LEADERSHIP IN THE COOPERATIVE EXTENSION SYSTEM: AN EXAMINATION OF LEADERSHIP STYLES AND SKILLS OF STATE DIRECTORS AND ADMINISTRATORS

By

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This document is dedicated to my father, Richard G. Moore and the memory of my mother, Judith H. Moore.

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The primary purpose of this study was to identify and describe leadership styles and skills of current Extension leaders. In the first phase of the study, seven administrative heads of agriculture participated in qualitative interviews to identify the major leadership skill areas and specific leadership competencies within each area needed by Extension leaders.

Forty-seven current Extension leaders from 1862 and 1890 institutions participated in the second phase. Participants completed a leadership style instrument, researcher-developed competency instrument, and demographic instrument. Leadership style and leadership skills were the dependent variables. Gender, ethnicity, age, tenure in Extension, tenure in Extension leadership position(s), highest degree, degree classification, and previous leadership development were the independent variables. Participants were described in terms of their demographics, leadership styles, and

leadership skills. Independent variables were used to explain the influence of demographics on the dependent variables.

Participants reported engaging in transformational leadership behaviors more often than transactional leadership behaviors. Transformational and transactional leadership styles were not significantly affected by the independent variables with the exception of both tenure in Extension and degree classification significantly affecting transactional leadership.

Overall, participants rated the skill areas as important and perceived themselves to be of above average proficiency. Self-perceived proficiency in the six leadership skill areas was not significantly affected by the independent variables with the exception of age having a significant effect on proficiency in human skills (r=.30, p<.05).

This study found that the best model for explaining transformational leadership style explained 13% of the variance and included ethnicity, tenure in Extension, and previous leadership development total score. The best model for explaining transactional leadership style explained 28% of the variance and included the highest degree held by the participant, tenure in Extension, and previous leadership development total score. The best model for explaining self-perceived proficiency in human skills explained 9% of the variance and included ethnicity and age. No model significantly explained the influence of demographics on laissez-faire leadership or self-perceived proficiency in the leadership skills areas of conceptual skills, technical skills, communication skills, emotional intelligence skills, or industry knowledge skills.

CHAPTER 1
INTRODUCTION AND PURPOSE OF THE STUDY

Introduction to the Study

This study utilized qualitative research methodology to identify specific leadership competencies current state Extension administrators need to be successful in their position, as perceived by their administrative heads. This study also incorporated quantitative methodology to describe current state Extension leaders in terms of their demographics and leadership styles, and to assess their self-perceived proficiency level in each of the competencies identified by their supervisors. Finally, this study examined the influence of demographic variables on the leadership styles and skills of current Extension leaders.

Background of the Study

The Cooperative State Research, Education, and Extension Service (CSREES), often referred to as the Cooperative Extension Service (CES), is one of four departments housed within the Research, Education, and Economics (REE) division of the United States Department of Agriculture (USDA). The system itself is a publicly funded, non-formal educational system that links the activities of the USDA, CSREES, 51 land-grant universities created under the Morrill Act of 1862, 17 land-grant institutions created or supported under the second Morrill Act of 1890, 34 land-grant institutions created from 1890 to 1994, and approximately 3,150 county administrative units (Extension Committee on Organization and Policy, 1997; McDowell, 2001; Rasmussen, 1989).

The CSREES is a unique educational system established over 85 years ago by the Smith-Lever Act of 1914. It was originally designed as a partnership among the land-grant universities, created under the Morrill Land-Grant College Acts in 1862 and 1890, which provided higher education to the general public rather than only the elite. The Morrill Act of 1862 provided for at least one college in each state, called land-grant colleges, to teach agriculture and mechanical arts. The Morrill Act of 1890 required the establishment of "separate, but equal" land-grant colleges for black students. Most recently, the Equity in Educational Land-Grant Status Act of 1994 conferred land-grant status to 29 tribal colleges. State legislation allowed local governments in each county to become the third legal partner in the system.

The CSREES identified diversity as a major area of emphasis over 10 years ago (Extension Committee on Organization and Policy, 1991). Diversity is not a concept defined simply in terms of race or gender (Thomas, 1991). In fact, it encompasses much more and can be defined as differences among people with respect to age, class, ethnicity, gender, physical and mental ability, race, sexual orientation, spiritual practice, and other human differences (Gear, 1992).

According to Pathway to Diversity (Extension Committee on Organization and Policy, 1991), the strategic plan for implementing the emphasis on diversity within the CSREES, a commitment was made to emphasize diversity in several aspects of the organization: mission and vision; work force; programs; audience; and relationships with other people, groups, and organizations. Within this strategic plan was the specific goal of achieving work force diversity. The plan called for the CES to increase and sustain the diversity of its work force, including leadership, to better reflect the diversity of the

Nation, states, and territories. This increase in the diversity of Extension staff is necessary for the CES to achieve the goals of its strategic plan and to provide quality educational programming to new and varied audiences (Grogan & Eshelman, 1998).

Human diversity in terms of individual differences in areas such as history, knowledge and experience, perspective and insight, and gender is key to organizational success (Klagge, 1996). Support, genuine commitment that goes beyond sloganism, and a demonstrated belief in diversity by leaders in top management positions are critical to transform such a traditional organization (Cano & Ludwig, 1995; Cox & Blake, 1991; Mosley, 1998). In other words, for the CES to achieve its goals in the area of diversity, and thereby organizational success, it is essential that such diversity be apparent in and endorsed by the leaders of the organization.

Mosley (1998) concluded that the workforce demographics of an organization's staff should mirror that of the clientele they serve. This conclusion is supported as it applied to Extension (Gear, 1992; Extension Committee on Organization and Policy, 1991). The United States has become a very diverse society, and as such, the makeup of the United States workforce has also diversified (Ewert, Rice, & Lauderdale, 1995). More and more women, minorities, and older individuals have entered the workforce in the United States over the past two decades. In 1990, more than half of the U.S. workforce consisted of women, minorities, and immigrants. Thus, the problem is not getting diverse populations into an organization; it is more a problem of getting them into leadership positions (Thomas, 1990).

Most people would agree that women and minorities can be leaders (Alire, 2001; Indvik, 2001). Despite this agreement, women are still underrepresented in the ranks of

senior leadership positions across a variety of disciplines (Cohen, Broschak, & Haveman, 1998; Kvaerner, Aasland, & Botten, 1999).

This trend is consistent with the trend seen in the Extension hierarchy. There are more women and minorities in non-manager and first-line management positions now than in previous years. For example, only 25% of the total Extension staff in Ohio was female in 1970, whereas in 1990, the number of female staff members had grown to 44% (Walker, 2000). The Ohio Extension system also saw an increase in the number of minority staff during a similar time period. From 1970 to 1998, the number of non-white agents went from 1% (n=3) to 5% (n=27) of the total Extension staff (Walker, 2000). However, this increase in the number of women and minorities has not transcended into senior level, top management positions (Clark, 1992; Mayer, 2001; Moore & Jones, 2001). These positions have traditionally been held, and continue to be held, predominantly by white males.

As Moore and Jones (2001) pointed out, in many states, Extension leadership does not reflect diversity in terms of both ethnicity and gender. In 1992, 70 of the 77 state directors of the Cooperative Extension Service from both 1862 and 1890 institutions, or 90.9% of the population, participated in a study conducted by Clark (1992). He reported that of these 70 participants, 91.4% were male. In 2001, Moore and Jones reported that of the 56 1862 land-grant universities, only 9% (n=5) of the directors, 7% (n=4) of the associate directors, and 2% (n=1) of the interim directors were female. Of these ten individuals, nine were Caucasian and one was African American. In the 17 1890 land-grant universities including Tuskegee, 24% (n=4) of the administrators, 12% (n=2) of the associate administrators, and 6 percent (n=1) of the acting associate

administrators were female. Of these 7 individuals, all are African American. Thus, the representation of ethnic minorities in senior leadership positions are a little more encouraging in 1890 institutions as compared to 1862 institutions. However, even within these institutions, leaders seem to be very similar and therefore, empirical evidence still suggests an overall under-representation of diverse populations in senior leadership positions within the Extension system as a whole.

Studies conducted within Extension have suggested the need for and recommended further diversification of leaders within the organization (Lowery, 1996). Lowery reported that 83% of the CEDs who participated in her study were males, 89% were white, and 45% held degrees in agriculture. Findings of her study indicated that individuals who have worked in other areas besides agriculture, females, and ethnic minorities can also provided effective leadership.

There is substantial empirical evidence to suggest that demographic variables, such as gender, age, ethnicity, tenure, background, and formal leadership training, influence the leadership styles of individuals. The influence of these variables on an individual's leadership style combined with the specific abilities that an individual possesses are determining factors in which individuals become leaders within an organization.

Problem Statement

Most employers, including those responsible for hiring state Extension directors, would agree that leadership skills are desirable in employees. Although an abundance of information about leadership exists, there is still a lack of consensus surrounding specific aspects of leadership. This is especially true within the Extension system.

Despite a commitment by the CSREES to a diverse workforce, including the leaders of the organization, there are still populations that are underrepresented in leadership positions within the Extension system. Mayer (2001) reported a discrepancy between the number of qualified women within the CSREES and the number of women in state-based director positions. The people in positions of power in the United States have traditionally been white males (Dorsey, 2001) and many business and industry leaders tend to replace themselves with people whose backgrounds, experiences, and characteristics are similar to there own (Sorcher & Brant, 2002). It is possible that these same trends are present within the Extension service.

Empirical evidence exists that documents the lack of diversity in leadership positions, within Extension. There is also research that examines the relationship between demographics and leadership styles and supervisory/management competencies of mid-level leaders within Extension (Cobb, 1989; Haynes, 1997; Lowery, 1996; Shearon, 1969), but the amount of research focusing on the influence of demographics on leadership styles and skills of senior leaders within the organization is arguably thin.

Furthermore, in-depth leadership skill development training programs have been recommended for professional staff in Extension (Holder, 1990). However, the organization has made no attempt to define specific leadership styles and skills it is seeking in its leaders, thus making the inclusion of such competencies in training programs difficult.

Several questions thus arise. What specific leadership skills do Extension leaders need to be successful? Which leadership styles do most leaders within the organization posses? What role do demographic characteristics play in an individual's leadership style

and skills? Are diverse populations underrepresented in leadership positions in Extension as a function of different leadership styles and skills?

The study focused on identifying specific leadership skills needed by state Extension directors and describing the self-perceived proficiency level of current administrators in each of these areas. This study also described the demographic characteristics of these current administrators, thus examining and describing aspects of diversity among current administrators.

Purpose and Objectives of the Study

The primary purpose of this study was to identify and describe the leadership styles and skills of current Extension leaders. In this study, specific leadership competencies needed by state Extension directors, as perceived by their administrative heads, were determined. The self-perceived level of proficiency of current Extension leaders in each competency was assessed. The study also described current Extension administrators in terms of their leadership style, gender, age, ethnicity, previous leadership training, and educational background. In describing current administrators, it was possible to assess the current level of diversity within Extension state director and administrator positions.

This research addressed the following specific objectives:

1. To determine the leadership skill areas and specific leadership competencies within each skill area needed by Extension leaders, as perceived by their administrative heads.
2. To describe current Extension leaders in terms of their demographics and leadership style.
3. To assess how important current Extension leaders believe each skill area is as well as how proficient they perceive themselves to be in each area.

4. To explain the influence of demographic variables on the leadership styles of current Extension leaders.

5. To explain the influence of demographic variables on the leadership skills of current Extension leaders.

Significance of Study

This study identified specific leadership competencies administrative heads of current Extension leaders believe these leaders need to possess in order to be successful. The CES is a unique organization in that its leaders are promoted almost exclusively from within based on their performance in previous positions (Patterson, 1997; Pittman & Bruny, 1986). The identification of specific competencies needed by Extension leaders could help design leadership development programs that prepare individuals to be successful in future leadership positions and ensure a large pool of competent leaders, including members of diverse populations, from which the next generation of leaders can be chosen.

This study also described current Extension leaders in terms of their demographics, leadership style, and self-perceived proficiency in leadership skill areas. Only a small body of knowledge exists that addresses the leadership styles and demographics of Extension leaders, and that tries to explain the influence of these variables on the ability of individuals to obtain positions of leadership within the organization. Very few studies have been conducted that focus on leaders in senior leadership positions within the organization. Being able to better explain the influence of demographics on leadership styles and skills of Extension personnel could help in the recruitment of future leaders, preferably from diverse populations.

Definition of Terms

- Cooperative States Research, Education, and Extension Service (CSREES) (Also known as the Cooperative Extension Service [CES]) – An educational system established as a partnership between the United States Department of Agriculture and the land-grant universities to disseminate practical information in areas such as agriculture and home economics to local community members.

- Administrative Heads – For the purposes of this study, Administrative Heads will be the individuals in positions recognized by the National Association of State Universities and Land-Grant Colleges (NASULGC) as Administration Heads of Agriculture. According to NASULGC, these individuals are the chief administrators of the member universities agricultural programs.

- Diversity – Differences among people with respect to age, class, ethnicity, gender, physical and mental ability, race, sexual orientation, spiritual practice, and other human differences (Gear, 1992).

- Leadership – An interaction that occurs between two or more members of a group and can involve a structuring, or restructuring, of both the situation involves, and the perceptions and expectations of the members involved (Bass, 1990).

- Leadership styles – The characteristic manner in which an individual leads other people; patterns of leadership behavior.

- Leadership skills – The abilities and acquired tasks related to leadership developed by an individual.

- Extension leaders – For the purpose of this study, Extension leaders will be defined as those individuals responsible for the day-to-day operation of the Extension system within each state, as identified by the individuals listed in the CSREES State Directors and Administrators Directory (April, 2002).

Limitations of the Study

As with any scholarly study, there are limitations that limit the generalizability of this study. The first limitation that must be considered is related to the nature of the organization being studied. Because this study will be conducted within the Cooperative State Research, Education, and Extension System, which is a unique organization in terms of its structure and function, the findings will not be generalizable to other

organizations. The study will nevertheless contribute useful information and recommendations for researchers and Extension practitioners.

Second, this study will be limited to current Extension leaders in state director or administrator positions, or as identified as the individual responsible for the day-to-day operations of Extension within their state. This definition of "Extension leaders" limits the generalizability of the findings to other types of leaders, such as leaders who emerge within an organization without holding a formal management or administrative position.

The third limitation of the study deals with the limited number of demographic variables included in the study. Other demographic variables that were not included in this study may influence an individual's leadership style and leadership skills.

The final limitation of the study that must be considered is the fact that the proficiency of current leaders related to each of the leadership competencies is self-reported. This self-reported data may, or may not, be as accurate as if it was obtained from observers familiar with the leader's proficiency in each of the skill areas.

Summary

This chapter provided the background and significance of the problem as well as the purpose of the study. This study described the leadership styles of Extension leaders and assessed the self-perceived proficiency level of administrators in specific leadership competencies identified by their immediate supervisors. The study also explained the influence of demographics on the leadership style and leadership skills of current leaders.

There were five research questions presented and the significance of study was discussed. The five research objectives were the following:

1. To determine the leadership skill areas and specific leadership competencies within each skill area needed by Extension leaders, as perceived by their administrative heads.

2. To describe current Extension leaders in terms of their demographics and leadership style.

3. To assess how important current Extension leaders believe each skill area is as well as how proficient they perceive themselves to be in each skill area.

4. To explain the influence of demographic variables on the leadership styles of current Extension leaders.

5. To explain the influence of demographic variables on the leadership skills of current Extension leaders.

This chapter also included the operational definitions of several terms related to the study. Limitations of the study were also discussed.

Chapter 2 will present the theoretical and conceptual frameworks that guided this study. Empirical research related to leadership styles, leadership skills, and the influence of demographic variables will be addressed.

CHAPTER 2
REVIEW OF LITERATURE

The primary purpose of this study was to identify and describe the leadership styles and skills of current Extension leaders. Specifically, this study sought to (1) identify leadership skill areas and specific leadership competencies within each skill area needed by Extension leaders, as perceived by their administrative heads, (2) describe current Extension leaders in terms of their demographics and leadership style, (3) assess how important current Extension leaders perceive each skill area to be as well as how proficient they perceive themselves to be in each area (4) explain the influence of demographics on leadership style, and (5) explain the influence of demographics on leadership skills.

This chapter presents a review of the relevant literature concerned with leadership styles and skills. The chapter focuses on literature describing leadership styles, the effect of demographic variables on leadership styles, and presents the relevant theoretical and conceptual frameworks. A number of general studies related to leadership styles and demographic variables are included in this examination, as a limited amount of empirical research has been conducted specific to the Extension system. This chapter also reviews pertinent literature concerned with specific leadership skills and the influence of personal variables on these skills.

This chapter is divided into the following major sections: the nature of leadership and leadership defined, leadership and management, major theories of leadership,

leadership styles, influence of demographics on leadership styles, leadership skills, influence of demographics on leadership skills, conceptual framework, and summary.

The Nature of Leadership and Leadership Defined

Leadership has been well researched over the years, yet a lack of consensus in many aspects of leadership still remains. Despite the fact that several thousand books, articles, and papers have been written on the phenomenon of leadership, there is still not an appropriate, consensus definition that is universally accepted. According to Stogdill (1974), "there are almost as many definitions of leadership as there are persons who have attempted to define the concept" (p. 7).

Although most researchers generally define leadership according to their major areas of interest and personal perspectives, most definitions are based on the belief that leadership is a process that occurs as one individual influences one or more others in an effort to facilitate organizational or group performance (Yukl, 2002). Similarly, Northouse (2001) identified four central components to the concept of leadership: (1) leadership is a process, (2) leadership involves influence, (3) leadership occurs within a group context, and (4) leadership involves goal attainment.

The following examples reflect the various definitions of leadership that have been proposed over the years. Gardner (1990) defined leadership as "the process of persuasion or example by which an individual (or leadership team) induces a group to pursue objectives held or shared by the leader and his or her followers" (p. 1). Kouzes & Posner (1997a) defined leadership as "the art of mobilizing others to want to struggle for shared aspirations" (p. 30). Northouse (2001) defined leadership as "a process whereby an individual influences a group of individuals to achieve a common goal" (p. 3). Bass (1990a) defined leadership as "an interaction between two or more members of a group

that often involves a structuring or restructuring of the situation and the perceptions and expectations of the members" (p. 19).

One of the characteristics common to each of these definitions is the presence of other people. In his book *Lead, Follow, or Get Out of the Way* James Lundy (1990) offers the following simple definition of a leader, "A leader is anyone who has followers" (p. 20). According to this definition, leaders can exist anywhere within the organizational hierarchy. Leadership should not be equated with position, power, authority, or status (Bolman & Deal, 1997; Gardner, 1990). Leadership should be viewed as more of a function of the relationship that exists between leaders and followers rather that the title, power, status or authority one possesses within the organization. This is not to say that people in administrative and management positions should not be considered leaders. They are leaders not because of their title, but because people around them grant their cooperation and follow them (Bolman & Deal).

Leadership is a universally accepted concept, yet one that is surrounded by confusion and disagreement (Bolman & Deal, 1997). According to Bennis and Nanus (1997), " 'Leadership' is a word on everyone's lips," and "Everyone agrees there is less of it than there used to be" (p. 1). They go on to point out that although specific leadership competencies have remained more or less the same over the years, theories of what exactly leadership is, how it works, how it is learned, and how it is applied have not remained as quite as constant.

Leadership and Management

An ongoing debate exists about the difference between leadership and management. Within the Extension system, it is often assumed that the leaders of the organization are those individuals in the top-management positions and that to be

effective, these individuals need to be both a manager and a leader. Therefore, it is important at this point to define and discuss the similarities and differences between leadership and management.

Scholars generally agree that there are differences, but the degree to which the two overlap or exist as separate entities is a matter of perspective. Some theorists have suggested that leadership and management are two distinct entities (Bennis & Nanus, 1985; Kotter, 1990b; Zalenik, 1977). Kotter (1990b) distinguished between leaders and managers on three different criteria. According to him, leaders set a direction, align people, and motivate and inspire whereas managers plan and budget, organize and staff, and control and solve problems. In essence, management functions to provide order and consistency to an organization whereas leadership functions to produce change and movement and leadership compliments rather than replaces management (Kotter, 1990a). Although Kotter described leadership and management as separate factors, he did not assume that leaders and managers are different people.

In contrast, Zalenik (1977) argued that leaders and managers themselves are different and distinct. He distinguished between leaders and managers based on three areas of suggested differences: motivation, personal history, and in how they think and act and goes on to argue that managers and leaders are in fact different types of people (Zalenik). As a result of his belief that leaders and managers are two different types of people, Zalenik went on to argue that training and developing managers may actually inhibit the development of leaders.

Similarly, Bennis and Nanus (1985) described distinct differences between managers and leaders as people. According to them, “managers are people who do things

right and leaders are people who do the right things" (p. 21). For theorists such as Kotter, Zalenik, and Bennis and Nanus, the essential distinction between leaders and managers seems to be that leaders influence commitment while managers simply exercise authority as they perform the responsibilities associated with their position (Yukl, 1989). However, empirical research does not support the association of leadership and management with different types of people as people tend not to sort themselves into such extreme stereotypes (Yukl, 2002).

There are also theorists who, although they see the functions of leadership and management as separate, view the two as interdependent rather than distinct entities (Lester & Kunich, 1997). Lester & Kunich (1997) defined the functions of a leader as setting the overall tone for the organizational culture and shaping the vision and mission of the organization by setting goals and objectives and giving followers something to believe in, and then motivating and inspiring them to accomplish the goal. In contrast, they defined the roles of effective managers to be ensuring that everything is operating optimally and efficiently by controlling and integrating resources to accomplish organizational goals. These theorists see leadership and management as interdependent. That is to say that good leadership can exist without effective management, and that poor leadership can exist with effective management. No matter if theorists have suggested the two to be entirely separate or interdependent, theorists agree that to be successful, organizations need both effective leadership and effective management (Kotter, 1990b; Lester & Kunich, 1997).

One thing that many definitions of effective management have in common is the effective utilization of both human and material resources to achieve common goals and

objectives (Seevers, Graham, Gamon, & Conklin, 1997). Most scholars support the notion that to be an effective manager, leading is involved (Buford, Bedeian, & Lindner, 1995; Yukl, 2002). Within the context of Extension, management can be divided into five major functions: planning, organizing, staffing and human resource management, leading and influencing, and controlling (Buford et al.). Buford et al. defined the leading and influencing function of management within Extension to be "the process of inducing individuals (peers, superiors, subordinates, and nonsubordinates) or groups to assist willingly and harmoniously in accomplishing organizational objectives" (p. 7). Thus, although leadership is not positional, managers within Extension can be expected to be leaders within the organization as well.

Major Leadership Theories

In order to begin understanding the concept of leadership, one must understand the various leadership theories that have contributed thus far to our understanding of leadership as a whole. In his paper on leadership competencies, Scholtes (1999) discussed the importance of theory. According to Scholtes, "without theory there is no learning and without application there is no learning. We have a theory. We try it out. We adjust our theory, based on what we have learned. We try that out – and on and on. The extensive cycle is called learning" (p. S706). When viewed collectively, the various leadership theories provide a multifaceted view of leadership (Kanji & Sa, 2001).

Over the years, researchers have conducted literally thousands of studies that have tried to explain leadership, and perhaps more importantly, effective leadership using a number of different approaches. Nahavandi (2000) classified modern leadership approaches into one of three eras: the trait era, the behavior era, and the contingency era. Similarly, Yukl (2002) classified empirical research and leadership theories into one of

five major approaches: the trait approach, the behavioral approach, the power-influence approach, the situational approach, and the integrative approach. Studies that have been conducted within the various approaches to leadership have made distinct contributions to our understanding of what leadership is, and each approach continues to influence our thinking about leadership as a process (Nahavandi). Each of the approaches outlined by Yukl will be discussed briefly in the sections that follow.

The Trait Approach

Studies conducted using the trait approach to leadership emphasized specific attributes, or traits, of leaders such as personality, motives, values, and skills (Yukl, 2002). The basic assumption that guided the trait leadership studies was that leaders possessed certain traits that other people did not possess. In essence, the trait approach assumed that leaders were born, not made.

Hundreds of trait leadership studies were conducted during the 1930s and 1940s. In fact, most of the leadership research conducted until the 1940s can be classified as trait research (Bass, 1990a). However, these studies failed to create list of traits that would guarantee leadership success (Yukl, 2002). Different studies found different traits associated with leaders, and soon, the list became too long to be of practical significance.

After trait leadership studies failed to produce a conclusive list of traits that made leaders successful, researchers began to study leadership using one of the other approaches. However, there has been a renewed interest in trait leadership in recent years (Bryman, 1992; Nahavandi, 2000). The inclusion of traits as one of the elements in effective leadership is generally well accepted, but is no longer looked at as the only, or even dominant, factor in effective leadership (Nahavandi).

The Behavioral Approach

After the studies conducted using the trait approach failed to produce conclusive findings, many researchers began using a behavioral approach to study leadership. In doing so, researchers and theorists began looking into what leaders actually did on the job (Yukl, 2002). According to Yukl, research conducted under the behavioral approach falls into one of two subcategories: (1) how leaders spend their time and the typical pattern of activities, responsibilities, and functions of their jobs, and (2) identifying effective leadership behavior.

The behavior approach was successful in increasing our understanding of leadership by successfully identifying several categories of leadership behaviors (Nahavandi, 2000). However, similar to the trait approach, the behavior approach focused only on one variable of leadership. As Nahavandi points out, by emphasizing only behaviors, this approach disregarded other variables, such as situational elements, and therefore, provides a simplistic, and less than thorough understanding of the complex process of leadership.

The Power-Influence Approach

According to Yukl (2002), this type of approach to leadership involves the study of the influence that takes place between leaders and other people. Studies that have been conducted with this approach generally focused on leadership in terms of the amount of power possessed by a leader, the different types of power, and how power was exercised (Yukl, 1989).

Power and influence are of concern to researchers as influence is the essence of leadership and power is important not only for influencing followers, but also for influencing peers and superiors, as well as individuals outside of an organization (Yukl,

1989, 2002). Bradford and Cohen (1984) noted the importance of this multidirectional power and influence within an organization. According to them, "having clout with your boss gains respect from subordinates and peers; being influential with colleagues lets you deliver what your boss wants and your subordinates need; and high-performing subordinates increase your power sideways and upwards because you can deliver on your obligations and promises" (p. 280).

The Situational Approach

The situational approach emphasizes the importance of contextual factors in the study of leadership. Yukl (1989; 2002) identified the following contextual factors: the leader's authority and discretion, the nature of the work performed by the leader's unit, the characteristics of the followers, the type of organization, and the nature of the external environment. Similarly, from his review of the works of several leadership theorists, Bennis (1961) identified several factors that must be taken into account when explaining who emerges and succeeds as a leader within an organization. Such factors might include the relationship between leaders and followers and the design of tasks that allow individuals to reach self-actualization. Bennis argued that effective leadership depends on finding balance between individuals and the organization such that both can obtain maximum satisfaction.

Research conducted under the situational approach generally can be generally categorized into one of two subcategories: (1) an attempt to discover the extent to which the leadership processes are the same or unique across different types of organizations, levels of management, and cultures, or (2) an attempt to identify aspects of the situation that moderate the relationship of leader attributes to leader effectiveness (Yukl, 2002).

The Integrative Approach

Researchers and theorists using the integrative approach to leadership include more than one type of leadership variable, such as trait, behavior, influence processes, and situational variables (Yukl, 2002). Bass (1990a) stressed the importance of including more than one type of leadership variable in research involving leaders and leadership when he stated, “cognitive, behavioral, and interactional explanations are likely to be needed to account fully for leader-follower relations and outcomes from them” (p. 52). He further stated that "leadership must be conceived in terms of the interaction of variables that are in constant flux" (p. 76).

Leadership theories such as charismatic and transformational leadership are good examples of an integrative approach to leadership. These theories are “broader in scope: they simultaneously involve leader traits, power, behavior, and situational variables” (Yukl, 1989, p. 270).

Leadership Styles

The concept of leadership styles is somewhat vague in that each individual’s style is as personal as the individuals themselves. Leadership style refers to the characteristics manner in which an individual leads others. Early conceptualizations categorized leadership styles as either autocratic, democratic, or laissez faire (White & Lippitt, 1960). According to White and Lippitt, autocratic leadership styles are exhibited by leaders who maintain a high degree of control over the group, without allowing much freedom for participation by group members in decision-making. The autocratic leader sets group goals and determines how the group will accomplish those roles. In other words, the autocratic leader possesses high goal and means control, and utilizes low stimulation of group procedures. The democratic leader, on the other hand, attempts to get the group to

develop the methods or procedures used to set goals. Therefore, the democratic leader possesses low goals and means control, and utilizes high stimulation of group procedures. The Laissez-faire leadership style is characterized by a “hands-off” approach to leadership. Laissez-faire leaders both possess low goal and means control, and utilize low stimulation of group procedures.

Through their work with the situational approach to leadership, Hersey and Blanchard created their own leadership styles. They based their leadership styles on the amount a task-behavior and relationship-behavior the leader provided followers. In their initial classification system, leaders could be classified as having one of the four following styles: telling (high task, low relationship), selling (high task, high relationship), participating (low task, high relationship), or delegating (low task, low relationship).

A newer version of Hersey and Blanchard’s situational leadership model has been created (Blanchard, Zigarmi, & Zigarmi, 1985). In this version, Situational Leadership II, there area still four classifications of leadership styles based on task and relationship behavior, but leaders are said to have either directing, coaching, supporting, or delegating leadership styles.

In the last 20 years, a new paradigm of leadership has emerged that shifted emphasis from the traditional, or transactional, models of leadership toward of the study of transformational leadership styles. The concept of transformational leadership was introduced by Burns (1978) and refined by Bass (1985a). According to Tichy and Devanna (1990), "transformational leaders are not dictators. They are powerful yet sensitive of other people, and ultimately they work toward the empowerment of others"

(p. 273). The concept of transactional versus transformational leadership style becomes an important aspect in the overall study of leadership in that, according to Bass (1985a), "the leadership of great men (and great women) of history has usually been transformational, not transactional" (p. 26).

Transformational and Transactional Leadership Styles

Burns (1978) viewed the two as a dimensional construct in which transactional and transformational leadership were at opposite ends of the same continuum. He characterized transactional leadership as being based on interactions between leaders and followers in which something of value was exchanged, such as rewards for performance. At the other end of the continuum, he characterized transformational leadership as occurring when leaders and followers interacted in such a way that the level of motivation and morality in both the leader and the follower were raised.

In contrast, Bass (1985a) viewed the two as complementary constructs, and as such, saw it possible, in fact almost necessary, for the leader to engage in both transactional and transformational leadership behaviors. Transformational leadership is not a substitute for transactional leadership, but rather tends to add to its effectiveness (Bass, 1997).

Bass characterized the transactional leader as someone who worked within the existing organizational culture of the group to recognize and clarify the roles and responsibilities of followers such that desired outcomes were achieved (see Figure 2-1).

These desired outcomes were achieved when the leader negotiated with followers an exchange relationship of reward for compliance (Bass, 1985a). In other words, transactional leaders explain to followers what is required of them and then negotiate the compensation followers will receive if they meet the requirements, either the promise of

reward for good performance or the threat of punishment for poor performance (Bass, 1990b). Bass (1985a; 1990b) identified four characteristics of transactional leaders: (1) contingent reward in which the leader provides rewards if followers meet agreed upon performance and designated goals; (2) active management-by-exception in which the leader watches and searches for follower mistakes such that corrective action can be taken; (3) passive management-by-exception in which the leader only intervenes in a followers work if performance goals are not being met; and (4) laissez-faire leadership in which the leader withdraws and avoids responsibility and decision-making when performance goals are not met. Laissez-faire leadership can actually be considered a non-leadership factor as it represents the absence of leadership (Northouse, 2001).

Bass characterized transformational leaders as individuals who motivate followers to do more than they originally expected to do based on their original level of confidence towards accomplishing desired outcomes (see Figure 2-2). Transformational leadership occurs when a leader: raises the level of awareness about the importance and value of desired outcomes, alters or expands the wants and needs of followers, and/or gets followers to transcend their own self-interest for the sake of the group (Bass, 1985a). Bass (1985a; 1990b) identified four characteristics of transformational leaders: (1) charisma in which the leader is able to provide followers with a vision, transmit a sense mission, gain respect and trust, and instill faith in followers; (2) inspiration in which the leader provides examples and patterns for the follower through symbols and images, emotional appeals, and communicating high expectations; (3) intellectual stimulation in which the leader stimulates followers to think in new ways, promotes intelligence and rationality, and emphasizes problem solving; and (4) individualized consideration in

which the leader provides a supportive and coaching environment such that each follower is treated as a respected individual.

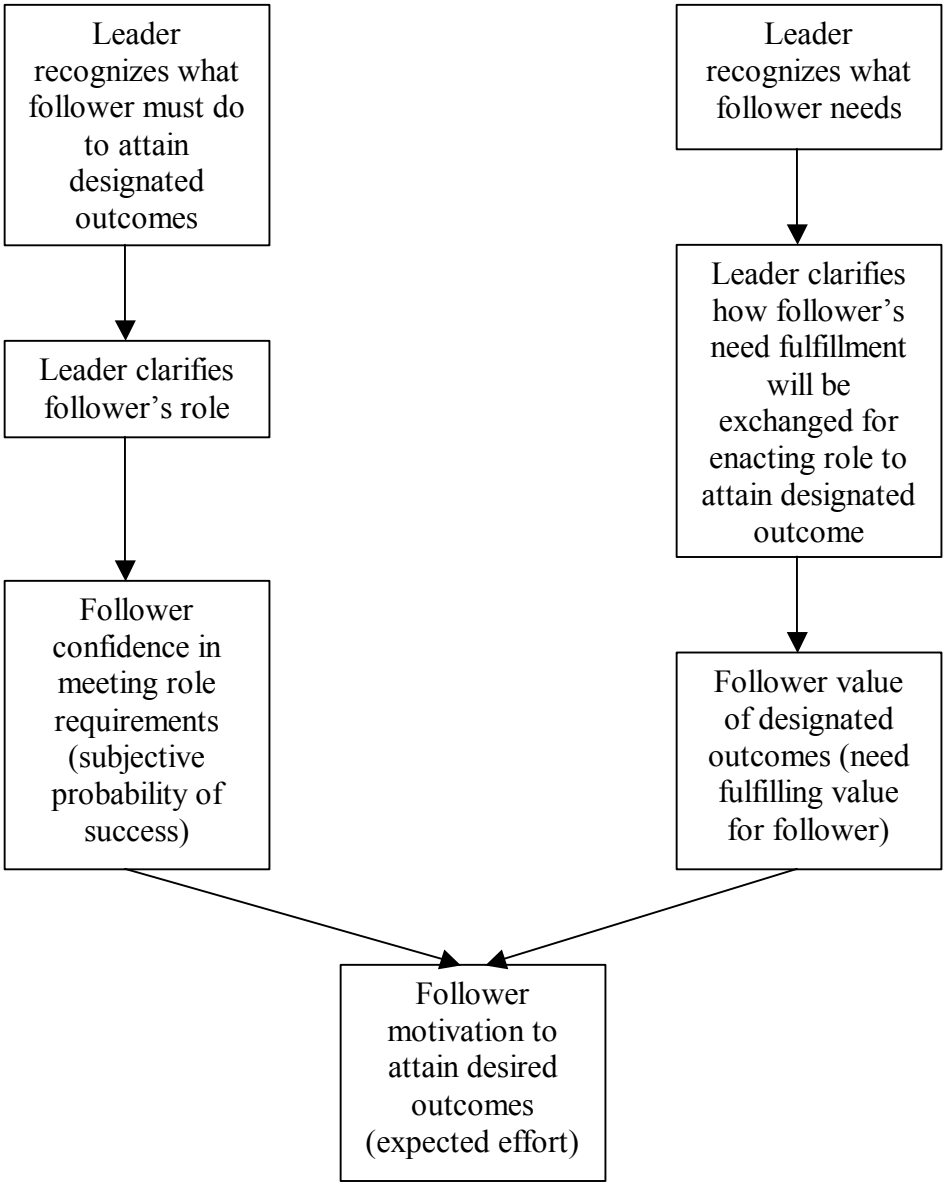

Figure 2-1. Bass's (1985a) model of transactional leadership.

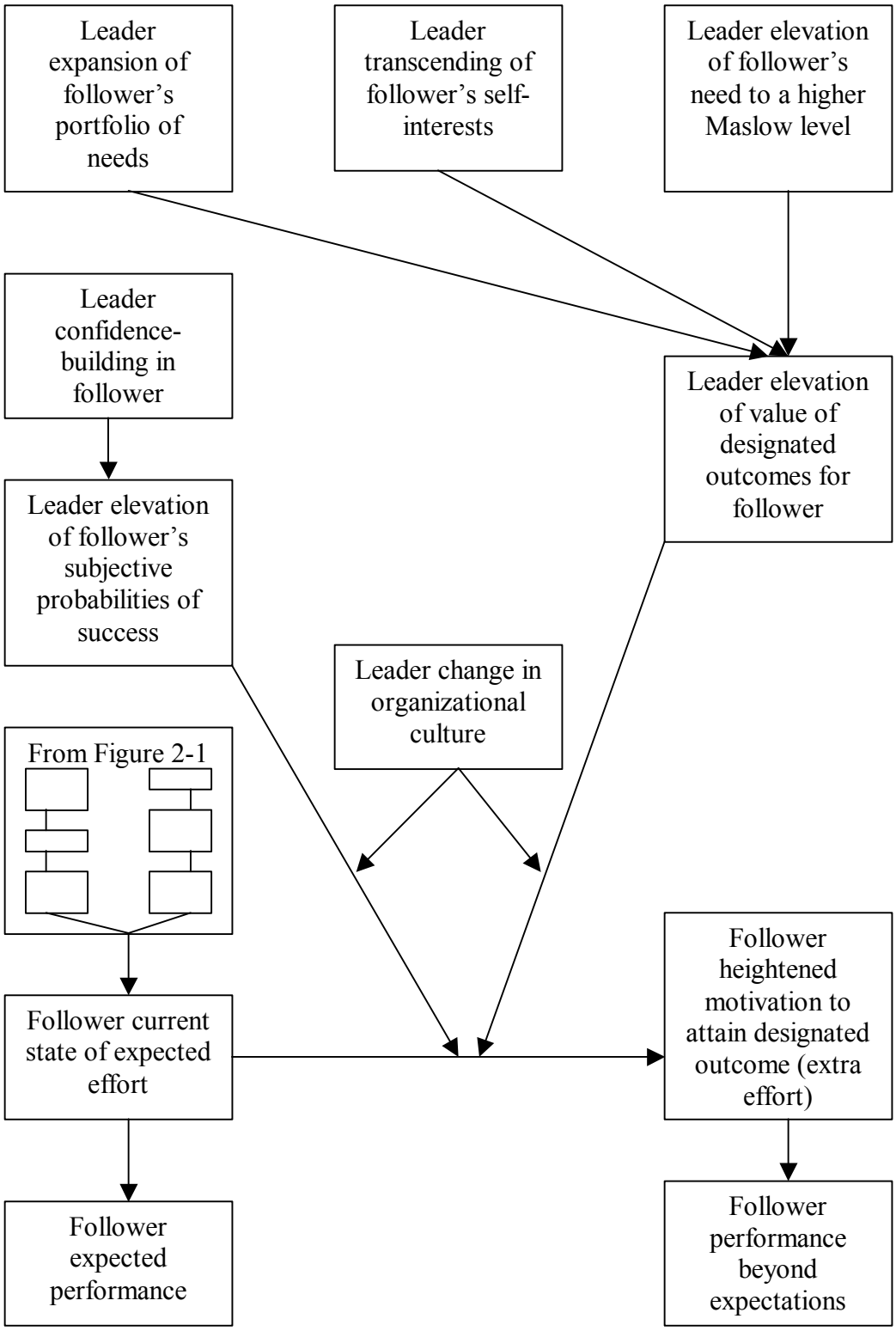

Figure 2-2. Bass' (1985a) model of transformational leadership.

Another popular conceptualization of transformational leadership style was that of the leadership challenge (Kouzes & Posner, 1987). Kouzes and Posner collected over 1,000 surveys and interviewed numerous middle-level to senior-level managers who described their personal best leadership experience and identified five fundamental leadership practices of transformational leaders. When the leaders in their study moved people beyond expectations, they: (1) challenged the process, (2) inspired a shared vision, (3) enabled others to act, (4) modeled the way, and (5) encouraged the heart. Posner and Kouzes (1988) reported that over 80 percent of the behaviors and strategies respondents described in their interviews and personal best leadership experiences were accounted for by these five fundamental practices.

Leaders who exhibit the leadership practice Challenge the Process are not bound by the status quo, are open to innovation, and encourage risk-taking within the organization. Leaders who Inspire a Shared Vision are able to look ahead and see what the organization can be while at the same time enlisting the efforts of others in the achieving the common goals of the organizational vision. Leaders who engage in behaviors characteristic of the Enabling Others to Act practice transfer power to others in the organization, involve others in the decision making processes of the organization, and ultimately build trust and mutual respect within the organization. Leaders who Model the Way set examples within the organization by adhering to the same rules and expectations of others within the organization. Leaders who utilize the Encourage the Heart practice recognize the contributions of individuals and celebrate the accomplishments of others within the organization.

Measurement of Transformational and Transactional Leadership Styles. In an effort to measure the conceptualizations of transformational and transactional leadership, Bass created the Multifactor Leadership Questionnaire (MLQ). To develop the instrument, Bass began with 142 statements drafted from a review of literature and open-ended interviews with 70 male senior industrial executives. These statements were reviewed by 11 graduate MBA and social science students who were enrolled in a leadership seminar class. The 11 judges had studied detailed descriptions of transactional and transformational leadership and sorted the statements into one of three categories: transactional, transformational, or "can't say."

Items were selected as transactional if nine or more of the 11 judges identified it as transactional and none or only one of the judges identifies it as transformational. An item was selected as transformational if eight or more of the 11 judges identified it as transformational and none or only one identified it as transactional. Of the original 142 statements, 73 remained and were included in the revised questionnaire.

From his conceptualization of the characteristics of transformational and transactional leaders, Bass identified seven leadership factors: charisma, inspiration, intellectual stimulation, individualized consideration, contingent reward, management-by-exception, and laissez-faire leadership (Avolio, Bass, & Jung, 1999; Bass, 1985a). Although Bass considered charisma and inspiration to be distinct constructs, the two were not found to be distinguishable in a factor analysis study of data obtained from 176 military officers (104 U.S. Army colonels, foreign officers, and civilians of equivalent rank and 72 senior military officers) who completed the 73 item revised questionnaire, and thus the two were combined to represent a single factor (Bass, 1985a, 1988).

Similarly, the laissez-faire leadership construct faded as a separate entity (Bass, 1985a). Of the remaining five factors, three were identified as transformational (charismatic leadership, individualized consideration, and intellectual consideration) and two were identified as transactional (contingent reward and management-by-exception).

More recent forms of the MLQ such as the MLQ 5X (2000a) include nine leadership scales. Of these, five are transformational: idealized influence (attributed), idealized influence (behavior), inspirational motivation, intellectual stimulation, and individualized consideration. Three of the leadership scales are transactional: contingent reward, management-by-exception (active), and management-by-exception passive. The remaining leadership scale, laissez-faire leadership is the only measure the laissez-faire, or non-leadership, style.

Idealized influence is defined in terms of how followers react to the leader and his/her behavior. Leaders with idealized influence are admired and respected by followers and serve as strong role models. They have high standards of ethical and moral conduct and provide followers with a vision and sense of mission. Followers want to emulate leaders who exhibit idealized influence (Northouse, 2001). According to Bass and Avolio (2000b), idealized influence can be seen as both a behavior and an impact, thus requiring two leadership scales: idealized influence (attributed) and idealized influence (behavior).

Inspirational motivation is displayed by a transformational leader when he/she inspires and motivates followers to demonstrate commitment to the shared vision of the organization. Leaders who engage in this behavior clearly communicate high expectations to followers and increase team spirit and enthusiasm (Northouse, 2001).

Intellectual stimulation is demonstrated by a transformational leader when he/she supports followers to be creative and innovative, try new approaches, and challenge their own beliefs and values as well as those of the leader and the organization. Followers engage in problem solving to find creative solutions (Northouse, 2001).

Individualized consideration is displayed by a transformational leader when he/she provides a supportive climate, listens to followers, and acts as a coach and mentor. The leader pays attention to individual differences and treats individual employees in a caring and unique way. Leaders also help individuals achieve goals and grow personally (Northouse, 2001).

Contingent reward refers to the engagement of leaders and followers in an exchange process in which effort by followers is exchanged for specific rewards. Objectives are agreed upon by both leaders and followers, and achievement of the objectives is positively reinforced (Northouse, 2001).

Management-by exception occurs when transactional leaders intervene to make some correction and generally involves corrective criticism and negative reinforcement. Management-by-exception can be active or passive. Transactional leaders engage in active management-by-exception when they closely monitor followers so they can detect mistakes and take corrective action and offer negative feedback. Transactional leaders engage in passive management-by-exception when they intervene with a follower only after standards have not been met or problems arise (Northouse, 2001).

Laissez-faire leaders engage in laissez-faire behaviors when they abdicate responsibility, delay decisions, offer no feedback, and make little or no effort to help

followers satisfy needs, achieve goals, or grow personally. It is a "hands-off" approach to leadership (Northouse, 2001).

The MLQ is the most widely used measure of transformational leadership (Northouse, 2001). By 1986, the MLQ had been included in over 75 research studies with findings published in journals, dissertations, book chapters, conference papers, and technical reports (Lowe, Kroeck, & Sivasubramaniam, 1996). According to Lowe et al. (1996), the MLQ has been used to study leaders at all levels of both public and private organizations in business and industry, the military, and educational and religious institutions, as well as to study effectiveness criteria such as follower perceptions of effectiveness and satisfaction and extra effort and organizational measures of performance.

In an effort to measure their own conceptualizations of leadership, Kouzes and Posner created the Leadership Practices Inventory (LPI). After collecting and analyzing the interview and personal best leadership experience forms and identifying the five fundamental practices of effective leaders, the authors wrote six statements that captured each of the five practices for a total of 30 statements. Kouzes and Posner created two forms of the instrument: the LPI-Self to be completed by the leader and the LPI-Other to be completed by the leader's followers or subordinates (Kouzes & Posner, 1997b). The initial versions of the instrument were based on a five-point Likert scale that asked respondents to rate how often the leader demonstrated a particular behavior on a scale from one to five where one represented rarely or very seldom and five represented very frequently or almost always. The LPI was then completed by 120 MBA students and receiving feedback from respondents, difficult, ambiguous, or inconsistent statements

were revised or replaced (Posner & Kouzes, 1988). The revised instrument was administered to over 2,100 managers and their subordinates and data were analyzed for internal reliability and construct validity. A factor analysis was also conducted and statements that loaded poorly or on a factor that was not interpreted were either discarded or rewritten. In a study of managers and executives in management development seminars and approximately three of their subordinates (N=2,876) Posner and Kouzes (1988) reported overall internal reliabilities of the LPI ranging from .77 to .90 with reliabilities of .70 to .84 on the LPI-Self and .81 to .91 on the LPI-Other. The authors also reported that a factor analysis extracted five factors and accounted for 59.9% of the variance.

The LPI was not created to measure either transactional or transformational leadership, but rather the five fundamental practices of leadership identified by Kouzes and Posner (1987). However, in a study involving 1,892 subordinates describing 344 middle managers, Fields and Herold (1997) evaluated three alternative factor models of the five dimensions of the LPI. Results of the analysis indicated that the model which associates two dimensions of the LPI (Challenging the Process and Inspiring a Shared Vision) with transformational leadership, one dimension (Enabling Others to Act) with transactional leadership, and the remaining two dimensions (Modeling the Way and Encouraging the Heart) with a mixture of both transformational and transactional leadership produced to best fit to the raw data. The authors concluded that subordinate assessments of a leader using the LPI can be used to measure transformational and transactional leadership.

Similarly, in a study involving 1,440 subordinates in an Australian banking firm, Carless (2001) concluded that although the constructs of the LPI were highly correlated and thus the LPI had a weak discriminant validity, the instrument was assessing an over-arching transformational leadership construct. It should be noted however that this study utilized the first edition of the LPI rather than the newer, second edition.

Posner and Kouzes (1988) also examined the relationship between a leader's effectiveness and his or her behavior as measured by the LPI. Data collected only from the LPI-Other instruments were analyzed using stepwise regression. The five factors were entered as independent variables and leader effectiveness was entered as the dependent variable. A significant regression equation was obtained. Results of the analysis indicated that nearly 55% of a manager's effectiveness can be explained by the manager's behavior based on the conceptual framework of transformational leadership measured by the LPI (Posner & Kouzes, 1988).

Kouzes and Posner have continued to revise and improve the LPI as well as conduct reliability and validity studies (1997b). The second edition of the instrument asks respondents to rate the leader's demonstrated behavior on a one to ten point Likert scale instead of the five-point scale used in an earlier version. Additionally, the authors changed the name of the LPI-Other to the LPI-Observer because they believe the new name more accurately describes its intent as it is designed to be used by people who directly observe the behaviors of the leader they are describing (Kouzes & Posner, 1997b).

Early views of transformational and transactional leadership styles placed the two at opposite ends of a single continuum, and therefore suggested that leaders were unable

to engage in aspects of both styles at the same time. In contrast, current theories view the two as complementary constructs, both of which are important to the success and prosperity of organizations, and suggest that effective leaders can, and should, engage in aspects of both at the same time. In other words, transformational leadership is an extension of the traditional transactional leadership, and leaders are most effective when they exhibit both styles. In a meta-analysis of 39 studies on transformational leadership that used the MLQ, Lowe et al. (1996) reported that transformational leadership behaviors were more strongly correlated to leadership effectiveness than were transactional leadership behaviors across different contexts. These findings support the theory that effective leaders utilize transactional leadership when necessary and appropriate, but also emphasize and practice transformational leadership.

Relationship Between Leadership Style and Leadership/Management Theory

Some scholars have related the differences between management and leadership to the difference between transactional and transformational leadership. Bennis and Nanus (1997) noted that management typically consists of a set of contractual exchanges whereas the end result of leadership is empowerment, which results in the desire of individuals to achieve success. From this perspective, management can be seen as those activities performed by transactional leaders while leadership can be seen as those activities performed by transformational leaders.

The functions of management and leadership are different, but a considerable amount of overlap exists between the two. Both effective management and effective leadership are needed in order for organizations to reach their greatest potential outcomes. In many respects, the functions of management can be compared to transactional leadership in which followers meet the expectations of their leaders based

on contracts and performance requirements. Under most circumstances, this may be effective, however, over the past couple of decades the leadership paradigm has shifted and the literature now supports the idea that to generate extra effort, commitment and satisfaction in followers, transformational leadership is more effective.

Influence of Demographics on Leadership Styles

Numerous studies have been conducted in the field of leadership that have addressed the influence of selected demographic characteristics of individuals on their leadership style. Some studies have focused on the influence of the characteristics on the self-perceived leadership style of the individual, others have focused on the perceptions of followers related to an individual's leadership style and the influence of these characteristics, and still others have involved the perceptions of both the leaders and their followers. Krishnan and Park (1998) noted that demographic characteristics do exert considerable influence on the leadership styles of top managers. Hambrick and Mason (1984) proposed that demographic traits such as age, tenure in an organization, functional area background, educational background, and degree of formal management training are all important aspects of leadership that influence organizational success.

Gender

Differences in the preferred leadership styles of men and women is perhaps one of the most well researched aspects of leadership. There are two major schools of thought on gender differences and leadership, one that says there are distinct differences and the other that says there are no differences in the preferred leadership styles of men and women.

Several studies have been conducted to determine if male or female leaders are more transformational. In their meta-analysis, Eagly and Johnson (1990) found that

women tend to use a more participative and inclusive style while men tend to use a more directive and controlling style. This indicates that women use more transformational styles while men use more transactional styles. This conclusion is supported by other studies that found women more likely to use transformational leadership than men and that men were more likely to use transactional leadership as their primary style (Druskat, 1994; Rosener, 1990).

Carless (1998) went on to assess transformational and transactional leadership in terms of subordinate, leader and superior perceptions. A unique aspect of her study is that she used both the MLQ and the LPI to completely assess and measure transformational and transactional leadership. Carless reported that while subordinates reported no differences between men and women in their use of transformational leadership, both the leaders themselves and the leaders' superiors reported females to be more transformational than their male counterparts.

In a study of 73 senior human resource management professionals, 49 males and 24 females, Posner and Kouzes (1988) reported that statistically significant differences were obtained between the males and females on the Encouraging the Heart factor of the LPI with the females reporting higher frequency scores than their male counterparts. In a later study involving 5,298 managers who completed the LPI-Self instrument and 30,913 subordinates who completed the LPI-Observer instrument, two of the five leadership practices were found to be significantly different between males and females in both LPI-Self and LPI-Observer groups (Posner & Kouzes, 1993). In the LPI-self group, female managers reported engaging in Modeling the Way and Encouraging the Heart significantly more often that their male counterparts. This finding is supported by the

findings of the LPI-Observer scores that revealed female managers were seen by their subordinates as engaging in Modeling the Way and Encouraging the Heart behaviors significantly more often that their male colleagues. Findings from these studies suggest that in general, male and female leaders are more alike than they are different in terms of the five leadership practices that are measured by the LPI (Posner & Kouzes, 1993). It is interesting to not however, that the two practices females have been shown to engage in significantly more often than that their male peers, Modeling the Way and Encouraging the Heart, are the same two practices that Fields and Herold (1997) found to represent both transformational and transactional leadership behaviors.

There have been studies conducted within the Extension system that have addressed differences in the leadership styles of men and women administrators. Rudd (2000) conducted a study in which five observers completed the LPI-Observer instrument for 38 male and 16 female County Extension Directors in Florida. Observers reported significant differences between the men and women on four of the five leadership practices measured by the LPI. Observers reported women using Challenging the Process, Inspiring a Shared Vision, Enabling Others to Act, and Encouraging the Heart behaviors significantly more often than their male counterparts. In the same study, 28 male and 16 female County Extension Directors completed the LPI-Self instrument. It is interesting to note that the male leaders ranked themselves higher in all five leadership practices than did their observers, whereas the female leaders ranked themselves lower in four of the five leadership practices. Self-reported and observer scores for females in the Enabling Others to Act were equivalent.

Lowery (1996) used the Human Patterns instrument to measure five leadership behaviors based on the work of Kouzes and Posner. The five leadership behaviors were: appreciating and recognizing others, challenging and pushing others, coaching and enabling others, inspiring others, and serving as a role model. Results showed that the female CEDs in her study showed a strong preference for inspiring others and challenging others while male CEDs preferred the leadership behaviors of inspiring others, coaching others, and appreciating others.

In a study in which the self-perceived leadership and management behaviors of County Extension Directors (CED) were compared with the perceptions of their behaviors provided by County Extension Agents (CEA), Sykes (1995) classified certain behaviors as those found in leaders, such as risk taker, visionary, and innovates, and certain behaviors found in managers, such as monitors, administers general duties, and satisfied with status quo. When compared with the literature, those behaviors Sykes classified as leader behaviors are comparable to behaviors exhibited by transformational leaders, whereas those behaviors she classified as manager behaviors are more comparable to transactional leadership behaviors. With respect to gender, Sykes found that female CEDs perceived themselves to demonstrate more leadership behaviors than male CEDs perceived themselves to demonstrate.

Haynes (1997) examined the relationship between demographics such as gender, age, tenure in Extension, tenure in a supervisory/management position, and program area and 15 supervisory/management competencies that were observed and assessed in an Extension Assessment Center. In his study, participants that demonstrated above average

strength ion the behavioral flexibility competency tended to be female. Demonstrated strength in the remaining competencies was not affected by gender.

In her study involving employees of the New Mexico Cooperative Extension Service, Holder (1990) categorized participants as either Extension faculty (county Extension faculty and Extension specialists) or middle managers (county Extension directors, district directors, and program leaders). She reported that leadership style was not significantly related to gender for either Extension faculty or middle managers.

Ethnicity

Little empirical evidence exists in the study of ethnicity differences related to leadership styles. Few studies in Extension have been conducted in which the influence of ethnicity on leadership style was addressed. However, it is nevertheless important to consider ethnicity differences in leadership styles. As Alire (2001) points out, "minorities themselves view differences between white and minority leadership" (p. 97) and "for the most part, minorities think that they are held to a higher standard" (p. 99).

Davis (1982) concluded that based on Burns' definitions of transformational and transactional leadership, the needs and experiences of the black population may dictate a greater emphasis on transformational leadership. This conclusion may suggest that black followers seek transformational leaders and that black leaders tend to be more transformational. The latter has not been supported in empirical studies. In the Posner and Kouzes (1993) study involving over 36,000 managers and their subordinates, the authors compared the responses of Caucasians with those of non-Caucasians. Non-Caucasian managers reported engaging in Inspiring a Shared Vision and Modeling the Way behaviors significantly more often than their Caucasian colleagues. However, when

LPI-Observer scores were analyzed, no significant differences between Caucasians and non-Caucasians in any of the five leadership practices.

In a smaller study conducted with 42 male and 32 female Directors of Student Athletic Support Services at NCAA Division I Institutions, Rochelle (1999) reported significant differences between Hispanics and the group that reported Other as their ethnicity in the leadership practice Encouraging the Heart as measured by the LPI.

Within the Extension system, Sykes (1995) reported significant differences in the self-perceived leadership behaviors of African-American CEDs as compared to CEDs of other races. The African-American CEDs in her study perceived themselves to demonstrate more leadership behaviors. In contrast, Holder (1990) found no significant relationship between ethnic origin and leadership style of Extension faculty and middle managers.

Age

Several studies examining the relationship between age and leadership style have been conducted organizations other than Extension. Vroom and Pahl (1971) suggested that older managers within an organization may have a greater commitment to maintaining the status quo than younger managers and less favorable attitudes towards taking risks. Hambrick and Mason (1984) proposed that younger managers were more inclined to take risks than older managers. Taking risks rather than maintaining the status quo is one of the characteristics of leaders who engage in the leadership practice Challenging the Process identified by Kouzes and Posner (1987).

Spotanski and Carter (1993) conducted a study on the self-perceived leadership practices and behaviors of agricultural education department executive officers in which demographic variables, including age, tenure, and formal leadership training and/or

education, were analyzed in relation to the leadership practices measured by the LPI. In their study, 28 of 49 participants were below the age of 50 and 21 were above the age of 50. When grouped according to age, below 50 and above 50, findings of the study indicated no significant differences in leadership style.

Within the Extension system, Sykes (1995) found that the age of a CED did not significantly influence her behavior as a manager or a leader. She did find, however, that younger CEDs, 45 years old and younger, perceived themselves to demonstrate more leader behaviors.

Holder (1990) reported that age was not significantly related to the preferred leadership style of Extension faculty and middle managers. Similarly, Haynes (1997) reported that age did not affect participants' demonstrated strength in the 15 supervisory/management competencies included in his study.

Tenure

Studies have been conducted that assess the relationship between an individual's leadership style and their tenure within an organization as well as their tenure in leadership positions within the organization. Hambrick and Mason (1984) proposed that the more tenure the leaders of an organization have, the more likely they are to have a greater commitment to maintaining the status quo. Similarly, Bantel and Jackson(1989) found that the more tenure of the top management team within the independent financial institutions they studied had, the more likely they were to resist innovation and organizational change. However, in their study, they found no significant differences between the tenure of the CEO and total innovation.

Tenure has also been addressed from the perspective of how long an individual has served in a leadership position. The Spotanski and Carter (1993) study that included

age as a demographic variable also included a comparison between leadership styles and the number of years in which a participant had served as a department executive officer. The authors reported no significant difference between leadership styles of the study participants when compared to years of experience as a department executive officer.

In his study of Directors of Student Athletic Support Services at NCAA Division I Institutions, Rochelle (1999) reported that the number of years respondents reported working in the primary leadership role was significantly correlated with the Encouraging the Heart leadership practice of the LPI.

Shearon (1969) introduced the concept of Administrative Professional Leadership (APL) in Extension that he defined as a leader's efforts to coordinate and influence the performance of Extension agents. In his study involving County Extension Chairmen (CEC) and Extension agents in the North Carolina Agricultural Extension Service, he found that the more tenure a CEC had in Extension, the lower their APL scores indicating decreased leadership effectiveness.

Cobb (1989) conducted a study involving CEDs and county Extension agents in select counties of the North Carolina Agricultural Extension Service. He reported no significant difference in the leadership effectiveness of CEDs with one to 10 years tenure in the CED position as compared to CEDs with 11 to 30 years of tenure in the CED position. Similarly, Holder (1990) reported no significant relationship between tenure in Extension and the preferred leadership style of Extension faculty and middle managers.

Sykes (1995) reported on the influence of tenure both within Extension as a whole and within and Extension CED position. Findings of her study indicated that tenure in the Extension system as a whole did not influence a CEDs behavior either as a leader or

as a manager. The same finding was reported for tenure in an Extension CED position. In other words, more tenure, either in the Extension system as a whole or in a leadership position within Extension, did not necessarily indicate a more transactional leadership style.

In his study involving demonstrated strength of Extension employees who completed the Assessing Supervisory and Management Skills Assessment Center at the Minnesota Extension Summer School and the Ohio State University Extension County Chair Assessment Center, Haynes (1997) reported that participants who demonstrated above average strength in leadership tended to have more tenure in Extension. Those who demonstrated above average strength in development of coworkers had both more tenure in Extension and more tenure in a supervisory/management position. The remaining competencies were not affected by tenure.

Educational Background and Promotion Path

Educational background and promotion path are variables that have received considerably less attention than other demographic variables within the literature. Shearon (1969) found no relationship between undergraduate major, which he classified as either oriented more to the social sciences or to agricultural technology, and the APL of the CECs in his study.

Findings of the study conducted by Sykes (1995) suggested that program discipline from which CEDs came from significantly influenced their self-perceptions related to transformational leadership styles. Sykes reported that CEDs from home economics and 4-H program backgrounds perceived themselves to demonstrate more leadership behaviors than CEDs from agricultural program backgrounds. Sykes also reported that the type of degree, beyond a bachelor's degree, had no significant influence

on the self-perceive leadership styles of the CEDs in her study. However, in terms of leadership effectiveness, Cobb (1989) reported no significant difference in the leadership effectiveness of CEDs as a function of their previous program discipline.

Haynes (1997) reported that participants in his study who demonstrated above average strength in leadership tended not to be from the family and consumer science, 4-H youth development, or community/economic development program areas. Similarly, those who demonstrated above average strength in development of coworkers tended not to come from the agriculture/natural resources, 4-H youth development, or community/economic development programs and those who demonstrated above average strength in behavioral flexibility tended not to come from the community/economic development program area. The remaining competencies were not affected by previous program area.

Although there has been little study into the influence of educational background and promotion path, it is an area of great importance as the leaders of Extension are almost always promoted from within the organization based on their performance in their subject matter discipline or previous Extension positions (Patterson, 1997; Pittman & Bruny, 1986). In many cases, leaders tend to want to surround and replace themselves with people who are like them in terms of their background and experiences (Sorcher & Brant, 2002). Thus, it is logical to believe that individuals trained in a bench science disciple would seek to promote individuals with training in a bench science. However, Bantel and Jackson (1989) proposed that it is to the benefit of top management teams within an organization to be composed of diverse individuals with dissimilar types of curricula backgrounds.

In some respects, this proposition has not been supported in the literature related to Extension. For example, All six of the African American Extension leaders at 1890 Land-Grant institutions studied by Moore and Jones (2001) had an academic background in Family and Consumer Sciences.

Gender, ethnicity, age, tenure, and background are the most common demographic variables studied throughout the literature in regards to their influence on leadership style. There are many inferences that can be drawn from the findings of the studies examined. It can be suggested that younger leaders are more transformational in their leadership style.

Leadership Training and Development

Transformational leadership practices can be taught and learned (Bass, 1990b, 1998; Kouzes & Posner, 1987; 1997a) and therefore, it is important consideration in the context of training and development. In the context of Extension, training programs for administrators have historically included instruction in managerial skills such as program planning, personnel management, resource allocation and budgeting, and advisory committee organization, but lacked instruction in leadership skill areas such as participatory leadership, visioning, communication, innovation, empowerment, and recognition of followers and subordinates (Rudd, 2000). Moore and Jones (2001) suggested that an increase in minorities in leadership positions would occur in Extension would increase leadership development opportunities for minorities.

When leadership training and development is viewed from a transformational leadership perspective, Payne, Fuqua, and Canegami (1997) reported that when trained, there is no difference between the transformational leadership behaviors of men and women. However, when untrained, men will use a more task-oriented or transactional

style, while women will tend to use a more consideration-oriented or transformational style.

Gunderson (1994) reported ways of preparing individuals for future leadership positions as a major theme that emerged from an in-depth case study involving 57 Extension leaders from four states. Radhakrishna, Yoder and Baggett (1994) noted the importance and value of identifying leadership styles, behaviors and practices in the professional growth of County Extension Directors. According to the authors, the identification of weakness areas would help determine additional professional growth efforts, which in turn could increase their effectiveness as leaders.

The findings that leadership training and development is important within the Extension system are supported by the findings of studies conducted in other organizations as well as in Extension. The Spotanski and Carter (1993) study involving agricultural education department executive officers reported that study participants who had completed a leadership course in college or formal leadership training utilized the leadership practice Encouraging the Heart significantly more often than participants who had not completed such training. The authors also reported that study participants who completed a college course in leadership also utilized the leadership practice Enabling Others to Act significantly more often that participants who had not completed a leadership course.

Within the Extension system, Shearon (1969) found no relationship between the APL of the CEC and the number of courses taken in the areas of administration, education, and sociology.

Leadership Skills

Leadership skills can be taught and learned, yet skilled leaders continue to be in short supply (Pernick, 2001). According to Katz (1955), a skill can be defined as "an ability which can be developed, not necessarily inborn, and which is manifested in performance, not merely in potential" (p. 33-34). Nahavandi (2000) expanded on this definition by including a training dimension. Nahavandi proposed that a skill is an acquired task a person develops and can change with training and experience.

Katz (1955) identified three categories of skills needed by leaders: technical skills, human skills, and conceptual skills. Although the amount of human, technical, and conceptual skills may vary depending on position within the organizational hierarchy, each is nevertheless important for successful leaders to possess. Figure 2.3 illustrates the amount of each skill required at the various levels of management within an organization.

Technical skills, according to Katz, are the most concrete type of skills and are associated with understanding and being able to complete specific activities. In other words, these are the "how to do it" skills and involve methods, processes, procedures, or techniques. Leaders engage in technical skills when they perform the technical activities required of them. Technical skills are more important at the lower levels of administration (Goleman, 1998; Hicks & Gullett, 1975; Katz, 1955). As a leader moves up in the organizational hierarchy, he/she relies on the technical skills of followers more than on his/her own technical skills (Hicks & Gullett, 1975).

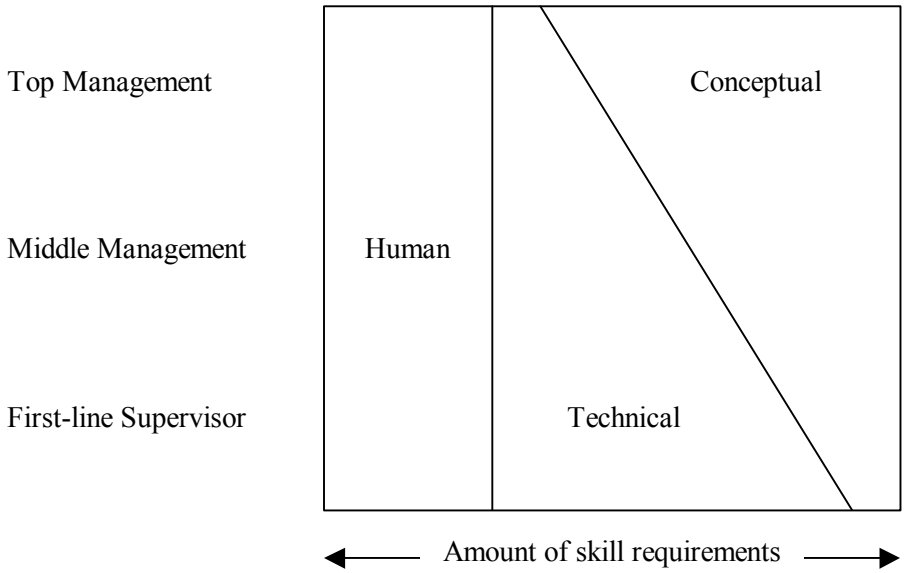

Figure 2.3. Amount of human, technical, and conceptual skills needed at various levels in an organization (Hicks & Gullett, 1975, p. 308).

Human skills can be considered the "people skills." Katz (1955) defined human skills as "the ability to work effectively as a group member and to build cooperative effort within the team he leads" (p. 34). This skill is demonstrated in how a leader perceives and behaves towards those around him/her, including superiors, peers, and followers, and most importantly cannot be a "some-time skill," but rather must be demonstrated in every action of the leader (Katz, 1955). Leaders engage in human relation skills when they motivate individuals and groups. Human skills are essential throughout all management levels (Hicks & Gullett, 1975; Katz, 1955).

Conceptual skills can be thought of as the "thinking skills" needed by leaders. This type of skill involves being able to see both what is going on within an entire organization, and how the various parts of the organization interact and depend on one another (Katz, 1955). Conceptual skills are perhaps most important at top management

levels where policy decisions, long-term planning, and broad scale actions are required (Hicks & Gullett, 1975; Katz, 1955).

Newer approaches to leadership skills have been built upon the technical, human, and conceptual skill classification, but are slightly different. Goleman (1998) outlined three domains of leadership skills: purely technical skills, cognitive abilities, and competencies that demonstrated emotional intelligence. There are five components to emotional intelligence: self-awareness, self-regulation, motivation, empathy, and social skill.

Goleman (1998) included emotional intelligence as a set of leadership skills because he saw it as the distinguishing competence of senior leaders. In fact, he reported emotional intelligence to be twice as important as the others when applied to all levels of jobs within the organizational hierarchy, and found emotional intelligence, rather than conceptual skills, to explain 90% of the difference in the effectiveness of star performers and average senior level leaders.

Strand (1981) conducted a study to determine community leadership competencies, as perceived by community residents. A factor analysis of the 39 competency items contained in the instrument revealed nine broad competency areas. Four of the nine competency areas represented conceptual skills, three represented human skills, and two represented technical skills. Findings of this study suggested that conceptual competencies were the most important, followed closely by human competencies, with technical competencies being least important.

In a study in which they designed a leadership competency instrument for healthcare administration, Robbins, Bradley, and Spicer (2001)identified four leadership

skill domains. Their assessment instrument contained 52 items that were classified as technical skills, industry knowledge, analytic and conceptual reasoning, or interpersonal and emotional intelligence. They identified industry knowledge as a domain of skills due to the complex nature of the healthcare industry.

Just like there are a number of different approaches researchers can use to study leadership, there are a number of different classification systems of leadership skills. However, each involves some aspect of getting the work done, some aspect of seeing both the big picture and the small, and dealing with the human aspect of the leadership process either from a self or other perspective.

Leadership Competencies. Within an organization, identifying critical leadership competencies required for effectiveness helps define what skills leaders need (Pernick, 2001). In a study conducted by The American Society for Training & Development, The American Productivity & Quality Center, James Kouzes, and Robert Fulmer, most of the best-practice organizations, those identified as having a strong or innovative leadership development programs, studied had identified leadership competencies of successful leaders within their organization (Fulmer & Wagner, 1999). The identification of key competencies provides for both individual and organizational growth and helps the organization meet future demands (Pickett, 1998).

Pernick identified three ways in which organizations determine critical leadership competencies: (1) use generic leadership competencies found in theory, (2) build their own competencies, or (3) derive competencies from the organization's mission statement and core values. However, according to Barner (2000), "it makes no sense to try to

identify essential leadership capabilities unless one knows the business context in which the leaders will be expected to excel" (p. 47).

There are two distinct views of competencies. One is based on the belief that a competent individual is one who has the knowledge, skills, and abilities to perform a job adequately to minimum standards of performance, while the other is based on the belief that competencies are based on the belief that competencies are developed based on characteristics of highly successful individuals (Robbins et al., 2001). Robbins et al. proposed that the second view, the "star" approach, is the most useful view in terms of leadership development

In his study on community leadership competencies, Strand (1981) reported nine categories of leadership competencies. The nine competencies identified as important by community members were:

1. Problem solving ability.
2. Demeanor.
3. Budgeting and supervisory competencies.
4. Needs assessment competencies.
5. Promoting feelings of importance in community members.
6. Group organization and communication competencies.
7. Organization leadership competencies.
8. Leadership attitudes/principles.
9. Management of change competencies.

After the identification of the nine competency areas, Strand was able to view each as technical, human, or conceptual skills.

Based on Deming's System of Profound Knowledge (Deming, 1994), Scholtes (1999) identified six competencies he considered essential for leaders to possess. Scholtes' six new leadership competencies were:

1. The ability to think in terms of systems and knowing how to lead systems.
2. The ability to understand the variability of work in planning and problem-solving.

3. Understanding how we learn, develop and improve, and leading true learning and improvement.
4. Understanding people and why they behave as they do.
5. Understanding the interdependence and interaction between systems, variation, learning and human behavior: knowing how each affects the others.
6. Giving vision, meaning, direction and focus to the organization.

If we were to group these six competencies according to Katz's (1955) classification system of leadership skills, we would find an overwhelming tilt towards the human and conceptual skills, or those skills identified as most important to top management.

Kanji and Sa (2001) summarized 11 core competencies of leadership based on the work of Dering (1998), Senge (1990), and Zairi (1999). According to Kanji and Sa, the following 11 competency areas are the key leadership competencies for an organization committed to quality and excellence:

1. Ethics and principles.
2. Communication.
3. Customer orientation.
4. Organizational change.
5. Structures and systems.
6. Measurement, evaluation and reporting.
7. Process improvement.
8. Team development.
9. Developing subordinates.
10. Developing partnerships.
11. Innovation and continuous learning.

Within each of the 11 competency areas, Kanji and Sa provided specific examples of how leaders might accomplish each competency.

Although some leadership competencies may be transferable, it is nonetheless important to look at specific competencies needed within a particular organization (Barner, 2000; Fulmer & Wagner, 1999; Pickett, 1998). Within the Extension system, the National Impact Study of Leadership Development in Extension (NISLDE) (Michael,

Paxson, & Howell, 1991)identified 13 broad leadership competencies (Paxson, Howell, Michael, & Wong, 1993). The 13 competencies identified were:

1. Solving problems.
2. Directing projects or activities.
3. Forming and working with groups.
4. Planning for group action.
5. Managing meetings.
6. Communicating effectively.
7. Developing proficiency in teaching.
8. Mobilizing for group action.
9. Understanding and developing oneself.
10. Understanding financial matters.
11. Understanding leadership.
12. Understanding society.
13. Understanding social change.

In trying to group theses competencies into skill sets, it is possible to see that technical, human relation, emotional intelligence, and conceptual skills are represented. For example, understanding and developing oneself can be seen as an emotional intelligence skill in that it requires one to clarify values, assess degree of self-confidence, and ultimately build self-confidence. Likewise, Understanding financial matters, such as budgeting, record keeping, and understanding financial records can be viewed as technical skills. Although the goal of the NISLDE study was to understand leadership development work in Extension from the standpoint of what skills Extension workers were trying to teach clientele as a part of their leadership development effort, the list of 13 broad competencies was the result of asking Extension staff what the word "leadership" meant to them (Paxson et al., 1993).

Although there was much overlap in the competencies that were identified in each of the studies, no two studies reported the same competency list. Much like the trait approach to leadership failed to produce a universal list of traits that distinguished leaders

from non-leaders, there is not a universal list of competencies for leaders across different organizations. Although many of the competencies are transferable, there are some that are unique to each organization. Therefore, specific leadership competencies must be developed with the specific organization in mind.

Influence of Demographics on Leadership Skills

Little research has been conducted on the influence of demographic variables on leadership skills. One thing that is certain, however, is that leadership skills can be learned (Goleman, 1998; Katz, 1955; Nahavandi, 2000; Pernick, 2001).

Some theorists believe that the development of leadership skills is accomplished through experience (Goleman, 1998; Katz, 1955; Nahavandi, 2000). If this is true, then it makes sense intuitively that demographic variables such as age, educational background, promotion path, tenure both within an organization and in a leadership position, and prior exposure to leadership training and/or courses would influence an individual's leadership skills. This notion is supported, at least in the area of emotional intelligence, by Goleman who reported that emotional intelligence, on of his three classifications of leadership skills, does increase with both age and experience.

Conceptual Framework

The variables gender, ethnicity, age, tenure in an organization as well as tenure in a leadership position, background, and leadership training have all been identified in the literature as factors that may influence the leadership styles of individuals. Thus, it is possible that diverse populations are excluded from leadership positions based on their leadership style. The literature also suggested that demographic variables that are related to an individuals age and/or experience can influence an individual's leadership skills. That is, variables such as age, background, tenure within Extension, tenure in a

leadership position, and exposure to leadership training and/or courses may all influence and increase an individual's leadership skills in one or more skill areas. A conceptual model for this study depicting the relationship between selected variables and an Extension leader's leadership style and leadership skills is presented in Figure 2-4.

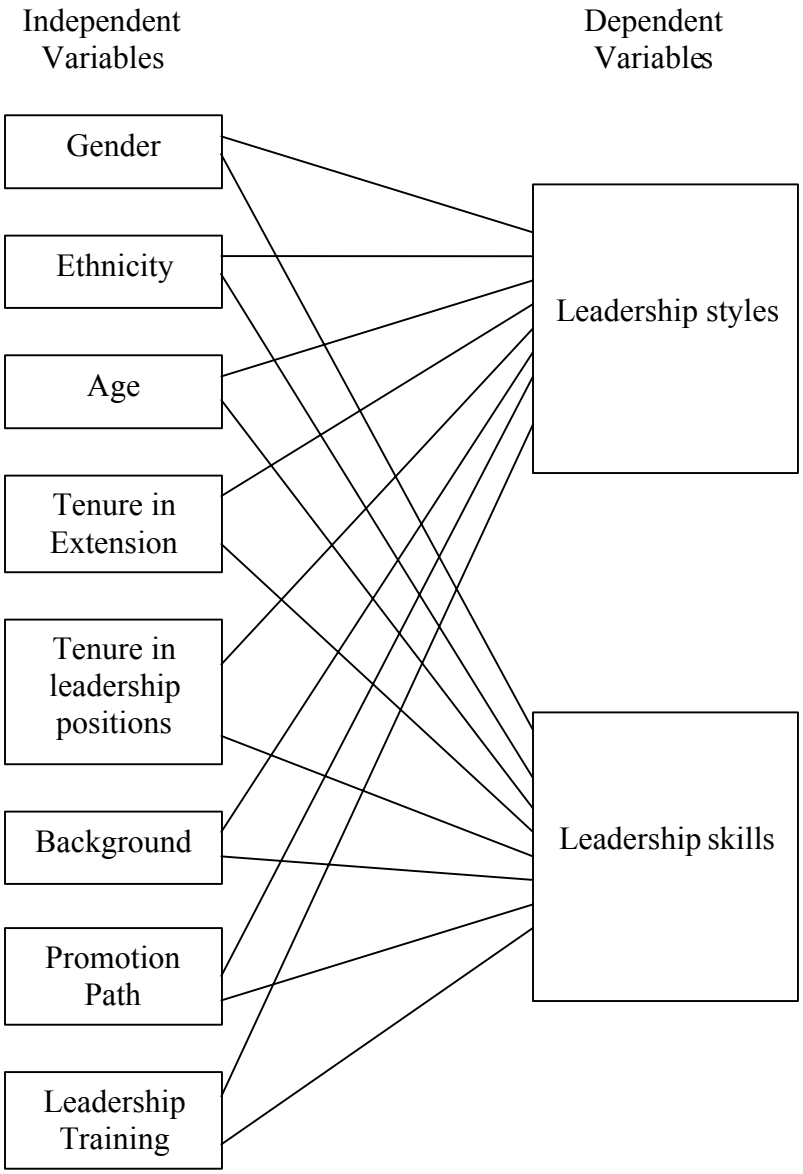

Figure 2-4. Factors influencing leadership styles and leadership skills of Extension leaders.

Summary

This chapter has reviewed literature related to transactional and transformational leadership and their relationship with leadership and management, and the variables influencing transformational and transactional leadership. The theoretical and conceptual frameworks were also discussed.

The review of literature revealed that leadership is an area in which much research has been conducted, but little consensus has been reached. There are a number of definitions of what leadership is, and as a result, a number of theories about effective leadership and what makes a leader effective have emerged. Several recent studies have focused on the transformational leadership theories.

Bass (1985a) introduced a model of transformational leadership where the performance of an organization's followers exceeds the expectations that would be expected to be achieved by expanding on transactional leadership. A leader engages in transactional leadership when he/she recognizes the needs and wants of followers and clarifies how these will be met if necessary efforts are made (Bass, 1985b). According to Bass's model of transactional leadership, by clarifying the role and task requirements of the desired outcomes, the leader gives followers the confidence necessary to reach the expected effort. Additionally, by recognizing followers' needs and wants and clarifying how these will be satisfied once the desired outcomes are met, the leader is able to motivate followers to perform and expend the necessary effort.

Bass' (1985a) transformational leadership model begins with the current level of effort a leader could expect through transactional leadership and builds upon this to reach performance beyond expectations. According to Bass' theory, the leader is able additional effort and performance by increasing the confidence level of followers, which

increases their belief in their own probability of success, and by increasing the needs of the follower, which elevates the value of outcomes for the followers.

The literature showed that there are differences between specific functions of leadership and management, but that the two concepts overlap. There is also literature to suggest that the concepts of leadership and management can be equated with transactional and transformational leadership. Management is concerned with consistency and efficiency through contractual agreements as is transactional leadership, whereas leadership is concerned with adapting to change through empowering those around you as in transformational leadership.

CHAPTER 3
METHODS

Chapter 1 described the Cooperative Extension service and provided the background for studying leadership positions within the organization. Definitions of several key terms were provided. Chapter 1 also identified the purposes of the study and explained the significance of the study.

The primary purpose of this study was to identify and describe the leadership styles and skills of current Extension leaders. This study also sought to explain the influence of demographic variables on an Extension leader's leadership style and leadership skills.

Chapter 2 presented a discussion of previous research related to this study. Theoretical and conceptual frameworks were also provided. Chapter 2 focused on literature related to the following key areas: (a) the nature of leadership and leadership defined, (b) leadership and management, (c) major leadership theories, (d) leadership styles, (e) the influence of demographics on leadership styles, (f) leadership skills, and (g) the influence of demographics on leadership skills.

This chapter explains the methods used to accomplish the objectives of the study. Five specific research objectives were identified: (1) to determine the leadership skill areas and specific leadership competencies within each skill area needed by Extension leaders, as perceived by their administrative heads, (2) to describe current Extension leaders in terms of their demographics and leadership style, (3) to assess how important current Extension leaders believe each skill area is as well as how proficient they

perceive themselves to be in each skill area, (4) to explain the influence of demographic variables on the leadership styles of current Extension leaders, and (5) to explain the influence of demographic variables on the leadership skills of current Extension leaders.

This chapter specifically addresses the research design, target populations, instrumentation, data collection procedures and statistical procedures that were used to analyze the data.

Research Design

This study employed a mixed methodology to accomplish the specific research objectives. A qualitative long interview design was used to accomplish the first research objective. Content analysis of the interview data provided a basis for the development of a leadership competency instrument.

Descriptive research was used to accomplish research objectives two and three. A correlational and causal-comparative or *ex post facto* design was employed to accomplish objectives four and five. In an *ex post facto* design, the researcher does not have direct control over the independent variable(s) and any variations in the independent variable(s) have already been determined prior to the research being conducted (Ary, Jacobs, & Razavieh, 1996).

The independent variables were age, gender, ethnicity, highest degree, degree classification, tenure in Extension, tenure in an Extension leadership position(s), and previous experience with leadership courses and/or training. Gender, ethnicity, highest degree, and degree classification were nominal independent variables. Degree classification was determined by classifying the highest degree reported by study participants as either a bench science degree or a social science degree. Age, tenure in Extension, tenure in Extension leadership position(s), and previous experience with

leadership courses and/or training total score were continuous independent variables. The previous experience with leadership courses and/or training total score was derived by summing the total number of experiences listed by participants on the demographic instrument described later in this chapter. The leadership styles scores and leadership skills scores of Extension leaders were the dependent variables in this study and were continuous variables.

Populations

The total population for this study consisted of two different groups: (a) the state Extension directors and administrators at each of the 1862 and 1890 land-grant institutions, and (2) the administrative heads of these leaders. For the purposes of this study, a census of the Extension leaders was used, whereas a purposive sample of the administrative heads was utilized.

Participant Selection: Extension Leaders

The Extension leaders who participated in the quantitative data collection portion of this study were the Extension directors and administrators responsible for the day-to-day operation of the Cooperative Extension Service within their state. Each individual listed in the CSREES Directors and Administrators Directory (April, 2002) was contacted via e-mail about the nature and purposes of this study. These individuals were contacted because many of the individuals listed in the directory function as the administrative head of Extension rather than the director or administrator who is in charge of the day-to-day operation of the organization. The individuals contacted were asked to confirm that they were in charge of the day-to-day operation of Extension, or to provide the name and contact information of the individual who was. Based on the responses to these e-mails,

a list of 80 current Leaders was compiled and served as the population frame for this study.

There were 49 responses from the population frame of 80 current Extension leaders for a response rate of 61.25%. Two responses did not contain usable data and were removed from the database leaving 47 actual participants in the study.

Participant Selection: Administrative Heads of Extension Leaders

The administrative heads of Extension leaders who that were selected as participants in the qualitative data collection portion of this study consisted of a purposive sample chosen from both the 1862 and 1890 land-grant institutions. The sample consisted of administrative heads identified by a panel of Extension administrators and educators as the administrative heads most familiar with the Extension system. The use of such a purposive sample was intended to reduce any potential bias that may have been introduced by administrative heads that are unfamiliar with the Extension system as a whole. According to Barner (2000), "it makes no sense to try to identify essential leadership capabilities unless one knows the business context in which the leaders will be expected to excel" (p. 47). Therefore, a purposive sample of administrative heads identified by current Extension administrators and educators as most knowledgeable about Extension was used to collect data on the specific leadership competencies needed by Extension leaders. A total of 11 administrative heads were selected as participants. Seven individuals were from 1862 institutions, and four individuals were selected from the 1890 institutions.

Instrumentation

A total of four instruments were used in this study. The first instrument, a researcher-designed interview questionnaire (see Appendix A), was used to collect

information from the administrative heads on the specific leadership competencies they believe Extension leaders need to possess to be successful. The second instrument was a researcher-developed leadership competencies in Extension instrument that assessed both how important current Extension leaders believe the specific leadership competencies are, as well as how proficient they believe they are in each competency (see Appendix B). The third instrument was a demographic instrument developed by the researcher to gather demographic and personal data information from participants. To reduce the number of instruments participants were required to complete, the demographic instrument was included on the leadership competency instrument (see Appendix B). The final instrument used in this study, the Multifactor Leadership Questionnaire (Bass & Avolio, 2000a), was used to gather information on the leadership style of participants (see Appendix C).

The reliability and validity of the instruments are important aspects to consider in all research studies utilizing survey instruments. Validity is a concept that refers to whether or not an instrument measures what it is intended to measure (Ary et al., 1996). In an effort to ensure valid researcher developed instruments, each instrument was evaluated by a panel of experts for content and face validity. The leadership competency instrument was pilot tested prior to its administration to the Extension leaders in the study.

Interview Questionnaire

When conducting the long interviews, the use of a questionnaire was indispensable (McCracken, 1988). According to McCracken, the questionnaire has several functions: (a) to ensure that the investigator covers the same information in the same order with each individual that is interviewed, (b) to ensure the correct scheduling

of necessary prompts, (c) to establish channels for the direction and scope of the conversation, and (d) to allow the interviewer to give all of his/her attention to the individual's response. In essence, the interview questionnaire protected the structure and objectives of the interview while at the same time routinizing enough tasks such that the interviewer was able to focus on the person being interviewed and his/her responses with as little distraction as possible (McCracken).

Questions on the interview instrument were developed based on the review of literature. The interview questionnaire was evaluated by a panel of experts for content and face validity prior to the telephone interviews.

Leadership Competencies in Extension Instrument

From the content analysis of the long interviews, a specific competency instrument was developed by the researcher. A total of 80 competencies were identified within six major leadership skill areas. This instrument was designed to assess how important current Extension leaders believe each competency is to their overall success and the self-perceived proficiency level of the leaders in each specific leadership competency.

To assess importance, participants were asked to respond to the 80 competencies on a Likert scale ranging from 1 (Not Important) to 5 (Very Important). Raw scores were calculated for the perceived importance of each of the six skill areas by summing the responses within each area. Raw scores were then converted to a 100-point scale by dividing the sum of the responses by the total possible response score for each skill area. Scores were converted to a 100-point scale for ease of interpretation and allowed all skill areas, regardless of the number of items within the skill area, to be represented on the same scale. Scores on this 100-point scale served as the scale score for importance in

each of the six areas. Raw scores were also calculated for perceived importance of all 80 competencies by summing all of the importance responses. These raw scores were also converted to a 100-point scale by dividing the sum of responses by the maximum possible score, 400, which served as the total score for importance.

To measure participants' self-perceived proficiency, participants were asked to respond to each of the 80 competencies on a Likert scale ranging from 1 (None) to 5 Very Proficient). Raw scores were calculated for proficiency in each of the six skill areas by summing the responses within each area. Raw scores were converted to a 100-point scale by dividing the sum of the responses by the total possible response score for each skill area. Scores on this 100-point scale served as the scale score for proficiency in each of the six skill areas. Raw scores were also calculated for the self-perceived proficiency in all 80 competencies by summing all of the proficiency responses. These raw scores were also converted to a 100-point scale by dividing the sum of responses by the maximum possible score, 400, which served as the total score for proficiency.

After its development, the instrument was evaluated by a panel of experts for content and face validity. The panel of experts consisted of individuals identified as experts in the field of leadership and/or Extension. The instrument was also pilot tested with a group of Extension administrators not included in the study.

Data collected during the pilot study was used to establish reliability. The pilot study group consisted of 29 associate and assistant deans and directors of Extension not included in the study. Fifteen of the 29 individuals invited to participate in the pilot study completed the instrument for a response rate of 51.7%. Cronbach's alpha was calculated for importance and proficiency within each skill category (see Table 3-1). Cronbach's

alpha is appropriate for estimating internal-consistency reliability within a scale in Likert format (Isaac& Michael1995). In terms of how important pilot study participants perceived the competencies within each skill area to be, Cronbach's alpha for each skill area were: α=.91 for Human Skills, α=.92 for Conceptual Skills, α=.74 for Technical Skills, α=.91 for Communication Skills, α=.86 for Emotional Intelligence Skills, and α=.92 for Industry Knowledge Skills. In terms of how proficient pilot study participants perceived they were in each skill area, Cronbach's alpha for each skill area were: α=.93 for Human Skills, α=.94 for Conceptual Skills, α=.80 for Technical Skills, α=.91 for Communication Skills, α=.91 for Emotional Intelligence Skills, and α=.88 for Industry Knowledge Skills. No leadership competencies could have been removed so as to cause an increase in Cronbach's alpha for both perceived importance and self-perceived level of proficiency.

Table 3-1 Cronbach's Alpha For Importance and Proficiency for Each Skill Area (N=15)

	Importance	Proficiency
Skill Area	α	α
Human Skills	0.91	0.93
Conceptual Skills	0.92	0.94
Technical Skills	0.74	0.80
Communication Skills	0.91	0.91
Emotional Intelligence Skills	0.86	0.91
Industry Knowledge Skills	0.92	0.88

According to Penfield (2001), reliabilities of greater than .90 are considered high, those greater than .80 are considered moderate to high, and those greater than .70 considered low. The only scale on the instrument with low reliability was for importance of technical skills. Therefore, these estimates were deemed appropriate and the instrument was not changed as a result of the pilot test.

To confirm reliability of the instrument, Cronbach's alpha for importance and proficiency within each skill category was calculated after final data collection (see Table 3-2). In terms of how important study participants perceived the competencies within each skill area to be, Cronbach's alpha for each skill area were: α=.83 for Human Skills, α=.78 for Conceptual Skills, α=.87 for Technical Skills, α=.90 for Communication Skills, α=.88 for Emotional Intelligence Skills, and α=.87 for Industry Knowledge Skills. In terms of how proficient study participants perceived they were in each skill area, Cronbach's alpha for each skill area were: α=.88 for Human Skills, α=.90 for Conceptual Skills, α=.85 for Technical Skills, α=.89 for Communication Skills, α=.86 for Emotional Intelligence Skills, and α=.94 for Industry Knowledge Skills.

Table 3-2 Cronbach's Alpha For Importance and Proficiency for Each Skill Area (N=47)

	Importance	Proficiency
Skill Area	α	α
Human Skills	0.83	0.88
Conceptual Skills	0.78	0.90
Technical Skills	0.87	0.85
Communication Skills	0.90	0.89
Emotional Intelligence Skills	0.88	0.86
Industry Knowledge Skills	0.87	0.94

Although the reliabilities of some of the scales changed, all but one of the scales had moderate to high reliabilities. Therefore the reliability of the scales, and the instrument as a whole, was considered acceptable.

Demographic Instrument

The instrument used to collect data on the demographic characteristics of participants was developed by the researcher. The data collected included the gender, ethnicity, age, position, degrees held, educational background (major program area), tenure in years within the Extension system, tenure in years in a leadership position

within the Extension system, previous positions held within the Extension system, and exposure to previous leadership training of current Extension leaders. Previous exposure to leadership training was divided into three sections: (1) college leadership courses, (2) leadership workshops provided by non-Extension trainers, and (3) leadership workshops provided by the Cooperative Extension System. Each experience listed was given a value of one point. Participants who described entire degrees in leadership were given five points. Sub-total scores were created for each of the three areas: college leadership courses, non-Extension training courses/workshops, and Extension training courses/workshops. These self-reported experiences were summed to create the previous leadership development total scores.

The demographic instrument was administered as a part of the leadership competency instrument. The demographic instrument was evaluated by a panel of experts for content and face validity prior to data collection.

Multifactor Leadership Questionnaire

The Multifactor Leadership Questionnaire (MLQ) Form 5X was developed and tested by Bernard Bass and Bruce Avolio (2000a). The instrument has been copyrighted by Bass and Avolio and published by Mind Garden, Inc.

The MLQ 5X has two forms: a leader form and a rater form. The Leader Form was developed to be completed by an individual to measure his/her self-perceived leadership styles and was used in this study. The instrument consisted of 45 statements and asked respondents to answer each item on a Likert scale ranging from 0 (Not at all) to 4 (Frequently, if not always).

The MLQ 5X was developed to measure aspects of transformational, transactional, and non-leadership leadership styles as well as outcomes of leadership.

The 45-item instrument contained 12 scales: Idealized Influence (Attributed) , Idealized Influence (Behavior), Inspirational Motivation, Intellectual Stimulation, Individualized Consideration, Contingent Reward, Management-by-Exception (Active), Management-by-Exception (Passive), Laissez Faire Leadership, Extra Effort, Effectiveness, and Satisfaction. Idealized influence, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration were transformational leadership style scales measured by the MLQ. Contingent Reward and Management-by-Exception were transactional leadership style scales measured by the MLQ. Laissez Faire leadership was the non-leadership component.

Idealized influence is defined in terms of how followers react to the leader and his/her behavior. Leaders with idealized influence are admired and respected by followers and serve as strong role models. They have high standards of ethical and moral conduct and provide followers with a vision and sense of mission. Followers want to emulate leaders who exhibit idealized influence (Northouse, 2001). According to Bass and Avolio (2000b), idealized influence can be seen as both a behavior and an impact, thus requiring two leadership scales: idealized influence (attributed) and idealized influence (behavior).

Inspirational motivation is displayed by a transformational leader when he/she inspires and motivates followers to demonstrate commitment to the shared vision of the organization. Leaders who engage in this behavior clearly communicate high expectations to followers and increase team spirit and enthusiasm (Northouse, 2001).

Intellectual stimulation is demonstrated by a transformational leader when he/she supports followers to be creative and innovative, try new approaches, and challenge their

own beliefs and values as well as those of the leader and the organization. Followers engage in problem solving to find creative solutions (Northouse, 2001).

Individualized consideration is displayed by a transformational leader when he/she provides a supportive climate, listens to followers, and acts as a coach and mentor. The leader pays attention to individual differences and treats individual employees in a caring and unique way. Leaders also help individuals achieve goals and grow personally (Northouse, 2001).

Contingent reward refers to the engagement of leaders and followers in an exchange process in which effort by followers is exchanged for specific rewards. Objectives are agreed upon by both leaders and followers, and achievement of the objectives is positively reinforced (Northouse, 2001).

Management-by exception occurs when transactional leaders intervene to make some correction and generally involves corrective criticism and negative reinforcement. Management-by-exception can be active or passive. Transactional leaders engage in active management-by-exception when they closely monitor followers so they can detect mistakes and take corrective action and offer negative feedback. Transactional leaders engage in passive management-by-exception when they intervene with a follower only after standards have not been met or problems arise (Northouse, 2001).

Laissez-faire leaders engage in laissez-faire behaviors when they abdicate responsibility, delay decisions, offer no feedback, and make little or no effort to help followers satisfy needs, achieve goals, or grow personally. It is a "hands-off" approach to leadership (Northouse, 2001).

All of the leadership style scales had four items per scale. Leadership styles scores for each of the nine leadership style scales were the average scores for the items in each scale. Transformational leadership styles scores were derived by averaging all of the scores from the items contained in the Idealized Influence (Attributed), Idealized Influence (Behavior), Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration scales, a total of 20 items. Transactional leadership styles scores were derived by averaging all of the scores from the items in the Contingent Reward, Management-by-Exception (Active), and Management-by-Exception (Passive) scales, a total of 12 items. Because Laissez-faire Leadership is the only scale measuring non-leadership, the non-leadership style score was equivalent to the Laissez-faire Leadership scale score.

In their MLQ technical report, Bass and Avolio (2000b) discussed the construct validation process associated with the MLQ 5X. An early version was evaluated by a panel of six leadership scholars, and their recommendations were included in the final instrument development. Since that time, 14 samples have been used to validate and cross-validate the MLQ Form 5X (Bass & Avolio, 2000b).

Reliability refers to how consistently the instrument measures whatever it measures (Ary et al., 1996). According to Gall, Borg, and Gall (1996), "the reliability of a test refers to how much measurement error is present in the scores yielded by the test" (p. 254). Measurement error is one of four sources of survey error outlined by Dillman (2000). Measurement error occurs when there is a difference between the score an individual receives on a test over a variety of conditions and their true score on the test and often results from poor question wording and questionnaire construction (Ary et al., ;

Gall et al.). The reliability of the MLQ 5x is of particular concern in this study as it is intended to measure and provide scores on an individual's leadership style, including transformational, transactional and non-leadership components. Bass and Avolio (2000b) report reliabilities for each of the leadership factors ranging from .74 to .91 and for the outcomes of leadership ranging from .91 to .94.

Data Collection and Analysis

Prior to the collection of any data, a proposal to conduct the each phase of the study was submitted to the University of Florida Institutional Review Board for non-medical projects (IRB-02). Both proposals were approved (Protocol #2002-U-698 for the first phase; Protocol #2002-U-699 for the second phase). A copy of the informed consent form that was mailed to study participants with the instruments was submitted to the IRB with the proposal to conduct the study. The informed consent form described the study and the voluntary nature of participation, and also informed participants of any potential risks and/or compensations associated with participation in the study.

Once approval to conduct this study was granted by the IRB, data was collected and analyzed by the researcher. Data was collected during September, October, November, and December of 2002 and January and February of 2003. Specific data collection procedures, including which instruments were administered to each group and how the instruments were administered, and data analysis procedures, including the types of statistics included in the analysis, are discussed for each of the research objectives.

Methods Used for Objective One

In order to accomplish research objective one, to identify specific leadership competencies needed by state Extension directors and administrators as perceived by administrative heads, a purposive sample of these administrative heads were involved in

telephone interviews using the interview questionnaire developed by the researcher. Long interviews with the administrative heads was selected to accomplish this objective as long interviews allow us "to achieve qualitative objectives within a manageable methodological context" (McCracken, 1988, p. 11).

Prior to conducting the interviews, participants were sent a skills summary sheet developed by the researcher based on a review of the literature. Based on the literature, the summary sheet was divided into five major skill groups: technical skills, human skills, conceptual skills, emotional intelligence skills, and industry knowledge skills. The summary sheet described the skill category and provided two examples of specific leadership competencies within each skill area. The purpose of this skills summary sheet was to help participants focus their thinking on the types of competencies needed by Extension leaders. The skills summary sheet was evaluated for content and face validity prior to sending it to the participants.

Each interview was conducted over the telephone and lasted between one-half and one hour. Each interview was tape-recorded and transcribed in its entirety as soon as possible following the interview. The transcripts and audio-tapes were analyzed for content and coded. Based on the themes and competencies identified in the review of literature, a "start list" of codes was created prior to coding (Miles & Huberman, 1984). This "start list" provided a base for coding the data collected during the interviews, but codes were revised, eliminated, or added as necessary. Thus, the themes and competencies reviewed in the literature served as a guide during the coding process, but did not prohibit the revision of themes and competencies or the emergence of new ideas.

The themes and competencies were counted and clustered in order to generate meaning of the information collected (Miles & Huberman, 1984). This process aided in the development of the Leadership Competencies in Extension instrument. The major themes served as the leadership skill areas of the instrument, while the minor themes served as sub-skills. These sub-skills were then refined, based on the specific comments of interview participants and the literature base, to develop the specific competencies that were then classified into one of the skill areas. These specific competencies served as the individual response items on the instrument.

Methods Used for Objectives Two and Three

In order to accomplish research objective two, to describe current Extension leaders in terms of their demographics and including leadership style, the Multifactor Leadership Questionnaire and the demographic instrument were administered to the current Extension leaders identified by contacting the individuals listed in the CSREES State Directors and Administrators Directory (April, 2002).

The Multifactor Leadership Questionnaire (Form 5X), the leadership competency instrument, and the demographic instrument were administered at the same time following the Tailored Design Method of Dillman (2000). This method included a system of up to five compatible contacts with each individual selected for participation in the study.

First, a brief prenotice letter was sent to the current Extension leaders informing them that they would soon be receiving directions for completing the instruments and encouraging their participation in the study. Second, within one week, a packet containing directions for participating in the study, an informed consent form, and the Multifactor Leadership Questionnaire were mailed to the Extension leaders. At this time,

study participants were asked to complete the Leadership Competencies in Extension instrument on-line. Third, a thank you postcard was sent one week later thanking those who had already completed the instruments and returned them, while at the same time encouraging those who had not to please complete and return the instruments.

Study participants were randomly assigned an individual identification number and all instruments were coded with these individual identification numbers. As the researcher received the completed instruments, they were dated and the codes used to eliminate that particular individual from any future contacts requesting the completion and return of the instruments.

Approximately three weeks after sending the thank you post card a fourth contact was made with individuals who have not returned the completed instruments. Replacement instrument packets were mailed to these individuals. For participants who had already completed and returned the Multifactor Leadership Questionnaire and informed consent form, the replacement instrument packets contained a hard-copy of the Leadership Competencies as well as directions for completing the instrument on-line if the participant preferred.

For participants who had already completed the Leadership Competencies in Extension instrument, the replacement packet included another informed consent form and another Multifactor Leadership Questionnaire. For individuals from whom nothing had been received, the replacement packet contained another informed consent form, another Multifactor Leadership Questionnaire, and a hard-copy of the Leadership Competencies in Extension instrument as well as instructions for completing the competency instrument on-line if the individual preferred.

Finally, a fifth contact was made by telephone approximately one week after the replacement questionnaires were mailed as a final attempt to encourage a response.

In order to accomplish research objective three, to assess the proficiency level of current Extension leaders in specific leadership competencies, the Leadership Competencies in Extension instrument developed by the researcher, based on the data collected during the qualitative interviews, was administered to the current Extension leaders identified by contacting the individuals listed in the CSREES State Directors and Administrators Directory (April, 2002).

According to Lindner, Murphy, and Briers (2001), nonresponse error can be a threat to the external validity of a study anytime a response rate below 100% is achieved. In an effort to address nonresponse error in this study, early and late respondents were compared for statistical differences (Ary et al., 1996; Lindner et al.; Miller & Smith, 1983). Late responders were defined as the later 50% of the respondents (Lindner et al.). There was no statistical difference between early responders and late responders.

Data collected from the demographic instrument, the Multifactor Leadership Questionnaire (Form 5X), and the leadership competency instrument were analyzed using SPSS® statistical package for Windows™. In instances where participants did not respond to a particular item, the missing value was replaced with the mean for that item during analysis (George & Mallery, 2001). However, there were five cases in which the missing data accounted for more than 15 percent of the scale and therefore missing values were left as missing and that participant's responses were not included in the analysis of that particular scale or in the analysis of the total score for the instrument (George & Mallery).

Descriptive statistics such as frequencies and measures of central tendency were used to describe current Extension leaders in terms of their gender, age, ethnicity, highest degree, degree classification, tenure in Extension, tenure in Extension leadership positions, previous experience with leadership courses/training, leadership styles, perceived importance of each leadership competency, and self-perceived proficiency in each of the leadership competencies.

Methods Used for Objectives Four and Five

Correlations between the independent and dependent variables were also analyzed to examine the effect of the independent variables on the dependent variables on an individual basis. Multiple regression is one of the most widely used statistical techniques to determine the correlation between a criterion variable and a combination of two or more predictor variables (Gall et al., 1996). In an attempt to explain the influence of demographic variables on the leadership styles and skills of current Extension leaders, the researcher used backward multiple regression to build 10 explanatory models: (1) Transformational Leadership Style, (2) Transactional Leadership Style, (3) Laissez-Faire Leadership, (4) proficiency in Human Skills, (5) proficiency in Conceptual Skills, (6) proficiency in Technical Skills, (7) proficiency in Communication Skills, (8) proficiency in Emotional Intelligence skills, (9) proficiency in Industry Knowledge, and (10) total proficiency score.

Summary

This chapter described the methods used in this examination of leadership styles and skills of Extension leaders. The first phase of this study used a qualitative long interview design to determine the leadership skill areas and specific leadership competencies needed by Extension leaders. The population for this phase of the study

was administrative heads of agriculture at land-grant institutions. The second phase of the study descriptive research with a correlational and causal-comparative design was used to describe current Extension leaders and explain the influence of demographics on their leadership styles and leadership skills. The population for this phase of the study were the individuals responsible for the day-to-day operation of Extension within each of the 1862 and 1890 land-grant institutions.

There were four instruments used to gather data for this study: (1) an interview questionnaire developed by the researcher, (2) a Leadership Competencies in Extension Instrument developed by the researcher, (3) a demographic instrument developed by the researcher, and (4) the Multifactor Leadership Questionnaire (Bass & Avolio, 2000a). Data were collected through on-line and mailed instruments.

Data analysis procedures were also discussed in this chapter. Content analysis of the interview tapes and transcripts was used in the qualitative phase of the study. In the quantitative phase of the study, descriptive statistics, correlations, and backward multiple regression procedures were used.

Chapter 4 will report the results of the study. Findings will be reported by the objectives of the study.

CHAPTER 4
RESULTS

Chapter 1 described the background for studying leadership within the Cooperative Extension Service. The chapter also described the purposes and the significance of the study. The primary purpose of this study was to identify and describe the leadership styles and skills of current Extension leaders. Specifically, this study sought to: (1) determine the leadership skill areas and specific leadership competencies within each skill area needed by Extension leaders, as perceived by their administrative heads, (2) describe current Extension leaders in terms of their demographics and leadership style, (3) assess how important current Extension leaders believe each skill area is as well as how proficient they perceive themselves to be in each skill area, (4) explain the influence of demographic variables on the leadership styles of current Extension leaders, and (5) explain the influence of demographic variables on the leadership skills of current Extension leaders. Chapter 1 also provided operational definitions of several key terms and identified the limitations of the study.

Chapter 2 presented the theoretical and conceptual frameworks for this study based on previous research related to leadership and Extension. Chapter 2 focused on empirical research related to the following key areas: (a) the nature of leadership and leadership defined, (b) leadership and management, (c) major leadership theories, (d) leadership styles, (e) the influence of demographics on leadership styles, (f) leadership skills, and (g) the influence of demographics on leadership skills.

Chapter 3 described the research methodology used to accomplish the objectives of the study. Specifically, this chapter explained the research design, populations, instrumentation, and data collection and analysis procedures.

This chapter presents the findings of the study. Findings are organized by the objectives of the study identified in Chapter 1.

Objective One

Determine the Leadership Skill Areas and Specific Leadership Competencies Within Each Skill Area Needed by Extension Leaders, as Perceived by Their Administrative Heads

Six major leadership skill areas emerged from the analysis of the interview transcripts and audio-tapes. Prior to conducting each interview, participants were sent a skills summary sheet developed by the researcher based on the review of the literature. Consistent with the literature, the summary sheet was divided into five major skill groups: technical skills, human skills, conceptual skills, emotional intelligence skills, and industry knowledge skills. As expected, these five skill areas emerged as skill areas needed by Extension leaders. However, in this study, communication skills emerged as an additional leadership skill area needed by Extension leaders. The following statement from one of the interview participants indicated the need to include communication skills as a separate skill area:

> I, I guess, I hope that the human skills and people skills would encompass some other things other than being able to, uh, I suppose oral presentations is what I see that comes out here. We have a whole communications wing as you do that helps support what they director or dean wants to put together in a speech, but I think sometimes, the interaction with people, whether it's scripted or not, is one of the most important things tied into leadership as well. And so writing I think factors into that because there are some things that only directors write, and so, I didn't see that, you know, broken out as a particular skill and I think one of the most important ones is listening. And I think if you're really comprehensive in this, as I think you want to be, the reading, writing, speaking, and listening ought to somehow be in this particular section of people skills.

Fifty-six minor themes, or sub-skills, emerged from the interviews. The sub-skills that emerged from the data are presented in Table 4-1.

Table 4-1 Leadership Sub-Skills

Sub-skill	Sub-skill
Context/role of Extension	Negotiation
Vision	Internet skills
Listening Skills	Coaching
Strategic/sequential planning	Competent (in technical area)
Time management	Decision making
Budgeting	Critical/creative thinking
Empathy/respect	Goals (set and achieve)
Know constituencies	Organizational change
Speaking skills	Mentoring
Relationship builder	Motivation
Open/approachable	Reading skills
Communication (settings)	Identify talent
Team leader	Electronic communication
Maturity (criticism/emotions)	Media interaction
Energy/enthusiasm	Networking abilities
Team player/member	Written communication
Honesty/integrity	Understand social problems
Evaluate people	Flexibility
Computer skills	Run meetings/set agendas
Conflict resolution	High values
Finances/fundraising	Appreciate position
Cultural awareness/diversity	Gregarious and bright
Sense of humor	Positive attitude
Political environment	Keep up with what's going on
Create linkages	Appropriate behavior
Extension priorities	Administrative skill
Leadership development	Stability
Understand program areas	Courage

Sub-skills with a frequency of one were mentioned by only one of the seven administrative heads of agriculture that participated in the qualitative interviews. Because these sub-skills emerged from only one participant, they were not considered as trustworthy for the development of the leadership competency instrument and were therefore removed from consideration. The remaining 45 sub-skills were clustered into one of the six leadership skill areas that emerged. Table 4-2 summarizes these sub-skills

clustered within each skill area. From these sub-skills, a total of 80 leadership competencies were developed.

Skill Area One: Human Skills

The human skills area had more sub-skills than any other skills area. When asked to identify the specific leadership competencies Extension leaders need related to human skills, one study participant replied, "I think we could talk about that all day."

Five of the seven participants mentioned something about being a relationship builder. For example, when asked about human skills, one participant said, "Evidence of relationship building skills and a value for human relationships" while another participant said "And I think it's very, very important for someone in the, in a leadership position to not only foster strength that you can get from team relationships, but also to be someone who fosters trust among team members."

Two of the sub-skills that emerged from the data in this area were related to teams. Although related, these were kept as separate sub-skills. According to one study participant:

> And you have to be, be a, for sure to be both an effective team leader and an effective team member when you're not the leader because you're gonna be in situations no matter what your position is where you're not the leader.

From the eleven sub-skills that were clustered into the human skills area, fifteen specific leadership competencies were identified (see Table 4-3).

Table 4-2 Minor Themes by Leadership Skill Areas

Leadership Skill Area	Number of Sub-skills	Sub-skills
Human Skills	11	Relationship builder
		Open/approachable
		Team member/player
		Evaluate people
		Team leader
		Cultural awareness/diversity
		Identify talent
		Mentoring
		Leadership development
		Coaching
		Understand social problems
Conceptual Skills	6	Vision
		Strategic/sequential planning
		Decision making
		Critical/creative thinking
		Goals (set and achieve)
		Organizational change
Technical Skills	5	Budgeting
		Finance/fundraising
		Computer skills
		Internet skills
		Competent (in technical area)
Communication Skills	7	Listening skills
		Speaking skills
		Communication (settings)
		Reading skills
		Electronic communication
		Media interaction
		Written communication
Emotional Intelligence Skills	9	Time management
		Empathy/respect
		Maturity (criticism/emotions)
		Energy/enthusiasm
		Honesty/integrity
		Conflict resolution
		Sense of humor
		Negotiation
		Motivation
Industry Knowledge Skills	7	Context/role of Extension
		Know constituencies
		Political environment
		Create linkages
		Extension priorities
		Understand program areas
		Networking abilities

Table 4-3 Human Skills Leadership Competencies

Item Number	Specific Competency
1	Ability to foster relationships
2	Ability to be an effective mentor
3	Ability to identify personal strengths and weaknesses
4	Ability to be an effective team leader
5	Ability to evaluate the impact of personnel
6	Demonstrate respect for others
7	Ability to identify the strengths and weaknesses of others
8	Ability to create an environment in which the leader is approachable and open to new ideas
9	Demonstrate empathy for social problems
10	Ability to be an effective team member
11	Ability to be an effective coach
12	Ability to surround themselves with people of complimentary strengths
13	Create an environment that values the diversity of others
14	Ability to create an environment in which the team members are willing to share ideas
15	Demonstrate support for organizational leadership development programs

Skill Area Two: Conceptual Skills

Within the conceptual skills area, all seven study participants referred to some aspect of having a vision. As one of the participants explained:

> You know, this is vision. I would put vision in this. You're able to create a vision. I surely think that's not only to create the vision, but also lead the group, your organization to the point where they finalize the vision and take ownership of it. I think that the leader's got to give them a glimpse of the vision, but the completeness of the vision needs to be developed by the organization and where they take ownership of that vision. So it not just the director's vision, it's the organization's vision.

From the six sub-skills clustered into the conceptual skills area, fourteen specific leadership competencies were identified (see Table 4-4).

Skill Area Three: Technical Skills

The technical skills area had the fewest number of sub-skills as compared to the other skill areas. Participants also offered conflicting views related to the sub-skills related to using computers. Participants from larger institutions saw computer skills as

less important. For example, when asked about technical skills, one participant from a large institution stated:

> I think it's less, quite honestly, and very candidly, I think it's of less importance that uh our directors be able to effectively use PC software and word processing, spreadsheets, and databases until it gets into their management responsibilities. And if they can't do that, they're not going to be even considered.

Table 4-4 Conceptual Skills Leadership Competencies

Item Number	Specific Competency
1	Ability to create a long term vision for the organization
2	Ability to think strategically
3	Ability to set goals
4	Create an environment that supports organizational change
5	Ability to communicate an organizational vision with others
6	Ability to think critically
7	Ability to help others support organizational change
8	Ability to utilize sequential planning techniques
9	Ability to be decisive
10	Ability to think abstractly as well as linearly
11	Exhibit an attitude that supports and welcomes organizational change
12	Ability to achieve goals
13	Ability to think creatively
14	Ability to create an environment in which all personnel are able to take ownership of the organizational vision

Similarly, another participant from a larger institution stated:

> Technical skills really don't, don't come up real high in terms of the skills that are needed I don't believe. It's nice to have them, but, they're not something that are gonna, gonna be a big limitation I don't believe.

However, the other two participants who discussed computer skills were from smaller institutions and saw them as important skills to have within the technical skills area. One of these participants offered the following comment:

> Well, you know, where you've got word processing, spreadsheets, and databases, you also need to know how to integrate those. How to go from one to the other and merge files, collapse files. But, you also need, not only to know how to use them, but also how to integrate them. You need to know how to integrate those skills, not just use them independently.

The other participant who spoke positively about PC software and computer skills as a technical skill referred to them as "…pretty obviously critical."

Other sub-skills in the technical skills area, such as budgeting, finances and fundraising, and technical competence in some area were much less controversial. Participants saw these as important to the success of Extension leaders.

From the five sub-skills clustered into the technical skills area, ten specific leadership competencies were identified (see Table 4-5).

Table 4-5 Technical Skills Leadership Competencies

Item Number	Specific Competency
1	Ability to develop budgets for all levels within the organization
2	Ability to effectively use computer software for word processing
3	Ability to raise funds from external sources
4	Ability to interpret and explain organizational budgets
5	Ability to effectively use and search the internet
6	Ability to use computer software for spreadsheets
7	Ability to implement and adjust organizational budgets to accomplish programs
8	Ability to effectively use computer software for databases
9	Ability to work with foundations
10	Ability to effectively integrate computer software program applications (i.e. merge files)

Skill Area Four: Communication Skills

All seven interview participants mentioned some form of communication, either written, oral, reading, listening, or electronic communication, during their interview. One participant pointed out the importance of communication with the media:

> And the other one, you know, I thought about, and this is something that every Extension director/administrator has to do, and they have to interact with the media. And again, there's some, there are some, we run training programs ourselves to help people be more skillful in interaction with newspaper reporters, television reporters, radio reporters…it's communication skills, but it's targeted to particular audiences.

Another participant described the importance of communication skills in various settings by stating:

> If that person doesn't posses the tremendous skill in communication, it would be very hard to carry out the mission of Extension. The ability to communicate, to stand up in front of any group, or one-on-one is very important.

Six of the seven participants referred to the importance of listening skills as important to the success of Extension leaders. For example, one participant stated:

> One thing I've noticed that I've been talking about lately with people here is being able to listen, auditory skills. Being able to listen. Uh, the thing is, I was talking to the staff, the staff out there, not just the Extension director, but there is research and the department chairperson, you need to refine or improve the ability of just listening to what our people are saying. So their auditory skills are very important.

From the seven sub-skills clustered into the communication skills area, fourteen specific leadership competencies were identified (see Table 4-6).

Table 4-6 Communication Skills Leadership Competencies

Item Number	Specific Competency
1	Ability to communicate orally with groups of various sizes ranging from one-on-one situations to large group situations
2	Ability to actively listen to people
3	Ability to interact and communicate with individuals with various depth of knowledge capabilities
4	Ability to interact and communicate with people who have divergent points of view
5	Ability to effectively communicate with others using electronic communication channels (i.e. e-mail)
6	Ability to identify barriers to listening
7	Ability to write for various organizational purposes (i.e. technical writing professional publications, etc.)
8	Ability to conduct quality oral presentations
9	Ability to read and comprehend a wide range of publications
10	Ability to reduce barriers to listening
11	Ability to recognize and effectively use nonverbal cues or behaviors
12	Ability to write for various audiences (i.e. limited resource audiences)
13	Ability to communicate orally with groups of various backgrounds
14	Ability to interact with the media (i.e. television and newspaper reporters)

Skill Area Five: Emotional Intelligence Skills

Six of the participants discussed the importance of time management skills and being balanced in one's life. One participant had this to say about time management,

"Obviously the ability to…to manage your time. I always used to think I was pretty good in time management until I got in a big enough job that uh, that I found, I found I needed to get better." Similarly, another participant stated, "This one, I was laughing this morning, I told my secretary that I don't effectively manage my personal time." Both of these participants discussed the importance of Extension leaders being able to seek balance between their personal and professional lives and effectively manage their time in both areas.

Another sub-skill that four of the seven participants spent time discussing centered around emotional maturity in terms of being able to receive criticism without becoming critical or hearing bad news without "shooting the messenger." For example, one participant, when asked about emotional intelligence skills stated:

> Calmness, you have to be able to control your emotions. You know, one way or the other and uh, sometimes you've gotta hear some things you don't like and maybe even upset you, but you can't let your emotions control your actions.

Another participant had the following to say in relation to emotional intelligence skills:

> An ability to take criticism and anger without becoming critical and angry themselves. And that is described I guess as maturity so that they can focus on their objective rather than getting embroiled in the personality parts of people's reactions.

From the nine sub-skills clustered into the emotional intelligence skills area, fourteen specific leadership competencies identified (see Table 4-7).

Skill Area Six: Industry Knowledge Skills

All seven participants in the interview phase of this study identified understanding the context and or role of Extension as being an important industry knowledge skill. For many of the participants, this begins by first defining the industry. One participant stated:

> And, I think,…when we say industry, we often think agriculture, and yet we should be thinking much broader. Uh, who is, who are the constituencies. It isn't just

> agriculture. It's basically the entire state. And so one has to kind of be able to think about the organizations and the people that are in that other than the ag industry.

Table 4-7 Emotional Intelligence Skills Leadership Competencies

Item Number	Specific Competency
1	Demonstrate personal integrity
2	Ability to set priorities to effectively manage personal time
3	Ability to resolve conflict
4	Ability to make use of constructive criticism without becoming critical and angry
5	Ability to separate personalities from behaviors
6	Possess a sense of humor
7	Ability to negotiate agreement
8	Demonstrate high level of motivation
9	Ability to control emotions in emotional situations
10	Demonstrate professional integrity
11	Demonstrate empathy and respect for others
12	Ability to set priorities to effectively manage organizational time
13	Demonstrate high levels of energy and enthusiasm
14	Demonstrate respect for the time commitments of others

Participants also discussed when Extension leaders needed to know specifically related to the Extension system. Comments ranged from knowing who the constituents of Extension are within the state, understanding the cultural base of those constituents, and knowing the political environment influencing Extension.

Participants were also concerned that Extension leaders understand and recognize the implications of Extension at the national level. One of the participants explained,

> I'd also want someone who understood not only what the state priorities are, which I think are usually pretty obvious, state legislatures are usually pretty close to Extension. But, the national priority system is also important, and I don't think as easily understood by leadership and I would want someone who understood that the national priorities, and how the formula funds are applied, and what work product is, um, and work plans and the demands from the national perspective. I'd want somebody who, who understood that very well.

From the seven sub-skills clustered into the industry knowledge skills area, thirteen specific leadership competencies were identified (see Table 4-8).

Table 4-8 Industry Knowledge Skills Leadership Competencies

Item Number	Specific Competency
1	Ability to explain the basic program areas of Extension within the state
2	Network and partner with a variety of organizations and agencies to accomplish programs
3	Ability to identify and describe the various constituencies of Extension
4	Ability to explain state and national Extension priorities
5	Ability to create linkages within both traditional and non-traditional audiences
6	Ability to interact with elected officials and their staff
7	Possess depth of knowledge in a content area
8	Ability to explain the role of Extension relative to the mission of the land-grant university
9	Ability to identify the needs of various client groups within the state
10	Ability to explain the political environment of the state and the implications for Extension
11	Explain the relationships between statewide programs (i.e. role of various agencies in the delivery of programs)
12	Ability to evaluate the impact of programs for each client group
13	Ability to explain the cooperative nature of Extension with county, state, and federal governments

Objective Two

Describe Current Extension Leaders in Terms of Their Demographics and Leadership Style

Of the 47 current Extension leaders who participated in the second phase, the quantitative phase, of the study, 70.2% (*n*=33) were male and 29.8% (*n*=14) were female. In terms of ethnicity, 80.9% (*n*=38) were White, 14.9% (*n*=7) were Black or African American, 2.1% (*n*=1) were Asian, and 2.1% (*n*=1) were Hispanic or Latino. Table 4-9 shows the gender of participant by ethnicity.

Table 4-9 Gender of Participants by Ethnicity (N=47)

	Gender					
	Male		Female		Total	
Ethnicity	n	% of total	n	% of total	n	%
Asian	1	2.1	0	0.0	1	2.1
Black or African American	6	12.8	1	2.1	7	14.9
Hispanic or Latino	1	2.1	0	0.0	1	2.1
White	25	53.2	13	27.7	38	80.9
Total	33	70.2	14	29.8	47	100.0

Age of the participants ranged from 44 to 66. The mean age of the participants was 54.46. One participant did not report their age. Tenure within the Extension system ranged from three to 37 years and had a mean of 22.08 years. Their tenure in Extension leadership positions ranged from one year to 26 years and had a mean of 11.88 years. Age and tenure are presented in Table 4-10.

Table 4-10 Age and Tenure of Study Participants (N=47)

	N	M	SD	Minimum	Maximum
Age	46	54.46	4.89	44	66
Tenure in Extension	47	22.08	9.20	3	37
Tenure in Extension Leadership	47	11.88	7.17	1	26

In terms of the highest degree held by study participants, 76.6% (*n*=36) had a doctor of philosophy degree, 12.8% (*n*=6) had a masters degree, 6.4% (*n*=3) had an doctor of education degree, 2.1% (*n*=1) had a specialist degree, and 2.1% (*n*=1) had a doctor of veterinary medicine degree.

The academic major of each participant's highest degree was classified as either a bench science degree or a social science degree. Of the 47 participants, 59.6% (*n*=28) had a social science degree and 40.4% (*n*=19) had a bench science degree.

Previous leadership training sub-scores and total scores are presented in Table 4-11. According to the table, sub-total scores for previous experience in college leadership courses, non-Extension leadership courses/workshops, and Extension leadership courses/workshops ranged from zero to five. The average sub-total scores were *M*=1.30, *SD*=1.90 for college leadership courses, *M*=1.11, *SD*=1.40 for non-Extension leadership courses/workshops, and *M*=.93, *SD*=1.44 for Extension leadership courses/workshops. Previous leadership development total scores ranged from zero to 15 and had a *M*=3.19 and *SD*=3.28.

Table 4-11 Previous Leadership Training Scores (N=47)

	M	SD	Minimum	Maximum
College leadership courses	1.30	1.90	0	5
Non-Extension leadership courses	1.11	1.40	0	5
Extension leadership courses	0.93	1.44	0	5
Previous leadership development total	3.19	3.28	0	5

Leadership styles of study participants were determined as outlined in the MLQ 5X Scoring Key. Mean scores of the nine leadership scales measured by the MLQ 5X as well as Transformational and Transactional Leadership Style scores are presented in Table 4-12. Means for each of the scale and style scores have a possible range of zero to four. Of the nine scale scores, the highest mean scores was reported for the Inspirational Motivation (*M*=3.54, *SD*=.48) scale and the Idealized Influence (Behavior) (*M*=3.53, *SD*=.48) scale, both transformational leadership scales, and the lowest mean score was reported for the Laissez-Faire Leadership (*M*=.50, *SD*=.49) scale, the non-leadership scale and no-leadership style.

Table 4-12 MLQ 5X Leadership Scale Scores and Leadership Style Scores (N=47)

	M	SD	Minimum	Maximum
Idealized Influence (Attributed)	3.16	0.48	2.00	4.00
Idealized Influence (Behavior)	3.53	0.48	1.75	4.00
Inspirational Motivation	3.54	0.44	2.00	4.00
Intellectual Stimulation	3.35	0.44	2.25	4.00
Individualized Consideration	3.48	0.41	2.50	4.00
Transformational Leadership Style	3.41	0.35	2.20	3.90
Contingent Reward	3.15	0.56	2.00	4.00
Management-by-Exception (Active)	1.20	0.82	0.00	4.00
Management-by-Exception (Passive)	1.02	0.60	0.00	2.25
Transactional Leadership Style	1.79	0.41	0.92	2.83
Laissez-Faire Leadership	0.50	0.49	0.00	1.67

Objective Three

Assess How Important Current Extension Leaders Believe Each Skill Area Is As Well As How Proficient They Perceive Themselves to be in Each Skill Area

Perceived Importance of Leadership Skill Areas

The mean score for perceived importance of the 80 leadership competencies was *M*=88.82, *SD*=8.03 (see Table 4-13). Scores for the importance of Human Skills ranged from a low of 80.00 to a high of 100, the highest possible score. For the importance of Conceptual Skills, scores ranged from a low of 82.27 to a high of 100. Scores for the importance of Technical Skills ranged from a low of 56.00 to a high of 100. For the importance of Communications Skills, scores ranged from a low of 65.71 to a high of 100. Scores for the importance of Emotional Intelligence Skills ranged from a low of 77.14 to a high of 100. For the importance of Industry Knowledge Skills, scores ranged from a low score of 73.85 to a high score of 100. Total Importance Scores ranged from a low of 76.00 to a high of 99.75.

Table 4-13 Mean Scores for Perceived Importance of the Leadership Skills

	n	M	SD
Human Skills (Importance)	47	92.04	5.63
Conceptual Skills (Importance)	47	92.27	5.28
Technical Skills (Importance)	46	79.52	11.13
Communication Skills (Importance)	46	89.06	7.86
Emotional Intelligence Skills (Importance)	46	93.14	6.14
Industry Knowledge Skills (Importance)	46	91.04	7.52
Total Importance Score	44	90.24	5.83

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

One respondent had more than 15 percent missing data for the importance of Technical Skills. One respondent had more than 15 percent missing data for the importance of Communication Skills. One respondent had more than 15 percent missing data in the importance of Emotional Intelligence Skills and the importance of Industry

Knowledge Skills. Data for these respondents was not included in the analysis for the scale in which they were missing more than 15 percent of the data, or in the analysis for the Total Importance Score so as not to artificially lower the total score (George & Mallery, 2001).

As shown in Table 4-13, the highest mean score was in the Emotional Intelligence Skills scale (*M*=93.14, *SD*=6.14) and the lowest mean score was in the Technical Skills scale (*M*=79.52, *SD*=11.13). Mean scores for all of the scales and the total score were above 75 out of the possible range of zero to 100. The Technical Skills (M=79.52, SD=5.28) and Communication Skills (M=89.06, SD=7.86) scales were the only two scales with mean scores lower than 90.

Perceived Proficiency in Leadership Skill Areas

The mean score for self-perceived proficiency in the 80 leadership competencies was *M*=81.91, *SD*=8.14 (see Table 4-14). Scores for the self-perceived proficiency of respondents in Human Skills ranged from a low of 66.67 to a high of 97.33 on a possible scale of 20 to 100. For the self-perceived proficiency level in Conceptual Skills, scores ranged from a low of 58.57 to a high of 98.57. Scores for self-perceived proficiency in Technical Skills ranged from a low of 46.00 to a high of 98.00. For the self-perceived proficiency level in Communication Skills, scores ranged from a low score of 58.57 to a high score of 100. Scores for self-perceived proficiency in Emotional Intelligence Skills ranged from a low of 68.57 to a high of 100. For the self-perceived proficiency level in Industry Knowledge Skills, scores ranged from a low of 50.77 to a high of 100. Total Proficiency Scores ranged from a low of 64.00 to a high of 96.50.

Table 4-14 Mean Scores for Self-perceived Proficiency in the Leadership Skills

	n	M	SD
Human Skills (Proficiency)	47	84.28	8.31
Conceptual Skills (Proficiency)	47	82.49	9.42
Technical Skills (Proficiency)	46	71.50	12.20
Communication Skills (Proficiency)	47	81.51	9.95
Emotional Intelligence Skills (Proficiency)	47	85.46	8.10
Industry Knowledge Skills (Proficiency)	47	84.31	10.80
Total Proficiency Score	46	82.11	8.12

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Proficiency Score.

One respondent had more than 15 percent missing data for self-perceived proficiency in Technical Skills. Data for this respondent was not included in the analysis for the Technical Skills scale, or in the analysis for the Total Proficiency Score.

As shown in Table 4-14, the highest mean score for proficiency level was in the Emotional Intelligence Skills scale (M=85.46, SD=8.10) and the lowest mean score was in the Technical Skills scale (M=71.50, SD=12.20). Mean scores for all of the scales and the total score were above 70 out of the possible range of zero to 100. The Technical Skills (M=71.50, SD=12.20) scale was the only scale with mean scores lower than 80. No scale had a mean score greater than 90.

Difference Between Perceived Importance and Self-Perceived Proficiency

Table 4-15 shows the difference between mean scores for the importance of each skill area and the self-perceived proficiency level of respondents in each skill area. Means for importance were greater than means for proficiency in all of the skill areas and total score. The largest gap between mean scores occurred in the Conceptual Skills area ($M_{\text{Importance}}$=92.27, $M_{\text{Proficiency}}$=82.49) and the smallest gap occurred in the Industry Knowledge Skills ($M_{\text{Importance}}$=91.04, $M_{\text{Proficiency}}$=84.31).

Table 4-15 Difference Between Mean for Importance and Mean for Proficiency

	M (Importance)	M (Proficiency)	Difference
Human Skills	92.04	84.28	7.76
Conceptual Skills	92.27	82.49	9.78
Technical Skills	79.52	71.50	8.02
Communication Skills	89.06	81.51	7.55
Emotional Intelligence Skills	93.14	85.46	7.68
Industry Knowledge Skills	91.04	84.31	6.73
Total Score	90.24	82.11	8.13

Objective Four

Explain the Influence of Demographic Variables on the Leadership Styles of Current Extension Leaders

Leadership Style and Gender

There were more male respondents (*n*=33) than female respondents (*n*=14). Leadership scales scores and leadership styles scores had a possible range of zero to four. The range of Transformational Leadership Style scores was 2.20 to 3.90 for males and 2.70 to 3.90 for females. The range of Transactional Leadership Styles scores was .92 to 2.90 for males and 1.25 to 2.83 for females. The range of Laissez-Faire Leadership (non-leadership) was .00 to 1.50 for males and .00 to 1.67 for females. Mean scores for each of the nine leadership scales and the leadership styles by gender are presented in Table 4-16. Management-by-Exception (Active) was the only scale in which males (*M*=1.24, *SD*=.84) scored higher than females (*M*=1.09, *SD*=.81). A medium effect (Cohen, 1977) was found for the Idealized Influence (Attributed) (d=.78) leadership scale. Small effects were found in the Inspirational Motivation (d=.34), Intellectual Stimulation (d=.31), Individualized Consideration (d=.20), and Management-by-Exception (Passive) (d=.21) leadership scales and Transformational Leadership Style (d=.20).

Table 4-16 showed that females scored higher in all but one of the leadership scales. However, independent sample t-tests revealed that gender had no effect on the

leadership scales except in the Idealized Influence (Attributed) scale $t(45)=-2.12$, $p<.05$ (see Table 4-17). The t-test also revealed no statistical difference between males and females for Transformational Leadership Style, $t(45)=-1.26$, $p>.05$, or Transactional Leadership Style, $t(45)=-.51$, $p>.05$.

Table 4-16 Mean Leadership Scale Scores and Leadership Style Scores by Gender (N=47)

Construct	Gender	n	M	SD	d
Idealized Influence (Attributed)	Male	33	3.07	0.49	0.78
	Female	14	3.38	0.40	
Idealized Influence (Behavior)	Male	33	3.52	0.48	0.06
	Female	14	3.55	0.48	
Inspirational Motivation	Male	33	3.50	0.44	0.34
	Female	14	3.64	0.41	
Intellectual Stimulation	Male	33	3.31	0.45	0.31
	Female	14	3.45	0.41	
Individualized Consideration	Male	33	3.46	0.41	0.20
	Female	14	3.54	0.40	
Transformational Leadership Style	Male	33	3.37	0.36	0.41
	Female	14	3.51	0.34	
Contingent Reward	Male	33	3.09	0.58	0.40
	Female	14	3.29	0.50	
Management-by-Exception (Active)	Male	33	1.24	0.84	0.19
	Female	14	1.09	0.81	
Management-by-Exception (Passive)	Male	33	0.99	0.56	0.21
	Female	14	1.11	0.69	
Transactional Leadership Style	Male	33	1.77	0.41	0.17
	Female	14	1.84	0.43	
Laissez-Faire Leadership	Male	33	0.53	0.47	0.19
	Female	14	0.44	0.54	

Leadership Style and Ethnicity

There were more participants who reported their ethnicity as White (n=38) than individuals who reported their ethnicity as Black or African American. It should be noted that the effect of ethnicity on leadership scale scores and leadership style scores was not analyzed for the Asian and Hispanic or Latino participants because there was only one participant who reported each of these ethnicities. The range of

Transformational Leadership Styles ranged from 2.70 to 3.90 for Whites and 2.80 to 2.80 for Blacks. The range of Transactional Leadership Styles ranged from 1.08 to 2.83 for Whites and .92 to 2.42 for Blacks. The range of Laissez-Faire Leadership (non-leadership) ranged from .00 to 1.67 for Whites and .00 to 1.25 for Blacks. Mean scores for each of the nine leadership scales and the leadership styles by gender are presented in Table 4-18. Contingent Reward and Laissez-Faire Leadership are the only scales in which Blacks (*M*=3.21, *SD*=.53; *M*=.54, *SD*=.57) scored higher than Whites (*M*=3.17, *SD*=.56; *M*=.48, *SD*=.49), respectively. A large effect size was found in the Management-by-Exception (Active) (d=.80) leadership scale. A medium effect was found in the Intellectual Stimulation (d=.64) leadership scale. Small effects were found in the Individualized Consideration (d=.29) and Management-by-Exception (Passive) (d=.26) leadership scales and the Transformational Leadership (d=.33) and Transactional Leadership (d=.48) Styles.

Table 4-17 Independent Groups t-test for Leadership Scale and Leadership Styles by Gender (N=47)

	t	df	Sig. (2-tailed)
Idealized Influence (Attributed)	-2.12	45	0.04
Idealized Influence (Behavior)	-0.25	45	0.80
Inspirational Motivation	-1.06	45	0.30
Intellectual Stimulation	-0.98	45	0.33
Individualized Consideration	-0.57	45	0.58
Transformational Leadership Style	-1.26	45	0.22
Contingent Reward	-1.10	45	0.28
Management-by-Exception (Active)	0.58	45	0.57
Management-by-Exception (Passive)	-0.62	45	0.54
Transactional Leadership Style	-0.51	45	0.61
Laissez-Faire Leadership	0.55	45	0.59

Table 4-18 showed that Whites scored higher than Blacks in all but two of the leadership scales. However, independent sample t-tests revealed that ethnicity had no effect on the nine leadership scales (see Table 4-19). The t-test also revealed no

statistical difference between Blacks and Whites for Transformational Leadership Style, $t(43)=.80$, $p>.05$, or Transactional Leadership Style, $t(43)=1.13$, $p>.05$.

Table 4-18 Mean Leadership Scale Scores and Leadership Style Scores by Ethnicity (N=47)

Construct	Ethnicity	n	M	SD	d
Idealized Influence (Attributed)	White	38	3.20	0.49	0.17
	Black	7	3.14	0.35	
Idealized Influence (Behavior)	White	38	3.58	0.41	0.19
	Black	7	3.50	0.41	
Inspirational Motivation	White	38	3.58	0.37	0.11
	Black	7	3.54	0.44	
Intellectual Stimulation	White	38	3.42	0.39	0.64
	Black	7	3.17	0.57	
Individualized Consideration	White	38	3.53	0.39	0.29
	Black	7	3.43	0.35	
Transformational Leadership Style	White	38	3.46	0.30	0.33
	Black	7	3.36	0.35	
Contingent Reward	White	38	3.17	0.56	0.08
	Black	7	3.21	0.53	
Management-by-Exception (Active)	White	38	1.23	0.83	0.80
	Black	7	0.75	0.60	
Management-by-Exception (Passive)	White	38	1.03	0.62	0.26
	Black	7	0.89	0.54	
Transactional Leadership Style	White	38	1.81	0.40	0.48
	Black	7	1.62	0.49	
Laissez-Faire Leadership	White	38	0.48	0.49	0.13
	Black	7	0.54	0.47	

Table 4-19 Independent Groups t-test for Leadership Scale and Leadership Styles by Ethnicity (N=45)

	t	df	Sig. (2-tailed)
Idealized Influence (Attributed)	0.29	43	0.77
Idealized Influence (Behavior)	0.47	43	0.64
Inspirational Motivation	0.25	43	0.80
Intellectual Stimulation	1.49	43	0.14
Individualized Consideration	0.67	43	0.51
Transformational Leadership Style	0.80	43	0.43
Contingent Reward	-0.19	43	0.85
Management-by-Exception (Active)	1.45	43	0.15
Management-by-Exception (Passive)	0.55	43	0.59
Transactional Leadership Style	1.13	43	0.27
Laissez-Faire Leadership	-0.27	43	0.79

Leadership Style and Age

Pearson Product Moment Correlations between each of the leadership scales and the leadership styles and age are presented in Table 4-20. As shown in the table, there was no significant relationship between age and leadership style. There was a low negative (Miller, 1998), but insignificant relationship between Idealized Influence (Attributed) and age, r=-.20, p>.05 when alpha was set apriori at .05. The relationship was low positive, but insignificant between the Idealized Influence (Behavior), r=.18, p>.05, Inspirational Motivation, r=.15, p>.05, and Contingent Reward, r=.13, p>.05, scales and age and between Transactional Leadership Style, r=.10, p>.05 when alpha was set apriori at .05.

Table 4-20 Pearson Product Moment Correlations Between Leadership Scales and Leadership Styles and Age (N=46)

	r	df	Sig. (2-tailed)
Idealized Influence (Attributed)	-0.20	45	0.17
Idealized Influence (Behavior)	0.18	45	0.23
Inspirational Motivation	0.15	45	0.33
Intellectual Stimulation	0.08	45	0.62
Individualized Consideration	0.06	45	0.72
Transformational Leadership Style	0.06	45	0.69
Contingent Reward	0.13	45	0.38
Management-by-Exception (Active)	0.09	45	0.56
Management-by-Exception (Passive)	-0.02	45	0.90
Transactional Leadership Style	0.10	45	0.51
Laissez-Faire Leadership	0.06	45	0.68

Note: One participant did not report their age.

Leadership Style and Tenure in Extension

Pearson Product Moment Correlations between each of the leadership scales and the leadership styles and tenure in Extension are presented in Table 4-21. As shown in the table, there was a significant moderate negative relationship between Transactional Leadership Style, r=-.49, p<.05, and two of the scales from which Transactional Leadership Style is derived, Management-by-Exception (Active), r=-.36, p>.05, and

Management-by-Exception (Passive), r=-.33, p>.05 and tenure in Extension when alpha was set apriori at .05. There was no relationship between tenure in Extension and the other seven leadership scales or Transformational Leadership Style.

Table 4-21 Pearson Product Moment Correlations Between Leadership Scales and Leadership Styles and Tenure in Extension (N=47)

	r	df	Sig. (2-tailed)
Idealized Influence (Attributed)	-0.18	46	0.22
Idealized Influence (Behavior)	-0.03	46	0.86
Inspirational Motivation	-0.07	46	0.66
Intellectual Stimulation	0.01	46	0.96
Individualized Consideration	0.02	46	0.92
Transformational Leadership Style	-0.07	46	0.67
Contingent Reward	-0.20	46	0.17
Management-by-Exception (Active)	-0.36	46	0.01
Management-by-Exception (Passive)	-0.33	46	0.03
Transactional Leadership Style	-0.49	46	0.00
Laissez-Faire Leadership	0.06	46	0.70

Leadership Style and Tenure in Extension Leadership Position(s)

Pearson Product Moment Correlations between each of the leadership scales and the leadership styles and tenure in Extension leadership position(s) are presented in Table 4-22. As shown in the table, there was no significant relationship between tenure in Extension leadership position(s) and leadership style. There was a low negative, but insignificant relationship between the Contingent Reward, r=-.11, p>.05, and Management-by-Exception (Passive) scales and tenure in Extension leadership position, r=-.28, p>.05 and between Transactional Leadership Styles and tenure in Extension leadership position(s), r=-.25, p>.05 when alpha was set apriori at .05. The relationship was low positive, but insignificant between the Idealized Influence (Behavior), r=.18, p>.05, and Individualized Consideration, r=.12, p>.05, scales and tenure in Extension leadership position(s) when alpha was set apriori at .05.

Table 4-22 Pearson Product Moment Correlations Between Leadership Scales and Leadership Styles and Tenure in Extension Leadership Position(s) (N=47)

	r	df	Sig. (2-tailed)
Idealized Influence (Attributed)	-0.09	46	0.55
Idealized Influence (Behavior)	0.18	46	0.22
Inspirational Motivation	0.04	46	0.79
Intellectual Stimulation	0.03	46	0.83
Individualized Consideration	0.12	46	0.42
Transformational Leadership Style	0.07	46	0.62
Contingent Reward	-0.11	46	0.48
Management-by-Exception (Active)	-0.09	46	0.56
Management-by-Exception (Passive)	-0.28	46	0.06
Transactional Leadership Style	-0.25	46	0.09
Laissez-Faire Leadership	-0.06	46	0.71

Leadership Style and Highest Degree

One-way analysis of variance revealed that leadership style is not dependent on highest degree (see Table 4-23). Transformational Leadership Style, $F(4,42)=.48$, $p>.05$, and Transactional Leadership Style, $F(4,42)=.92$, $p>.05$, were not statistically different as a function of the highest degree participants held. The Management-by-Exception scale (one of the transactional leadership scales), $F(4,42)=3.01$, $p<.05$, was statistically different as a function of the highest degree participants held. There was no statistical difference found between highest degree and any of the other leadership scales. A large effect (Keppel, 1991) was found in the Management-by-Exception ($\omega^2=.15$) leadership scale.

Leadership Style and Degree Classification

In this study, the highest degree of each respondent was classified as either a social science degree or a bench science degree. There were more respondents with social science degrees ($n=28$) than with bench science degrees ($n=19$). The range of Transformational Leadership Style scores was 2.70 to 3.90 for participants with bench science degrees and 2.20 to 3.90 for participants with social science degrees. The range

of Transactional Leadership Styles scores was .1.08 to 2.83 for participants with bench science degrees and .92 to 2.42 for participants with social science degrees. The range of Laissez-Faire Leadership (non-leadership) was .00 to 1.67 for participants with bench science degrees and .00 to 1.50 for participants with social science degrees.

Table 4-23 One Way ANOVA of Leadership Styles by Highest Degree (N=47)

		df	F	Sig.	ω^2
Idealized Influence (Attributed)	Between	4	0.54	0.71	-0.04
	Within	42			
Idealized Influence (Behavior)	Between	4	1.00	0.40	0.00
	Within	42			
Inspirational Motivation	Between	4	0.34	0.85	-0.06
	Within	42			
Intellectual Stimulation	Between	4	0.45	0.77	-0.05
	Within	42			
Individualized Consideration	Between	4	0.30	0.87	-0.06
	Within	42			
Transformational Leadership	Between	4	0.48	0.75	-0.05
	Within	42			
Contingent Reward	Between	4	0.49	0.74	-0.05
	Within	42			
Management-by-Exception (Active)	Between	4	0.44	0.78	-0.05
	Within	42			
Management-by-Exception (Passive)	Between	4	3.01	0.03	0.15
	Within	42			
Transactional Leadership Style	Between	4	0.92	0.46	-0.01
	Within	42			
Laissez-Faire Leadership	Between	4	0.31	0.87	-0.06
	Within	42			

Mean scores for each of the nine leadership scales and the leadership styles by degree classification are presented in Table 4-24. As shown in Table 4-24, Intellectual Stimulation was the only scale in which participants with a social science degree (*M*=3.41, *SD*=.40) scored higher than participants with a bench science degree (*M*=3.26, *SD*=.50). A large effect was found in the Management-by-Exception (Active) (d=1.07) leadership scale. A medium effect was found in Transactional Leadership Style (d=.56). Small effects were found in the Idealized Influence (Behavior) (d=.39), Inspirational

Motivation (d=.24), and Intellectual Stimulation (d=.38) leadership scales and in Laissez-Faire Leadership (d=.23).

Table 4-24 showed that participants with bench science degrees scored higher in all but one of the leadership scales. Independent sample t-tests revealed that degree classification had a significant effect on Transactional Leadership Style t(45)=2.11, p<.05, and one of the transactional leadership scales, Management-by-Exception (Active), t(45)=2.81), p<.05 when alpha was set apriori at .05 (see Table 4-25). The t-test revealed no statistical difference between participants with bench science degrees and those with social science degrees for Transformational Leadership Style, *t*(45)=.35, *p*>.05 when alpha was set apriori at .05.

Table 4-24 Mean Leadership Scale Scores and Leadership Style Scores by Degree Classification (N=47)

Construct	Classification	n	M	SD	d
Idealized Influence (Attributed)	Bench	19	3.18	.62	0.08
	Social	28	3.15	.38	
Idealized Influence (Behavior)	Bench	19	3.64	.38	0.39
	Social	28	3.45	.52	
Inspirational Motivation	Bench	19	3.60	.41	0.24
	Social	28	3.50	.46	
Intellectual Stimulation	Bench	19	3.26	.50	0.38
	Social	28	3.41	.40	
Individualized Consideration	Bench	19	3.49	.44	0.03
	Social	28	3.48	.38	
Transformational Leadership Style	Bench	19	3.44	.37	0.11
	Social	28	3.40	.35	
Contingent Reward	Bench	19	3.20	.60	0.15
	Social	28	3.12	.53	
Management-by-Exception (Active)	Bench	19	1.58	.97	1.07
	Social	28	0.94	.60	
Management-by-Exception (Passive)	Bench	19	1.01	.48	0.02
	Social	28	1.00	.67	
Transactional Leadership Style	Bench	19	1.94	.45	0.56
	Social	28	1.69	.46	
Laissez-Faire Leadership	Bench	19	0.57	.48	0.23
	Social	28	0.46	.50	

Leadership Style and Previous Leadership Development

Pearson Product Moment Correlations between each of the leadership scales and the leadership styles and previous leadership development total score are presented in Table 4-26. A significant low negative relationship existed between Management-by-Exception (Active), r=-.29, p<.05, and previous leadership development. A low negative, but insignificant relationship between the between Transformational Leadership Style, r=-.21, p>.05, and previous leadership development and between Transactional Leadership Style, r=-.28, p>.05, and previous leadership development.

Table 4-25 Independent Groups t-test for Leadership Scale and Leadership Styles by Degree Classification (N=47)

	t	df	Sig. (2-tailed)
Idealized Influence (Attributed)	0.27	45	0.79
Idealized Influence (Behavior)	1.42	45	0.16
Inspirational Motivation	0.76	45	0.45
Intellectual Stimulation	-1.11	45	0.28
Individualized Consideration	0.04	45	0.97
Transformational Leadership Style	0.35	45	0.73
Contingent Reward	0.49	45	0.63
Management-by-Exception (Active)	2.81	45	0.01
Management-by-Exception (Passive)	0.33	45	0.74
Transactional Leadership Style	2.11	45	0.04
Laissez-Faire Leadership	0.77	45	0.44

Table 4-26 Pearson Product Moment Correlations Between Leadership Scales and Leadership Styles and Total Leadership Development Score (N=47)

	r	df	Sig. (2-tailed)
Idealized Influence (Attributed)	-0.17	46	0.24
Idealized Influence (Behavior)	-0.19	46	0.20
Inspirational Motivation	-0.11	46	0.47
Intellectual Stimulation	-0.24	46	0.11
Individualized Consideration	-0.12	46	0.44
Transformational Leadership Style	-0.21	46	0.17
Contingent Reward	-0.14	46	0.33
Management-by-Exception (Active)	-0.29	46	0.05
Management-by-Exception (Passive)	-0.05	46	0.75
Transactional Leadership Style	-0.28	46	0.06
Laissez-Faire Leadership	0.04	46	0.78

Influence of Demographic Variables on Leadership Styles

The previous sections described the relationship between individual demographic variables and leadership styles. Backward multiple regression was performed between all of the demographic variables (gender, ethnicity, age, tenure in Extension, tenure in Extension leadership position(s), highest degree, degree classification, and previous leadership development) and three leadership styles (Transformational Leadership Style, Transactional Leadership Style, and Laissez-Faire Leadership) in order to explain the influence of demographic variables on leadership style. When conducting multiple regression analysis procedures, there should be 15 subjects for every variable included in the model (Gall, Borg, & Gall, 1996). Because there were 47 participants in this study, a maximum of three demographic variables will be included in the model to explain leadership styles.

Transformational Leadership Style. Ethnicity, tenure in Extension leadership position(s), and previous leadership development total score yield the best model for explaining the influence of demographic variables on Transformational Leadership Style. Regression analysis revealed that the model significantly explained Transformational Leadership Style, $F(3, 42)=3.20$, $p<.05$. R^2 for the model was .19 and adjusted R^2 was .13. Unstandardized regression coefficients (B), intercept, and standardized regression coefficients (β) for each variable are presented in Table 4-27.

Table 4-27 Backward Regression Explaining Transformational Leadership Skill Score (N=47)

	B	SE	Beta	t	Sig.
(Constant)	2.83	0.25		11.23	0.00
Ethnicity	0.10	0.04	0.35	2.48	0.02
Tenure in Extension leadership position(s)	0.01	0.01	0.19	1.32	0.19
Leadership development total score	0.03	0.02	-0.28	-1.95	0.06

In terms of individual relationships between the independent variables and Transformational Leadership Style, ethnicity, t=.80, p>.05, tenure in Extension leadership position(s), r=.07, p>.05, and previous leadership development total score, r=-.21, p>.05 did not significantly predict Transformational Leadership Style. When combined, the three variables, ethnicity, tenure in Extension leadership position(s), and leadership development total score explained 13 percent of the variance in Transformational Leadership Style.

Transactional Leadership Style. Participants' highest degree, tenure in Extension, and previous leadership development total score yield the best model for explaining the influence of demographic variables on Transactional Leadership Styles. Regression analysis revealed that the model significantly explained Transformational Leadership Style, $F(3, 42)=6.81$, $p<.05$. R^2 for the model was .33 and adjusted R^2 was .28. Unstandardized regression coefficients (B), intercept, and standardized regression coefficients (β) for each variable are presented in Table 4-28.

Table 4-28 Backward Regression Explaining Transformational Leadership Skill Score (N=47)

	B	SE	Beta	t	Sig.
(Constant)	2.75	0.27		10.01	0.00
Highest Degree	0.09	0.05	-0.24	-1.91	0.06
Tenure in Extension	0.02	0.01	-0.48	-3.61	0.00
Leadership Development Total Score	0.02	0.02	-0.18	-1.33	0.19

In terms of individual relationships between the independent variables and Transactional Leadership Style, pervious leadership development total score, r=-.28, p>.05 and participants' highest degree, F=.92, p>.05, did not significantly predict Transactional Leadership Sstyle while tenure in Extension, r=-.49, p<.05 did significantly predict Transactional Leadership Style. When combined, the three variables, previous

leadership development total score, participants' highest degree, and tenure in Extension explained 28 percent of the variance in Transactional Leadership Style.

Laissez-Faire Leadership. Regression analysis using the demographic variables did not yield a model that significantly explained Laissez-Faire Leadership. None of the variables exhibited significant individual relationships with Laissez-Faire Leadership.

Objective Five

Explain the Influence of Demographic Variables on the Leadership Skills of Current Extension Leaders

Leadership Skills and Gender

Importance. Leadership skills scores were on a 100 point scale. The scores for the importance of Human Skills ranged from 81.33 to 100.00 for males and 80.00 to 100.00 for females. The scores for the importance of Conceptual Skills ranged from 82.27 to 100.00 for males and 83.29 to 100.00 for females. Scores was for the importance of Technical Skills ranged from 56.00 to 100.00 for males and 60.00 to 98.00 for females. Scores for the importance of Communication Skills ranged from 65.71 to 100.00 for males and 75.71 to 100.00 for females. The range of scores for the importance of Emotional Intelligence was 77.14 to 100.00 for males to 84.29 to 100.00 for females. The range of scores for the importance of Industry Knowledge Skills was 73.85 to 100.00 for males and 78.46 to 100.00 for females. Total Importance Scores ranged from 76.00 to 99.75 for males and 80.00 to 99.75 for females.

Mean scores for each of the six skills scales for importance and for total importance score by gender are presented in Table 4-29. Females reported higher scores for importance in all of the skill areas. A medium effect was found in the perceived importance of Emotional Intelligence Skills (d=.62). Small effects were found in the

perceived importance of Conceptual Skills (d=.36), Communication Skills (d=.24), Industry Knowledge Skills (d=.30), and in the Total Importance Score (d=.47).

Table 4-29 Mean Leadership Skills (Importance) Scores by Gender (N=47)

	Gender	n	M	SD	d
Human Skills (Importance)	Male	33	91.73	5.81	0.19
	Female	14	92.76	5.33	
Conceptual Skills (Importance)	Male	33	91.70	5.25	0.36
	Female	14	93.60	5.27	
Technical Skills (Importance)	Male	33	79.33	11.42	0.06
	Female	13	80.00	10.77	
Communication Skills (Importance)	Male	32	88.52	8.05	0.24
	Female	14	90.31	7.54	
Emotional Intelligence Skills (Importance)	Male	32	92.19	6.40	0.62
	Female	14	95.31	5.06	
Industry Knowledge Skills (Importance)	Male	32	90.38	7.71	0.30
	Female	14	92.53	7.11	
Total Importance	Male	31	89.51	6.02	0.47
	Female	13	91.96	5.17	

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Table 4-29 shows that females reported higher scores for importance in all six skill areas and total importance score. However, independent sample t-tests revealed that gender had no effect on the perceived importance of leadership skills (see Table 4-30).

Table 4-30 Independent Groups t-test for Leadership Skills (Importance) by Gender (N=47)

	t	df	Sig. (2-tailed)
Human Skills (Importance)	-0.57	45	0.57
Conceptual Skills (Importance)	-1.13	45	0.26
Technical Skills (Importance)	-0.18	44	0.86
Communication Skills (Importance)	-0.71	44	0.48
Emotional Intelligence Skills (Importance)	-1.61	44	0.11
Industry Knowledge Skills (Importance)	-0.89	44	0.38
Total Importance	-1.28	42	0.21

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Proficiency. Scores for self-perceived proficiency in Human Skills ranged from 66.67 to 97.33 for males and 73.33 to 93.33 for females. The range of scores for self-

perceived proficiency in Conceptual skills was 58.57 to 98.57 for males and 65.71 to 91.53 for females. The scores for self-perceived proficiency in Technical Skills ranged from 46.00 to 98.00 for males and 56.00 to 86.00 for females. The range of scores for self-perceived proficiency in Communication Skills was 58.57 to 100.00 for males and 75.71 to 95.71 for females. The scores for self-perceive proficiency in Emotional Intelligence Skills ranged from 68.57 to 100.00 for males and 71.43 to 97.14 for females. The range of scores for self-perceived proficiency in Industry Knowledge Skills was 50.77 to 100.00 for males to 67.69 to 96.92 for females. Total Proficiency Scores ranged from 64.00 to 96.50 for males and 72.25 to 92.75 for females.

Mean scores for each of the six skills scales for self-perceived proficiency and for total proficiency score by gender are presented in table 4-31. Females reported higher self-perceived proficiency scores in Communication Skills (*M*=83.04, *SD*=6.10), Emotional Intelligence Skills (*M*=86.53, *SD*=7.36), and Industry Knowledge Skills (*M*=85.55, *SD*=8.12), than did the males (*M*=80.87, *SD*=11.22; *M*=85.01, *SD*=8.47; *M*=83.79, *SD*=11.83), respectively. Small effects were found in the self-perceived proficiency all six leadership skill areas, but not in the Total Proficiency Score.

Table 4-31 shows that females reported higher scores for proficiency in three of the six skill areas. However, independent sample t-tests revealed that gender had no effect on the perceived importance of leadership skills (see Table 4-32).

Leadership Skills and Ethnicity

Importance. The scores for the importance of Human Skills ranged from 80.00 to 100.00 for Whites and 81.33 to 97.16 for Blacks. The scores for the importance of Conceptual Skills ranged from 82.86 to 100.00 for Whites and 82.27 to 100.00 for Blacks. Scores was for the importance of Technical Skills ranged from 56.00 to 100.00

for Whites and 70.00 to 98.00 for Blacks. Scores for the importance of Communication Skills ranged from 65.71 to 100.00 for Whites and 87.14 to 97.14 for Blacks. The range of scores for the importance of Emotional Intelligence was 81.43 to 100.00 for Whites to 88.57 to 98.57 for Blacks. The range of scores for the importance of Industry Knowledge Skills was 73.85 to 100.00 for Whites and 83.08 to 96.92 for females. Total Importance Scores ranged from 76.00 to 99.75 for Whites and 86.65 to 92.75 for Blacks.

Mean scores for each of the six skills scales for perceived importance and for total importance score by ethnicity are presented in table 4-33. Medium effects were found for perceived importance of Conceptual Skills (d=.50), and for Total Importance Score (d=.55). Small effects were found in the perceived importance of Human Skills (d=.40) and Industry Knowledge Skills (d=.37).

Table 4-31 Mean Leadership Skills (Proficiency) Scores by Gender (N=47)

	Gender	n	M	SD	d
Human Skills (Proficiency)	Male	33	84.66	9.22	0.22
	Female	14	83.39	5.83	
Conceptual Skills (Proficiency)	Male	33	83.25	9.84	0.30
	Female	14	80.69	8.40	
Technical Skills (Proficiency)	Male	33	72.41	13.52	0.41
	Female	13	69.20	7.90	
Communication Skills (Proficiency)	Male	33	80.87	11.22	0.36
	Female	14	83.04	6.10	
Emotional Intelligence Skills (Proficiency)	Male	33	85.01	8.47	0.21
	Female	14	86.53	7.36	
Industry Knowledge Skills (Proficiency)	Male	33	83.79	11.83	0.22
	Female	14	85.55	8.12	
Total Proficiency	Male	33	82.14	8.96	0.02
	Female	13	82.03	5.76	

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

As shown in Table 4-33, Whites reported higher perceived importance scores for Human Skills (*M*=92.73, *SD*=5.43), Conceptual Skills (*M*=92.92, *SD*=5.11), and Industry Knowledge Skills (*M*=91.90, *SD*=89.74) than did Blacks (*M*=91.17, *SD*=3.87; *M*=90.36,

SD=5.82; *M*=89.74, *SD*=5.89), respectively. Whites also had higher total importance scores (*M*=90.93, *SD*=5.78) than did Blacks (*M*=89.77, *SD*=2.12).

Table 4-32 Independent Groups t-test for Leadership Skills (Proficiency) by Gender (N=47)

	t	df	Sig. (2-tailed)
Human Skills (Proficiency)	0.48	45	0.64
Conceptual Skills (Proficiency)	0.85	45	0.40
Technical Skills (Proficiency)	0.80	44	0.43
Communication Skills (Proficiency)	-0.68	45	0.50
Emotional Intelligence Skills (Proficiency)	-0.58	45	0.56
Industry Knowledge Skills (Proficiency)	-0.51	45	0.61
Total Proficiency	0.04	44	0.97

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Table 4-33 Mean Leadership Skills (Importance) Scores by Ethnicity (N=47)

	Ethnicity	n	M	SD	d
Human Skills (Importance)	White	38	92.73	5.43	0.40
	Black	7	91.17	3.87	
Conceptual Skills (Importance)	White	38	92.93	5.11	0.50
	Black	7	90.36	5.82	
Technical Skills (Importance)	White	37	79.84	11.15	0.14
	Black	7	81.43	11.18	
Communication Skills (Importance)	White	37	89.58	7.99	0.17
	Black	7	90.15	3.43	
Emotional Intelligence Skills (Importance)	White	38	93.62	5.96	0.05
	Black	6	93.81	4.01	
Industry Knowledge Skills (Importance)	White	38	91.90	7.35	0.37
	Black	6	89.74	5.89	
Total Importance	White	36	90.93	5.78	0.55
	Black	6	89.77	2.12	

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Table 4-33 shows that Whites reported higher scores for perceived importance in three of the six skill areas and total importance score. However, independent sample t-tests revealed that ethnicity had no effect on the perceived importance of leadership skills (see Table 4-34).

Table 4-34 Independent Groups t-test for Leadership Skills (Importance) by Ethnicity (N=47)

	t	df	Sig. (2-tailed)
Human Skills (Importance)	0.71	43	0.48
Conceptual Skills (Importance)	1.20	43	0.24
Technical Skills (Importance)	-0.35	42	0.73
Communication Skills (Importance)	-0.19	42	0.85
Emotional Intelligence Skills (Importance)	-0.08	42	0.74
Industry Knowledge Skills (Importance)	0.68	42	0.50
Total Importance	0.48	40	0.63

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Proficiency. Scores for self-perceived proficiency in Human Skills ranged from 72.00 to 97.33 for Whites and 69.33 to 97.33 for Blacks. The range of scores for self-perceived proficiency in Conceptual skills was 67.14 to 98.57 for Whites and 65.71 to 95.71 for Blacks. The scores for self-perceived proficiency in Technical Skills ranged from 46.00 to 98.00 for Whites and 60.00 to 90.00 for Blacks. The range of scores for self-perceived proficiency in Communication Skills was 58.57 to 100.00 for Whites and 81.43 to 92.86 for Blacks. The scores for self-perceive proficiency in Emotional Intelligence Skills ranged from 68.57 to 100.00 for Whites and 77.14 to 94.19 for Blacks. The range of scores for self-perceived proficiency in Industry Knowledge Skills was 66.15 to 100.00 for Whites and 73.85 to 90.77 for Blacks. Total Proficiency Scores ranged from 67.00 to 96.50 for Whites and 74.50 to 88.75 for Blacks.

Mean scores for each of the six skills scales for self-perceived proficiency and for total proficiency score by ethnicity are presented in table 4-35. Blacks reported higher self-perceived proficiency scores in Technical Skills (*M*=74.49, *SD*=12.84), Communication Skills (*M*=86.33, *SD*=4.51), and Emotional Intelligence Skills (*M*=86.92, *SD*=6.50), than did Whites (*M*=71.39, *SD*=12.29; *M*=81.65, *SD*=9.76; *M*=85.86, *SD*=8.10), respectively. Blacks also reported higher total proficiency scores (*M*=83.42,

SD=5.76) than did Whites (*M*=82.78, *SD*=7.74). A large effect was found for self-perceived proficiency in Communication Skills (d=1.04). Small effects were found in the self-perceived proficiency of Human Skills (d=.29) and Technical Skills (d=.25).

Table 4-35 Mean Leadership Skills (Proficiency) Scores by Ethnicity (N=47)

	Ethnicity	n	M	SD	d
Human Skills (Proficiency)	White	38	85.26	7.62	0.29
	Black	7	83.05	9.61	
Conceptual Skills (Proficiency)	White	38	83.57	8.39	0.16
	Black	7	82.22	10.22	
Technical Skills (Proficiency)	White	37	71.39	12.29	0.25
	Black	7	74.49	12.84	
Communication Skills (Proficiency)	White	38	81.65	9.76	1.04
	Black	7	86.33	4.51	
Emotional Intelligence Skills (Proficiency)	White	38	85.86	8.10	0.16
	Black	7	86.92	6.50	
Industry Knowledge Skills (Proficiency)	White	38	85.53	10.03	0.11
	Black	7	84.89	5.59	
Total Proficiency	White	37	82.78	7.74	0.11
	Black	7	83.42	5.76	

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Table 4-35 shows that Blacks reported higher scores for self-proficiency in three of the six skill areas and total proficiency score. However, independent sample t-tests revealed that ethnicity had no effect on the self-perceived proficiency in leadership skills (see Table 4-36).

Table 4-36 Independent Groups t-test for Leadership Skills (Proficiency) by Ethnicity (N=47)

	t	df	Sig. (2-tailed)
Human Skills (Proficiency)	0.68	43	0.50
Conceptual Skills (Proficiency)	0.38	43	0.71
Technical Skills (Proficiency)	-0.67	42	0.51
Communication Skills (Proficiency)	-1.24	43	0.22
Emotional Intelligence Skills (Proficiency)	-0.33	43	0.74
Industry Knowledge Skills (Proficiency)	0.16	43	0.87
Total Proficiency	-0.21	42	0.84

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Leadership Skills and Age

Importance. Pearson Product Moment Correlations between perceived importance of each of the leadership skill areas and total importance score and age are presented in Table 4-37. As shown in the table, there was no significant relationship between age and leadership skills. There was a low positive (Miller, 1998), but insignificant relationship between Human Skills and age, r=.11, p>.05 and between Industry Knowledge Skills and age, r=.11, p>.05, when alpha was set at .05.

Table 4-37 Pearson Product Moment Correlations Between Leadership Skills (Importance) and Age (N=46)

	r	df	Sig. (2-tailed)
Human Skills (Importance)	0.11	45	0.47
Conceptual Skills (Importance)	0.02	45	0.91
Technical Skills (Importance)	0.05	44	0.76
Communication Skills (Importance)	0.09	44	0.55
Emotional Intelligence Skills (Importance)	-0.04	44	0.79
Industry Knowledge Skills (Importance)	0.11	44	0.46
Total Importance	0.06	42	0.70

Note: One participant did not report their age.
Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Proficiency. Pearson Product Moment Correlations between self-perceived proficiency in each of the leadership skill areas and total proficiency score and age are presented in Table 4-38. There was a significant, moderate positive relationship between self-perceived proficiency in Human Skills and age, r=.30, p<.05, when alpha was set at .05. The relationship was low positive, but insignificant between self-perceived proficiency in Conceptual Skills and age, r=.18, p>.05, self-perceived proficiency in Communication Skills and age, r=.12, p>.05, self-perceived proficiency in Industry Knowledge Skills and age, r=.13, p>.05, and Total Proficiency Score and age, r=.16, p>.05, when alpha was set at .05.

Table 4-38 Pearson Product Moment Correlations Between Leadership Skills (Proficiency) and Age (N=46)

	r	df	Sig. (2-tailed)
Human Skills (Proficiency)	0.30	45	0.04
Conceptual Skills (Proficiency)	0.18	45	0.22
Technical Skills (Proficiency)	-0.04	44	0.80
Communication Skills (Proficiency)	0.12	45	0.41
Emotional Intelligence Skills (Proficiency)	0.09	45	0.53
Industry Knowledge Skills (Proficiency)	0.13	45	0.40
Total Proficiency	0.16	44	0.45

Note: One participant did not report their age.
Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Leadership Skills and Tenure in Extension

Importance. Pearson Product Moment Correlations between perceived importance of each of the leadership skill areas and total importance score and tenure in Extension are presented in Table 4-39. There was no significant relationship between perceived importance of the leadership skills and tenure in Extension. There was a low positive, but insignificant relationship between perceived importance of Human Skills and tenure in Extension, r=.18, p>.05, perceived importance of Conceptual skills and tenure in Extension, r=.21, p>.05, and perceived importance of Industry Knowledge Skills and tenure in Extension, r=.23, p>.05 when alpha was set apriori at .05.

Table 4-39 Pearson Product Moment Correlations Between Leadership Skills (Importance) and Tenure in Extension (N=47)

	r	df	Sig. (2-tailed)
Human Skills (Importance)	0.18	46	0.23
Conceptual Skills (Importance)	0.21	46	0.17
Technical Skills (Importance)	-0.02	45	0.88
Communication Skills (Importance)	0.06	45	0.68
Emotional Intelligence Skills (Importance)	0.06	45	0.70
Industry Knowledge Skills (Importance)	0.23	45	0.13
Total Importance	0.11	43	0.48

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Proficiency. Pearson Product Moment Correlations between self-perceived proficiency in each of the leadership skill areas and total proficiency score and tenure in Extension are presented in Table 4-40. There was no significant relationship between self-perceived level of proficiency in leadership skills and tenure in Extension. There was a low positive, but insignificant relationship between self-perceived level of proficiency in Industry Knowledge skills and tenure in Extension, r=.22, p>.05 when alpha was set apriori at .05.

Table 4-40 Pearson Product Moment Correlations Between Leadership Skills (Proficiency) and Tenure in Extension (N=47)

	r	df	Sig. (2-tailed)
Human Skills (Proficiency)	0.01	46	0.96
Conceptual Skills (Proficiency)	0.08	46	0.58
Technical Skills (Proficiency)	-0.09	45	0.57
Communication Skills (Proficiency)	0.03	46	0.84
Emotional Intelligence Skills (Proficiency)	0.09	46	0.56
Industry Knowledge Skills (Proficiency)	0.22	46	0.13
Total Proficiency	0.07	45	0.63

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Leadership Skills and Tenure in Extension Leadership Position(s)

Importance. Pearson Product Moment Correlations between perceived importance of each of the leadership skill areas and total importance score and tenure in Extension leadership position(s) are presented in Table 4-41. As shown in the table, there was no significant relationship between perceived importance of leadership skills and tenure in Extension leadership position(s). There was a low negative, but insignificant relationship between perceived importance of Emotional Intelligence Skills and tenure in Extension leadership position(s), r=-.13, p>.05 when alpha was set apriori at .05.

Table 4-41 Pearson Product Moment Correlations Between Leadership Skills (Importance) and Tenure in Extension Leadership Position(s) (N=47)

	r	df	Sig. (2-tailed)
Human Skills (Importance)	0.00	46	0.99
Conceptual Skills (Importance)	0.08	46	0.57
Technical Skills (Importance)	-0.05	45	0.75
Communication Skills (Importance)	-0.08	45	0.60
Emotional Intelligence Skills (Importance)	-0.13	45	0.40
Industry Knowledge Skills (Importance)	-0.05	45	0.73
Total Importance	-0.04	43	0.81

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Proficiency. Pearson Product Moment Correlations between self-perceived proficiency in each of the leadership skill areas and total proficiency scores and tenure in Extension leadership position(s) are presented in Table 4-42. There was no significant relationship between self-perceived proficiency in leadership skills and tenure in Extension leadership position(s). There was a low positive, but insignificant relationship between the self-perceived proficiency in the Human Skills, r=.12, p>.05, Conceptual Skills, r=.16, p>.05, and Emotional Intelligence Skills, r=.10, p>.05, scales and tenure in Extension leadership position (s) when alpha was set apriori at .05. The relationship was low negative, but insignificant between self-perceived proficiency in Communication Skills and tenure in Extension leadership position(s), r=-.10, p>.05.

Table 4-42 Pearson Product Moment Correlations Between Leadership Skills (Proficiency) and Tenure in Extension Leadership Position(s) (N=47)

	r	df	Sig. (2-tailed)
Human Skills (Proficiency)	0.12	46	0.44
Conceptual Skills (Proficiency)	0.16	46	0.27
Technical Skills (Proficiency)	-0.02	45	0.92
Communication Skills (Proficiency)	-0.10	46	0.51
Emotional Intelligence Skills (Proficiency)	0.10	46	0.49
Industry Knowledge Skills (Proficiency)	0.07	46	0.66
Total Proficiency	0.07	45	0.67

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Leadership Skills and Highest Degree

Importance. One-way analysis of variance revealed that perceived importance in the leadership skills areas of Communication Skills, $F(4,42)=3.78$, $p<.05$, and Industry Knowledge Skills, $F(4,41)=3.05$, $p<.05$, and Total Importance Scores $F(4,39)=2.66$, $p<.05$ were statistically different as a function of the highest degree participants held (see Table 4-43). Perceived importance in Human Skills, $F(4,42)=1.36$, $p>.05$, Conceptual Skills, $F(4,42)=2.53$, $p>.05$, Technical Skills, $F(4,41)=1.61$, $p>.05$, and Emotional Intelligence Skills, $F(4,41)=1.48$, $p>.05$, were not statistically different as a function of the highest degree participants held. Large effects were found in perceived importance of Communication Skills ($\omega^2=.19$) and Industry Knowledge Skills ($\omega^2=.15$). Medium effects were found in perceived importance of Conceptual Skills ($\omega^2=.12$) and in Total Importance Score ($\omega^2=.13$). Small effects were found in perceived importance of Human Skills ($\omega^2=.03$), Technical Skills ($\omega^2=.05$), and Emotional Intelligence Skills ($\omega^2=.04$).

Table 4-43 One Way ANOVA of Leadership Skills (Importance) by Highest Degree (N=47)

		df	F	Sig.	ω^2
Human Skills (Importance)	Between	4	1.36	0.27	0.03
	Within	42			
Conceptual Skills (Importance)	Between	4	2.53	0.06	0.12
	Within	42			
Technical Skills (Importance)	Between	4	1.61	0.19	0.05
	Within	41			
Communication Skills (Importance)	Between	4	3.78	0.01	0.19
	Within	41			
Emotional Intelligence (Importance)	Between	4	1.48	0.27	0.04
	Within	41			
Industry Knowledge Skills (Importance)	Between	4	3.05	0.03	0.15
	Within	41			
Total Importance	Between	4	2.66	0.05	0.13
	Within	39			

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Proficiency. One-way analysis of variance revealed that self-perceived proficiency in Technical Skills, $F(4,41)=2.93$, $p<.05$ was statistically different as a function of the highest degree participants held (see Table 4-44). Self-perceived proficiency in Human Skills, $F(4,42)=.46$, $p>.05$, Conceptual Skills, $F(4,42)=2.24$, $p>.05$, Communication Skills, $F(4,42)=2.33$, $p>.05$, Emotional Intelligence Skills, $F(4,42)=.96$, $p>.05$, and Industry Knowledge Skills $F(4,42)=1.30$, $p>.05$ were not statistically different as a function of the highest degree participants held. Total Proficiency Score $F(4,41)=1.90$, $p>.05$, was also not dependent on highest degree. Medium effects were found in the self-perceived proficiency of Conceptual Skills ($\omega^2=.10$), Technical Skills ($\omega^2=.14$), Communication Skills ($\omega^2=.10$), and in Total Proficiency ($\omega^2=.07$). A small effect was found in the self-perceived proficiency of Industry Knowledge Skills ($\omega^2=.02$).

Table 4-44 One Way ANOVA of Leadership Skills (Proficiency) by Highest Degree (N=47)

		df	F	Sig.	ω^2
Human Skills (Proficiency)	Between	4	0.46	0.77	-0.05
	Within	42			
Conceptual Skills (Proficiency)	Between	4	2.24	0.08	0.10
	Within	42			
Technical Skills (Proficiency)	Between	4	2.93	0.03	0.14
	Within	41			
Communication Skills (Proficiency)	Between	4	2.33	0.07	0.10
	Within	42			
Emotional Intelligence (Proficiency)	Between	4	0.96	0.44	-0.00
	Within	42			
Industry Knowledge Skills (Proficiency)	Between	4	1.30	0.29	0.02
	Within	42			
Total Proficiency	Between	4	1.90	0.13	0.07
	Within	41			

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Leadership Skills and Degree Classification

Importance. The scores for the importance of Human Skills ranged from 81.33 to 100.00 for participants with bench science degrees and 80.00 to 100.00 for those with social science degrees. The scores for the importance of Conceptual Skills ranged from 82.27 to 100.00 for participants with bench science degrees and 82.86 to 100.00 for participants with social science degrees. Scores was for the importance of Technical Skills ranged from 58.00 to 100.00 for participants with bench science degrees and 56.00 to 98.00 for those with social science degrees. Scores for the importance of Communication Skills ranged from 65.71 to 100.00 for participants with bench science degrees and 71.43 to 100.00 for participants with social science degrees. The range of scores for the importance of Emotional Intelligence was 81.43 to 100.00 for participants with bench science degrees to 77.14 to 100.00 for those with social science degrees. The range of scores for the importance of Industry Knowledge Skills was 73.85 to 100.00 for participants with bench science degrees and 75.38 to 100.00 for participants with social science degrees. Total Importance Scores ranged from 76.00 to 99.75 for participants with bench science degrees and 76.75 to 99.75 for those with social science degrees.

Mean scores for each of the six skills scales for importance and for total importance score by degree classification are presented in Table 4-45. Conceptual Skills was the only skill area in which participants with social science degrees (*M*=93.01, *SD*=5.24) reported higher scores for perceived importance than did participants with bench science degrees (*M*=91.17, *SD*=5.28). Small effects were found in the perceived importance of Conceptual Skills (d=.35), Technical Skills (d=.48), Communication Skills (d=.36), Emotional Intelligence Skills (d=.29), and Industry Knowledge Skills (d=.25).

Table 4-45 Mean Leadership Skills (Importance) Scores by Degree Classification (N=47)

	Degree	n	M	SD	d
Human Skills (Importance)	Bench	19	92.14	5.53	0.03
	Social	28	91.97	5.79	
Conceptual Skills (Importance)	Bench	19	91.17	5.28	0.35
	Social	28	93.01	5.24	
Technical Skills (Importance)	Bench	19	82.21	12.79	0.48
	Social	27	77.63	9.59	
Communication Skills (Importance)	Bench	19	90.68	8.14	0.36
	Social	27	87.92	7.60	
Emotional Intelligence Skills (Importance)	Bench	19	94.06	5.50	0.29
	Social	27	92.49	6.58	
Industry Knowledge Skills (Importance)	Bench	19	92.06	8.11	0.25
	Social	27	90.31	7.14	
Total Importance	Bench	19	90.80	5.94	0.17
	Social	25	89.81	5.83	

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Table 4-45 shows that participants with bench science degrees reported higher scores for importance in five of the six skill areas and total importance score. However, independent sample t-tests revealed that degree classification had no effect on the perceived importance of leadership skills (see Table 4-46).

Table 4-46 Independent Groups t-test for Leadership Skills (Importance) by Degree Classification (N=47)

	t	df	Sig. (2-tailed)
Human Skills (Importance)	0.10	45	0.92
Conceptual Skills (Importance)	-1.18	45	0.25
Technical Skills (Importance)	1.39	44	0.17
Communication Skills (Importance)	1.18	44	0.25
Emotional Intelligence Skills (Importance)	0.85	44	0.39
Industry Knowledge Skills (Importance)	0.77	44	0.44
Total Importance	0.55	42	0.59

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Proficiency. Scores for self-perceived proficiency in Human Skills ranged from 69.33 to 97.33 for participants with bench science degrees and 66.67 to 97.33 for those with social science degrees. The range of scores for self-perceived proficiency in

Conceptual Skills was 58.57 to 98.57 for participants with bench science degrees and 65.71 to 97.14 for participants with social science degrees. The scores for self-perceived proficiency in Technical Skills ranged from 46.00 to 98.00 for participants with bench science degrees and 56.00 to 96.00 for those with social science degrees. The range of scores for self-perceived proficiency in Communication Skills was 58.57 to 97.14 for participants with bench science degrees and 62.83 to 100.00 for those with social science degrees. The scores for self-perceive proficiency in Emotional Intelligence Skills ranged from 71.43 to 97.14 for participants with bench science degrees and 68.57 to 100.00 for those with social science degrees. The range of scores for self-perceived proficiency in Industry Knowledge Skills was 50.77 to 100.00 for participants with bench science degrees and 67.69 to 100.00 for participants with social science degrees. Total Proficiency Scores ranged from 64.00 to 96.00 for participants with bench science degrees and 66.25 to 96.50 for those with social science degrees.

Mean scores for each of the six skills scales for self-perceived proficiency and for total proficiency score by degree classification are presented in Table 4-47. Participants with bench science degrees reported higher self-perceived proficiency scores in Human Skills (*M*=84.47, *SD*=9.07) and Technical Skills (*M*=71.68, *SD*=13.97), than did participants with social science degrees (*M*=84.16, *SD*=7.93; *M*=71.37, *SD*=11.06), respectively. Participants with social science degrees reported higher self-perceived proficiency scores in the remaining four leadership skill areas. For total proficiency scores, participants with social science degrees (*M*=82.43, *SD*=7.37) reported higher scores than did those with bench science degrees (*M*=81.65, *SD*=7.37). A small effect was found in the self-perceived proficiency of Industry Knowledge Skills (d=.29).

Table 4-47 Mean Leadership Skills (Proficiency) Scores by Degree Classification (N=47)

	Degree	n	M	SD	d
Human Skills (Proficiency)	Bench	19	84.47	9.07	0.04
	Social	28	84.16	7.93	
Conceptual Skills (Proficiency)	Bench	19	81.81	10.28	0.13
	Social	28	82.94	8.95	
Technical Skills (Proficiency)	Bench	19	71.68	13.97	0.03
	Social	27	71.37	11.06	
Communication Skills (Proficiency)	Bench	19	81.11	11.03	0.07
	Social	28	81.79	9.35	
Emotional Intelligence Skills (Proficiency)	Bench	19	85.11	7.20	0.08
	Social	28	85.70	8.79	
Industry Knowledge Skills (Proficiency)	Bench	19	82.71	12.85	0.29
	Social	28	85.40	9.26	
Total Proficiency	Bench	19	81.65	9.27	0.11
	Social	27	82.43	7.37	

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Table 4-47 shows that participants with social science degrees reported higher scores for self-perceived proficiency in four of the six skill areas and total proficiency score. However, independent sample t-tests revealed that degree classification had no effect on the perceived importance of leadership skills (see Table 4-48).

Table 4-48 Independent Groups t-test for Leadership Skills (Proficiency) by Degree Classification (N=47)

	t	df	Sig. (2-tailed)
Human Skills (Proficiency)	0.13	45	0.90
Conceptual Skills (Proficiency)	-0.40	45	0.69
Technical Skills (Proficiency)	0.08	44	0.93
Communication Skills (Proficiency)	-0.23	45	0.82
Emotional Intelligence Skills (Proficiency)	-0.24	45	0.81
Industry Knowledge Skills (Proficiency)	-0.83	45	0.41
Total Proficiency	-0.32	44	0.75

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Leadership Skills and Previous Leadership Development

Importance. Pearson Product Moment Correlations between perceived importance of each of the leadership skill areas and total importance score and previous

leadership development total score are presented in Table 4-49. There was no significant relationship perceived importance of leadership skills and previous leadership development. There was a low negative, but insignificant relationship between perceived importance of Technical Skills and previous leadership development, r=-.19, p>.05 when alpha was set apriori at .05.

Table 4-49 Pearson Product Moment Correlations Between Leadership Skills (Importance) and Previous Leadership Development (N=47)

	r	df	Sig. (2-tailed)
Human Skills (Importance)	0.07	46	0.65
Conceptual Skills (Importance)	0.02	46	0.89
Technical Skills (Importance)	-0.19	45	0.22
Communication Skills (Importance)	-0.02	45	0.88
Emotional Intelligence Skills (Importance)	-0.04	45	0.79
Industry Knowledge Skills (Importance)	-0.04	45	0.81
Total Importance	-0.07	43	0.65

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Proficiency. Pearson Product Moment Correlations between self-perceived proficiency in each of the leadership skill areas and total proficiency score and previous leadership development are presented in Table 4-50. There was no significant relationship between self-perceived proficiency in leadership skills and previous leadership development. The relationship was low negative, but insignificant between the self-perceived proficiency level in Conceptual Skills and previous leadership development, r=-.12, p>.05, self-perceived proficiency level in Technical Skills and previous leadership development, r=-.19, p>.05, and between total proficiency score and previous leadership development, r=-.10, p>.05, when alpha was set apriori at .05.

Table 4-50 Pearson Product Moment Correlations Between Leadership Skills (Proficiency) and Previous Leadership Development (N=47)

	r	df	Sig. (2-tailed)
Human Skills (Proficiency)	-0.00	46	0.99
Conceptual Skills (Proficiency)	-0.12	46	0.44
Technical Skills (Proficiency)	-0.19	45	0.22
Communication Skills (Proficiency)	-0.09	46	0.55
Emotional Intelligence Skills (Proficiency)	-0.03	46	0.85
Industry Knowledge Skills (Proficiency)	-0.09	46	0.56
Total Proficiency	-0.10	45	0.49

Note: If more than 15% of the data for a particular scale was missing, that respondent's data was not included in the analysis for that scale or for the Total Importance Score.

Influence of Demographic Variables on Leadership Skills

The previous sections described the relationship between individual demographic variables and leadership skills. Backward multiple regression was performed between all of the demographic variables (gender, ethnicity, age, tenure in Extension, tenure in Extension leadership position(s), highest degree, degree classification, and previous leadership development) and the self-perceived proficiency of the leadership skills (Human Skills, Conceptual Skills, Technical Skills, Communication Skills, Emotional Intelligence Skills, Industry Knowledge Skills, and Total Proficiency) in order to explain the influence of demographic variables on participants' self-perception of proficiency.

Human Skills (Proficiency). Ethnicity and age yield the best model for explaining the influence of demographic variables on self-perceived proficiency of Human Skills. Regression analysis revealed that the model significantly explained Human Skills, $F(2, 43)=3.31$, $p<.05$. R^2 for the model was .13 and adjusted R^2 was .09. Unstandardized regression coefficients (B), intercept, and standardized regression coefficients (β) for each variable are presented in Table 4-51. In terms of individual relationships between the independent variables and self-perceived proficiency in Human Skills, ethnicity, $t=.68$, $p>.05$, did not have a significant effect while age, $r=.30$, $p<.05$ did

have a significant effect. When combined, the two variables, ethnicity and age explained nine percent of the variance in self-perceived proficiency in Human Skills.

Table 4-51 Backward Regression Explaining Human Skills (Proficiency) (N=47)

	B	SE	Beta	t	Sig.
(Constant)	49.98	13.96		3.58	0.00
Ethnicity	1.44	0.99	0.21	1.45	0.16
Age	0.49	0.25	0.28	1.98	0.05

Conceptual Skills (Proficiency). Regression analysis using the demographic variables did not yield a model that significantly explained self-perceived proficiency of Conceptual Skills. None of the independent variables exhibited significant individual relationships with self-perceived proficiency in Conceptual Skills.

Technical Skills (Proficiency). Regression analysis using the demographic variables did not yield a model that significantly explained self-perceived proficiency of Technical Skills. The highest degree held by participants, $F(4,41)=2.93$, $p<.05$, was the only independent variable with a significant individual relationship with self-perceived proficiency in Technical Skills.

Communication Skills (Proficiency). Regression analysis using the demographic variables did not yield a model that significantly explained self-perceived proficiency of Communication Skills. None of the independent variables exhibited significant individual relationships with self-perceived proficiency in Communication Skills.

Emotional Intelligence Skills (Proficiency). Regression analysis using the demographic variables did not yield a model that significantly explained self-perceived proficiency of Emotional Intelligence Skills. None of the independent variables exhibited

significant individual relationships with self-perceived proficiency in Emotional Intelligence Skills.

Industry Knowledge Skills (Proficiency). Regression analysis using the demographic variables did not yield a model that significantly explained self-perceived proficiency of Industry Knowledge Skills. None of the independent variables exhibited significant individual relationships with self-perceived proficiency in Industry Knowledge Skills.

Total Proficiency. Regression analysis using the demographic variables did not yield a model that significantly explained Total Proficiency scores. None of the independent variables exhibited a significant relationship with Total Proficiency score on an individual basis.

Summary

This chapter presented the findings of the study. Findings were organized and presented by the following objectives: (1) determine the leadership skill areas and specific leadership competencies within each skill area needed by Extension leaders, as perceived by their administrative heads, (2) describe current Extension leaders in terms of their demographics and leadership style, (3) assess how important current Extension leaders believe each skill area is as well as how proficient they perceive themselves to be in each skill area, (4) explain the influence of demographic variables on the leadership styles of current Extension leaders, and (5) explain the influence of demographic variables on the leadership skills of current Extension leasers.

Chapter 5 will present more a detailed discussion of the findings. Conclusions drawn from the findings and recommendations will also be presented.

CHAPTER 5
SUMMARY AND DISCUSSION

This chapter summarizes the study and discusses the conclusions, implications, and recommendations drawn from the findings of the study. The first section of the chapter provides an overview of the study, including the purpose and specific objectives, methodology, and findings. The remainder of the chapter discusses specific conclusions drawn from the findings, implications of the findings, and recommendations for future research.

Summary of the Study

Statement of the Problem

Most employers, including those responsible for hiring state Extension directors, would agree that leadership skills are desirable in employees. Although an abundance of information about leadership exists, there is still a lack of consensus about specific aspects of leadership. This is especially true within the Extension system.

Despite a commitment by the CSREES to a diverse workforce, including the leaders of the organization, there are still populations that are underrepresented in leadership positions within the Extension system. Mayer (2001) reported a discrepancy between the number of qualified women within the CSREES and the number of women in state-based director positions. The people in positions of power in the United States have traditionally been white males (Dorsey, 2001) and many business and industry leaders tend to replace themselves with people whose backgrounds, experiences, and

characteristics are similar to their own (Sorcher & Brant, 2002). It is possible that these same trends are present within the Extension system.

Empirical evidence exists that documents the lack of diversity in leadership positions, but the amount of research focusing on the influence of demographics on leadership styles and skills of Extension leaders is arguably thin. Furthermore, the organization has made no attempt to define specific leadership styles and skills it is seeking in its leaders. Several questions thus arise. What specific leadership skills do its leaders need to be successful? Which leadership styles do most leaders within the organization possess? What role do demographic characteristics play in an individual's leadership style and skills? Are diverse populations underrepresented in leadership positions in Extension as a function of different leadership styles and skills?

Purpose and Objectives

The primary purpose of this study was to identify and describe the leadership styles and skills of current Extension leaders. Specifically, this study sought to: (1) determine the leadership skill areas and specific leadership competencies within each skill area needed by Extension leaders, as perceived by their administrative heads, (2) describe current Extension leaders in terms of their demographics and leadership style, (3) assess how important current Extension leaders believe each skill area is as well as how proficient they perceive themselves to be in each skill area, (4) explain the influence of demographic variables on the leadership styles of current Extension leaders, and (5) explain the influence of demographic variables on the leadership skills of current Extension leaders.

Methodology

To accomplish the specific objectives, the study was conducted in two phases with two different populations. The first phase was conducted to accomplish objective one and utilized qualitative interviews with administrative heads of agriculture, as identified by NASULGC. A total of 11 administrative heads of agriculture were invited to participate in the interviews. Seven of the 11 individuals that were included in this sample participated for a response rate of 63.3%.

Data in this phase were collected during audio-taped telephone interviews. Following the interviews, the tapes were transcribed. The transcripts and audio-tapes were analyzed for content and coded. Major themes that emerged from the data were used to identify major leadership skill areas. Sub-skills that emerged were clustered into one of the skill areas and specific competencies were developed based on the sub-skills. These skill areas and specific competencies were used to develop the Leadership Competencies in Extension instrument used in the second phase of the study.

The second phase of the study was conducted to accomplish objectives two through five and utilized survey (descriptive) research and a correlational and causal comparative, or *ex post facto*, design. The dependent variables in the study were leadership styles and skills. The independent variables were gender, ethnicity, age, tenure in Extension, tenure in Extension leadership positions, highest degree held, classification of highest degree, and previous leadership development and training.

In the second phase, the current Extension leaders in each of the CSREES state partner institutions, as identified by the individuals listed in the CSREES Directors and Administrators Directory (April, 2002), were included in the population for a total of 80

individuals. Responses were obtained from 49 of the 80 individuals for a response rate of 61.25%. Of these 49 responses, 47 contained usable data.

Data in this phase were collected on-line for the leadership competency instrument, and by mail for the leadership style instrument and late responders to the leadership competency instrument. Data analysis procedures consisted of frequencies, descriptives, independent sample t-tests, Pearson Product Moment correlations, omega-squared, Cohens d, one-way analysis of variance, and backward multiple regression.

Findings

The findings of this study are summarized in relation to the objectives of the study presented in Chapter 1.

Objective One

Objective one sought to determine the leadership skill areas and specific leadership competencies within each skill area needed by Extension leaders, as perceived by their administrative heads. Major themes served as leadership skill areas. Six leadership skill areas were identified: human skills, conceptual skills, technical skills, communication skills, emotional intelligence skills, and industry knowledge skills. Forty-five minor themes were identified and clustered into one of the six skill areas. From these themes, a total of 80 specific leadership competencies were identified.

Objective Two

Objective two sought to describe current Extension leaders in terms of their demographics and leadership style. The demographic variables of gender, ethnicity, age, tenure in Extension, tenure in Extension leadership positions, highest degree held, science classification of highest degree held, and involvement in previous leadership development and training were included in this study.

Of the 47 participants who participated in the second phase of the study, 70.2% were male and 29.8% were female. Almost 81% of the study participants reported their ethnicity as white, 15% reported black or African American, and 2% each reported Asian and Hispanic or Latino.

The participants ranged in age from 44 to 66 years. The mean age of the participants was 54.5 years.

The mean tenure in the Cooperative Extension System was 22 years and ranged from 3 to 37 years. In terms of tenure in leadership positions within the Cooperative Extension System, the mean was 11.9 years and ranged from 1 to 26 years.

Over three-quarters (76.6%) of the study participants held a doctor of philosophy degree as their highest degree while 12% held a masters degree, 6.4% held a doctor of education degree, and 2.1% each held a specialist degree and a doctor of veterinary medicine degree. Sixty percent of the study participants held their highest degree in a social science discipline and 40% held their highest degree in a bench science discipline.

Participants had previous experience in an average of 3.19 leadership courses/workshops. When separated by the type of experience, participants reported involvement in an average of 1.30 leadership courses in college, 1.11 leadership courses/workshops conducted by non-Extension presented, and .93 leadership courses/workshops within Extension.

In terms of leadership style, study participants reported engaging in behaviors related to transformational leadership more often than behaviors related to transactional leadership or laissez-faire leadership. On a scale from zero to four, participants had the highest mean scores for Transformational Leadership Style (M=3.41, SD=.35), followed

by Transactional Leadership Style (*M*=1.79, *SD*=.41) and Laissez-Faire Leadership (*M*=.50, *SD*=.49).

Objective Three

Objective three sought to assess how important current Extension leaders believe each skill set is as well as how proficient they perceive themselves to be in each skill set. In terms of perceived importance, participants as a whole rated each leadership skill area as important. All scores were above 75 for the possible range of 20 to 100. The highest mean score was for the importance of Emotional Intelligence Skills (*M*=93.14, *SD*=6.14), followed by Conceptual Skills (*M*=92.27, *SD*=5.28), Human Skills (*M*=92.04, *SD*=5.62), Industry Knowledge Skills (*M*=91.04, *SD*=7.52), Communication Skills (*M*=89.06, *SD*=7.86), and Technical Skills (*M*=79.53, *SD*=11.13), respectively. The Technical Skills area was the only skill area that had a mean score for perceived importance below 80.

In terms of self-perceived proficiency in each of the skill areas, participants reported lower means than for importance. All scores were above 70 for the possible range of 20 to 100. The highest mean score for self-perceived proficiency was for Emotional Intelligence Skills (*M*=85.46, *SD*=8.10), followed by Industry Knowledge Skills (*M*=84.31, *SD*=10.80), Human Skills (*M*=84.28, *SD*=8.31), Conceptual Skills (*M*=82.49, *SD*=9.48), Communication Skills (*M*=81.51, *SD*=9.95), and Technical Skills (*M*=71.50, *SD*=12.20), respectively.

Mean scores were higher for perceived importance than for self-perceived level of proficiency in all six skill areas. The difference between perceived importance and self-perceived proficiency was greatest for Conceptual Skills (Mean Difference=9.78), followed by Technical Skills (Mean Difference=8.02), Human Skills (Mean Difference=7.76), Emotional Intelligence Skills (Mean Difference=7.68),

Communication Skills (Mean Difference=7.55), and Industry Knowledge Skills (Mean Difference=6.73).

Objective Four

Objective four sought to explain the influence of demographic variables on the leadership styles of current Extension leaders. Individual relationships between independent variables and leadership styles were analyzed. Gender had a significant effect on the Idealized Influence (Attributed) leadership scale ($t(45)=-2.12$, $p<.05$) with female scoring significantly higher than males. Overall, gender had no significant effect on Transformational Leadership Style ($t(45)=-1.26$, $p>.05$), or Transactional Leadership Style ($t(45)=-.51$, $p>.05$). Ethnicity had no significant effect on Transformational Leadership Style ($t(43)=.80$, $p>.05$), or Transactional Leadership ($t(43)=1.13$, $p>.05$). Age did not have a significant effect on Transformational Leadership Style ($r=.06$, $p>.05$), or Transactional Leadership Style ($r=.10$, $p>.05$) although the relationship between age and transactional leadership was a low positive relationship. Tenure in Extension had a significant moderate relationship with the Management-by-Exception (Active) ($r=-.36$, $p<.05$), and Management-by-Exception (Passive) ($r=-.33$, $p<.05$), leadership scales and the Transactional Leadership Style ($r=-.49$, $p<.05$). Tenure in Extension did not have a significant effect on Transformational Leadership Style ($r=-.07$, $p>.05$). Tenure in Extension leadership position did not have a significant effect on Transformational Leadership Style ($r=.07$, $p>.05$) or Transactional Leadership Style ($r=-.25$, $p>.05$). The highest degree held by participants had a significant effect on the Management-by-Exception (Passive) ($F(4,42)=3.01$, $p<.05$) leadership scale, but did not have a significant effect on overall Transformational Leadership Style ($F(4,42)=.48$, $p>.05$) or Transactional Leadership Style ($F(4,42)=.92$, $p>.05$). Degree classification had

a significant effect on Transactional Leadership Style ($t(45)=2.11$, $p<.05$) with participants with bench science degrees scoring significantly higher than those with social science degrees. Degree classification did not have a significant effect on Transformational Leadership style ($t(45)=.35$, $p>.05$). Previous leadership development had a significant effect on the Management-by-Exception ($r=-.29$, $p<.05$) leadership scale, but did not have a significant effect on Transformational Leadership Style ($r=-.21$, $p>.05$) or Transactional Leadership Style ($r=-.28$, $p>.05$).

Backward multiple regression analysis was then performed to explain the influence of all of the demographic variables on Transformational Leadership Style, Transactional Leadership Style, and Laissez-Faire Leadership. Transformational Leadership Style was best explained with a model including ethnicity, tenure in Extension leadership position(s), and previous leadership development total score that explained 13% of the variance. Transactional Leadership Style was best explained with a model including highest degree, tenure in Extension, and previous leadership development total score, which explained 28% of the variance. For Laissez-Faire Leadership, there was no model that significantly explained the influence of demographic variables.

Objective Five

Objective five sought to explain the influence of demographic variables on the leadership skills of current Extension leaders. Individual relationships between each of the demographic variables and perceived importance of the leadership skills were analyzed. Gender, ethnicity, age, tenure in Extension, tenure in Extension leadership position(s), degree classification, and previous leadership development had no significant effect on perceived importance of any of the six leadership skill areas. Highest degree

had a significant effect on the perceived importance of Communication Skills ($F(4,41)=3.78$, $p<.05$), and Industry Knowledge Skills ($F(4,41)=3.05$, $p<.05$) but did not have a significant effect on the perceived importance of the other four leadership skill areas.

Individual relationships between each of the variables and participants' perception of their proficiency in each of the leadership areas were also analyzed. Gender, ethnicity, tenure in Extension, tenure in Extension leadership position(s), degree classification, and previous leadership development had no significant effect on participants' perceived level of proficiency in any of the six leadership skill areas. Age had a significant effect on self-perceived proficiency in Human Skills ($r=.30$, $p<.05$) but did not have a significant effect in the other five leadership skill areas. Highest degree had a significant effect on self-proficiency in Technical Skills ($F(4,41)=2.93$, $p<.05$) but did not have a significant effect in the other five leadership skills.

Backward multiple regression analysis was then performed to explain the influence of all of the demographic variables on the participants' self-perceived proficiency in each of the six leadership skill areas. Proficiency in Human Skills was best explained by a model including ethnicity and age, which explained 9% of the variance. There was no model that significantly explained proficiency in the leadership skills areas of Conceptual Skills, Technical Skills, Communication Skills, Emotional Intelligence Skills, or Industry Knowledge Skills.

Conclusions

Because the quantitative phase of this study was a census study of Extension leaders directly responsible for the day-to-day operations of Extension within each state, the generalizability of the conclusions and recommendations of the study beyond the

population described should be carefully considered. With this limitation in mind, the following conclusions were derived from the findings of the five research objectives.

- Leadership skill areas needed by Extension leaders are: Human Skills, Conceptual Skills, Technical Skills, Communication Skills, Emotional Intelligence Skills, and Industry Knowledge Skills.
- Administrative heads of agriculture from larger schools placed less importance on computer skills than do administrative heads of agriculture from smaller schools.
- Females and minorities are underrepresented in Extension leadership positions.
- The majority of participants held their highest degree in social science disciplines.
- Participants engaged in Transformational Leadership Style behaviors more often than they engaged in Transactional Leadership Style behaviors
- Human Skills, Conceptual Skills, Communication Skills, Emotional Intelligence Skills, and Industry Knowledge Skills rated between important and very important. Technical skills were rated between somewhat important and important.
- Emotional Intelligence skills were rated as most important and Technical Skills were rated as least important.
- Participants ranked themselves between above average and very proficient in terms of their proficiency in Human Skills, Conceptual Skills, Communication Skills, Emotional Intelligence Skills, and Industry Knowledge Skills. Participants ranked themselves between about average and above average in proficiency in technical skills.
- Participants were most proficient in Emotional Intelligence Skills and least proficient in Technical Skills.
- There was a significant, moderately negative relationship between tenure in Extension and Transactional Leadership Style.
- Participants with bench science degrees engaged in Transactional Leadership Style behaviors significantly more often than those with social science backgrounds.
- Ethnicity, tenure in Extension leadership position(s), and previous leadership development total score were the variables that provided the best model for explaining the influence of demographic variables on Transformational Leadership Style.
- Participants' highest degree, tenure in Extension, and previous leadership development total score were the variables that provided the best model for

explaining the influence of demographic variables on Transactional Leadership Style.

- Demographics did not significantly influence Transformational Leadership Styles. With the exception of tenure in Extension and degree classification, demographics did not significantly influence Transactional Leadership Styles.
- Ethnicity and age were the variables that provided the best model for explaining the influence of demographic variables on Human Skills.
- With the exception of Human Skills, demographics did not significantly influence leadership skills.

Discussion and Implications

Objective One – Determine the Leadership Skill Areas and Specific Leadership Competencies Within Each Skill Area Needed by Extension Leaders, as Perceived by Their Administrative Head

Leadership skill areas needed by Extension leaders are: Human Skills, Conceptual Skills, Technical Skills, Communication Skills, Emotional Intelligence Skills, and Industry Knowledge Skills

Because the administrative heads were provided a skills summary sheet prior to the interview that reviewed the leadership skill areas found in the review of literature (Goleman, 1998; Katz, 1955, Robbins, et al., 2001) it was to be expected that interview participants would identify leadership competencies within the areas of Human Skills, Conceptual Skills, Technical Skills, Emotional Intelligence Skills, and Industry Knowledge Skills as being important. However, in this study, Communication Skills, a leadership skill area not previously identified in leadership skills literature as a separate, important skill area emerged as another skill area of leadership needed by Extension leaders. Holder (1990) did however recommend the inclusion of communication and listening skills, as well as visionary and futurism training, and enabling skills such as empowerment and delegation be included in Extension leadership training programs.

It is possible that participants in both phases of the study did not recognize communication as a part of leadership. Participants of the study had at least a masters degree and most all college degrees require a communications course of some sort. Yet, on the Leadership Competencies in Extension instrument, no participant included a communications course when asked about previous experience in leadership development.

Findings of this study indicated that all six leadership skill areas are important for Extension leaders to possess and thus, leadership development programs should incorporate all six areas. It must be noted, however, that because the largest gap between perceived importance and self-perceived proficiency occurred within the conceptual skills area, additional emphasis should be placed on the development of conceptual skills as a whole and the specific competencies contained within this leadership skill area. In essence this finding supports literature, which suggested that conceptual skills are more important at higher levels of leadership within an organization. Perhaps current Extension leaders have not received enough training in the Conceptual Skills area prior to assuming a senior leadership position within the organization, and therefore, report the largest difference between perceived importance and self-perceived proficiency in the Conceptual Skills area.

Administrative heads of agriculture from larger schools placed less importance on computer skills than do administrative heads of agriculture from smaller schools

Technical Skills was the leadership skill area that had the most disagreement among interview participants. Hicks & Gullet (1975) suggested that the amount of technical skills needed by leaders decreased the higher an individual climbed within the organizational hierarchy. Several of the participants in this study supported this notion,

especially related to computer and PC software skills. However, other study participants emphasized the importance of these same skills as skills needed by Extension professional in order for them to be successful.

The individuals that perceived these skills to be less important represented the larger land-grant institutions included in this phase of the study, whereas those who saw them as more important were from the smaller land-grant universities and the 1862 land-grant university represented in this study. For example, one participant who was from a large land-grant institution in the study stated:

> Um, obviously the things that uh, that you mention there in terms of uh computers uh are very useful but in many cases uh if they don't have that that's not a great limitation because there are people right next to them that have those skills uh very strongly and uh use them and provide that support to the leader.

It is likely that the Extension leaders at the larger institutions have more resources and support at their disposal than do the Extension leaders at the smaller schools, and that these additional resources decrease the perceived importance of computer related competencies in the technical skills area.

Objective Two – Describe Current Extension Leaders in Terms of Their Demographics and Leadership Style

Females and minorities are underrepresented in Extension leadership positions.

In this study, 70.2% (*n*=33) of participants were male and 29.8% (*n*=14) were female. This finding is actually very representative of the total population frame of 80 Extension leaders. In the total population, 71.25% (*n*=57) were male and 28.75% (*n*=23) were female. When analyzed by ethnicity, white males still comprised the majority of participants. In this study, 53.19% (*n*=25) were white males, 27.66% (*n*=13) were white females, 12.76% (*n*=6) were Black or African American males (*n*=6), and there was

2.13% of each Asian males (*n*=1), Hispanic or Latino males (*n*=1), and Black or African American females (*n*=1).

Although the majority of participants were white males, the findings of this study are nonetheless encouraging in that they show more diverse populations serving in senior leadership positions within Extension. In a study by Clark (1992), of the 90.9% (*n*=70) of the state directors of the Cooperative Extension Service from both 1862 and 1890 institutions that participated in the study, 91.4% (*n*=64) were male, as compared to the 70.2% in the present study. Thus, there are more females in senior leadership positions within Extension today than there were a decade ago.

Strides are being made towards gender diversity as a whole, but there is still a need to recruit minorities, and more specifically, minority females. Moore and Jones (2001) reported that of the 17 females in state director/administrator, associate director/associate administrator, or interim director/acting associate administrator, eight were Black or African American: one associate director, four state administrators, two associate administrators, and one associate acting administrator. In the present study, there was only one black female participant.

While the findings of this study are encouraging, several concerns still remain. Findings of this study suggest that diverse populations are not underrepresented in senior leadership positions in Extension as a function of different leadership styles and skills. It is possible that women and minorities are underrepresented in Extension leadership positions for reasons other than differences in leadership styles and skills. For example, it is possible that women and minorities do not want such senior leadership positions. Perhaps they do not want to have to balance family and work concerns, and therefore do

not actively seek leadership positions within the organization. Further research should be conducted to examine the motives of females who do and do not seek senior leadership positions.

The majority of participants held their highest degree in social science disciplines

In this study, 59.6% of participants held their highest degree in social science degrees as opposed to bench science degrees. When analyzed by gender, the majority of participants were white males, and of those, 52% were from social science backgrounds. These findings are encouraging for the diversity efforts of Extension in that it showed that Extension leaders are becoming more diverse in terms of educational background, whereas traditionally, leadership positions within the organization were held by bench scientists.

It must be pointed out, however, that this study only classified participants according to their highest degree. It is possible that some of the participants who held their highest degree in a social science held other degrees in bench science disciplines. If they were promoted to a leadership position in Extension from a state specialist position, for example, it is quite possible that their academic home was actually in a bench science discipline rather than a social science discipline.

Participants engaged in Transformational Leadership Style behaviors more often than they engaged in Transactional Leadership Style behaviors

The mean score for Transformational Leadership Style was M=3.41, SD=.35 and the mean score for Transactional Leadership Style was M=1.79, SD= .41. The possible range of means was from zero to four where a zero indicated that a leader engaged in a particular behavior not at all, one indicated that the leader engaged in the behavior once in a while, two indicated that the leader engaged in the behavior sometimes, three

indicated that the leader engaged in the behavior fairly often, and a four indicated that the leader engaged in the behavior frequently, if not always. Participants in this study were engaging in transactional leadership behaviors once in a while to sometimes and engaged in transformational leadership behaviors fairly often to frequently, if not always.

Using transformational leadership as a theoretical base, the fact that participants reported engaging in both types of behaviors at least every once in a while is to be expected. Bass (1985a) viewed transformational leadership and transactional leadership as complimentary constructs. According to Bass, it is necessary for leaders to engage in both transformational and transactional leadership behaviors. Results of this study supports this notion.

This finding is important in that it shows the leaders are not trying to replace one leadership style with the other, but rather are using both. They are using transformational leadership more often and thus, are augmenting the effects of transactional leadership, a major premise of transformational leadership theory.

Objective Three – Assess How Important Current Extension Leaders Believe Each Skill Area Is As Well As How Proficient They Believe They Are In Each Skill Area

Human Skills, Conceptual Skills, Communication Skills, Emotional Intelligence Skills, and Industry Knowledge Skills were rated between important and very important. Technical skills were rated between somewhat important and important

Five of the six leadership skill areas had means for perceived importance that were between 80 and 100. The possible range of scores was 20 to 100. Scores between 20 and 40 represented skill areas that were not important to of little importance, scores between 40 and 60 represented skill areas that were between of little importance and somewhat important, scores between 60 and 80 represented skill areas that were between somewhat important and important, and scores between 80 and 100 represented skill

areas that were between important and very important. Therefore, in this study, Human Skills, Conceptual Skills, Communication Skills, Emotional Intelligence Skills, and Industry Knowledge Skills were all perceived as important to very important for Extension leaders to possess. Technical Skills were somewhat important to important for Extension leaders to have.

Overall, participants rated all of the competencies as important to very important. This finding could suggest one of two things. It could indicate that a great job was done in developing a relevant instrument for assessing leadership competencies in Extension. It could also suggest that perhaps participants are trying to do all things for all people, and therefore see everything as important.

Emotional Intelligence Skills were rated as most important and Technical Skills were rated as least important

Participants perceived Emotional Intelligence Skills (M=93.14, SD=6.14) to be the most important of the six leadership skills areas. In such difficult budget times, demands on faculty time continue to increase. It is no surprise that the Emotional Intelligence Skills area, which included competencies such as time management and balancing personal and professional lives, was perceived as the most important.

Although not unexpected, it is interesting to find Emotional Intelligence Skills rated most important. Many of the sub-skills and specific competencies within this skill area are the same skill areas and competencies often left out of leadership training and development. For example, it is rare to find a leadership course, workshop, or seminar on developing a sense of humor, yet possessing a sense of humor was one of the specific leadership competencies mentioned by more than one of the interview participants in this study. It is not so rare to find leadership development in competencies such as conflict

resolution and negotiation, but overall, the competencies within the Emotional Intelligence Skills area are generally not taught in leadership training and development courses. Perhaps the fact these competencies are so rarely taught contributes to the perceived importance of them by Extension leaders.

Participants perceived Technical Skills (*M*=79.52, *SD*=11.13) to be the least important of the six leadership skill areas. The mean for the Technical Skills areas was the only mean below 80. This finding is consistent with the literature (Hicks & Gullett, 1975) that reported the amount of technical skills required by leaders decreased the higher in the organizational hierarchy leaders were. Since the leaders in this study were in the most senior leadership positions within the organization, it is to be expected that the amount of technical skills they require would be less than that of other skill areas and therefore perceived as less important. It must be noted however, that although the Technical Skills area was rated as least important, overall, the competencies were still rated between somewhat important and important and in reality, were rated closer to the important end of that scale.

The Technical Skills area also had the largest standard deviation indicating more deviation from the mean of the distribution for this skill area than for any of the other skill areas. In essence, this finding supports the finding of the qualitative interview portion of the study that found technical skills to be the area of the most disagreement. In other words, some of the current Extension leaders perceived technical skills competencies to be closer to very important while others perceived them to be closer to somewhat important. Perhaps like in the qualitative portion of the study, those that perceive them to be less important are from the larger institutions with more resources

and those that perceive them to be more important are from the smaller institutions with fewer resources at their disposal.

Participants ranked themselves between above average and very proficient in terms of their proficiency in Human Skills, Conceptual Skills, Communication Skills, Emotional Intelligence Skills, and Industry Knowledge Skills. Participants ranked themselves between average and above average in proficiency in technical skills

Five of the six leadership skill areas had means for self-perceived proficiency that were between 80 and 100. The possible range of scores was 20 to 100. Scores between 20 and 40 represented proficiencies in skill areas from none to below average proficiency, scores between 40 and 60 represented proficiencies in skill areas that were between of below average proficiency and about average proficiency, scores between 60 and 80 represented proficiencies in skill areas that were between about average proficiency and above average proficiency, and scores between 80 and 100 represented proficiencies in skill areas that were above average proficiency and very proficient. Therefore, in this study, participants perceived themselves to be between above average in proficiency to very proficient in Human Skills, Conceptual Skills, Communication Skills, Emotional Intelligence Skills, and Industry Knowledge Skills. They perceived their proficiency in Technical Skills to be between about average proficiency and very proficient.

Previous research has offered conflicting findings related to whether leaders tend to rate themselves higher on self-reported leadership measures than do people who are familiar with their styles and abilities. Holder (1990) reported that Extension faculty members rated their middle managers lower on leadership practices and skills than the managers rated themselves. In contrast, Cobb (1989) reported no significant differences in the leadership effectiveness ratings of the CEDs who rated themselves and the county

Extension agents who rated their CEDs. A study by Rudd (2000) offered conflicting finding based on gender. In his study, male CEDs ranked themselves higher on all five leadership practices measured by the LPI than did there observers whereas female CEDs ranked themselves lower in four of the five leadership areas than did their observers. Future research involving superiors and subordinates of the participants in the present study needs to be conducted to determine if participants have a false sense of security about their own level of proficiency in each competency, or if they in fact actually view their abilities as they are.

Participants were most proficient in Emotional Intelligence Skills and least proficient in Technical Skills

Participants perceived themselves to be most proficient in Emotional Intelligence leadership skills (*M*=85.46, *SD*=8.10). After finding that participants ranked Emotional Intelligence skills as most important, it was not unexpected to find that they perceived themselves to be most proficient in the same skill area. It is to be expected that participants in a study involving self-reported data are not likely to perceive themselves to be poor in a skill area they believe is very important. Perhaps because participants perceived the Emotional Intelligence Skills area to be most important, they have sought opportunities to develop such skills and therefore perceive themselves to be more proficient than in other skill areas in which they have not sought development opportunities.

Participants perceived themselves to be least proficient in the Technical skills area (*M*=71.50, *SD*=12.20). The mean for Technical Skills was the only mean below 80. It is interesting to note that participants also believed Technical Skills were the least important of the six skills. This is not surprising based on the self-reported nature of the data. It

may be possible that the reason Technical Skills are rated as least important is because participants see them as an area of weakness. It is also quite possible that because Technical Skills are seen as least important, participants have chosen to develop their skills in areas they consider to be more important and not sought opportunities to develop their technical skills.

It must also be noted that self-perceived proficiency in the Technical Skills area had the largest standard deviation indication variation about the mean. This again supports the finding from the qualitative portion of the study. Further research should be conducted that analyzes the specific competencies to determine if the disagreement is a function of the computer related competencies or competencies such as budgeting and finance.

Objective Four – Explain the Influence of Demographic Variables on the Leadership Styles of Current Extension Leaders

There was a significant, moderately negative relationship between tenure in Extension and Transactional Leadership Style

There was a significant relationship between tenure in Extension and Transactional Leadership Style. The relationship was moderately negative (r=-.49, p<.05). In other words, the longer participants had been in the Extension system, the less often they engaged in transactional leadership behaviors. It should be noted however, that there was not a significant relationship between tenure in Extension and Transformational Leadership Style. Thus, participants did not differ in how often they engaged in transformational leadership behaviors, only transactional leadership behaviors.

This finding clouds rather than clarifies the relationship between tenure in an organization and leadership style. According to Hambrick and Mason (1984), the more

tenure leaders have within an organization, the greater commitment they would have towards maintaining the status quo. If this is true, then tenure in Extension would be expected to have a positive rather negative relationship with Transactional Leadership Style. The fact that there was a significant negative relationship also contradicts the findings of Sykes (1995) who reported that tenure within the Extension system did not influence either transformational or transactional leadership behavior.

Although this finding does not confirm findings of previous studies, it is encouraging for Extension. On a positive note, leaders with less tenure in the Extension system are engaging in transformational leadership behaviors just as often as leaders who have more tenure and regardless of how long leaders have been in Extension, participants reported engaging in transformational leadership behaviors more often than transactional leadership behaviors. The only significant change that is occurring in leaders the longer they are in Extension is the decrease in frequency of transactional leadership behaviors.

Perhaps when leaders enter the Extension system, they believe that to achieve desired outcomes, the must interact with followers in such a way that performance that meets expectations is rewarded and performance that does not meet performance is punished in some way. This belief may be due, in part, to their previous experiences as a leader in other organizations or as a follower, both variables not addressed in the present study. In any event, the longer are in Extension the less frequently they engage in this type of exchange interaction, thus accounting for the significant decrease in Transactional Leadership Style.

It is also encouraging to see that leaders, regardless of tenure, are still engaging in behaviors associated with Transactional Leadership Style sometimes, although with less

frequency than they are engaging in transformational leadership behaviors. This finding reflects Bass's theory of transformational leadership that leaders need to engage in both transformational and transactional leadership and that transformational leadership should augment the effects of transactional leadership.

Participants with bench science degrees engaged in Transactional Leadership Style behaviors significantly more often than those with social science backgrounds

The mean score for Transactional Leadership Style was significantly higher for participants with bench science degrees (*M*=1.94, *SD*=.45) than for those with social science degrees (*M*=1.69, *SD*=.46). This finding is somewhat consistent with the findings of (Sykes, 1995). In her study, CEDs from home economics, a social science discipline, perceived themselves to be more transformational than their counterparts from agricultural programs, more of the bench science agricultural disciplines. Lowery (1996) reported that CEDs with Community/Resource Development and agricultural areas of responsibility focus more on subject matter knowledge and technical expertise as compared to leadership behaviors. In contrast to both of these studies, Cobb (1989) reported no significant differences in the leadership effectiveness of CEDs as a function of previous program area. Although these other studies did not report the degree classification of individuals within each program area, perhaps the structure and focus on subject matter associated with bench science degree influences leaders to engage in the exchange of behavior for rewards type behaviors that are more consistent with transactional leadership.

Ethnicity, tenure in Extension leadership position(s), and previous leadership development total score were the variables that provided the best model for explaining the influence of demographic variables on Transformational Leadership Style

The ethnicity of participants, the participant's tenure in Extension, and the score for total previous leadership development experience were the variables included in the model that best explained total variance in Transformational Leadership Style. Regression analysis revealed that the model significantly explained the variance. R^2 for the model was .19 and adjusted R^2 was .13. The three variables collectively explained 13% of the variance in Transformational Leadership Style, the dependent variable.

None of the three variables had a significant effect on Transformational Leadership Style when individual relationship between the independent and dependent variables were analyzed. In terms of ethnicity, previous literature suggests that African-American extension CEDs perceive themselves to be more transformational (Sykes, 1995). Lowery (1996) found that 80% of the African-American/Other CEDs in her study reported a preference for the leadership practice of inspiring others while white CEDs preferred coaching others. However, in the present study, whites reported higher scores, although not statistically different, for Transformational Leadership Style.

This study found that tenure in Extension leadership position did not by itself have a significant effect on Transformational Leadership Style. This finding is consistent with that of Sykes (1995) and Cobb (1989). Cobb hypothesized that individuals with more tenure as a CED would have higher levels of leadership effectiveness as compared to those with less tenure in a leadership position. However, findings of his study found no significant difference between CED leadership effectiveness as a function of tenure in a leadership position. Findings of the present study, as well as those of the previous

studies cited, suggest that Extension leaders are interested in maintaining high levels of transformational leadership behaviors, regardless of tenure.

If leadership styles can be taught and learned (Bass, 1990b, 1998; Kouzes & Posner, 1987), then it would seem logical that the more leadership training a participant had been exposed to, the more they would engage in transformational leadership behaviors. Findings of this study do not support that notion. However, findings do support those of Payne et al. (1997) that found when trained, there is no difference between the transformational leadership behaviors of men and women. In this study, previous leadership development total score had a negative relationship with Transformational Leadership Style (r=-.21, p<.05). This finding could suggest that when asked to report previous experience with leadership development courses, seminars, and/or workshops, study participants tended to report those experiences that were in fact management development activities rather than leadership development activities, and thus, be more related to the development of transactional leadership behaviors rather than transformational behaviors. It is also possible that on-the-job training would account for the fact that there were no statistical differences between any of the groups in Transformational Leadership Style.

The fact that participants reported an average only three previous leadership development activities (M=3.19, SD=3.28) is also an area of concern. The finding that all participants had more tenure in Extension than they did in an Extension leadership position suggests that Extension leaders continue to be promoted from within the organization as opposed to being hired directly into leadership positions. This finding, coupled with the fact that respondents reported participating in, on the average, less than

one leadership development activity conducted within Extension lends credibility to the notion that Extension leaders may be hired into the system to perform a job that requires one set of skills, and then are promoted into another position requiring another set of skills without being adequately prepared for the new position. It may be that many senior leaders in Extension were initially hired for their technical expertise rather than their leadership abilities.

Perhaps the open-ended nature of the questions used to collect the self-reported data related to previous leadership development experience created some measurement error. Perhaps study participants did not report everything they should have reported. In fact, several participants did not report any previous leadership development courses, seminars, and/or workshops.

Participants' highest degree, tenure in Extension, and previous leadership development total score were the variables that provided the best model for explaining the influence of demographic variables on Transactional Leadership Style

The highest degree of participants, tenure in Extension, and the score for total previous leadership development experience were the variables included in the model that best explained total variance in Transactional Leadership Style. Regression analysis revealed that the model significantly explained the variance. R^2 for the model was .33 and adjusted R^2 was .28. The three variables collectively explained 28% of the variance in Transactional Leadership Style, the dependent variable.

It would seem as though the more education an individual has, the more accustomed they are to rewards for performance behaviors and thus, highest degree would play a role in Transactional Leadership Sstyle. Sykes' (1995) study found that type of degree beyond a bachelor's degree had no significant effect on perceive

transformational leadership, but nothing was reported for transactional behaviors. It is not surprising that a low negative relationship existed between previous leadership development and Transactional Leadership Style. This means that as previous leadership score increased, transactional leadership decreased, a finding that is consistent with that of Payne et al. (1997).

Demographics did not significantly influence Transformational Leadership Style. With the exception of tenure in Extension and degree classification, demographics did not significantly influence Transactional Leadership Style

When relationships between the independent demographic variables and Transformational Leadership Style, the dependent variable, were analyzed on an individual basis, none of the demographic variables significantly influenced Transformational Leadership Style. When relationships between the independent demographic variables and Transactional Leadership Style, the dependent variable, were analyzed on an individual basis, only two demographic variables, tenure in Extension and degree classification significantly influenced Transactional Leadership Style. As previously discussed, participants with bench science degrees engaged in transactional leadership behaviors significantly more often than those with social science degrees and as tenure in Extension increased, participants engaged in transactional leadership behaviors significantly more often.

The significance of these findings lie in the fact that the variables most commonly associated with differences in leadership style, such as gender and ethnicity, did not have a significant effect on leadership style, either Transformational Leadership Style or Transactional Leadership Style. This suggests that females and African-American leaders are not underrepresented as a function of their perceived leadership style. Perhaps they are still underrepresented in senior leadership positions within Extension

because others perceive them to lead differently. The perceptions of others related to both the leadership style and leadership effectiveness of female and minority Extension leaders should be addressed in future research.

Objective Five – Explain the Influence of Demographic Variables on the Leadership Skills of Current Extension Leaders

Ethnicity and age were the variables that provided the best model for explaining the influence of demographic variables on Human Skills

The ethnicity of participants and the age of participants were the variables included in the model that best explained total variance in self-perceived proficiency in Human Skills. Regression analysis revealed that the model significantly explained the variance. R^2 for the model was .13 and adjusted R^2 was .09. The two variables collectively explained 9% of the variance in self-perceived proficiency in Human Skills, the dependent variable.

It was not entirely unexpected that age would affect proficiency in the leadership skills. Although the influence of demographics on perceived proficiency in leadership skills has not been extensively documented in the literature, it has been suggested that skills can be developed through experience (Goleman, 1988; Katz, 1955, Nahavandi, 2000). The fact that age had a significant, positive relationship with proficiency in Human Skills supports this notion and suggests that the experiences that come with age allow individuals to perceive themselves as more proficient in the Human Skills area of leadership skills.

Ethnicity was not expected to play a major role in the proficiency of study participants in the leadership skill areas. Sykes (1995) reported that African-American CEDs in her study perceived themselves to be significantly more transformational than CEDs of other races. Transformational leaders empower people, which could correlate to

increased proficiency in human skills as compared to transactional leaders. It could be expected then that African-Americans would have higher self-perceived proficiency in the human skills than whites. However, in this study, the opposite was found. White participants scored higher, although not significantly higher, than black participants in the Human Skills area.

With the exception of human skills, demographics did not significantly influence leadership skills

The independent variables did not have a significant effect on the self-perceived proficiency of participants in the leadership skill areas of Conceptual Skills, Technical Skills, Communication Skills, Emotional Intelligence Skills, and Industry Knowledge Skills. One way analysis of variance did reveal that self-perceived proficiency in Technical Skills ($F(4,41)=2.93$, $p<.05$) was statistically different as a function of age, but no regression model significantly explained the variance in Technical Skills.

Age was the only independent variable that had a significant effect ($r=.30$, $p<.04$) on Human Skills and was included in the model that significantly explained variance in Human Skills. There is little empirical evidence that supports a relationship between age and leadership skill development. However, Goleman (1998) suggested that emotional intelligence skills increased with age. Findings of this study do not support this notion.

In this study, there was very little variability in self-perceived proficiency between different groups of people in each of the skill areas. More influence of demographics on the leadership skills in general was expected. However, any significant differences were due to variables other than those included in this study.

It must be noted, however, that the competencies contained in the Leadership Competencies in Extension Instrument were identified by the individuals responsible for

hiring Extension leaders as those competencies needed by leaders. If these are the competencies that all leaders need, the question must be asked it we really desire to see diversity in terms of proficiency within the competencies. Perhaps this is one area in which Extension does not need to diversify its leaders.

Recommendations

Based upon the findings and conclusions of this study, the following recommendations were made:

- Leadership development programs for Extension administrators should focus on developing the leadership skills of participants in the areas of human skills, conceptual skills, technical skills, communication skills, emotional intelligence skills, and industry knowledge skills. These leadership skill areas and the specific competencies on the Leadership Competencies in Extension instrument were identified because of their perceived importance by the administrative heads of current Extension leaders and the current leaders themselves perceived these as important.

- Because communication skills emerged as a leadership skill area important for Extension leaders to have, communications courses and workshops should be recognized as necessary leadership development activities.

- The largest gap between perceived importance and self-perceived proficiency occurred in the area of conceptual skills. Competencies in this area of development, such as strategic thinking and creating a long term vision, should be included in Extension leadership development programs for Extension administrators.

- In this study, gender had no effect on overall transformational leadership style, overall transactional leadership style, or perceived proficiency in the leadership skill areas. Based on this finding, gender should not be a basis of discrimination when hiring Extension leaders.

- In this study, ethnicity had no effect on overall transformational leadership style, overall transactional leadership style, or perceived proficiency in the leadership skill areas. Based on this finding, ethnicity should not be a basis of discrimination when hiring Extension leaders.

- Because tenure in Extension did not have a significant effect on perceived proficiency in any of the six leadership skill areas, it may not be as important to promote from within as once perceived.

- In this study, demographics exhibited little significant effect on the leadership styles or leadership skills participants. Based on this finding, Extension could recruit individuals with diverse backgrounds without dramatic changes in the leadership styles and skills of the leaders.

Suggestions for Additional Research

Based upon the findings and conclusions of this study, the following suggestions for additional research were made:

- Because this was a census study and only those individuals within each state directly responsible for the day-to-day operations of Extension, typically the state director or state administrator were included and the majority of the participants were white males, additional research needs to be conducted with a larger population, such as including associate directors and administrators and assistant directors and administrators, that perhaps includes more diversity.

- Some of the administrative heads of agriculture that participated in the study perceived technical skills to be of little importance. It appears as though those from smaller institutions perceived them to be more important than those from smaller institutions. Technical skills was the leadership skills area participants perceived to be of least importance. In this study, no data were collected on the size of the institution participants were from and the availability of technical support. Additional research is needed in this area to determine if perceived importance is actually a function of such factors or simply that many professionals are becoming more computer literate.

- This study identified specific leadership competencies needed by Extension leaders and assessed the self-perceived proficiency of current leaders in each competency. Future research should be conducted to develop an objective measure of leadership knowledge related to the six leadership skill areas.

- Because both the Multifactor Leadership Questionnaire 5X and the Leadership Competencies in Extension instrument were self-reported instruments, additional research should be conducted using these instruments with both superiors and subordinates of Extension leaders to validate the self-reported data of participants.

- In this study, gender and ethnicity had no significant effect on leadership style. This study looked only at senior leaders within the organization and did not examine specific factors related to the development of an individuals leadership style. It is possible that females and/or minorities in senior leadership positions were promoted to those positions because they emulated the leaders who preceded them. Additional research needs to be conducted with leaders at all levels within the organization to determine if gender or ethnicity has an effect on the leadership style of other organizational leaders.

- This study only addressed the perceived leadership styles and self-perceived proficiency in leadership skills of current leaders. Future research should be conducted to determine the perceptions of both leaders and those around them with respect to the effectiveness of leadership.

- In this study, previous leadership development had no effect on self-perceived proficiency in any of the six leadership skills areas as reported on the Leadership Competencies in Extension instrument. Because this was a correlational, or *ex post facto*, design with no experimental treatment, additional research should be conducted using a quasi-experimental design in which the instrument is administered both before and after participation in a leadership development program to assess the influence of such programs on self-perceived proficiency.

- Researchers should continue to investigate the relationship between leader characteristics and leadership style and skills. In order to explain more of the variance in leadership styles and skills, the relationship between situational variables and leadership characteristics should also be investigated.

APPENDIX A
TELEPHONE INTERVIEW QUESTIONNAIRE

Thank you again for agreeing to participate in this study of leadership competencies needed by Extension leaders. For the purposes of this study, we are defining Extension leaders as the directors and administrators of the Cooperative Extension System within each state. Because individuals in positions such as your are often responsible for the hiring of Extension leaders in your state, we are particularly interested in your thoughts and ideas about what specific leadership competencies these individuals need in order to be successful.

Demographics (to be filled in by the researcher):

Name of interviewee:

University:

Extension Region:

Background Questions:

I have just a couple of background questions to ask you as we begin our discussion.

6. Please describe you current position.
7. How long have you been in your current position?
8. What is your highest degree?

Leadership Skills and Competencies Questions:

Next, I would like to talk briefly about Extension in your state.

9. How many counties are there in your state? Extension employees?

10. What do you see as the role of the Cooperative Extension Service in your state?

11. How involved are you in your state's Cooperative Extension Service? Are you responsible for the hiring/firing of Extension leaders in your state?

12. Does your state have a list of leadership competencies identified for its Extension leaders? If so, could you describe them to me? Would you be willing to send me a copy of these competencies?

13. If your state does have a set of identified leadership competencies, is there a relationship between the identified competencies and hiring practices?

14. How are Extension leaders recruited and hired in your state? Do you have a copy of the last position announcement for the State Extension Director position you would be willing to send me?

Now I would like to talk to you about specific leadership skills and competencies you believe the leaders of Extension (State Directors and Administrators) need to be successful in their positions.

I hope you had a chance to review the leadership skills summary sheet and have given some thought to what specific competencies you see as important within each category. Do you have any questions about these categories before we begin? Let's discuss these in the order they were discussed on the summary sheet.

We will start with technical skills.

15. What specific leadership competencies do you believe Extension leaders need related to technical skills? Could you be a little more specific? Are there any other technical leadership competencies you see as important for Extension leaders to possess?

Let's move on to human skills.

16. What specific leadership competencies do you believe Extension leaders need related to human skills? Could you be a little more specific? Are there any other human leadership competencies you see as important for Extension leaders to possess?

Next, let's talk about conceptual skills.

17. What specific leadership competencies do you believe Extension leaders need related to conceptual skills? Could you be a little more specific? Are there any other conceptual leadership competencies you see as important for Extension leaders to possess?

    Let's move on to industry knowledge skills.

18. What specific leadership competencies do you believe Extension leaders need related to industry knowledge skills? Could you be a little more specific? Are there any other industry knowledge leadership competencies you see as important for Extension leaders to possess?

    Let's talk about emotional intelligence skills.

19. What specific leadership competencies do you believe Extension leaders need related to emotional intelligence skills? Could you be a little more specific? Are there any other emotional intelligence leadership competencies you see as important for Extension leaders to possess?

20. Can you think of any leadership competencies that you believe are important but do not fit in any of the leadership skill categories we have already discussed?

21. Think back over the competencies you identified during our discussion. If you were asked to create a list of the top 5 competencies required for Extension leaders, which of the competencies you identified would make that list?

22. Do you have anything else you would like to add?

Thank you again for taking time out of your day to visit with me. I have enjoyed talking with you.

APPENDIX B
LEADERSHIP COMPETENCIES IN EXTENSION INSTRUMENT

Thank you very much for agreeing to participate in this study. The purpose of this study is to determine the importance of specific leadership competencies to the success of Extension leaders and to assess proficiency levels of current Extension leaders in each competency.

Your responses to this instrument will be kept completely confidential. The code number on the front of this instrument will be used only for follow-up mailings to those individuals who do not respond. Your participation in this study is completely voluntary, but it is our hope that you will take just a few moments to complete the instrument and share information that will better help us prepare future Extension leaders. The instrument will take approximately 20-30 minutes to complete and has been reviewed and approved by the Institutional Review Board at the University of Florida. Thank you again for your participation.

Directions:
This instrument consists of seven sections. The first six address important areas of work or competencies needed in leadership. The last section of the instrument consists of demographic questions related to you and your position as an Extension leader.

Level of Importance:
Please rate the level of importance of each competency listed using the scale below:

1 = Not Important (NI)
2 = Little Importance (LI)
3 = Somewhat Important (SI)
4 = Important (I)
5 = Very Important (VI)

Level of Proficiency:
Please rate your level of proficiency in each of the competencies listed using the scale below. Please rate your current level of proficiency, not your desired level of proficiency.

1 = None (N)
2 = Below Average Proficiency (BA)
3 = About Average Proficiency (AV)
4 = Above Average Proficiency (AA)
5 = Very Proficient (VP)

Code Number _____

SECTION 1. Human Skills

For each human skill competency below, please rate the level of importance in the left-hand column and your current proficiency level in the right-hand column.

Level of Importance					HUMAN SKILLS		Level of Proficiency				
NI	**LI**	**SI**	**I**	**VI**			**N**	**BA**	**AV**	**AA**	**VP**
1	2	3	4	5	1.	Ability to foster relationships	1	2	3	4	5
1	2	3	4	5	2.	Ability to be an effective mentor	1	2	3	4	5
1	2	3	4	5	3.	Ability to identify personal strengths and weaknesses	1	2	3	4	5
1	2	3	4	5	4.	Ability to be an effective team leader	1	2	3	4	5
1	2	3	4	5	5.	Ability to evaluate the impact of personnel	1	2	3	4	5
1	2	3	4	5	6.	Demonstrate respect for others	1	2	3	4	5
1	2	3	4	5	7.	Ability to identify the strengths and weaknesses of others	1	2	3	4	5
1	2	3	4	5	8.	Ability to create an environment in which the leader is approachable and open to new ideas	1	2	3	4	5
1	2	3	4	5	9.	Demonstrate empathy for social problems	1	2	3	4	5
1	2	3	4	5	10.	Ability to be an effective team member	1	2	3	4	5
1	2	3	4	5	11.	Ability to be an effective coach	1	2	3	4	5
1	2	3	4	5	12.	Ability to surround themselves with people of complimentary strengths	1	2	3	4	5
1	2	3	4	5	13.	Create an environment that values the diversity of others	1	2	3	4	5
1	2	3	4	5	14.	Ability to create an environment in which team members are willing to share ideas	1	2	3	4	5
1	2	3	4	5	15.	Demonstrate support for organizational leadership development programs	1	2	3	4	5

SECTION 2. Conceptual Skills

For each conceptual skill competency below, please rate the level of importance in the left-hand column and your current proficiency level in the right-hand column.

Level of Importance					CONCEPTUAL SKILLS		Level of Proficiency				
NI	**LI**	**SI**	**I**	**VI**			**N**	**BA**	**AV**	**AA**	**VP**
1	2	3	4	5	16.	Ability to create a long term vision for the organization	1	2	3	4	5
1	2	3	4	5	17.	Ability to think strategically	1	2	3	4	5
1	2	3	4	5	18.	Ability to set goals	1	2	3	4	5
1	2	3	4	5	19.	Create an environment that supports organizational change	1	2	3	4	5
1	2	3	4	5	20.	Ability to communicate an organizational vision with others	1	2	3	4	5
1	2	3	4	5	21.	Ability to think critically	1	2	3	4	5
1	2	3	4	5	22.	Ability to help others support organizational change	1	2	3	4	5
1	2	3	4	5	23.	Ability to utilize sequential planning techniques	1	2	3	4	5
1	2	3	4	5	24.	Ability to be decisive	1	2	3	4	5
1	2	3	4	5	25.	Ability to think abstractly as well as linearly	1	2	3	4	5
1	2	3	4	5	26.	Exhibit an attitude that supports and welcomes organizational change	1	2	3	4	5
1	2	3	4	5	27.	Ability to achieve goals	1	2	3	4	5
1	2	3	4	5	28.	Ability to think creatively	1	2	3	4	5
1	2	3	4	5	29.	Ability to create an environment in which all personnel are able to take ownership of the organizational vision	1	2	3	4	5

SECTION 3. Technical Skills

For each technical skill competency below, please rate the level of importance in the left-hand column and your current proficiency level in the right-hand column.

Level of Importance					TECHNICAL SKILLS		Level of Proficiency				
NI	**LI**	**SI**	**I**	**VI**			**N**	**BA**	**AV**	**AA**	**VP**
1	2	3	4	5	30.	Ability to develop budgets for all levels within the organization	1	2	3	4	5
1	2	3	4	5	31.	Ability to effectively use computer software for word processing	1	2	3	4	5
1	2	3	4	5	32.	Ability to raise funds from external sources	1	2	3	4	5
1	2	3	4	5	33.	Ability to interpret and explain organizational budgets	1	2	3	4	5
1	2	3	4	5	34.	Ability to effectively use and search the internet	1	2	3	4	5
1	2	3	4	5	35.	Ability to use computer software for spreadsheets	1	2	3	4	5
1	2	3	4	5	36.	Ability to implement and adjust organizational budgets to accomplish programs	1	2	3	4	5
1	2	3	4	5	37.	Ability to effectively use computer software for databases	1	2	3	4	5
1	2	3	4	5	38.	Ability to work with foundations	1	2	3	4	5
1	2	3	4	5	39.	Ability to effectively integrate computer software program applications (i.e. merge files)	1	2	3	4	5

SECTION 4. Communication Skills

For each communication skill competency below, please rate the level of importance in the left-hand column and your current proficiency level in the right-hand column.

Level of Importance					COMMUNICATION SKILLS		Level of Proficiency				
NI	LI	SI	I	VI			N	BA	AV	AA	VP
1	2	3	4	5	40.	Ability to communicate orally with groups of various sizes ranging from one-on-one situations to large group situations	1	2	3	4	5
1	2	3	4	5	41.	Ability to actively listen to people	1	2	3	4	5
1	2	3	4	5	42.	Ability to interact and communicate with individuals with various depth of knowledge capabilities	1	2	3	4	5
1	2	3	4	5	43.	Ability to interact and communicate with people who have divergent points of view	1	2	3	4	5
1	2	3	4	5	44.	Ability to effectively communicate with others using electronic communication channels (i.e. e-mail)	1	2	3	4	5
1	2	3	4	5	45.	Ability to identify barriers to listening	1	2	3	4	5
1	2	3	4	5	46.	Ability to write for various organizational purposes (i.e. technical writing, professional publications, etc.)	1	2	3	4	5
1	2	3	4	5	47.	Ability to conduct quality oral presentations	1	2	3	4	5
1	2	3	4	5	48.	Ability to read and comprehend a wide range of publications	1	2	3	4	5
1	2	3	4	5	49.	Ability to reduce barriers to listening	1	2	3	4	5
1	2	3	4	5	50.	Ability to recognize and effectively use nonverbal cues or behaviors	1	2	3	4	5
1	2	3	4	5	51.	Ability to write for various audiences (i.e. limited resource audiences)	1	2	3	4	5
1	2	3	4	5	52.	Ability to communicate orally with groups of various backgrounds	1	2	3	4	5
1	2	3	4	5	53.	Ability to interact with the media (i.e. television and newspaper reporters)	1	2	3	4	5

SECTION 5. Emotional Intelligence Skills

For each emotional intelligence skill competency below, please rate the level of importance in the left-hand column and your current proficiency level in the right-hand column.

Level of Importance					EMOTIONAL INTELLIGENCE SKILLS		Level of Proficiency				
NI	**LI**	**SI**	**I**	**VI**			**N**	**BA**	**AV**	**AA**	**VP**
1	2	3	4	5	54.	Demonstrate personal integrity	1	2	3	4	5
1	2	3	4	5	55.	Ability to set priorities to effectively manage personal time	1	2	3	4	5
1	2	3	4	5	56.	Ability to resolve conflict	1	2	3	4	5
1	2	3	4	5	57.	Ability to make use of constructive criticism without becoming critical and angry	1	2	3	4	5
1	2	3	4	5	58.	Ability to separate personalities from behaviors	1	2	3	4	5
1	2	3	4	5	59.	Possess a sense of humor	1	2	3	4	5
1	2	3	4	5	60.	Ability to negotiate agreement	1	2	3	4	5
1	2	3	4	5	61.	Demonstrate high level of motivation	1	2	3	4	5
1	2	3	4	5	62.	Ability to control emotions in emotional situations	1	2	3	4	5
1	2	3	4	5	63.	Demonstrate professional integrity	1	2	3	4	5
1	2	3	4	5	64.	Demonstrate empathy and respect for others	1	2	3	4	5
1	2	3	4	5	65.	Ability to set priorities to effectively manage organizational time	1	2	3	4	5
1	2	3	4	5	66.	Demonstrate high levels of energy and enthusiasm	1	2	3	4	5
1	2	3	4	5	67.	Demonstrate respect for the time commitments of others	1	2	3	4	5

SECTION 6. Industry Knowledge Skills

For each industry knowledge skill competency below, please rate the level of importance in the left-hand column and your current proficiency level in the right-hand column.

Level of Importance					INDUSTRY KNOWLEDGE SKILLS		Level of Proficiency				
NI	**LI**	**SI**	**I**	**VI**			**N**	**BA**	**AV**	**AA**	**VP**
1	2	3	4	5	68.	Ability to explain the basic programs areas of Extension within the state	1	2	3	4	5
1	2	3	4	5	69.	Network and partner with a variety of organizations and agencies to accomplish programs	1	2	3	4	5
1	2	3	4	5	70.	Ability to identify and describe the various constituencies of Extension	1	2	3	4	5
1	2	3	4	5	71.	Ability to explain state and national Extension priorities	1	2	3	4	5
1	2	3	4	5	72.	Ability to create linkages within both traditional and non-traditional audiences	1	2	3	4	5
1	2	3	4	5	73.	Ability to interact with elected officials and their staff	1	2	3	4	5
1	2	3	4	5	74.	Possess depth of knowledge in a content area	1	2	3	4	5
1	2	3	4	5	75.	Ability to explain the role of Extension relative to the mission of the land-grant university	1	2	3	4	5
1	2	3	4	5	76.	Ability to identify the needs of various client groups within the state	1	2	3	4	5
1	2	3	4	5	77.	Ability to explain the political environment of the state and the implications for Extension	1	2	3	4	5
1	2	3	4	5	78.	Explain the relationships between statewide programs (i.e. role of various agencies in the delivery of programs)	1	2	3	4	5
1	2	3	4	5	79.	Ability to evaluate the impact of programs for each client group	1	2	3	4	5
1	2	3	4	5	80.	Ability to explain the cooperative nature of Extension with county, state, and federal governments	1	2	3	4	5

SECTION 7. Demographic Information

Please complete the following demographic questions.

1. What is your gender? (please check)
   - ❑ Female
   - ❑ Male

2. What is your ethnicity? (please check)
   - ❑ American Indian or Alaska Native
   - ❑ Asian
   - ❑ Black or African American
   - ❑ Hawaiian or Pacific Islander
   - ❑ Hispanic or Latino
   - ❑ White
   - ❑ Other (please indicate) _____

3. What is your age (in years)? _____

4. Please indicate your current position within Extension: _____

5. In the spaces below, please list the degree, year awarded, major, and granting institution for each of your degrees.

Degree	Year Awarded	Major	Institution

6. How long (in years) have you been employed within the Extension System? _____

7. How long (in years) have you been in a formal leadership position within the Extension System? _____

8. In the space provided below, please list the position titles of all positions you have held within the Extension System.

_____

_____

_____

9. In the space provided below, please complete the information about previous leadership training you have had.

College Courses: Please provide the year, course name, credit hours, and very brief description of the course.

_____

_____

_____

Workshops provided by non-Extension trainers: Please indicate the year, name of training organization/presenters, title of training, and a brief description of the workshop.

_____

_____

_____

Extension workshops: Please indicate the year, who conducted the training, length of training, title of training, and a brief description of the training.

_____

_____

_____

Thank you for your participation!

If you believe there are things we have not addressed that are important to leadership competency, please use the following space to record your comments.

APPENDIX C
MULTIFACTOR LEADERSHIP QUESTIONNAIRE (MLQ)

The Multifactor Leadership Questionnaire (MLQ) Form 5X was developed, tested, and copyrighted by Bass & Avolio (2000a) and is published by Mind Garden, Inc. The following sample questions from the MLQ Leader Form 5X are reproduced with permission.

Use the following rating scale:

10. Not at all
11. Once in a while
12. Sometimes
13. Fairly often
14. Frequently, if not always

1.	I provide others with assistance in exchange for their efforts	0	1	2	3	4
2.	I talk about my most important values and beliefs	0	1	2	3	4
3.	I articulate a compelling vision of the future	0	1	2	3	4
4.	I help others develop their strengths	0	1	2	3	4
5.	I delay responding to urgent questions	0	1	2	3	

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BIOGRAPHICAL SKETCH

Lori Lynne Moore was born at Patrick Air Force Base, Florida, on October 3, 1972. She lived in Pensacola, Florida, until the 3rd grade when her family moved to Houston, Texas. She graduated from Clear Lake High School in May, 1990.

Ms. Moore entered Texas A&M University in College Station, Texas, in the fall of 1990. She received her B.S. degree in agricultural education (agricultural science) in May, 1994. She remained at Texas A&M University. In August 1996, she received her M.S. degree in animal science (meat science).

Upon graduation, Ms. Moore returned to Houston and began teaching agriculture at Alvin High School in Alvin, Texas, where she taught animal science, advanced animal science, introduction to agricultural science, horticulture, and advanced plant and soil science. During the summer of 1998, she changed schools and began teaching agricultural science classes at her alma matter, Clear Lake High School. While there, she taught courses in personal skills, landscape development, animal science, advanced animal science, floral design, and advanced floral design.

In August, 2000, Ms. Moore entered the Ph.D. program in the Department of Agricultural Education and Communication at the University of Florida where she specialized in agricultural leadership and teaching and learning. While working on her degree, she was a graduate teaching and research assistant where she assisted in the instruction of six different agricultural education courses, supervised student teachers, and collaborated on several research projects within the department.