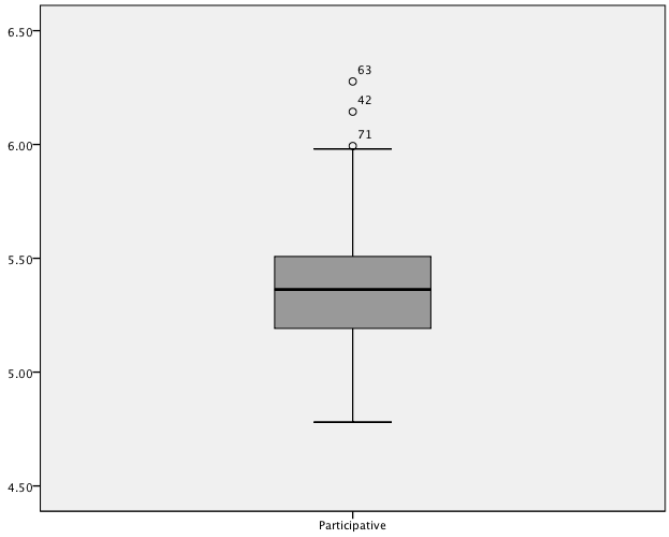

Figure 46. Box-and-whisker plot of Participative Index

Figure 47. Box-and-whisker plot of Humane-Oriented Index

Figure 48. Box-and-whisker plot of Autonomous Index

Total outliers equaled 36 cases. Of these 36 cases, nine cases appeared for more than one variable (Table 8), which left a total of 27 unique cases. The existence of outliers prompted the need to generate a Casewise Diagnostic Table. SPSS was run to detect cases outside of ±3 standard deviations and none were found. No outliers were removed.

Table 8
Regression Outliers

Index	N	Outliers by Case								
Transformational	0									
Transactional	2	93	97							
Laissez-Faire	1	**64**[a]								
Conservatism	0									
Patriotism	3	**8**[a]	52	85						
Warriorism	2	10	44							
Charismatic-Value Based	7	**2**[a]	**8**[a]	**38**[a]	**67**[a]	**77**[a]	**86**[a]	**109**[a]		
Team-Oriented	9	1	**2**[a]	**8**[a]	**38**[a]	**67**[a]	**77**[a]	**86**[a]	103	**109**[a]
Self-Protective	5	13	**64**[a]	69	105	106				
Participative	3	42	63	71						
Humane-Oriented	4	**2**[a]	**8**[a]	**67**[a]	**109**[a]					
Autonomous	0									

[a] Repeat outliers in different indices

Normality

Multiple linear regression assumes that residuals are approximately normally distributed (Laerd, 2016). This assumption will be tested using (a) histograms of standardized residuals with superimposed normal curves, (b) Normal P-P plots, and (c) Kolmogorov-Smirnov and Shapiro-Wilk tests. The histograms and Normal P-P plots are visual tests, while the Kolmogorov-Smirnov and Shapiro-Wilk tests use statistical inference.

Histograms. The normality of the regression residuals assumption for the three dependent variables was visually tested using histograms that appear in Figures 49, 50, and 51. The only histogram that approximates a normal distribution is the one for the

Transactional Leadership Style Index, which appears in Figure 50. The histograms for the Transformational Leadership Style Index (Figure 49) and the Laissez-Faire Leadership Style Index (Figure 51) clearly do not approximate a normal distribution. Therefore, using visual inspection of histograms, the normality of regression residuals assumption is met for the Transactional Leadership Style Index and is not met for either the Transformational Leadership Style Index nor the Laissez-Faire Leadership Style Index.

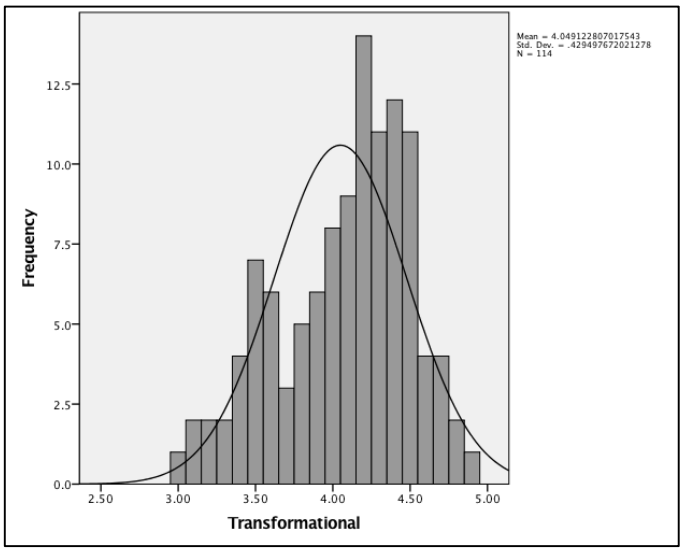

Figure 49. Histogram of standardized residuals of untransformed data for Transformational Leadership Style Index with a superimposed normal curve.

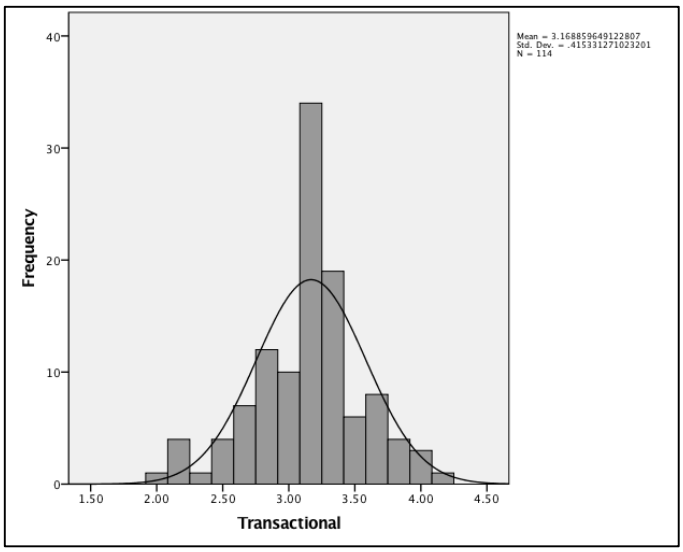

Figure 50. Histogram of standardized residuals of untransformed data for Transactional Leadership Style Index with a superimposed normal curve.

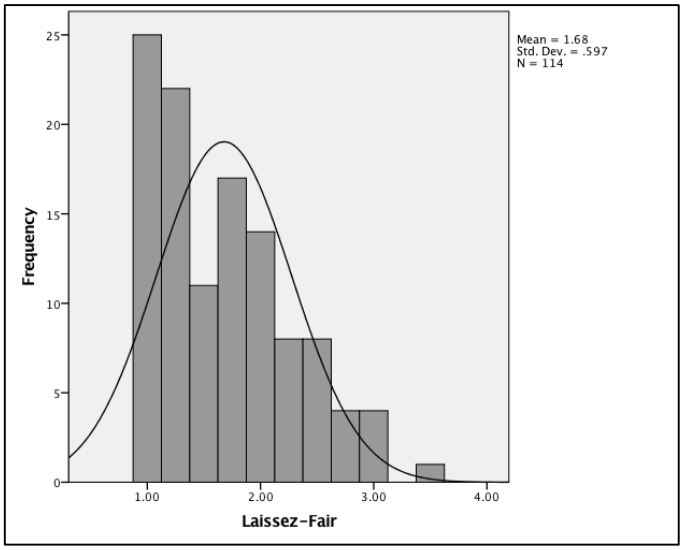

Figure 51. Histogram of standardized residuals of untransformed data for Laissez-Faire Leadership Style Index with a superimposed normal curve.

Normal P-P plots. The normality of the regression residuals assumption for the three dependent variables was visually tested using Normal P-P plots that appear in Figures 52, 53, and 54. A visual inspection of these three Normal P-P plots produces

inconclusive results because the data points fall close to but deviate somewhat from the diagonal lines. Therefore, using visual inspection of the three Normal P-P plots, the normality of regression residuals assumption for the Transformational Leadership Style Index, Transactional Leadership Style Index, and the Laissez-Faire Leadership Style Index is indeterminate.

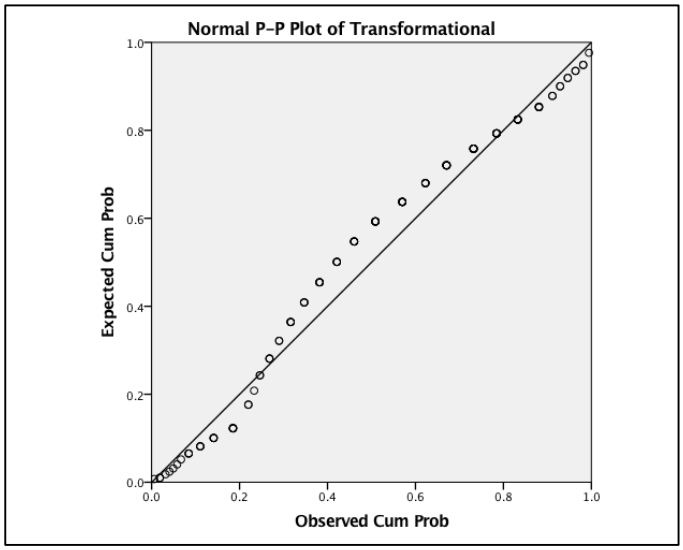

Figure 52. P-P plot of standardized residuals of untransformed data for Transformational Leadership Style Index.

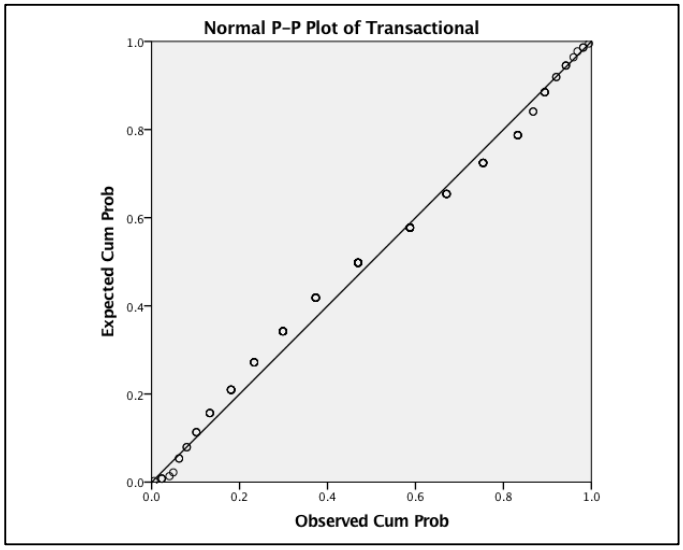

Figure 53. P-P plot of standardized residuals of untransformed data for Transactional Leadership Style Index with normal curve.

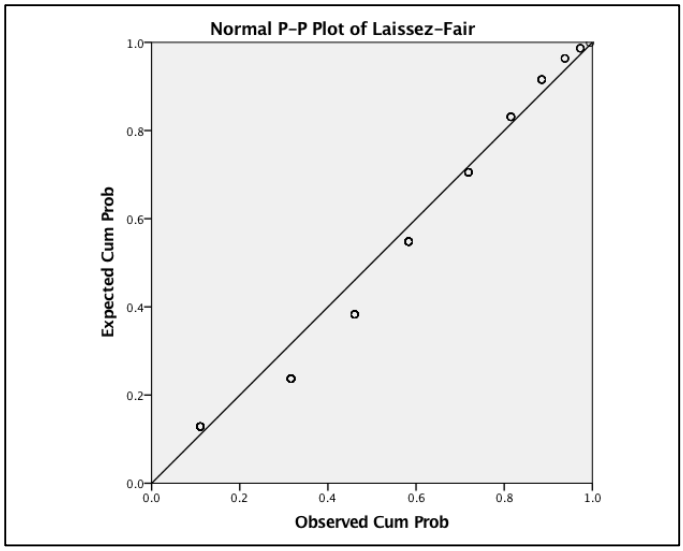

Figure 54. P-P plot of standardized residuals of untransformed data for Laissez-Faire Leadership Style Index.

Kolmogorov-Smirnov tests. The normality of the regression residuals assumption for the three dependent variables was statistically tested using Kolmogorov-Smirnov tests that appear in Table 9. The results of these tests were:

Table 9
SPSS Output Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Transformational	0.110	114	0.002	0.961	114	0.002
Transactional	0.094	114	0.014	0.979	114	0.074
Laissez-Faire	0.175	114	0.000	0.908	114	0.000

[a] Lilliefors Significance Correction

- The null hypothesis that the residuals for the Transformational Leadership Style Index were normally distributed was not supported by Kolmogorov-Smirnov test results because [($p = 0.002$) < ($\alpha/2 = 0.025$). Therefore, the assumption of the normality of the residuals was not satisfied for the Transformational Leadership Style Index.
- The null hypothesis that the residuals for Transactional Leadership Style Index were normally distributed was not supported by Kolmogorov-Smirnov test results because [($p = 0.014$) < ($\alpha/2 = 0.025$). Therefore, the assumption of the normality of the residuals was not satisfied for the Transactional Leadership Style Index.
- The null hypothesis that the residuals for Laissez-Faire Leadership Style Index were normally distributed was not supported by Kolmogorov-Smirnov test results because [($p < 0.0005$) < ($\alpha/2 = 0.025$). Therefore, the assumption of the normality of the residuals was not satisfied for the Laissez-Faire Leadership Style Index.

Although the null hypotheses that the residuals were normally distributed was not supported for all three of the dependent variables, multiple linear regression is a robust

analysis tool and, according to Fields (2013), the larger the sample size the less normality in the data will have an effect on the estimators.

Descriptive Analysis

The statistics appearing in this section is presented in aggregate in Table 10 and with demographic separation in Table 11. Table 11 and Figures 55 through 66 were provided to support discussion in Chapter 5 about the results of this study relative to full range leadership theory and self-categorization theory. Demographics included in this research are age, gender, Military Science Level (I - V), and university year (freshman, sophomore, junior, and senior).

Table 10
Descriptive Statistics Respondent Averages by Military Science Level and Gender

	All	Male	Female	MS I	MS II	MS III	MS IV
Transformational	4.05	4.13	3.91	4.06	4.02	3.99	4.09
Transactional	3.17	3.25	3.03	3.16	3.25	3.21	3.10
Laissez-Faire	1.68	1.62	1.77	1.58	1.73	1.74	1.73
Conservatism	2.48	2.47	2.50	2.47	2.47	2.45	2.53
Patriotism	4.11	4.09	4.13	4.09	4.01	4.37	4.03
Warriorism	3.26	4.13	3.91	1.58	1.73	1.74	4.09
Charismatic/Value-Based	5.85	3.38	3.06	3.18	3.15	3.40	3.35
Team Oriented	6.72	5.91	5.74	5.85	5.71	5.83	5.95
Self-Protective	3.34	6.78	6.63	6.71	6.67	6.71	6.78
Participative	5.37	3.44	3.17	3.35	3.33	3.23	3.80
Humane Oriented	4.85	5.36	5.38	5.39	5.39	5.31	5.36
Autonomous	4.29	4.93	4.73	4.80	4.74	4.88	4.99

Table 11
Descriptive Statistics of Dependent and Independent Variables

	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Transformational	114	1.90	3.00	4.90	461.60	4.05	0.04	0.43	0.18	-0.53	0.23	-.459	0.45
Transactional	114	2.25	2.00	4.25	361.25	3.17	0.04	0.42	0.17	-0.24	0.23	0.67	0.45
Laissez-Faire	114	2.50	1.00	3.50	191.25	1.68	0.06	0.60	0.36	0.72	0.23	-0.21	0.45
Conservatism	114	3.25	1.25	4.50	312.67	2.74	0.07	0.77	0.59	0.30	0.23	-0.39	0.45
Patriotism	114	4.00	1.00	5.00	468.33	4.11	0.07	0.72	0.52	-1.39	0.23	2.96	0.45
Warriorism	114	3.00	2.00	5.00	371.67	3.26	0.05	0.52	0.27	0.34	0.23	1.12	0.45
Charismatic/Value Based	114	3.33	3.06	6.39	666.72	5.85	0.06	0.59	0.35	-3.25	0.23	11.92	0.45
Team-Oriented	114	2.51	4.49	7.00	766.21	6.72	0.04	0.41	0.17	-3.33	0.23	12.71	0.45
Self-Protective	114	4.96	0.00	4.96	380.89	3.34	0.06	0.64	0.41	-2.32	0.23	11.78	0.45
Participative	114	1.50	4.78	6.28	611.76	5.37	0.03	0.29	0.09	0.50	0.23	0.47	0.45
Humane-Oriented	114	4.53	1.18	5.71	553.44	4.86	0.07	0.80	0.63	-1.80	0.23	4.91	0.45
Autonomous	114	5.00	1.75	6.75	489.25	4.29	0.01	1.21	1.47	0.12	0.23	-0.87	0.45

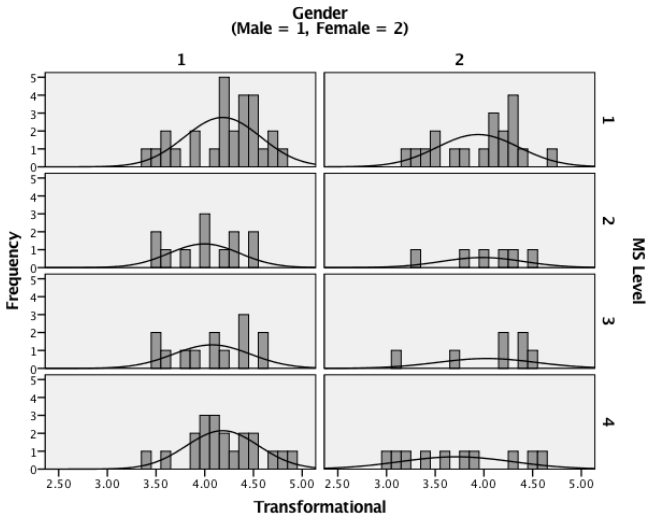

Figure 55. Histogram of Transformational Leadership Style Results Sub-Categorized by Gender and Military Science Level.

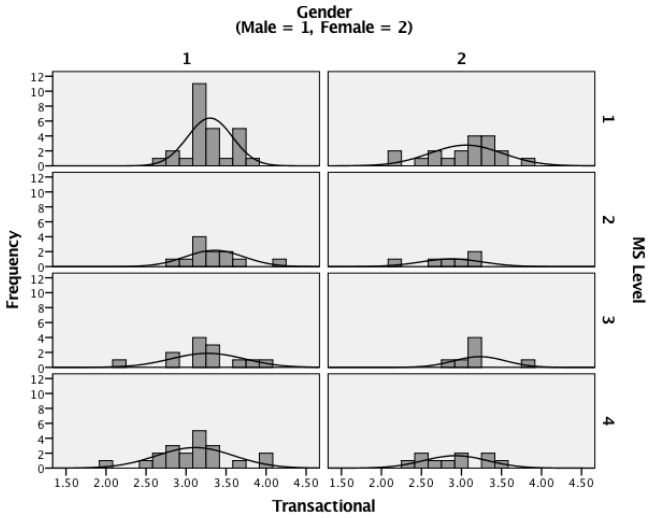

Figure 56. Histogram of Transactional Leadership Style Results Sub-Categorized by Gender and Military Science Level.

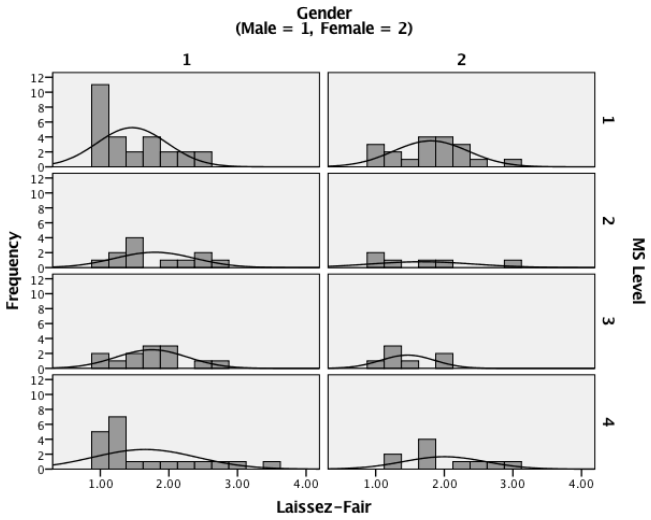

Figure 57. Histogram of Laissez-Faire Leadership Style Results Sub-Categorized by Gender and Military Science Level.

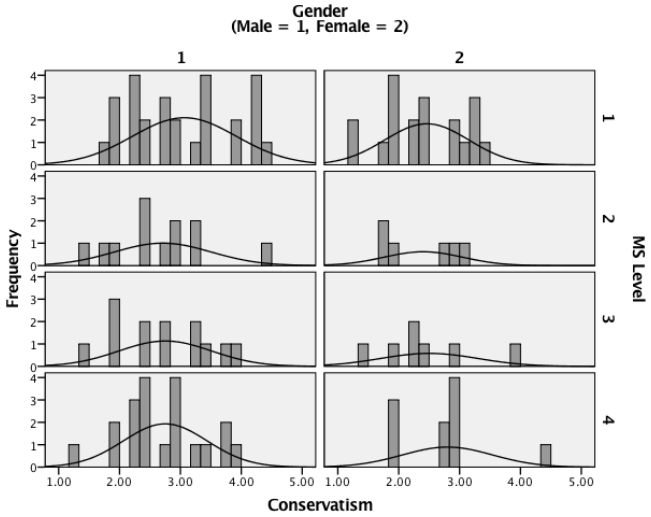

Figure 58. Histogram of Conservatism Index Results Sub-Categorized by Gender and Military Science Level.

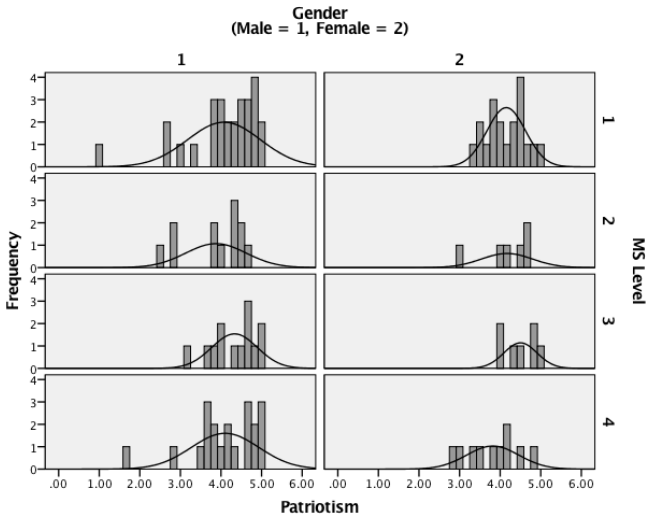

Figure 59. Histogram of Patriotism Index Results Sub-Categorized by Gender and Military Science Level.

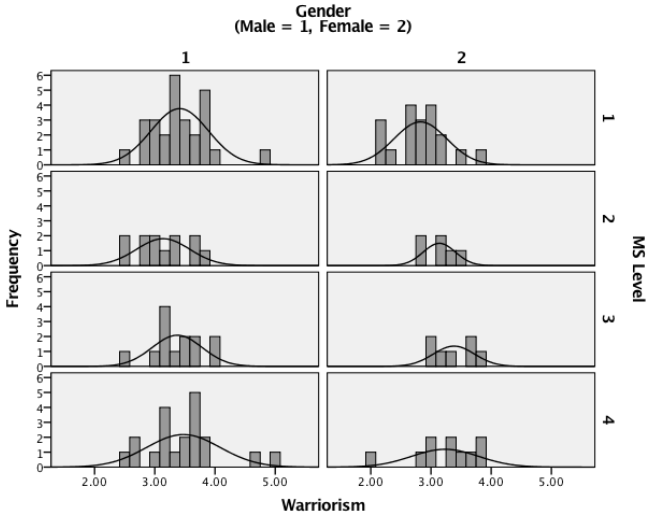

Figure 60. Histogram of Warriorism Index Results Sub-Categorized by Gender and Military Science Level.

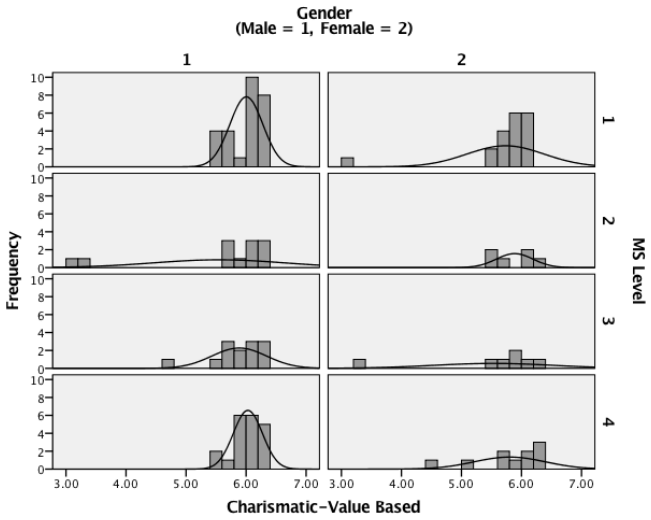

Figure 61. Histogram of Charismatic/Value-Based Index Results Sub-Categorized by Gender and Military Science Level.

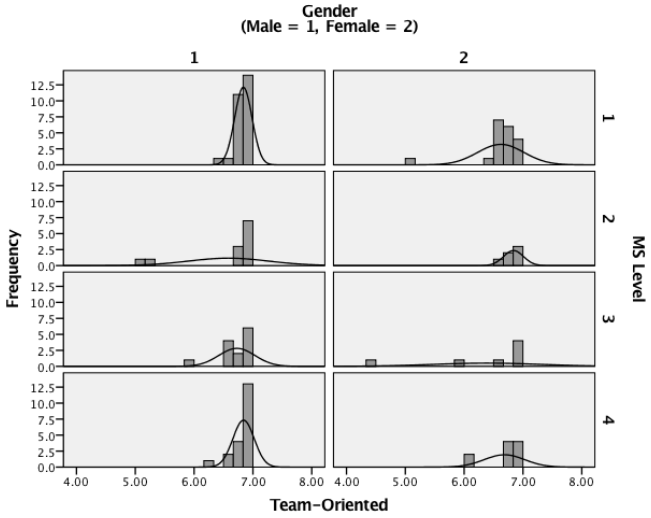

Figure 62. Histogram of Team-Oriented Index Results Sub-Categorized by Gender and Military Science Level.

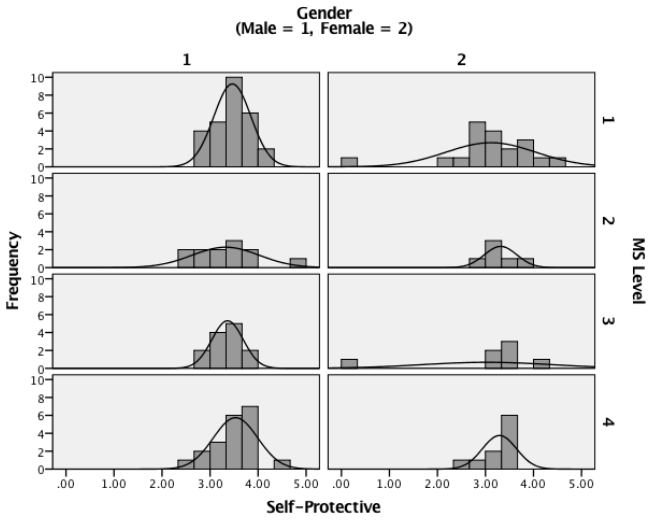

Figure 63. Histogram of Self-Protective Index Results Sub-Categorized by Gender and Military Science Level.

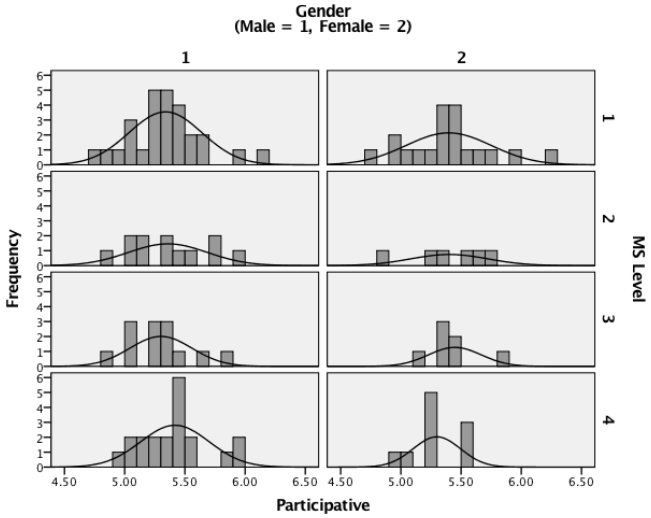

Figure 64. Histogram of Participative Index Results Sub-Categorized by Gender and Military Science Level.

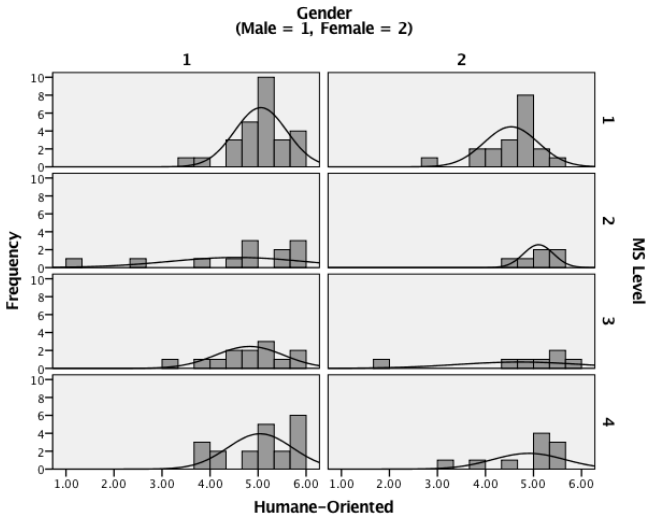

Figure 65. Histogram of Humane-Oriented Index Results Sub-Categorized by Gender and Military Science Level.

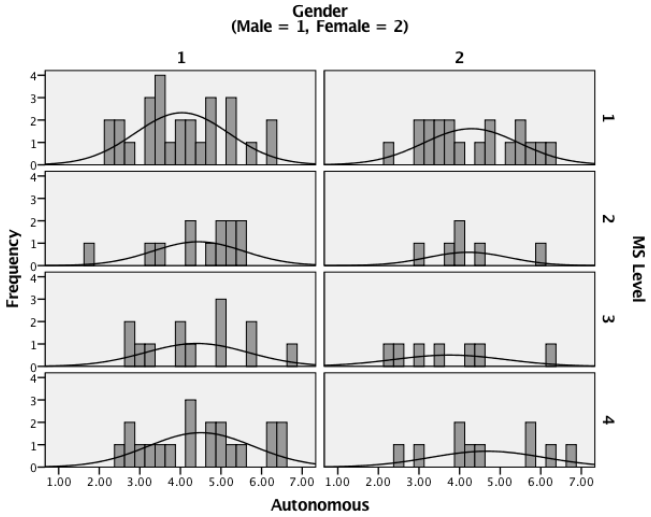

Figure 66. Histogram of Autonomous Index Results Sub-Categorized by Gender and Military Science Level.

Testing the Multiple Linear Regression Hypotheses

In this section, the hypotheses associated with the research questions will be tested.

Testing Hypotheses for Model Fit

Research Question 1. The null hypotheses H_0: $\rho^2 = 0$ for model fit for RQ1 is not supported because [$(p = .002) < (\alpha = .05)$] (see Table 13). Therefore, the alternative hypotheses H_A: $\rho^2 > 0$ is supported, which means that the multiple linear regression model is a good predictor of the dependent variable Transformational Leadership Style Index. However, the R^2 value for the dependent variable Transformational Leadership Style Index in Table 12 indicates that the multiple linear regression model explained only for 16.4 percent of the total variance of the residuals. That is, 83.6 percent of the total variance of the residuals is not explained by the statistically significant predictor variables, which means that other factors not included in this model exist that could explain the unexplained total variance of the residuals for the dependent variable Transformational Leadership Style Index.

Research Question 2. The null hypotheses H_0: $\rho^2 = 0$ for model fit for RQ2 is not supported because [$(p = .009) < (\alpha = .05)$] (see Table 13). Therefore, the alternative hypotheses H_A: $\rho^2 > 0$ is supported, which means that the multiple linear regression model is a good predictor of the dependent variable Transactional Leadership Style Index. However, the R^2 value for the dependent variable Transactional Leadership Style Index in Table 12 indicates that the multiple linear regression model explained only for 12.7 percent of the total variance of the residuals. That is, 87.3 percent of the total variance of the residuals is not explained by the statistically significant predictor

variables, which means that other factors not included in this model exist that could explain the unexplained total variance of the residuals for the dependent variable Transactional Leadership Style Index.

Research Question 3. The null hypotheses H_0: $\rho^2 = 0$ for model fit for RQ3 is supported because [(p = .497) > (α = .05)] (see Table 13). Therefore, the alternative hypotheses H_A: $\rho^2 > 0$ is not supported, which means that the multiple linear regression model is a not good predictor of the dependent variable Laissez-Faire Leadership Style Index. However, the R^2 value for the dependent variable Laissez -Faire Leadership Style Index in Table 12 indicates that the multiple linear regression model explained only for 7.5 percent of the total variance of the residuals. That is, 92.5 percent of the total variance of the residuals is not explained by the statistically significant predictor variables, which means that other factors not included in this model exist that could explain the unexplained total variance of the residuals for the dependent variable Laissez -Faire Leadership Style Index.

Table 12
Model Summary Output from SPSS

Dependent Variable	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
Transformational	0.405[a]	0.164	0.092	0.4093595	0.164	2.266	9	104	0.023
Transactional	0.356[a]	0.127	0.052	0.4044864	0.127	1.682	9	104	0.102
Laissez-Faire	0.274[a]	0.075	-0.005	0.5990200	0.075	0.936	9	104	0.497

Note. a. Predictors: (Constant), Autonomous, Patriotism, Conservatism, Participative, Humane-Oriented, Self-Protective, Warriorism, Team-Oriented, Charismatic-Value Based

Table 13
ANOVA Table Output From SPSS Using Forward Stepwise Linear Regression

Dependent Variable		Sum of Squares	df	Mean Square	F	Sig.
Dependent Variable: Transformational	Regression	1.738	1	1.738	10.185	.002[a]
	Residual	19.107	112	0.171		
	Total	20.845	113			
Dependent Variable: Transactional	Regression	1.149	1	1.149	7.016	.009[b]
	Residual	18.343	112	0.164		
	Total	19.493	113			
Dependent Variable: Laissez-Faire	Regression	3.023	9	0.336	0.936	0.498[c]
	Residual	37.317	104	0.359		
	Total	40.34	113			

a. Predictors: (Constant), Humane-Oriented

b. Predictors: (Constant), Warriorism

c. Predictors: (Constant), Autonomous, Patriotism, Conservatism, Participative, Humane-Oriented, Self-Protective, Warriorism, Team-Oriented, Charismatic-Value Based

Table 14
Coefficients of Regression Model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
Dependent Variable: Transformatio	(Constant)	3.291	0.241		13.683	0.000	2.815	3.768
	Humane-Oriented	0.156	0.049	0.289	3.191	0.002	0.059	0.253
Dependent Variable: Transactional	(Constant)	2.533	0.243		10.426	0.000	2.052	3.015
	Warriorism	0.195	0.074	0.243	2.649	0.009	0.049	0.341

Table 15
Model Summary - Durbin-Watson Transformational

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.289[a]	0.083	0.075	0.413	
2	0.350[b]	0.122	0.106	0.406	1.927

a. Predictors: (Constant), Humane-Oriented

b. Predictors: (Constant), Humane-Oriented, Patriotism

Table 16
Model Summary - Durbin-Watson Transactional

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.243[a]	0.059	0.051	0.405	1.922

a. Predictors: (Constant), Warriorism

Table 17
Model Summary - Durbin-Watson Laissez-Faire

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.274[a]	0.075	-0.005	0.599	1.553

a. Predictors: (Constant), Autonomous, Patriotism, Conservatism, Participative, Humane-Oriented, Self-Protective, Warriorism, Team-Oriented, Charismatic-Value Based

Testing Hypotheses for the Regression Coefficients

Research Question 1. Examining the results in Table 13 and 14 indicates that only one of the regression coefficients is statistically significant for the Transformational Leadership Style Index. That is, the null hypothesis H_0: $\beta_4 = 0$ for the predictor variable Humane-Oriented Index (x_4) is not supported because [$(p = .002) < (\alpha/2 = .025)$].

Therefore, the independent variable Humane-Oriented Index (x_4) is a good predictor of the Transformational Leadership Style Index. The results that appear in Table 18 indicate that the independent variables Charismatic/Value-Based Index (x_1), Team-Oriented Index (x_2), Participative Index (x_3), Autonomous Index (x_5), Self-Protective Index (x_6), Conservatism Index (x_7), Patriotism Index (x_8), and Warriorism Index (x_9) are not statistically significant predictors of the Transformational Leadership Style Index because the null hypothesis H_0: $\beta_i = 0$ is supported for all of these predictor variables because, for all of these predictor variables, [$p > (\alpha/2 = .025)$]. Note that the predictor variable Patriotism Index (x_x) was close to being statistically significant because $p = .029$, which is just above the threshold for non-support of the null hypothesis of .025.

Research Question 2. Examining the results in Table 14 indicates that only one of the regression coefficients is statistically significant for the Transactional Leadership Style Index. That is, the null hypothesis H_0: $\beta_9 = 0$ for the predictor variable Warriorism Index (x_9) is not supported because [$(p = .009) < (\alpha/2 = .025)$]. Therefore, the independent variable Warriorism Index (x_9) is a good predictor of the Transactional Leadership Style Index. The results that appear in Table 18 indicate that the independent variables Charismatic/Value-Based Index (x_1), Team-Oriented Index (x_2), Participative Index (x_3), Humane-Oriented Index (x_4), Autonomous Index (x_5), Self-Protective Index (x_6), Conservatism Index (x_7), and Patriotism Index (x_8) are not statistically significant predictors of the Transactional Leadership Style Index because the null hypothesis H_0: $\beta_i = 0$ is supported for all of these predictor variables because, for all of these predictor variables, [$p > (\alpha/2 = .025)$].

Research Question 3. Examining the results in Tables 14 and 18 indicates that none of the of the regression coefficients are statistically significant for the Laissez-Faire Leadership Style Index. That is, the null hypotheses H_0: $\beta_i = 0$ are not supported for the independent variables Charismatic/Value-Based Index (x_1), Team-Oriented Index (x_2), Participative Index (x_3), Humane-Oriented Index (x_4), Autonomous Index (x_5), Self-Protective Index (x_6), Conservatism Index (x_7), Patriotism Index (x_8), and Warriorism Index (x_9) because for all predictor variables for all of these predictor variables [$p > (\alpha/2 = .025)$].

Analysis of Excluded Variables

The predictor variables that were excluded from the models for each of the dependent variables using forward stepwise multiple linear regression analysis appear in Table 18. The implications for the entries in this Table were discussed above.

Table 18
Excluded Variables Table Output From SPSS

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
Dependent Variable: Transformational	Conservatism	0.126a	1.400	0.164	0.132	0.998
	Patriotism	0.202a	2.216	0.029	0.206	0.954
	Warriorism	0.110a	1.192	0.236	0.112	0.950
	Charismatic-Value Based	0.035a	0.222	0.824	0.021	0.334
	Team-Oriented	-0.017a	-0.115	0.909	-0.011	0.398
	Self-Protective	-0.120a	-1.318	0.190	-0.124	0.988
	Participative	0.059a	0.653	0.515	0.062	1.000
	Autonomous	-0.090a	-0.990	0.324	-0.094	0.980

Table 18 (continued)
Excluded Variables Table Output From SPSS (Continued)

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
Dependent Variable: Transactional	Conservatism	0.131[b]	1.353	0.179	0.127	0.892
	Patriotism	0.142[b]	1.528	0.129	0.144	0.964
	Charismatic-Value Based	0.047[b]	0.482	0.631	0.046	0.901
	Team-Oriented	0.048[b]	0.499	0.619	0.047	0.931
	Self-Protective	0.106[b]	1.157	0.250	0.109	1.000
	Participative	-0.060[b]	-0.652	0.516	-0.062	0.993
	Humane-Oriented	0.021[b]	0.219	0.827	0.021	0.950
	Autonomous	0.151[b]	1.596	0.113	0.150	0.926
Dependent variable: Laissez-Faire	No variables were found to have statistical significance with Laissez-Faire Leadership Style, therefore SPSS did not provide output data					

a. Predictors in the Model: (Constant), Humane-Oriented
b. Predictors in the Model: (Constant), Warriorism

Summary of the Results

The purpose of this chapter was to answer the research questions using the null and alternative hypotheses. Forward stepwise multiple linear regression was used to test the null and alternative hypothesis. Research data was tested in order to ensure that the data met model assumptions for multiple linear regression.

1. The first assumption that the dependent variables were measured on a continuous scale was met.
2. The second assumption that the data contained two or more continuous or categorical independent variables was met.

3. Because the data does not concern a time-series, the third assumption that there was an independence of residuals was satisfied. A Durbin-Watson test was conducted to confirm assumption three was met.
4. Partial plot regressions were visually inspected for possible linear relationships between dependent and independent variables and a Pearson's linear correlation coefficients were examined to determine the strength of the linear relationships. All relationships were found to be weak with a Pearson's correlation coefficient r-value that was less than .7.
5. Homoscedasticity was confirmed using scatterplots of the regression standardized residuals and regression standardized predicted values of the dependent variables Transformational Leadership Style Index and Transactional Leadership Style Index. Laissez-Faire leadership style was found to be heteroscedastic.
6. Pairwise multicollinearity assumptions were tested using Pearson's linear correlation coefficients and the jointly highly correlated multicollinearity assumptions were tested using the Variance Inflation Factor. Test results support that the data is not collinear and that the data is not jointly highly correlated.
7. The data did contain outliers, but none of the outliers were more than ±3 standard deviations. No cases were rejected.
8. Histograms of the dependent variables suggest that Transformational Leadership Style Index and Laissez-Faire Leadership Style Index are not normally distributed. Normal P-Plots were inconclusive and the normality of

regression residuals was indeterminate. A Kolmogorov-Smirnov test supported the assumption that normality was not satisfied for the Transformational Leadership Style Index, the Transactional Leadership Style Index, and the Laissez-Faire Leadership Style Index. However, the size of the sample and robustness of multiple linear regression was determined adequate to support estimator conclusions.

The null hypotheses H_0: $\rho^2 = 0$ for model fit is not supported for RQ1 and RQ2. Therefore, the alternative hypotheses H_A: $\rho^2 > 0$ is supported, which means that the multiple linear regression model is a good predictor of the dependent variable for the Transformational Leadership Style Index and Transactional Leadership Style Index. However, the Transformational Leadership Style Index only accounted for 16.4 percent and the Transactional Leadership Style Index only accounted for 12.7 percent of the total variance of the regression residuals. The null hypothesis H_0: $\rho^2 = 0$ is supported for RQ3, which means that the multiple linear regression model is not a good predictor of the dependent variable Laissez-Faire Leadership Style Index. The Laissez-Faire Leadership Style Index only accounted for 7.5 percent of the total variance of the residuals.

Two of the regression coefficients were statistically significant. The null hypothesis for the predictor variable of Humane-Oriented Index was not supported for the Transformational Leadership Style Index. Therefore, the Humane-Oriented Index is a good predictor of the Transformational Leadership Style Index. The null hypothesis for the predictor variable the Warriorism Index was not supported for the Transactional Leadership Style Index. Therefore, the Warriorism Index is a good predictor of the Transactional Leadership Style Index. All nine predictors of Conservatism, Patriotism,

Warriorism, Charismatic/Value-Based, Team-Oriented, Self-Protective, Participative, Humane-Oriented, and Autonomous Indices were not significant for the Laissez-Faire Leadership Style Index. Therefore, no variables were good predictors of the Laissez-Faire Leadership Style Index.

Conclusion

The results of this study support that a statistically significant relationship exists between full range leadership theory and self-categorization theory. A relationship was also established between Transformational Leadership Style and the cross-cultural leadership attribute Humane-Oriented. In addition, a relationship was established between Transactional Leadership Style and the Future Officer Survey value of Warriorism.

However, statistical significance was established between Laissez-Faire Leadership Style and the nine independent variables used in this study. On the other hand, the relationship observed in the dependent variables other than Laissez-Faire Leadership Style suggests a relationship exists between self-categorization theory values and attributes and Laissez-Faire Leadership Style, but could not be found within this study.

In the next chapter the implications of these findings will be discussed. Also discussed will be the need for further research to find other attributes and values that are supported by the alternative hypothesis. This chapter is reserved to the statistical significance found within the research study data.

CHAPTER 5. CONCLUSIONS AND DISCUSSION

Summary of the Results

This research provides evidence that self-categorized values and attributes of individuals are predictive of leadership styles within those individuals. This chapter will discuss the findings of the research and implications of those findings to full range leadership theory and self-categorization theory. Recommendations for scholars and practitioners are made regarding areas of future study based on the limitations and findings of this study.

Discussion of the Results

The purpose of this research study was to explain the relationship between self-categorization values/attributes and the Full Range Leadership Styles of students enrolled in an ROTC program. The results were different from those anticipated based upon a review of the relevant literature. However, a relationship was found that provides a stepping-stone for future research.

Findings from Data Analysis

Data analysis for this study supports the following statement: "Individuals choose the groups to which they associate" (Turner & Reynolds, 2012). True to self-categorization theory, Figures 55 through 66, and Tables 10 and 11 support the assertion that ROTC students share similar values and attributes. Within the demographics of military science level and gender, the manifestation of sub-groups did not appear. Survey

results suggest that the salience of ROTC membership is higher than military science level or gender. In Figures 55 through 66, the distributions for military science levels I through IV and across genders are symmetrically distributed, despite the frequency level remaining higher in the military science level I because of the larger cohort size.

Data analysis for this study supports the following statement: "Individual leadership style can be associated with full range leadership model constructs of Transformational Leadership Style, Transactional Leadership Style, and Laissez-Faire Leadership Style" (Avolio & Bass, 1995). ROTC student mean scores for both Transformational and Transactional Leadership Styles were high (Table 10). Across the ROTC cohort, the Laissez-Faire Leadership style scores were low. The deviation from the mean scores of Transformational, Transactional, and Laissez-Faire Leadership Style across the Military Science Levels and genders were minimal. Male ROTC students had slightly higher scores than females in Transformational and Transactional Leadership Styles and slightly lower scores than females in Laissez-Faire Leadership Style. No significant trends exist within military science levels in any of the full range leadership styles. Analysis of the box-and-whisker plot in Figure 37 showed that no outliers were associated with the Transformational Leadership Style. In Figure 38, Transactional Leadership Style had two outliers, one that scored high on the Transformational Leadership Style scale and one that scored low. In the Figure 39 box-and-whisker plot, one outlier scored high on the Laissez-Faire Leadership Style. This evidence suggests ROTC students identified with one or more of the leadership styles in full range leadership theory, even though this study could not support a relationship between Laissez-Faire Leadership and group values/attributes.

Data analysis supports the following statement: "ROTC students associate themselves with the values of Conservatism, Patriotism, and Warriorism" (Franke, 2001). Analysis of the Conservative Index (Figure 58) indicates that ROTC students show frequencies that are at both ends of the spectrum and in the middle of the scale. The distribution curve shows a slight rise near the middle of the scale but, overall, the Conservatism Index shows a wider frequency distribution than the Patriotism Index and the Warriorism Index. The Patriotism Index shows a high frequency at the upper end of the scale suggesting patriotism is most likely an ROTC cadet self-categorization value. All military science levels and genders within the Warriorism Index have a distribution curve that is symmetric with the distribution concentrated near the middle of the chart, with the exception of military science level I females, who showed that they started the ROTC program with a little less warrioristic value than their male counterparts. However, after year one, the males and females are evenly matched with regard to warriorism. This aligns with self-categorization theory and social gender roles (Athenstaedt et al., 2008). Results appearing in Table 10 suggest evidence of depersonalization within the group as individual values change to meet those of the group (Rabinovich et al., 2012).

Data analysis supports the following statement: "ROTC students as aspiring military leaders will associate with cross-culture leadership attributes of Charismatic/Value-Based, Team-Oriented, Self-Protective, Participative, Humane-Oriented, and Autonomous" (House et al., 2010). Descriptive Statistics (Table 10) support the assumption that ROTC students rate cross-culture leadership attributes of Participative, Team-Oriented, and Charismatic/Value-Based with a score of 5 or higher

out of 7. These values are aligned with Army values that are a requirement to live by and qualify for enrollment in an ROTC program. This suggests that Participative, Team-Orientation, and Charismatic/Value-Based are self-categorization group values of ROTC. Also suggested by the data analysis results is that ROTC student attributes/values are important.

Data analysis supports the following statement: "Military Science Level and the more senior an ROTC student becomes in the ROTC affects the comparative fit of ROTC students to the values and attributes of the group" (Reynolds et al., 2010). In alignment with the results of statement 3, data results in Figures 58 through 66 and Table 10 support that group values of ROTC students remain symmetric across military science levels and gender. Comparative fit is not a component of seniority but of entry into the group. The mean scores in Table 10 and similar distribution curves in Figures 55 through 66 support that ROTC students in all military science levels and genders share common values and attributes.

Data analysis supports the following statement: "A gender expectation difference exists within ROTC students based on social gender roles" (Athenstaedt et al., 2008). Survey responses do not support a gender expectation within the ROTC student sample population. The salience of ROTC membership is higher than the salience of groups based on gender or time in the ROTC program. The link this information has to the results of Chapter 4 is that the analysis is not gender or military science level dependent but applies to the entire sample and ROTC population.

Findings from the Model

Prior to conducting this research study, a stronger relationship between Conservatism, Patriotism, and Warriorism and the leadership styles of Transformational, Transactional, and Laissez-Faire were expected based on the findings of Dr. Frank (1997) in his 1995 research study of cadets at the U.S. Military Academy. Also expected were stronger relationship links with the cross-culture leadership dimensions of Charismatic/Value-Based, Team-Orientation, Self-Protective, Participative, Humane-Oriented, and Autonomous to all three full range leadership theory leadership styles. Even though this study found a small statistical significance, a relationship was established and the doorway opened to future study.

full range leadership theory was used in this study due to the availability of results from numerous research studies on the subject of leadership styles based upon the full spectrum approach full range leadership theory provides for application to a focused group of ROTC students. Based upon the data collected for this study, ROTC students showed an affinity for all three full range leadership styles. Transformational Leadership had the highest mean score across the individual traits measured by the Multifactor Leadership Questionnaire, with the Contingent Reward trait of Transactional Leadership Style having high scores across all respondents.

This result suggests that ROTC students expect their leadership to be willing to compensate their followership. A reason for this may be the ROTC recruiting practice of offering scholarships and stipends to students in return for their agreement to serve as a commissioned officer in the Army upon graduation. Also, ROTC students are university students who are expected to obtain a degree and high grade point average in order to

compete for a limited number of available active duty appointments. ROTC students expect their ROTC program to contingently reward them with the time and resources they need to be successful students in order to provide the ROTC program the number of commissioned officers required to remain relevant to the Army as an officer training program.

During the literature review for this study, two leadership theories were found that had a relationship with group values and attributes: implicit leadership theory (Quaquebeke et al., 2014; Quaquebeke, & Knippenberg, 2012; Quaquebeke et al., 2011; Salter et al., 2014) and social leadership theory (Moss, 2011). However, neither of these theories directly tied group values and attributes to leadership styles of Transformational, Transactional, and Laissez-Faire even though full range leadership theory is one of the most recognized and studied leadership theories.

Another subject relevant to this discussion is the importance of attributes and values to comparative fit and group salience. Implicit leadership theory and social leadership theory explain the relationship of group attributes and values to the core makeup of the leader (Moss, 2011; Quaquebeke et al., 2014; Quaquebeke, & Knippenberg, 2012; Quaquebeke et al., 2011, Salter et al., 2014) but do not discuss to what degree a leader's salience and comparative fit are important to being the leader of a group. Nor do implicit leadership theory or social leadership theory discuss depersonalization of a leader to meet the values and attribute expectations of the group. An area that was an important aspect of this study was a relationship between Transformational Leadership Style and Transactional Leadership Style with Humane-Oriented and Warriorism, respectively.

The published research literature to support this research study provided the background on two theories: full range leadership theory and self-categorization theory. The published research literature also demonstrated that other scholars had studied the gap between leadership and the values and attributes of leaders. Where the literature failed was in providing information that Transactional, Transformational, and Laissez-Faire Leadership Styles were linked to different self-categorized group values and attributes other than Humane-Oriented and Warriorism. This study explains the relationship and identified opportunities for further research on the subject.

Implications of Study Results

Implications for Scholars

Leadership, theorists agree to disagree on the definition of leadership. In the past six decades, at least 65 classification systems have been developed to define leadership (Northouse, 2013). This study adds another piece to the body of leadership knowledge and refines some of the knowledge that already exists by explaining a relationship between self-categorization theory and full range leadership theory.

Discussed in the literature review was the theory that leaders possess the same values and attributes as does the group that they lead (Moss, 2011). This concept may seem intuitive. But, as the components of self-categorization are dissected, a hidden truth appears: Group members choose to be members of groups based on their comparative fit to the group. Governing these groups are in-group/out-group definitions; the more salient a group is to a member, the closer members are to the values and attributes of the group. These values and attributes are not only used to fit members to the group; group members also develop an ideal or prototypical image of the leadership style that their group leader

should possess. If leaders of a group can be identified as transformational, transactional, or laissez-faire, then that leadership style is also a component of what the group is wants for their leader.

This study explains that a relationship exists between self-categorization theory and full range leadership theory. The self-categorization theory independent variable Humane-Oriented Index is related to the Transformational Leadership Style Index, and the self-categorization theory independent variable Warriorism Index is related to the Transactional Leadership Style Index. This relationship supports the proposition that leadership style is related to values and attributes of the group to which the leader belongs and supports the concepts associated with implicit leadership theory and social leadership theory.

An implication of this relationship to the body of leadership knowledge is that leadership theories are interrelated. Much like the evolution of Transactional Leadership (Weber, 1947) to Transformational Leadership (Burns, 1978) to what is now known as full range leadership theory (Bass 1981; Bass 1990), the definition of leadership will continue to evolve as gaps are filled in and the science behind leadership is revealed. Understanding that a relationship exists between a group leader's leadership style and the values and attributes of group members provides leadership scholars and theorists with the interface where two leadership definitions meet.

Implications for Praxis

The implications of this study concern leadership as a practice and also ROTC leadership. Like a surgeon that must know the anatomy and how the body functions before performing surgery, leaders must understand the dimensions of their craft. As

leaders better understand the underpinnings of the groups they lead, and the dynamics on how to lead, they are able to make more informed decisions.

Direct and indirect applications are:

1. Leaders need to understand the values and attributes that are considered core to the group, to either allow the group to maintain the group's current status or to influence change. A leader who is trying to maintain the stability already present in a group can use their understanding of group values and attributes to ensure members live by these standards. For example, at every Boy Scout meeting, scouts are required to repeat the scout oath and law. Leadership that seeks a change in vision for their group should understand the current group values and attributes, and have a picture of the needed values and attributes required to make change. Individuals are resistant to change and have a mental image of how their leaders should lead. If a leader makes changes with which members of the group do not identify or are willing to depersonalize, a leader will lose the followers in the change process.
2. The United States Army Cadet Command and the professors of military science responsible for university ROTC programs can use the findings of this research to validate the need to align correct leadership styles with group values and attributes in order to best instruct emerging leaders and move their organizations to action. This can be accomplished by the United States Army Cadet Command screening cadre to ensure cadre values and attributes are in line with ROTC student expectations of a group leader. This can also be accomplished at the student-leader level of the ROTC when professors of

military science make senior cadet leadership assignments from the military science level III and IV cohorts.

3. Leadership decisions can be expensive, either in the energy required to make group changes, or the failure for leadership to influence a group. The results of this research have the potential to save ROTC programs financial resources by reducing the costs and time associated with encouraging and motivating cadet participation in organizational objectives. This could be accomplished by aligning senior level communication and leadership styles with salient group aspirations. Providing leadership with the knowledge that they need to understand the values and attributes of the group, leadership can assign individuals that have a good comparative fit, as opposed to coercing potential group members to follow a value system or learn attributes they do not view as salient. Group accomplishment is more efficient when group leadership is able to focus on the vision instead of dragging followers to the goal.

Limitations

An online survey service company, Qualtrics, provided the panel recruitment process for this survey. The attributes of the ROTC members of the sample frame may be different than the attributes of the population of ROTC cadets, which may have produced different results. The characteristics of the participants that chose to respond to the survey request may also have biased the results because cadets willing to answer an online survey may have different characteristics than cadets who were not willing to complete the survey. Another source of bias may have been that the survey was taken near the end of Summer, which is when senior ROTC cadets were either at the Cadets

Leadership Course (also called summer camp) or at the very beginning of their university's Fall term, which is a time when moral within units is generally higher.

This research was limited to students of the United States Reserve Officer Training Corps but may be applicable to other students and practitioners of leadership. Participant survey panels from groups other than ROTC might have produced different results. Additionally, this research study was cross-sectional. Conducting this same research study over time following a single ROTC cohort may have generated different results.

The number of values and attributes studied in this research project was limited to nine predictors and three outcomes. Additional predictors may have resulted in statistically significant predictors that better explained the outcome variables. During the planning stages of this research project, the survey size of 173 questions raised concerns regarding the willingness of respondents to complete such a large survey. A hurdle future research may need to overcome is that the more variables that are tested the more questions in the survey instrument, which reduces the willingness of persons to participate in the study.

In Chapter 1, immaturity of self-thought was considered a limitation because the assumption was made that new students just entering adulthood and entering a new group setting would be less aligned with group values and traits. The research phase of this study was conducted at the beginning of a new school year when military science level 1 students would be new to their ROTC program. Survey results were expected to be less normalized for military science level I students as depersonalization would not have had time to take place. However, after reviewing survey score means from military science

level I to military science level IV, military science level I students did not deviate significantly from the value and attribute norms of the other military science levels. Therefore, mature and immature individual cognitive thought both align themselves with group values and attributes.

Recommendations for Further Research

This study provided evidence that a relationship exists between leadership styles and self-categorized group values and attributes. However, only two of the nine predictors provided statistically significant results. Recommendations for further research are based on the limitations described in the previous chapters and gaps in explaining the relationship of full range leadership theory and self-categorization theory. The recommendations for further research are:

1. Repeating the present study using other values and attributes that correlate group values and attributes to leadership styles of group leaders is suggested. This study successfully demonstrated that the attribute of Humane-Oriented is correlated with Transformational Leadership and that Warriorism has a relationship to Transactional Leadership as Warriorism applies to ROTC students. However, the relationship was weak and needs additional research.
2. The group under study during this research was Reserve Officer Training Corps students, but the relationship of full range leadership to self-categorization has an application to group leaders other than ROTC. Future research could explore the attributes and values of different groups to that of the leaders of their groups. Research that can find the relationship of common

leadership attributes and values to that of multiple groups may be helpful in expanding the concept of implicit leadership theory.

3. Future research may want to test these results over time. As the military continues to change and adapt and the United States moves forward into different conflicts and other-than-war duties, group values may change. As the group changes the values and attributes of what ROTC university students envision as the prototypical leader may change as well.
4. The population of the group of ROTC students is large, with over 33,000 cadets nationwide. Future research could benefit from adding location demographics to the study results and surveying a larger sample base to account for demographic differences.

Conclusion

The results of this study support that a relationship exists between full range leadership theory and self-categorization theory. A relationship was established between Transformational Leadership Style and the cross culture leadership attribute of Humane-Oriented. A relationship was also established between Transactional Leadership Style and the Future Officer Survey value of Warriorism. No statistical significance was established between Laissez-Faire Leadership Style and any of the nine independent variables used in this study. However, the relationship observed in the dependent variables other than Laissez-Faire Leadership Style suggests a relationship exists between self-categorization theory values and attributes and Laissez-Faire Leadership Style, but could not be found within this study.

The mean standard of error in Table 11 is less than 0.10 for all variables, suggesting that the data is closely clustered about the mean. Autonomous Index had the smallest mean standard error and Participative Index had the smallest standard deviation; however, all indices had a mean standard error that was 0.07 or less and a standard deviation that was less than 1 (except for the Autonomous Index). The larger standard deviation for the Autonomous Index suggests ROTC students have differing opinions on the leadership ability of leaders that do not rely on others.

The highest reported means were Transformational Index (4.05/5.00), Patriotism (4.11/5.00), Charismatic/Value-Based Index (5.85/7.00), Team-Oriented (6.72/7.00), and Participative Index (5.37/7.00). Based on the values and attributes presented to the ROTC students, the results suggest that the ROTC prototypical leader is a value-based charismatic person that believes in teamwork and participation. Of interesting note is the high mean score of the Transformational Leadership Style Index (3.17/5.00). This suggests the prototypical leader of an ROTC student also possesses Transactional Leadership Style qualities.

The ideal ROTC prototypical leader is a charismatic transformational leader that has warrioristic tendencies, is patriotic, and believes in contingent reward when working with followers. The relationship of self-categorization values and attributes to leadership style of the full range leadership model were empirically explained to develop the image of this prototypical leader. Like the ROTC, non-ROTC organizations have an *ideal image* of their leader (Quaquebeke et al., 2014; Quaquebeke, & Knippenberg, 2012; Quaquebeke et al., 2011; Salter et al., 2014). These leaders possess the values and attributes of the group and the character values and attributes that make them leaders. By

understanding the group attributes and values that are fit to the members of the group, one can determine group attributes and values that are included in the image of the group leader.

Forward stepwise multiple linear regression was used to answer the research question of the relationship of the nine independent variables of group values and attributes with the three dependent variables of Transformation Leadership Style, Transactional Leadership Style, and Laissez-Faire Leadership Style for a group of ROTC leadership students. Of the values of Conservatism, Patriotism, and Warriorism, which are directly correlated to group membership of ROTC students (Franke, 2001), only Warriorism showed a statistically significant relationship with Transactional Leadership Style. Of the six cross culture leadership attributes of Charismatic/Value-Based, Team-Oriented, Participative, Humane-Oriented, Autonomous, and Self-Protective, only one, Humane Orientation, demonstrated a relationship with Transformational Leadership Style for ROTC students. Therefore, the results of this research study found that a relationship existed between full range leadership theory and self-categorization theory for a group of ROTC students. But, this research study found that only two of the nine attributes and values included in were statistically significant. Future research will need to include other values and attributes in order to better explain their affect on management styles.

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STATEMENT OF ORIGINAL WORK

Academic Honesty Policy

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

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

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

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

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

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

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

Statement of Original Work and Signature

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

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

Learner name and date: Royal C. Atwood, September 25, 2016