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An Analysis of the Degree of Transformational Leadership Exhibited by Administrators of 1862 and 1890 Cooperative Extension Programs in States with Both Systems as a Predictor for the Attainment of State Match in Federal Fiscal Year 2004

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**An Analysis of the Degree of Transformational Leadership Exhibited by
Administrators of 1862 and 1890 Cooperative Extension Programs in States with
Both Systems as a Predictor for the Attainment of State Match in Federal Fiscal
Year 2004**

Dissertation

**Submitted to the
Graduate College of Marshall University**

**In Partial Fulfillment of the Requirements for the Degree of
Doctor of Education**

Ray Ali

2005

Key Words: Higher Education, Leadership, Cooperative Extension, State Match

ABSTRACT

An Analysis of the Degree of Transformational Leadership Exhibited by Administrators of 1862 and 1890 Cooperative Extension Programs in States with Both Systems as a Predictor for the Attainment of State Match in Federal Fiscal Year 2004

This study analyzed the degree of transformational leadership exhibited by 1862 and 1890 cooperative extension administrators in states with both extension systems as a predictor for the attainment of state match in federal fiscal year 2004. An additional focus of this study was to analyze institution type, sex, age, and years of experience as predictors for the attainment of state match in federal fiscal year 2004. The population of the study consisted of 1862 and 1890 cooperative extension program administrators in states containing both 1862 and 1890 institutions, N=110. Participants completed the Multifactor Leadership Questionnaire (MLQ) originally developed by Bernard Bass (1985), as well as an author-modified demographic component of the MLQ. Data analysis suggested that the only statistically significant predictor of state match was institution type, in which an 1862 program was approximately 25 times more likely than an 1890 program to receive its respective state match monies.

DEDICATION

This composition is devoted to my Wife and Better Half, Michele, who was the first to realize that although I came from a common place, I maintained a passionately uncommon view of the world.

ACKNOWLEDGEMENTS

I once believed that I had all of the answers, but continue to learn that I do not yet know all of the questions. The completion of this doctoral program is a manifestation of the dedication, belief, and inspiration of many individuals. I remain humbled by the esteemed consideration and guiding wisdom that these persons bestowed upon me.

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Dr. Barbara Nicholson's high standards of excellence have challenged me to strive for a firm appreciation for the art of leadership. Her opinions and knowledge effected a further ability to question latent assumptions regarding education.

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Dr. Nickey Jefferson first spoke with me when I was only twenty years of age. His mentorship and vocation of providing a voice for the voiceless compelled me to attempt to achieve his standards of excellence. I will spend my entire career attempting this.

Finally, and although last in sequence within this written form, definitively not last from my thoughts or in my heart, I, with the deepest gratitude, thank my Mother, Father, Sister, and family, who molded me into the man I am today.

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Chapter I

Introduction

Cooperative extension programs are in a state of transition in the 21st century. Due to the federal Agricultural Research, Extension, and Education Reform Act of 1998 (AREERA), said programs are threatened by a mandated state match (i.e. non-federal monies allocated by the state for the respective cooperative extension program) in order to continue receiving their respective federal appropriations (National Agricultural Research, Extension, and Teaching Policy Act, 1977; AREERA, 1998).

There are sixteen states that have both 1862 and 1890 cooperative extension programs, and one with three (Smith-Lever Act, 1914). Therefore, extension programs within these states are competing for finite resources from the same entity, their respective state legislatures, at a time when state funding for higher education is dwindling (Hebel, 2002). Furthermore, state legislators view support of higher education as discretionary (Hovey, 1999), and the maintenance of current state financing of higher education is projected to be difficult (Hovey, 1999).

Past leadership investigations within the *Journal of Extension* have found that aspects of transformational leadership, such as team-building, sharing leadership, and empowering subordinates, are critical to cooperative extension's continued existence (Paxson, Howell, Michael, & Wong, 1993; Sandmann & Vandenberg, 1995; Brown, Birnstihl, & Wheeler, 1996; Moore & Jones, 2001). In addition, the Kellogg Commission (1999), the Extension Committee on Organization and Policy (2002), and The Council of 1890 Presidents/Chancellors (2000) have called for further investigation

into the role of transformational leadership and resource development in cooperative extension programs.

Due to the state match mandate, one of the responsibilities of some cooperative extension administrators is to attain external funds from their state legislatures.

Leadership is critical to acquiring extramural funds (Grace, 1991; Tempel, 1991; Joyaux, 1997; Tromble, 1998; Day, 1998), the most effective style of which is transformational (Joyaux, 1997; Day, 1998). Transformational leaders are oriented to changing both the individual and the organization, communicating a vision, and motivating both internal and external constituents of the organization (Bass, 1985; Kirby, King, & Paradise, 1991; Joyaux, 1997; Day, 1998; Kark, Shamir, & Chen, 2003).

The following study is predicated upon four rationales found in the extant literature. First, studies in the *Journal of Extension* have found that transformational leadership is critical to cooperative extension's existence (Paxson, Howell, Michael, & Wong, 1993; Sandmann & Vandenberg, 1995; Brown, Birnstihl, & Wheeler, 1996; Moore & Jones, 2001). Second, prior investigations of cooperative extension call for further inquiry into transformational leadership and resource development (Paxson, Howell, Michael, & Wong, 1993; Sandmann & Vandenberg, 1995; Brown, Birnstihl, & Wheeler, 1996; Kellogg Commission, 1999; The Council of 1890 Presidents/Chancellors, 2000; Moore & Jones, 2001; ECOP, 2002). Third, there is competition for state match by 1862 and 1890 cooperative extension programs from the same respective legislatures (NARETPA, 1977; AREERA, 1998). Fourth, although transformational leadership is purported to be a critical leadership trait in the acquisition of extramural funds (Rosso,

1991; Tempel, 1991; Day, 1998; Tromble, 1998), there is an empirical paucity in the literature to support this assertion.

Therefore, this study attempts to analyze the degree of transformational leadership exhibited by administrators of 1862 and 1890 cooperative extension programs in states with both systems as a predictor for the attainment of state match in federal fiscal year (FFY) 2004. This study of transformational leadership can be accomplished via the employment of the Multifactor Leadership Questionnaire (Bass, 1985; Hartog, Den, Van Muijen & Jaap, 1997; Carlessa, 1998).

Federal Legislation Establishing 1862 and 1890 Land-Grant Institutions

The United States government established land-grant institutions with the passage of the First Morrill Act of 1862. The legislation granted each state and territory 30,000 acres of public land for each senator and representative in Congress at the time. These lands were sold, with proceeds establishing in each state an endowment to support at least one institution in which the agricultural and mechanical arts would be the main focus of instruction (First Morrill Act, 1862).

In 1890, the US Congress passed the Second Morrill Act, which provided funds to enhance the academic programs established by the 1862 legislation. The Act further stipulated that no federal monies would be disbursed to states for the support of a college in which a distinction of race or color was made in the admission of students. However, the separate establishment of a college for white or black students would be held in compliance with the 1890 law, providing that the federal funds received by the state were equitably distributed (Second Morrill Act, 1890). As a result, eighteen 1890 institutions were established in seventeen states (primarily Southern states, including Delaware and

West Virginia) that observed the legalized separation of the races (The Council of 1890 Presidents/Chancellors, 2000).

The Smith-Lever Act of 1914 established the Cooperative Extension System. This Act stipulated that there be an extension of the agricultural knowledge founded and instructed at the land-grant schools to be provided to citizens of the states (Smith-Lever Act, 1914). However, it was not until the passage of Public Law 89-106, in 1972, that federal funds were provided to 1890 Institutions for cooperative extension programming (Public Law 89-106, 1972). Formula funding was made permanent by the Food and Agriculture Act of 1977 (Food and Agriculture Act, 1977).

Aspects of Transformational Leadership in Past Research of Cooperative Extension

In 1995, Sandmann and Vandenberg conducted a study investigating a shift of extension programs from hierarchical and mechanical models into heterarchical, organic leadership modes. The study concluded that leadership development for the 21st century is centered in groups and organizations, rather than individuals, and engages the group in a spirit of shared leadership (Sandmann & Vandenberg, 1995). In addition, the study defined leadership within cooperative extension as a set of relationships among organizational members, in which everyone within the organization can play leadership roles at various times (Sandmann & Vandenberg, 1995). Summarily, Sandmann and Vandenberg (1995) maintained that extension programs should embrace shared leadership and decision-making from within the organization, or in other words, the heterarchical framework.

Brown, Birnstihl, and Wheeler (1996) conducted another study regarding the impact of transformational leadership on cooperative extension work groups. The

authors frame the study around Bass' concept of transformational leadership. In addition, the Multifactor Leadership Questionnaire (MLQ) was utilized to assess transformational leadership within a leadership cohort consisting of two administrators, eight staff members, and forty-seven subordinates (Brown, Birnstihl, & Wheeler, 1996).

The study concluded that transformational leadership characteristics positively correlate to personal qualities of the leader and desired organizational outcomes, such as job satisfaction and organizational effectiveness (average correlation for transformational leadership characteristics was .96). The examination also concluded that studies of transformational leadership show great promise for the cooperative extension system, and that further studies should be utilized with larger samples to be more representative of the system as a whole (Brown, Birnstihl, & Wheeler, 1996).

The above referenced leadership study is the only one that obtained data from extension professionals utilizing the Multifactor Leadership Questionnaire. However, the sample size consisted only of staff from the Nebraska Cooperative Extension Division (Brown, Birnstihl, & Wheeler, 1996). This current study, however, will not only employ the MLQ, but will also disseminate it among extension administrators in 35 institutions.

Another study, commissioned by the United States Department of Agriculture (USDA), focused upon leadership development in cooperative extension. Numerous leadership competencies were found to be necessary by the report, including the ability to work with groups; build teams; understand leadership styles; influence public policy; and comprehend social change (Paxson, Howell, Michael, & Wong, 1993).

A qualitative study specifically focused upon six African-American female administrators within the 1890 cooperative extension system. It investigated their

aspirations, values, motives, and actions in their rise to positions of management within the system. Participants described their challenges, and also the attributes they believed contributed to their success (Moore & Jones, 2001).

The study found that the participants, in consideration of fiscal constraints affecting respective extension programs, attributed their success to a number of items, including their ability to serve as positive role models to their subordinates; encouraging creativity and risk-taking; fostering a spirit of teamwork and open communication; serving as mentors for aspiring leaders; and supporting each other for problem-solving and collaboration. The investigators also recommended further study into the differences and similarities among the female administrators by using leadership assessment tools (Moore & Jones, 2001).

The Moore and Jones study (2001) provided qualitative insights into the leadership roles of African-American female administrators at 1890 institutions. The focus of the current study, however, is also to obtain quantitative data from the same category of administrators.

The findings cited in the above studies of cooperative extension illustrate that the effective leader is able to work with groups, build teams, share leadership, and empower subordinates to effect organizational goals (Paxson, Howell, Michael, & Wong, 1993; Sandmann & Vandenberg, 1995; Brown, Birnstihl, & Wheeler, 1996; Moore & Jones, 2001). These critical qualities of an effective leader are analogous to both earlier and concurrent works regarding the definition of transformational leadership by Bass (1985), Kirby, King, & Paradise (1991), and Kark, Shamir, & Chen (2003).

Transformational Leadership

Transformational leadership is oriented toward changing both the individual and the organization (Kirby, King, & Paradise, 1991). Values and interests of subordinates, once addressed by the leader, can motivate the former to perform beyond their own expectations, and thereby positively alter the organization as a whole (Kark, Shamir, & Chen, 2003).

Transformational leadership theory is based upon four components: idealized influence (charisma); inspirational motivation; intellectual stimulation; and individualized consideration (Bass, 1985; Kirby, King, & Paradise, 1991). Through the utilization of charisma, leaders are able to display conviction and establish trust. Leaders articulate a vision for the future through the use of inspirational motivation. Leaders also question old assumptions, traditions, and beliefs, by way of the intellectual stimulation of subordinates. In addition, leaders, through individualized consideration, are cognizant of follower needs, abilities, and aspirations (Bass, 1985).

Transformational leadership is not a mutually exclusive utility employed by the leader. Instead, the leader in different circumstances and intensities may use varying degrees of transformational leadership (Howell & Avolio, 1993). Furthermore, as there have been components of the transformational leadership style found among cooperative extension professionals (Paxson, Howell, Michael, & Wong, 1993; Sandmann & Vandenberg, 1995; Brown, Birnstihl, & Wheeler, 1996; Moore & Jones, 2001), the literature also reveals arguments maintaining that transformational leadership is the most effective style for the acquisition of external funds as well. However, there is a paucity of empirical data in said literature.

Transformational Leadership and Attaining Extramural Funds

External funds are raised by building relationships with those outside of the institution in order to acquire political and financial support (Tromble, 1998). As such, there are five sources from which monies may be raised. An organization may obtain resources from individuals, corporations, foundations, associations, and government (Rosso, 1991; Day, 1998). This study will focus upon state governments as the sources of external funds raised by 1862 and 1890 cooperative extension programs, in order to satisfy the state match requirement for federal fiscal year 2004.

Leadership is critical with respect to the procurement of additional funds (Grace, 1991; Day, 1998). Grace maintains that a team approach should be emphasized, in which members are empowered by the organizational and leadership structures to raise monies (1991). In addition, successful leaders keep team members involved and motivate them to achieve organizational goals throughout the process of strategy and resource development, by sharing responsibilities (Grace, 1991; Day, 1998).

Effective leaders create a vision and motivate followers to achieve that vision by employing aspects of transformational leadership (Grace, 1991; Joyaux, 1997; Day, 1998). Leaders construct an ideal image of the organization (Day, 1998). This is inclusive of communicating the vision to others, such as internal (e.g. staff members) and external constituencies (e.g. public officials). Furthermore, effective leaders inspire the team in the pursuit of additional funds (Rosso, 1996). Such leaders also operationalize the vision by creating effective policies and procedures (Day, 1998). Finally, the leader manifests the organizational vision through the utilization of personal practices (Day, 1998).

Therefore, transformational leadership is thought to be critical to the success of extramural fund acquisition, whereby leaders articulate and communicate a vision, build a team, inspire and motivate that team, and reflect the articulated vision through their own personal practices (Grace, 1991; Rosso, 1996; Joyaux, 1997; Day, 1998). In turn, leaders employing the transformational style are also better able to cultivate beneficial relationships with funders (Grace, 1991; Joyaux, 1997; Day, 1998). However, while the literature maintains that transformational leadership is the most effective style in resource development (Grace, 1991; Joyaux, 1997; Day, 1998), there is also a lack of empirical data with respect to the degree of success of the transformational leader.

The pursuit of extramural funds, in addition, must not be confused with the concept of lobbying. This is necessary for two reasons. First, nonprofit organizations, such as higher education institutions, operate under specific federal laws that preclude the use of institutional funds for the financial support of political candidates, electoral campaigns, and policies (Day, 1998). Second, the United States Department of Agriculture allocates federal monies to cooperative extension under the guidance of policies defined by the Executive Branch's Office of Management and Budget (OMB). OMB Circular A-110 (1999), which is further delineated by OMB Circular A-21 (2000), explicitly addresses the preclusion of federal allocations for the purposes of lobbying.

Circular A-21 prohibits any attempt to influence the introduction, enactment, or modification of any federal or state legislation by utilizing lobbying practices (OMB, 2000). The same circular, however, does allow for the use of technical and factual presentations upon the request of federal and state governments, and or their respective agents (OMB, 2000). The focus of this study, therefore, is not upon lobbying to state

legislators, as such behavior is prohibited (OMB, 2000), but rather the pursuit of state match, as permitted by OMB Circular A-21 in its allowance for technical and factual presentations (OMB, 2000).

State Match

The amended 1977 National Agricultural, Research, Extension, and Teaching Policy Act (NARETPA) stipulates that states shall provide matching funds from non-federal sources for cooperative extension (NARETPA, 1977). This applies to both 1862 and 1890 extension programs, and is further delineated by the federal Agricultural Research, Extension, and Education Reform Act of 1998 (AREERA).

With respect to 1862 extension programs, AREERA maintains that no federal funding will be provided to states in excess of the amount of non-federal monies the state makes available for the extension program (AREERA, 1998). Therefore, any monies reduced by a state that is less than the formula funding for extension established by the Smith-Lever Act of 1914 will result in an associated loss of funding for that 1862 cooperative extension program.

The Agricultural Research, Extension, and Education Reform Act also addresses 1890 cooperative extension in a manner similar to the 1862 programs (AREERA, 1998). In addition, the Code of Federal Regulations (CFR) delineates that each 1890 land-grant institution will be entitled to their allocation of federal extension formula funds less an amount equal to any required non-federal matching that the state fails to provide.

AREERA further directs a state matching requirement to commence with 50% of federal funding for federal fiscal year 2002, and to increase in increments of 10% until FFY 2007, when it will reach 100% of USDA appropriations (AREERA, 1998).

An exacerbation of the state match mandate is that state budgets for all higher education expenditures continue to decline (Hebel, 2002), state legislators view support of higher education as discretionary (Hovey, 1999), and the maintenance of current state financing of higher education is projected to be difficult (Hovey, 1999). However, as the preceding studies reveal, analyses of the transformational leadership qualities of extension administrators in their pursuit of state monies (Joyaux, 1997; Day, 1998) could provide insights into the potential for attainment of state match.

National Cooperative Extension Organizations, Transformational Leadership, and Resource Development

In 1999, the Kellogg Commission funded an investigation into the status of 1862 and 1890 land-grant institutions, and their cooperative extension programs. The study was administered by the presidents of a number of member institutions of the National Association of State Universities and Land-Grant Colleges (NASULGC). Two of the findings focused upon the engaged institution and a coherent campus culture (Kellogg Commission, 1999).

Due to public frustration over perceived unresponsiveness by land-grant universities, the study found that institutions should consider redefining their roles in American society by engagement. This term was defined as a process by which campuses redesigned their teaching, extension, and research functions to become more sympathetically and productively involved with their constituent communities, inclusive of government. In addition, the study found that leadership was critical in the engagement process because of the lack of stable funding for extension programming. Effective leadership would lead to the establishment of partnerships, such as with state

governments, through which resources could be leveraged to support cooperative extension (Kellogg Commission, 1999).

The second finding of the Kellogg Commission found that the roles of academic administrators will engender leadership responsibilities similar to those formerly reserved for presidents and chancellors, inclusive of raising monies. These leaders will need to articulate a vision, define goals, and act as a public voice, while conjointly focusing upon the external interests of the department/college and the institution, such as procuring additional funds (Kellogg Commission, 1999).

In response to the Kellogg Commission's findings, the Extension Committee on Organization and Policy (ECOP), which is composed of both 1862 and 1890 extension administrators, published: *The Extension System: A Vision for the 21st Century* (2002). The report concurred with the Kellogg Commission that extension must adjust to rapid changes within society, the economy, and technology.

The report also maintained that leadership was necessary for a paradigm shift to occur from a campus that is disconnected with community needs toward a fully engaged university. Successful leaders would be able to leverage additional resources through beneficial partnerships with constituents, such as state government, while understanding and serving their comprehensive needs. Furthermore, the study also called for consensus regarding the scholarship of engagement (ECOP, 2002).

Presidents of the 1890 institutions also responded to the Kellogg Commission in their report: *Strategically Approaching the Future: 1890 Land-Grant System – A Strategic Plan* (2000). This plan focuses upon the core stratagems of resource and leadership development.

Due to the limitations of fiscal resources, extension programs are being hindered from truly interfacing with communities. In addition, federal, state, and local resources are shrinking, political support is inconsistent, and dependence on the USDA for funding is at-risk (The Council of 1890 Presidents/Chancellors, 2000).

In order to address these issues, the 1890 presidents and chancellors stressed the importance of leadership development that focuses upon personal and group leadership skills that will empower individuals and communities. Furthermore, the leadership should be innovative and transformational, stressing the importance of collaborations for augmented resources (The Council of 1890 Presidents/Chancellors, 2000).

The aforementioned studies by national cooperative extension organizations focus primarily upon the goals of redefining extension in the 21st century through the process of engagement (Kellogg Commission, 1999; ECOP, 2002) and resource development (Kellogg Commission, 1999; The Council of 1890 Presidents/Chancellors, 2000; ECOP, 2002). In both of these processes, leadership is critical to the establishment of partnerships with constituent groups, such as state government, to leverage resources (Kellogg Commission, 1999; ECOP, 2002).

Leadership is also of vital importance to empower individuals and communities, and should embrace characteristics of the transformational style (The Council of 1890 Presidents/Chancellors, 2000). These critical aspects of leadership reflect the crucial role of the extension administrator, in which constituencies, such as state government, are cultivated in order to leverage resources (Tempel, 1991; Tromble, 1998). In addition, the transformational qualities of the extension administrator involved in said process may also dictate the success of monies raised (Grace, 1991; Day, 1998), such as state match.

A Measure of Transformational Leadership: the Multifactor Leadership Questionnaire

The studies above illustrate the importance of the cooperative extension administrator in the procurement of extramural funds (Tempel, 1991; Tromble, 1998; Kellogg Commission, 1999; The Council of 1890 Presidents/Chancellors, 2000; ECOP, 2002), the success of which may be dictated by the degree of transformational leadership exhibited (Grace, 1991; Joyaux, 1997; Day, 1998). These studies also call for further investigation into resource development and transformational leadership (Kellogg Commission, 1999; The Council of 1890 Presidents/Chancellors, 2000; ECOP, 2002). However, many extension professionals currently exhibit aspects of the transformational style (Bass, 1985; Kirby, King, & Paradise, 1991; Michael, & Wong, 1993; Sandmann & Vandenberg, 1995; Brown, Birnstihl, & Wheeler, 1996; Paxson, Howell, Moore & Jones, 2001; Kark, Shamir, & Chen, 2003), as was concluded in prior studies of cooperative extension that utilized the MLQ (Brown, Birnstihl, & Wheeler, 1996).

The Multifactor Leadership Questionnaire (MLQ) is predicated upon the works of Bernard Bass, in which he expounded upon transformational leadership theory (Bass, 1985). This instrument has been revised several times, and is the most widely used instrument to assess transformational leadership (Hartog, Den, Van Muijen & Jaap, 1997; Carlessa, 1998). The MLQ assesses four dimensions of transformational leadership, defined as charisma, inspiration, individual consideration, and intellectual stimulation. Therefore, the MLQ can be utilized to assess degrees of transformational leadership style. There have been a number of studies conducted regarding the statistical value of this measurement instrument.

A 1997 study assessed the internal consistency of the MLQ by administering it to approximately 1200 individuals representing commercial institutions (e.g. fast food), healthcare organizations (e.g. nursing homes), and local government organizations (Hartog et al., 1997). The analysis found that Cronbach's alpha, a statistical measure of internal consistency (Gay, 1996), for transformational leadership was .95 (Hartog et al., 1997).

Another study assessing the internal consistency of the MLQ was conducted in 1999. Individuals (N=3768) representing 14 independent samples of US and foreign firms and agencies (e.g. US undergraduate students, a US government research agency, Taiwanese undergraduate students) responded to the MLQ. Estimates of internal consistency, which indicates the stability of a measurement instrument (Gay, 1996), were above .70 for transformational leadership behaviors (Avolio & Bass, 1999).

Discriminant analysis measures the correlational level to which test scores from a focal test are not highly related to scores on another test. This process indicates that which a test does not measure (Johnson & Christensen, 2004). Carlessa conducted a study in which the MLQ was administered to 1440 staff members who worked in an Australian bank. Her analysis concluded that the MLQ is consistent with Bass' conception of transformational leadership (operationalized by the four factors). In addition, the MLQ essentially assesses a single overarching construct, which is transformational leadership (Carlessa, 1998).

Purpose of the Study

The purpose of this study was to analyze the degree of transformational leadership exhibited by 1862 and 1890 cooperative extension administrators in states with both

extension systems as a predictor for the attainment of state match in federal fiscal year 2004. An additional focus of this study was to analyze institution type, sex, age, and years of experience as predictors for the attainment of state match in federal fiscal year 2004.

Research Questions

1. Can the degree of transformational leadership exhibited by 1862 and 1890 cooperative extension administrators predict the attainment of state match for federal fiscal year 2004 with statistical significance?
2. Does the type of land-grant institution predict the attainment of state match for federal fiscal year 2004 with statistical significance?
3. Does the sex of 1862 and 1890 cooperative extension administrators predict the attainment of state match for federal fiscal year 2004 with statistical significance?
4. Can the age of 1862 and 1890 cooperative extension administrators predict the attainment of state match for federal fiscal year 2004 with statistical significance?
5. Can the years of experience of 1862 and 1890 cooperative extension administrators in their current positions predict the attainment of state match for federal fiscal year 2004 with statistical significance?

Operational Definitions

For the purposes of this investigation, the proceeding operational definitions were used.

1. 1862 Cooperative Extension Program – cooperative extension programs established by the 1914 Smith-Lever Act in institutions founded under the authority of the 1862 Morrill Act, in states that also have 1890 cooperative extension programs.
2. 1890 Cooperative Extension Program – cooperative extension programs established by the 1914 Smith-Lever Act in institutions founded under the authority of the 1890 Morrill Act, in states that also have 1862 cooperative extension programs.
3. 1862 Extension Administrator – personnel (e.g. Assistant Directors, Associate Directors, Directors, Deans, Assistant Vice-Presidents, etc.) in 1862 cooperative extension programs that are responsible for obtaining state match, as reported in the author-modified demographic component of the Multifactor Leadership Questionnaire (MLQ).
4. 1890 Extension Administrator – personnel (e.g. Assistant Directors, Associate Directors, Directors, Deans, Assistant Vice-Presidents, etc.) in 1890 cooperative extension programs that are responsible for obtaining state match, as reported in the author-modified demographic component of the MLQ.
5. Type of Land-grant Institution – either an 1862 or 1890 land-grant institution, as reported in the author-modified demographic component of the MLQ.
6. Sex of 1862 and 1890 cooperative extension administrators – either male or female, as reported in the author-modified demographic component of the MLQ.

7. Age of 1862 and 1890 cooperative extension administrators – number of years of age, in categories, as reported in the author-modified demographic component of the MLQ.
8. Years of experience of 1862 and 1890 cooperative extension administrators in their current positions – number of years in present position, as reported in the author-modified demographic component of the MLQ.
9. Transformational Leadership – a leadership style based upon four components: idealized influence (charisma), inspirational motivation, intellectual stimulation, and individualized consideration (Bass, 1985; Kirby, King, & Paradise, 1991), as measured by the Multifactor Leadership Questionnaire (MLQ).
10. Responsibility for Obtaining State Match – the development of and/or participation in studies, reports, or presentations for public officials and/or their agents, which is allowed by OMB Circulars A-110 and A-21 (OMB, 2000), as reported by the administrator on the author-modified demographic component of the MLQ.
11. 1890 Extension Program State Match - the attainment of state monies at 70% of the amount of federal funds appropriated (AREERA, 1998), as reported by the administrator on the author-modified demographic component of the MLQ, and cross-checked with related USDA reports pertaining to the institutional attainment of state match.
12. 1862 Extension Program State Match – the attainment of state monies at 100% of the amount of federal funds appropriated (AREERA, 1998), as

reported by the administrator on the author-modified demographic component of the MLQ, and cross-checked with related USDA reports pertaining to the institutional attainment of state match.

Significance of the Study

Cooperative extension programs provide invaluable educational outreach services to limited-resource and underserved clientele. These programs include 4-H (i.e. youth development), health and wellness, community development, workforce preparation, and family finance initiatives to persons not enrolled in college. If extension programs are unable to meet the state match requirement, they will cease to exist, and tens of thousands of individuals would no longer have access to educational programs that could assist them in bettering the quality of their lives.

From a historical perspective, land-grant institutions were founded by a public trust, in which federal lands were granted to states for the perpetual maintenance of at least one agricultural and mechanical college. Knowledge was to be founded and expanded at the campus through research, disseminated by instruction, and offered to the masses through extension programs. If extension programs cease, then one portion of the land-grant institution's tripartite mission will be negated. A university's pact with the public will be violated, and a unique component of the American higher education enterprise will no longer exist.

Financial constraints (Hebel, 2002) and federal law (NARETPA, 1977; AREERA, 1998) require extension administrators to address the mandated state match. Leadership is critical to the success of this process (Grace, 1991; Tempel, 1991; Joyaux, 1997; Tromble, 1998; Day, 1998), the most effective style of which is transformational (Grace,

1991; Joyaux, 1997; Day, 1998). However, there is a lack of empirical data in the research. Therefore, this seminal study's empirical findings could contribute to an expanding knowledge base for researchers of and practitioners in three fields: cooperative extension, transformational leadership, and extramural fund acquisition.

Nonetheless, studies and reports regarding leadership concluded that aspects of transformational leadership show great promise for the cooperative extension system, and further studies should be utilized (Paxson, Howell, Michael, & Wong, 1993; Sandmann & Vandenberg, 1995; Brown, Birnstihl, & Wheeler, 1996; Kellogg Commission, 1999; The Council of 1890 Presidents/Chancellors, 2000; Moore & Jones, 2001; ECOP, 2002). This study responded to the aforementioned's calling for further inquiry into transformational leadership and resource development.

Period of employment is also a salient issue. As the average years of experience of current professionals within 1862 and 1890 cooperative extension is 20 (USDA, 2004), a change in administrative leadership will most likely occur within the next ten years. Therefore, the results of this study can influence administrators who hire cooperative extension leaders to consider the leadership styles of candidates in the selection process. In addition, a focus of the current study was to ascertain whether or not years of experience also influences the attainment of state match.

Transformational leadership can be taught to personnel through training and staff development programs. Higher education administrators can employ these educational programs for cooperative extension leaders in order to increase the odds of attaining state match in the future.

Finally, an exploratory analysis of transformational leadership exhibited

by administrators, and its implications for state match, can serve as a part of the mechanism for the continued programmatic and fiscal development (i.e. engagement) by 1862 and 1890 cooperative extension programs into the 21st century.

Limitations of the Study

1. The population for this study was cooperative extension administrators in both 1862 and 1890 institutions that are located in states with both 1862 and 1890 extension programs. Therefore, the results of this study may not be generalizable to the extension programs of any other state or US territory with other land-grant institutions (Johnson & Christensen, 2004).
2. The population for this study consisted only of cooperative extension administrators who were responsible for attaining state match.
3. This study did not address the varying higher education governance structures (e.g. coordinating board, consolidated governing board, etc.) in the seventeen states.
4. This study did not address the varying political structures or party affiliations of public officials in the seventeen states.
5. This study did not address the relationships between/among ethnicity with leadership style and the attainment of state match.
6. This study was limited to the investigation of state match for federal fiscal year 2004 only.
7. The response bias on the Multifactor Leadership Questionnaire could limit the results of the study (Gay, 1996).

8. Self-reported information by respondents precludes verification of information. In addition, respondents' perceptions may be inaccurate with respect to understanding of the variables in context. The aforementioned are threats to both reliability and internal validity (Yukl, 2002).

Method

Administrators of 1862 and 1890 cooperative extension programs were surveyed with the MLQ in order to determine their respective degree of transformational leadership. In addition, the demographic information from the MLQ ascertained if institutional state match was attained (as binary and ratio data) and if the respondent was responsible for obtaining it (yes or no). Those not involved in obtaining state match (e.g. by interfacing with state legislators and/or agents, developing factual presentations for the legislators/agents, etc.) were excluded from the study.

A logistical regression model was fitted to the data to estimate the probability (odds) of predicting state matching (or not) based upon the levels of transformational leadership (high or low). The logistic model was appropriate for this study because the independent and dependent variables are binary categorical outcomes, and the observations within these categories were independent. Furthermore, the independent variables of type of land-grant institution (1862 or 1890), participant sex, age, and years of experience were integrated into the logistic model.

In addition, the independent variable of transformational leadership was operationalized using the ordinal scale of measurement. The independent variable of years of experience and the dependent variable of state match were also both delineated by the ratio scale. Therefore, linear regression analysis was utilized in this study.

Whereas logistic regression was utilized to predict probabilities, linear regression was employed in order to predict outcomes (Gay, 1996). In the case of linear regression, independent variables were of the ordinal, interval, or ratio scales of measurement.

Summary

Due to the federal mandate of state match (NARETPA, 1977; AREERA, 1998), cooperative extension programs are facing a funding dilemma. If state match is not obtained, extension programs may cease to exist in certain states. Therefore, the status quo of relying primarily on federal appropriations can no longer be maintained.

Transformational leaders have the ability to change an organization (Kirby et al., 1991). Furthermore, transformational leadership styles have a strong correlation with organizational outcomes (Brown et al., 1996), one of which, for extension programs, is state match.

As the role of extension administrators has grown to involve the acquisition of funding from state governments (Rosso, 1991; Tempel, 1991; Joyaux, 1997; Day, 1998; Tromble, 1998), transformational leadership within said processes is critical (Grace, 1991; Day, 1998). The success of obtaining additional monies is based upon the leader's ability to build and motivate the team by empowering its members, which can be accomplished through the four constructs of transformational leadership (Bass, 1985; Grace, 1991; Kirby, King, & Paradise, 1991; Day, 1998; Kark, Shamir, & Chen, 2003). However, although the literature maintains that transformational leadership is the most effective style in attaining extramural funds (Grace, 1991; Joyaux, 1997; Day, 1998), their conclusions are not empirically based with respect to the degree of success of the transformational leader.

Recent leadership investigations within cooperative extension programs have found some aspects of transformational leadership to be critical to its success. These include shared leadership (Sandmann & Vandenberg, 1995), personal characteristics of the leader (e.g. charisma) strongly and positively influencing organizational outcomes (Brown et al., 1996), and the ability to build teams (Paxson et al., 1993; Moore & Jones, 2001). But these studies also call for further inquiry into the leadership construct within cooperative extension programs. In addition, the Kellogg Commission (1999), ECOP (2002), and The Council of 1890 Presidents/Chancellors (2000) have called for further investigation into the role of transformational leadership and resource development in cooperative extension programs. Transformational leadership can be reliably assessed with the use of the MLQ (Bass, 1985; Brown, Birnstihl, & Wheeler, 1996; Hartog, Den, Van Muijen & Jaap, 1997; Carlessa, 1998).

As a result of and in response to the above, an empirical investigation of the degree of transformational leadership displayed by 1862 and 1890 cooperative extension administrators as a potential predictor for the attainment of state match in federal fiscal year 2004 was needed. Further, these results can contribute to an expanding knowledge base that may assist land-grant institutions in satisfying the federal state-match mandate through their applications of transformational leadership within cooperative extension programs.

Chapter II

Review of the Literature

Introduction

Land-Grant institutions were established by federal legislation (Morrill Act, 1862; Morrill Act, 1890). In addition, cooperative extension programs were created within said institutions by the Smith-Lever Act (Smith-Lever Act, 1914). This Act provided funding to 1862 extension programs for the transmission of agricultural knowledge to citizens within the states of the respective institutions. 1890 extension programs, in contrast, did not receive federal funding until 1972 (Public Law 89-106, 1972; Food and Agriculture Act, 1977).

Past research concluded that there are aspects of transformational leadership within cooperative extension organizations (Paxson, Howell, Michael, & Wong, 1993; Sandmann & Vandenberg, 1995; Brown, Birnstihl, and Wheeler, 1996; Moore & Jones, 2001). Said research is from the *Journal of Extension*, which is the professional journal of extension.

Transformational leadership is a theory that is predicated upon the empowerment of the individual for the better good of the group (Bass, 1985; Kirby, King, & Paradise, 1991; Kark, Shamir, & Chen, 2003). The four constructs of charisma (idealized influence), inspirational motivation, intellectual stimulation, and individualized consideration comprise transformational leadership (Bass, 1985; Kirby, King, & Paradise, 1991).

The literature also indicates that transformational leadership is the most effective style for the acquisition of external funds (Grace, 1991; Rosso, 1996; Joyaux, 1997; Day,

1998). In the aforementioned process, transformational leaders articulate and communicate a vision, build a team, inspire and motivate that team, and reflect the articulated vision through their own personal practices (Grace, 1991; Rosso, 1996; Joyaux, 1997; Day, 1998). However, there is an empirical paucity in the contentions of the literature.

Cooperative extension's acquisition of extramural funds from their respective state legislatures is critical because the amended 1977 National Agricultural, Research, Extension, and Teaching Policy Act (NARETPA) stipulates that states shall provide matching funds from non-federal sources for cooperative extension (NARETPA, 1977). This applies to both 1862 and 1890 extension programs, and is further delineated by the federal Agricultural Research, Extension, and Education Reform Act of 1998 (AREERA, 1998). The attainment of state funding may be difficult due to unstable projections for state support of higher education (Hovey, 1999; Hebel, 2002).

Studies by national cooperative extension organizations focus primarily upon the goals of redefining extension in the 21st century through the process of engagement (Kellogg Commission, 1999; ECOP, 2002) and resource development (Kellogg Commission, 1999; The Council of 1890 Presidents/Chancellors, 2000; ECOP, 2002). In both of these processes, leadership is critical to the establishment of partnerships with constituent groups, such as state government, to leverage resources (Kellogg Commission, 1999; ECOP, 2002). These reports also call for further research into leadership and resource development (Kellogg Commission, 1999; The Council of 1890 Presidents/Chancellors, 2000; ECOP, 2002).

Federal Legislation Establishing 1862 and 1890 Land-Grant Institutions

On July 2, 1862, the United States Congress passed the First Morrill Act, which donated lands for colleges of agriculture and the mechanical arts to each state (First Morrill Act, 1862). The Act apportioned 30,000 acres of federal land for each senator and representative in Congress to the respective state. The states, in turn, were then able to sell the lands, in order to establish a perpetual fund (endowment). The interest from the endowment was then appropriated by the respective state to found and maintain at least one college. In these institutions, the focus of the curricula, without excluding the scientific and classical studies, was the agricultural and mechanical arts, inclusive of military tactics (First Morrill Act, 1862).

The United States Congress passed the Second Morrill Act on August 30, 1890 (Second Morrill Act, 1890). This Act appropriated monies to each state for the additional maintenance of agricultural and mechanical colleges established under the 1862 Morrill Act. In addition, the Second Morrill Act prohibited the appropriation of monies to states whereby the established 1862 institution made a distinction of race or color in its admission of students. However, the establishment of a separate land-grant college for African-American students would be considered to comply with the Act (Second Morrill Act, 1890).

Therefore, in states where there was no distinction of race or color in the admission of students, the Second Morrill Act appropriations were provided for the institution established by the 1862 legislation. However, in states whose 1862 colleges did not admit African-American students, the 1890 appropriations led to the founding of agricultural and mechanical colleges for black students. As a result, eighteen 1890

institutions were established in seventeen states (primarily Southern states, including Delaware and West Virginia) that observed the legalized separation of the races (The Council of 1890 Presidents/Chancellors, 2000).

The Smith-Lever Act of 1914 established cooperative extension programs at the land-grant schools of 1862 and 1890 (Smith-Lever Act, 1914). These extension programs were to diffuse research knowledge, and the practical applications thereof, related to agriculture, home economics, and rural energy. Furthermore, such demonstrations and publications were to be imparted to persons not attending the land-grant institutions (Smith-Lever Act, 1914).

Appropriations were authorized under the Smith-Lever Act to initiate agricultural extension work in cooperation with the United States Department of Agriculture (USDA). These appropriations were based upon census data, and monies allotted were formulated as per the rural and farm populations of each state. Furthermore, in the states that maintained both 1862 and 1890 land-grant colleges, Smith-Lever Act appropriations made to said states would be under the direction of respective state legislatures (Smith-Lever Act, 1914).

It was not until the passage of Public Law 89-106, in 1972, that federal funds were provided directly to 1890 institutions for cooperative extension programming (Public Law 89-106, 1972). Appropriations were made permanent by the Food and Agriculture Act of 1977 (Food and Agriculture Act, 1977).

Transformational Leadership

There have been many studies regarding transformational leadership. For the purposes of this study, however, the works of Kirby, King, and Paradise (1991), Kark,

Shamir, and Chen (2003), Howell and Avolio (1993), and Bernard Bass (1985) will be focused upon in order to provide a foundation for both the definition and constructs of transformational leadership. The former three studies (Kirby, King, & Paradise, 1991; Howell & Avolio, 1993; Kark, Shamir, & Chen, 2003), nevertheless, are primarily predicated upon the works of Bass (1985).

Bass commences his discourse on transformational leadership by discussing Maslow's (1954) hierarchy of needs (Bass, 1985). Maslow asserted that an individual must satisfy basic needs for survival to a reasonable degree prior to becoming concerned about his or her own safety and security. Once the latter requisites are met, then the individual can focus upon the need for love and affiliation with family and friends. Upon fulfilling the aforementioned, the individual can then concentrate on self-esteem and recognition. The highest level of the hierarchy, however, is the need for self-actualization, or realizing one's own potential. Furthermore, Maslow viewed the fulfillment of said needs as interdependent and overlapping (Maslow, 1954).

The work of Burns (1978) is then expounded upon by Bass, who asserts that Maslow's hierarchy of needs (Maslow, 1954) was fundamental to the transformational process as defined by Burns (1978). Bass, however, maintains that although an upward shift in level of need is indicative of a transformation occurring, needs may in fact be expanded at the same hierarchical level or even modified from the top-down (Bass, 1985).

Bass then summarizes a model for transformational leadership, utilizing Burns (1978) as a foundation. Bass maintains that said leadership can be attained in any one of three interrelated manners. First, level of awareness is raised. By doing so, the level of

consciousness regarding the value of designated outcomes, and methods to achieve them, are augmented. Second, transformation occurs when an individual's own self-interest is transcended for the good of the team or organization. Third, if an individual's level of needs is altered or the portfolio of needs and wants is expanded, transformation may be attained (Bass, 1985).

Although the work of Burns (1978) served as the basis for Bass' explication of transformational leadership, Bass maintains that there are two substantive ways in which his definition differs from Burns' definition (Bass, 1985). First, Bass added the expansion of the portfolio of needs and wants to Burns' (1978) original assertion. Second, Bass posited that Burns saw transformation as not only elevating, but also as the furtherance of good rather than evil. Bass disagrees with Burns on this point, citing Hitler as an example of a transformational leader through which evil was propagated (Bass, 1985).

Bass further defines transformational leadership as being based upon four primary constructs. The four components of transformational leadership discussed are charisma, inspirational leadership, individualized consideration, and intellectual stimulation (Bass, 1985).

Charisma is defined by Bass as a description for leaders who have profound and extraordinary effects on followers (Bass, 1985). Furthermore, leaders exhibiting charisma instill loyalty and devotion in subordinates. Charismatic leaders, in turn, can transform an organization, as followers are motivated to place the goals and objectives of the group above their own self-interests (Bass, 1985).

While Bass posits that charisma is the most important component of transformational leadership, he also maintains that there are requisite abilities, interests, and personality traits of the charismatic leader (Bass, 1985). First, charismatic leaders exude self-confidence and self-esteem. Second, extraordinary determination and capability set charismatic leaders apart from followers. Third, leaders with charisma have insights into the needs, values, and hopes of subordinates. Finally, charismatic leaders foster a want for achievement of the team's goals in followers (Bass, 1985).

Inspirational leadership is a second component of Bass' transformational leadership definition (Bass, 1985). Bass asserts that although inspirational leadership is a component of charisma, inspiration can be self-generated within the follower. Therefore, charisma is not a prerequisite for inspiration (Bass, 1985). In this assertion, Bass places the focus of inspiration within the follower.

With inspirational leadership, the self-interests of followers can be transcended for the good of the team. As Bass further explicates that inspirational leadership stimulates enthusiasm for the work of the group, he also maintains that there are a number of requisites for inspirational leadership (Bass, 1985).

First, inspirational leaders motivate extra effort in followers with an action-orientation. In this, the emphasis of the leader is upon actions, and not bureaucratic formalities (e.g. administrative protocols, organizational structures, etc.). Second, confidence is built within subordinates by the inspirational leader. Third, transformational leaders are able to inspire belief in the greater cause of the group. Finally, inspirational leaders are able to increase the expectations of their subordinates, which in turn leads directly to extra-efforts and outcomes of performance (Bass, 1985).

The third construct in Bass' definition of transformational leadership is individualized consideration (Bass, 1985). Bass maintains that this aspect of transformational leadership may be characterized by the leader's ability to foster participative management and focus upon the individual employee's need for growth and participation. The result of this leadership behavior is that follower satisfaction and productivity will be augmented (Bass, 1985). Bass goes on to define numerous aspects of individualized consideration.

Leaders who focus upon the individual needs of followers also practice the delegation of challenging work in order to increase subordinate responsibilities. Furthermore, opportunities for familiarity and contact are provided by the leader and extended to all followers, regardless of their organizational ranks. Individualized consideration also involves the leader's balance of formal versus informal communication. In the latter, the subordinate is better able to participate in the decision-making process. Additionally, the leader is sensitive to the subordinate's desire for information. In this manner, followers are able to feel as if they are participants in organizational developments, and not just spectators (Bass, 1985).

Transformational leaders employing individualized consideration are also able to delineate among differences in followers. In essence, every subordinate is different with various needs, and the transformational leader is cognizant of this in her addressing of employee issues. Finally, individual counseling is also of importance. Leaders are expected to be counselors, and the adept attention and responses to follower needs are critical in the success of the leader. As a part of the aforementioned process, mentoring is

of essential importance. In this manner, the values of leaders can continue within the organization through the protégés (Bass, 1985).

The fourth and final construct of transformational leadership is intellectual stimulation. Bass explains this concept as the leader's stimulation and alteration of subordinates' awareness of problems and problem solving (Bass, 1985). The follower, in turn, is better able to conceptualize and understand the nature of the problems faced by the organization. Furthermore, because of this augmented follower understanding, he or she will be better capable of participating in the problem solving process (Bass, 1985).

Bass (1985) cautions, however, that leaders who employ intellectual stimulation must be cognizant of the follower's own intellectual capabilities. In essence, a balance must be maintained so that the leader is able to intellectually communicate with the subordinate, without the message being transmitted in such a way that is incomprehensible to the follower. In addition, transformational leaders are able to utilize symbols and images as interpretations of organizational values. These symbols and images are also signs that the leader is in fact leading (Bass, 1985).

Intellectual stimulation may be delineated into a number of types (Bass, 1985). Rationally oriented leaders focus upon competence and independence in subordinates. Existentially oriented leaders concentrate on increasing trust among followers and building teams. Empirically oriented leaders rely primarily upon empirical data in order to improve continuity of the organization. There are also idealistically oriented leaders who are more oriented toward follower growth, adaptation, creativity, and learning (Bass, 1985).

Bass (1985) utilized Maslow's (1954) hierarchy of needs and Burns' (1978) contentions on leadership in order to provide a framework for his own definition of transformational leadership (Bass, 1985). This framework consists of the four constructs of charisma, inspirational leadership, individual consideration, and intellectual stimulation (Bass, 1985). Three additional studies (Kirby, King, & Paradise, 1991; Howell & Avolio, 1993; Kark, Shamir, & Chen, 2003), which are primarily predicated upon the work of Bass (1985), provide further insights into transformational leadership.

Howell and Avolio (1993) conducted a study that utilized transformational leadership to predict the organizational unit performance of a large Canadian financial institution. They based their analysis on Bass' assertion that transformational leaders could influence followers to perform beyond expectations (Bass, 1985). In addition, said leaders would cause, within subordinates, extra effort, commitment to the leader, intrinsic motivation, and a sense of purpose. Transformational leaders could appeal to the interests of followers, thereby maximizing performance due to collective and shared values (Bass, 1985).

The authors hypothesized that transformational leadership could significantly and positively predict unit performance (Howell and Avolio, 1993). The sample consisted of 78 managers representing the organizational units of investments, group insurance, general insurance, and individual life insurance. In addition, the investigators utilized Bass' Multifactor Leadership Questionnaire (MLQ) to ascertain the degree of transformational leadership employed by the sample (Howell and Avolio, 1993).

The analysis found that the average internal consistency of the MLQ for transformational leadership factors was .93 (Howell and Avolio, 1993). In addition, the

authors also found that the MLQ constructs demonstrated discriminant validity, indicating that the transformational leadership factors of the MLQ measured what they purported to measure (thereby also indicating strong construct validity). Finally, the study indicated that transformational leadership could in fact positively predict unit performance with statistical significance (Howell and Avolio, 1993).

Kark, Shamir, and Chen, (2003) also utilized the MLQ developed by Bass (1985) in a similar manner as Howell and Avolio (1993) above. Utilizing prior studies in which transformational leadership was found to substantially influence employee motivation and performance, as Howell and Avolio (1993) had done, the authors tested three hypotheses. First, they posited that transformational leadership positively relates to a follower's personal identification with the leader. Second, the researchers asserted that transformational leadership positively relates to subordinate identification with the group. Finally, the authors maintained that transformational leadership positively relates to subordinate empowerment (Kark, Shamir, and Chen, 2003).

The study's sample consisted of 888 employees in a large Israeli banking corporation, and consisted of mid-level managers of independent units. Kark, Shamir, and Chen (2003) utilized Bass' MLQ and determined that said instrument had adequate construct validity.

The study found that transformational leadership was positively related to both personal identification of the leader and social identification with the work unit by the followers. In addition, the results of the investigation also demonstrated that transformational leadership was related to follower sense of empowerment (Kark, Shamir, and Chen, 2003).

While Howell and Avolio (1993) and Kark, Shamir, and Chen (2003) conducted quantitative analysis with the MLQ, Kirby, King, and Paradise (1991) conducted a mixed study that utilized qualitative analysis as well. The investigators based their study on Bass' definition of transformational leadership, in which such leaders are able to articulate and focus upon a mission and vision, create and maintain a positive image, show confidence and respect in subordinates, and exhibit behavior that reinforces the vision and mission (Kirby, King, and Paradise, 1991).

The study consisted of two primary purposes. The first was to determine the degree to which educational leaders utilized transformational leadership. This first purpose was investigated by the employment of Bass' MLQ, and its sample consisted of 103 K-12 teachers, principals, and assistant school administrators. The results of the first study indicated that transformational leadership was significantly related to perceived effectiveness and follower satisfaction with the leader (Kirby, King, and Paradise, 1991).

The second purpose of the study was to ascertain which behaviors were best able to predict follower satisfaction and leader effectiveness. A qualitative approach was utilized for this second purpose, in which a separate sample of respondents was asked to describe an extraordinary leader with whom they had worked with. The sample for the study's second purpose consisted of 58 teachers and administrators in 15 different public school districts in one southern state. Qualitative analysis of the data in the second study, which consisted of phrases, sentences, or sentence groups in respondent narratives, indicated that transformational leadership behaviors are used by extraordinary educators (Kirby, King, and Paradise, 1991).

The above referenced investigation determined that followers/subordinates in k-12 schools have a preference for transformational leaders. They are emotionally inspired by such leaders who demonstrate individual consideration and intellectual stimulation. Furthermore, these preferred educational leaders manifest their visions through effective communication, show respect for others, and create risks that followers can support and achieve (Kirby, King, and Paradise, 1991).

The above studies (Kirby, King, and Paradise, 1991; Howell & Avolio, 1993; Kark, Shamir, & Chen, 2003) are predicated upon Bass' (1985) work regarding transformational leadership. All three studies employed the Multifactor Leadership Questionnaire that was originally developed by Bass (1985). In conclusion, these studies found that transformational leadership is significantly related to organizational performance (Howell & Avolio, 1993), follower empowerment (Kark, Shamir, & Chen, 2003), identification with both the leader and the group (Kark, Shamir, & Chen, 2003), and subordinate satisfaction and effectiveness (Kirby, King, and Paradise, 1991). Additionally, there have been components of the transformational leadership style found among cooperative extension professionals (Paxson, Howell, Michael, & Wong, 1993; Sandmann & Vandenberg, 1995; Brown, Birnstihl, & Wheeler, 1996; Moore & Jones, 2001) as well.

Aspects of Transformational Leadership in Past Research of Cooperative Extension

Findings in studies of cooperative extension, primarily in the *Journal of Extension*, illustrate that the effective leader is able to work with groups, build teams, share leadership, and empower subordinates to effect organizational goals (Paxson, Howell, Michael, & Wong, 1993; Sandmann & Vandenberg, 1995; Brown, Birnstihl, &

Wheeler, 1996; Moore & Jones, 2001). As these critical qualities of an effective leader are analogous to the constructs of transformational leadership, Brown, Birnstihl, and Wheeler (1996) specifically utilized the transformational leadership framework in their study of Nebraska Cooperative Extension.

Brown, Birnstihl, and Wheeler (1996) conducted a study regarding the impact of transformational leadership upon cooperative extension work groups. The authors framed the study around Bass' concept of transformational leadership. In addition, the Multifactor Leadership Questionnaire (MLQ) was utilized to assess transformational leadership within a leadership cohort consisting of two administrators, eight staff members, and forty-seven subordinates (Brown, Birnstihl, & Wheeler, 1996). The leadership cohort was comprised of staff from the Nebraska Cooperative Extension Division (Brown, Birnstihl, & Wheeler, 1996).

The authors of the study predicated their research upon the four constructs of transformational leadership initially delineated by Bass (Brown, Birnstihl, & Wheeler, 1996). These are individualized consideration, intellectual stimulation, inspirational motivation, and idealized influence. In this study, however, the administrators were asked to complete the MLQ in a self-assessment, and their subordinates were also requested to utilize the MLQ as a rating mechanism for their leader.

The average MLQ score for transformational leadership in the self-assessment was 2.85. The average MLQ score for transformational leadership of the leaders as measured by the subordinates was 2.93 (Brown, Birnstihl, & Wheeler, 1996). Therefore, there was only a .08 difference between the self-assessed mean and the subordinate-rated mean of transformational leadership. Furthermore, the average correlation measured

between transformational leadership and organizational outcomes was .96 (Brown, Birnstihl, & Wheeler, 1996).

The authors concluded that transformational leadership characteristics have a strong positive relationship between personal qualities of the leader and desired organizational outcomes. The examination also posited that studies of transformational leadership show great promise for the cooperative extension system, and that further studies should be utilized with larger samples to be more representative of the system as a whole (Brown, Birnstihl, & Wheeler, 1996).

Moore and Jones (2001) conducted a qualitative study regarding the aspirations, values, motives, and actions of female African-American administrators of 1890 cooperative extension programs. The impetus behind the study was the low number of African-American female administrators in both 1862 and 1890 extension programs (zero and four directors of extension, respectively). The focus of the investigation was to explore and describe the challenges that African-American female administrators faced and also the qualities that they felt contributed to their success (Moore & Jones, 2001).

The study found that many of the participants attributed their accomplishments to a number of factors, including their ability to serve as positive role models to their subordinates; encouraging creativity and risk-taking; fostering a spirit of teamwork and open communication; serving as mentors for aspiring leaders; and supporting each other for problem-solving and collaboration (Moore & Jones, 2001). In addition, the female administrators, in consideration of fiscal constraints affecting respective extension programs, provided support to their staffs with a cooperative attitude. The investigators

also recommended further study into the differences and similarities among the female administrators by using leadership assessment tools (Moore & Jones, 2001).

While Moore and Jones (2001) focused upon African-American female administrators in their analysis of leadership in cooperative extension, another study utilized a national population in its analysis of effective leadership (Paxson, Howell, Michael, & Wong, 1993). This study, commissioned by the USDA, summarized the findings of the National Impact Study of Leadership Development in Extension (NISLDE). The investigation was conducted by a nationwide survey to 3300 extension faculty, staff, and supervisors. The response rate was 86% (Paxson, Howell, Michael, & Wong, 1993).

The NISLDE investigation concluded that thirteen leadership competencies were necessary for effective leadership. These included solving problems by building consensus, forming and working in groups, planning and mobilizing for group action, relating to others, and understanding social change. The findings concluded that there was an emphasis on the group, rather than the individual, that characterized successful leadership practices (Paxson, Howell, Michael, & Wong, 1993). In addition, Paxson, Howell, Michael, and Wong (1993) called for further research about the nature of leadership in cooperative extension.

In 1995, Sandmann and Vandenberg conducted a study investigating a shift of extension programs from hierarchical and mechanical models into heterarchical, organic leadership modes. This was a case study focusing upon leadership development at Michigan State University Extension (MSUE).

In 1994, a task force was created at MSUE to articulate future leadership development efforts within the organization. The task force concluded that leadership development for the 21st century is centered in groups and organizations, rather than individuals, and engages the group in a spirit of shared leadership (Sandmann & Vandenberg, 1995). Furthermore, the core constructs of leadership development were vision, community, learning, and energy (Sandmann & Vandenberg, 1995).

The Sandmann and Vandenberg study of MSUE (1995) also posited a number of action values that were necessary for leadership development. Developing a shared vision that gave meaning and purpose to group efforts, while also allowing for individual members to rise above self-interests for the common good of the group, was a priority. In addition, maintaining motivation was also part of the shared vision.

A second action value was that of leading together. In this construct, leadership roles are shared by everyone in the group, and designated leaders are responsible for inspiring and teaching. Finally, leaders of the group should also facilitate a cohesive team, by encouraging the development of a shared vision (Sandmann & Vandenberg, 1995).

The findings in the above studies of cooperative extension illustrate that the effective leader is able to work with groups, build teams, share leadership, and empower subordinates to effect organizational goals (Paxson, Howell, Michael, & Wong, 1993; Sandmann & Vandenberg, 1995; Brown, Birnstihl, & Wheeler, 1996; Moore & Jones, 2001). These critical qualities of an effective leader are analogous to both earlier and concurrent works regarding the definition of transformational leadership by Bass (1985), Kirby, King, & Paradise (1991), and Kark, Shamir, & Chen (2003). There is also found

in the literature arguments maintaining that transformational leadership is the most effective style for the acquisition of external funds as well (Grace, 1991; Rosso, 1996; Joyaux, 1997; Day, 1998). However, there is a paucity of empirical data in said literature.

Transformational Leadership and Attaining Extramural Funds

Tromble (1998), Day (1998) and Rosso (1991) explicate the sources from which external funds may be obtained. In addition, Grace (1991), Rosso (1996), Joyaux (1997), and Day (1998) indicate that aspects of transformational leadership are critical qualities in a leader who is attempting to obtain additional funding. Said assertions are analogous to the aforementioned studies regarding the four constructs of transformational leadership and behaviors of the transformational leader (Bass, 1985; Kirby, King, & Paradise, 1991; Howell & Avolio, 1993; Kark, Shamir, & Chen, 2003). Furthermore, Tromble (1998), Day (1998), Joyaux (1997), Grace (1991), and Rosso (1991 and 1996) root their contentions regarding fund development in both non-profit and higher education organizations. Although resource development in cooperative extension is not directly addressed, the cogency of the authors' assertions resides in the fact that extension programs are a part of the higher education infrastructure.

External funds are raised by building relationships with those outside of the institution, in order to acquire political and financial support (Tromble, 1998). First, the prospect (i.e. the monetary giver) is identified. Then, the potential donor is cultivated through the establishment and building of a relationship in which mutual interests and benefits are made evident. Third, the potential giver is asked to donate monies in the solicitation phase. Finally, the recipient of the extramural funding ensures that the

monies are utilized as per the intended purpose of the donor. This last step is the stewardship phase (Tromble, 1998).

There are five sources from which monies may be raised. An organization may obtain resources from individuals, corporations, foundations, associations, and government (Rosso, 1991; Day, 1998). Regardless of the source of extramural funding, the same process delineated above is generally employed in order to attain monies (Tromble, 1998). For the purposes of this study, state governments will be focused upon as the sources of external funds raised by 1862 and 1890 cooperative extension programs, in order to satisfy the state match requirement for federal fiscal year (FFY) 2004.

Grace (1991) maintains that there are critical qualities displayed by effective leaders who acquire additional funds. These individuals respect and trust others, maintain confidence in their ability to lead, believe in the organization's goals, and encourage creativity by delegating responsibilities. Essentially, the leader who espouses the aforementioned characteristics is in a better position to develop beneficial partnerships with potential donors (Grace, 1991). In addition, the author asserts that of all the qualities of a leader, the ability to build and create a cohesive team is of the utmost importance (Grace, 1991). Furthermore, in order to be successful in acquiring extramural funds, the leader and team must develop compelling mission and inspiring vision statements (Grace, 1991).

Grace's contentions regarding the effective leader who acquires extramural funds (Grace, 1991) are analogous to Bass' constructs of transformational leadership (Bass, 1985). First, the construct of charisma is a characteristic with which leaders have profound and extraordinary effects on followers, thereby instilling loyalty and devotion

(Bass, 1985). According to Grace (1991), effective leaders maintain confidence in their ability to lead and are able to develop compelling mission and inspiring vision statements. Donors, in turn, are inspired by the leader's vision and are more willing to provide monies to a worthwhile cause, which is embodied by the charismatic leader.

Second, Bass (1985) articulates that intellectual stimulation involves the prompting and alteration of subordinates' awareness of problems and associated problem solving. Leaders who build a cohesive team by fostering respect and trust in others (Grace, 1991) are demonstrating intellectual stimulation. In addition, leaders utilize intellectual stimulation to raise the awareness of a monetary need by representing the problem to donors in ways that can be understood by them. Therefore, the process of raising monies becomes individually tailored to the intellectual capacities of the donor.

Third, Bass (1985) maintains that the construct of individualized consideration is one in which the transformational leader fosters participative management and focuses upon the individual employee's needs for growth and participation. To Grace (1991), the effective leader encourages creativity by delegating responsibilities. This is analogous to Bass' (1985) contention of individual consideration. In addition, whenever monies are given by a donor, a partnership with the recipient is established. This relationship is manifested by the stewardship of monies, in which the donor remains an integral part of the process through which monies are administered.

Finally, the transformational leader stimulates enthusiasm for the work of the group (Bass, 1985). In comparison, the effective leader who seeks external funding believes in the organization's goals (Grace, 1991). This final contention by Grace (1991) is synonymous with Bass' delineation of individual consideration.

The ability to inspire and serve as a role model is of essential importance to the leader seeking additional monies (Rosso, 1996). Additionally, the leader should also emphasize the full cooperation of members of the team, not only through encouragement, but also by making clear the way in which individual team members contribute to the goals of the team. Motivation is also another key factor in effective leadership, conjoined with the provision of support for team members (Rosso, 1996).

Rosso's (1996) critical qualities of the successful leader are also similar to Bass' four constructs of transformational leadership (Bass, 1985). According to the latter, the construct of charisma instills loyalty and devotion in followers (Bass, 1985). Rosso's (1996) quality of charisma, in which subordinates are inspired, is similar to Bass' (1985) contention. In addition, Bass (1985) considers a leader that serves as a mentor to employ individual consideration. According to Rosso (1996), the successful leader who attains extramural funds serves as a role model to followers. Bass (1985) also maintains that the construct of inspirational leadership stimulates enthusiasm for the work of the group. Rosso's (1996) critical qualities of the effective leader emphasize the full cooperation of team members by the use of motivation.

Joyaux (1997) posits that successful leadership in the pursuit of external funds is contingent upon the shared values and beliefs of members of the group. More importantly, leaders are also accountable to the team (Joyaux, 1997). The author also delineates a number of leadership characteristics that are indicators of success. These include the effective leader valuing each team member, motivating and enabling others, creating a vision with direction and goals, serving as a symbol of the organization, and facilitating transformation at both the individual and organizational levels (Joyaux, 1997).

In essence, the effective leader empowers others by focusing upon teamwork and shared decision-making (Joyaux, 1997).

Bass' (1985) four constructs of transformational leadership are also reflected in Joyaux's (1997) critical qualities of an effective leader. Joyaux speaks to the fact that an effective leader creates a vision and serves as a symbol for the organization. This contention is similar to Bass' construct of charisma, in which the transformational leader has profound and extraordinary effects on followers, thereby instilling loyalty and devotion (Bass, 1985). Additionally, Joyaux asserts that effective leaders value each team member. This claim is similar to Bass' construct of individualized consideration, in which the transformational leader focuses upon the individual employee's needs for growth and participation. Finally, Joyaux believes that effective leaders motivate and empower subordinates (Joyaux, 1997). Bass' (1985) construct of inspirational leadership, in which the leader inspires followers and generates enthusiasm for the work of the group, is comparable.

Motivation is a critical component of the effective leader who raises additional monies (Day, 1998). In addition, the creation of a vision and mission is a fundamental responsibility of the leader. According to Day (1998), the successful leader is able not only to influence members of the team, but also to attain willing service from subordinates. The author continues by asserting that transformational leadership is the most essential element of the effective leader involved in acquiring extramural funds (Day, 1998).

Day (1998) defines transformational leadership according to three aspects. First, transformational leaders create a vision, which is inclusive of an ideal image of the

organization. Second, the leader employs cognitive skills in order to explain the vision to others, while at the same time expanding the vision to correspond to individual circumstances. Third, the successful leader implements the vision through personal practices (Day, 1998).

The four constructs of transformational leadership (Bass, 1985) are also mirrored in Day's (1998) critical qualities of the successful leader seeking extramural funds. According to Day (1998), the effective leader creates a vision and mission. Said quality is comparable to Bass' (1985) construct of charisma, in which the transformational leader fosters a want for achievement of the team's goals. Day (1998) also contends that a critical quality is the ability to influence members of the team. This position is similar to Bass' (1985) concept of individualized consideration, in which the leader focuses upon the individual employee's needs for growth and participation. Effective leaders, in addition, employ cognitive skills in order to explain the organizational vision (Day, 1998). This quality is reflective of Bass' (1985) construct of intellectual stimulation, through which the leader is oriented towards follower learning. Finally, Day (1998) maintains that the effective leader attains willing service from subordinates and implements the vision through personal practices. This contention is comparable to Bass' (1985) construct of inspirational leadership, in which the leader inspires belief in the greater cause of the group and increases expectations of subordinates.

Leadership is critical with respect to the procurement of additional funds (Grace, 1991; Day, 1998). In addition, successful leaders keep team members involved and motivate them to achieve organizational goals throughout the process of strategy and resource development, by sharing responsibilities (Grace, 1991; Day, 1998). Effective

leaders also create a vision and motivate followers to achieve that vision by employing aspects of transformational leadership (Joyaux, 1997; Day, 1998). Furthermore, effective leaders inspire the team in the pursuit of additional funds (Rosso, 1996).

The four transformational leadership constructs of charisma, inspirational motivation, intellectual stimulation, and individualized influence (Bass, 1985) can be found in and are comparable to the aforementioned authors' qualities of effective leadership in the acquisition of additional monies (Grace, 1991; Rosso, 1996; Joyaux, 1997; Day, 1998). However, Bass' four constructs of transformational leadership are interdependent and exist upon a continuum (Bass, 1985). Therefore, the above referenced associations between the critical qualities of the effective leader who seeks to acquire extramural funding and the constructs of transformational leadership are provided in order to support the contention that there are relationships among them.

Transformational leadership, therefore, is critical to the success of extramural fund acquisition, whereby leaders articulate and communicate a vision, build a team, inspire and motivate that team, and reflect the articulated vision through their own personal practices (Grace, 1991; Rosso, 1996; Joyaux, 1997; Day, 1998). Essentially, the aforementioned abilities of the transformational leader also manifest themselves into his or her capabilities to effectively cultivate relationships with potential donors, inclusive of public officials (Grace, 1991; Rosso, 1996; Joyaux, 1997; Day, 1998). As a result of these mutually beneficial relationships that are forged by the transformational leader, the prospects of extramural funding increase (please see Figure 1).

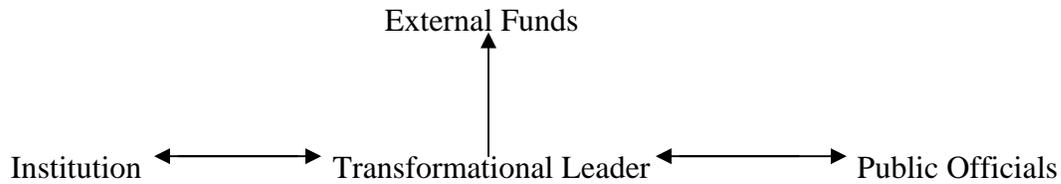


Figure 1. The Transformational Leader as the Link between Institutional and Public Interests via the Cultivation of Relationships that Leads to the Acquisition of External Funds.

The literature maintains that transformational leadership is the most effective style in resource development (Grace, 1991; Rosso, 1996; Joyaux, 1997; Day, 1998). There is, however, an empirical paucity in said literature with respect to the degree of success of the transformational leader. Although Tromble (1998), Day (1998), Joyaux (1997), Grace (1991), and Rosso (1991 and 1996) root their contentions regarding fund development in both non-profit and higher education organizations, they provide no quantitative data to support their contentions.

State Match

As a result of the state match mandate defined by NARETPA (1977) and AREERA (1998), 1862 extension programs must obtain a 100% non-federal match of their federal formula funding from their respective states in FFY 2004. In addition, 1890 extension programs must obtain a 70% non-federal match of their federal formula funding from their respective states in FFY 2004 (AREERA, 1998). An exacerbation of the state match mandate is that state budgets for all higher education expenditures continue to decline (Hebel, 2002), state legislators view support of higher education as discretionary (Hovey, 1999), and the maintenance of current state financing of higher education is projected to be difficult (Hovey, 1999).

An article in *The Chronicle of Higher Education* spoke to the status of state funding for higher education. In her article, Hebel (2002) asserted that state economies continue to worsen. Furthermore, states are allocating a consistently declining portion of their budgets for postsecondary enterprises (Hebel, 2002). The author concluded by stating that federal monies appropriated specifically for extension programming has remained flat (Hebel, 2002). Therefore, if state budgets for higher education are declining, then the potential for states to satisfy the mandates of AREERA (1998) are questionable.

Hovey (1999) may be considered a precursor to Hebel's (2002) article, providing a bleak fiscal forecast regarding state expenditures for higher education. He maintained that state public officials view fiscal support of higher education as discretionary (Hovey, 1999). Percentages of state budgets allocated for higher education have been declining, illustrating a further problem for future higher education expenditures. Merely maintaining extant campus services will be problematic. Furthermore, there will be pervasive inability for states to fund higher education services (Hovey, 1999).

Both Hovey (1999) and Hebel (2002) illustrate a national problem for state spending of higher education. Cooperative extension is only one facet of a state's consideration in its respective higher education outlays. If states are having difficulties maintaining higher education expenditures, the likelihood of cooperative extension attaining its state match is improbable. Furthermore, in states with both 1862 and 1890 extension programs seeking to fulfill the AREERA (1998) mandates from the same source (i.e. state legislatures), as is the focus of this study, the potential for the continuation of 100% of federal appropriations is dubious.

Circular A-21, nonetheless, prohibits any attempt to influence the introduction, enactment, or modification of any federal or state legislation by utilizing lobbying practices (OMB, 2000). The same circular, however, does allow for the use of technical and factual presentations upon the request of federal and state governments, and or their respective agents (OMB, 2000). Nonetheless, extension administrators are permitted to advocate for state match through technical and factual presentations (OMB, 2000). Therefore, analyses of the transformational leadership qualities of extension administrators, in their pursuit of state monies (Grace, 1991; Rosso, 1996; Joyaux, 1997; Day, 1998) as permitted by Circular A-21 (OMB, 2000), could provide insights into the potential for attainment of state match.

National Cooperative Extension Organizations, Transformational Leadership, and Resource Development

The state match mandate (AREERA, 1998) served as an impetus for cooperative extension programs throughout the country to reassess their positions within the higher education landscape. The National Association of State Universities and Land-Grant Colleges (NASULGC), through a grant from the Kellogg Commission, issued a series of reports entitled *Returning to Our Roots* in 1999. These reports addressed the redefinition of cooperative extension programs into the 21st century, and called for said programs to focus upon a coherent campus culture and engagement (Kellogg Commission, 1999).

With respect to the focus upon a coherent campus culture, the Kellogg Commission (1999) maintained that there is tension between the expansion of knowledge (i.e. research) and public service (i.e. extension), although both are parts of the comprehensive mission of land-grant institutions (teaching is the third component). As a

result of this tension, shared governance among all members of the university should be rebuilt. This can be attained only by strong leadership (Kellogg Commission, 1999).

The aforementioned report also maintained that administrators of colleges and departments, inclusive of cooperative extension, will be called upon to frame new visions, define goals, and act as the institution's representative to the public. This leadership will require administrators who are more creative than was necessary in the past (Kellogg Commission, 1999).

The second component of the Kellogg Report (1999) emphasized the process of engagement as a mechanism through which land-grant institutions, and cooperative extension programs, could become more relevant in modern society. Said contention was due to the finding that the public views extension as unresponsive to immediate community needs. The end result is that the general public has become frustrated with extension (Kellogg Commission, 1999).

The Kellogg Report (1999) posited that a remedy to address the unresponsiveness of extension is the process of engagement. In this manner, land-grant institutions would redesign their extension functions to become more sympathetically involved with their respective communities. Engagement, furthermore, was delineated as dedication to sharing and reciprocity (Kellogg Commission, 1999).

In the above referenced process of engagement, leadership is critical. The report contends that extension leadership will not develop by itself and will only be propagated by those with a sense of conviction, while at the same time emphasizing reciprocity and sharing. The report concluded with the fact that a lack of stable funding remains a critical problem for extension. Leaders who practice and focus upon engagement, in turn,

would be able to secure stable funding by the leveraging of resource partnerships (Kellogg Commission, 1999).

In the above report, the leadership emphasized is similar to constructs of the transformational style. The report contends that leaders for extension need to have conviction (Kellogg Commission, 1999). This is analogous with Bass' (1985) concept of charisma, in which transformational leaders display determination and self-confidence. In addition, the leader's focus upon reciprocity and sharing is also reflective of transformational leadership constructs. Participation and opportunities for familiarity and contact are aspects of the individualized consideration component of Bass (1985). Furthermore, the aspect of shared decision making emphasized in the Kellogg Report (1999) is reflective of the construct of individualized consideration (Bass, 1985), in which each team member is valued, inclusive of her participatory role in the decision-making schema. Therefore, the Kellogg Commission's report (1999) is reflective of Bass' (1985) components of transformational leadership.

The Extension Committee on Organization and Policy (ECOP), which is a national policy-making entity composed of representatives from both 1862 and 1890 extension programs, responded to the findings of the Kellogg Commission (1999). In *The Extension System: A Vision for the 21st Century*, ECOP concurred with the Kellogg Commission that extension must adjust to rapid changes within society, the economy, and technology (ECOP, 2002).

The ECOP report (2002) also maintained that extension must adapt to address broad social and economic issues that all communities face. Engagement is a means to

an ends to this adaptation. In order for engagement to occur, strong leadership is a requisite (ECOP, 2002).

The ECOP report (2002) concluded that extension leadership must accept change as a necessity for the long-term viability of the organization. Furthermore, by way of the process of engagement, extension leaders would be in a better position to establish the necessary partnerships both internally and externally to the institution. These partnerships have the potential to translate into augmented resources for extension programs, thereby increasing the potential for sustainability (ECOP, 2002).

The ECOP report (2002) is also illustrative of the constructs of transformational leadership. First, the concept of change is transformation. Second, the focus upon partnerships (ECOP, 2002) is also analogous to the transformational leadership construct of individualized consideration, in which the leader provides opportunities for participation and familiarity (Bass, 1985).

Presidents of the 1890 institutions also responded to the Kellogg Commission in their report *Strategically Approaching the Future: 1890 Land-Grant System – A Strategic Plan* (2000). This plan focuses upon the core stratagems of resource and leadership development (The Council of 1890 Presidents/Chancellors, 2000).

The Council's report (2000) includes an assessment of needs for 1890 extension. First, the current status of both state and federal funding limits the capacity of programs to respond. Therefore, the number of staff available to meet the needs of communities is not adequate. Second, as a result of the state match requirement of AREERA (1998), 1890 extension programs need to aggressively pursue political support at the state level, specifically from respective state legislatures and public officials. Hence, resource

development is a major focus of 1890 extension (The Council of 1890 Presidents/Chancellors, 2000).

Funding parity between 1862 and 1890 land-grant universities and their respective extension programs was also an issue of concern in the report (The Council of 1890 Presidents/Chancellors, 2000). However, in order to obtain resources to leverage, leadership was critical. According to the findings of the Council (2000), transformational leadership should be emphasized in order to empower individuals. Furthermore, the leadership should be innovative, emphasize shared decision-making, and utilize collaborations to achieve goals (The Council of 1890 Presidents/Chancellors, 2000).

The Council's report (2000) explicitly delineates transformational leadership as the necessary style of administration for 1890 cooperative extension's success into the 21st century. The issue of empowerment speaks directly to Bass' (1985) construct of inspirational leadership. Furthermore, the report's discussion of collaborations and shared-decision making are also reflective of individualized consideration, in which participation by members of the team is emphasized (Bass, 1985).

The aforementioned studies by national cooperative extension organizations focus primarily upon the goals of redefining extension in the 21st century through the process of engagement (Kellogg Commission, 1999; ECOP, 2002) and resource development (Kellogg Commission, 1999; The Council of 1890 Presidents/Chancellors, 2000; ECOP, 2002). In both of these processes, leadership is critical to the establishment of partnerships with constituent groups, such as state governments, to leverage resources (Kellogg Commission, 1999; ECOP, 2002).

Leadership is also of vital importance to empower individuals and communities, and should embrace characteristics of the transformational style (The Council of 1890 Presidents/Chancellors, 2000). These critical aspects of leadership reflect the crucial role of the extension administrator, in which constituencies, such as state government, are cultivated in order to leverage resources (Tempel, 1991; Tromble, 1998). In addition, the transformational qualities of the extension administrator involved in said process may also dictate the success of monies raised (Grace, 1991; Rosso, 1996; Joyaux, 1997; Day, 1998), such as state match.

Summary

The First and Second Morrill Acts of 1862 and 1890 established land-grant institutions (First Morrill Act, 1862; Second Morrill Act, 1890). Said legislation provided for the founding of higher education institutions in every state. The curricular focus of each campus was to be upon the agricultural, mechanical, and military arts (First Morrill Act, 1862; Second Morrill Act, 1890).

The Smith-Lever Act (1914) provided federal formula funds for cooperative extension programs at each land-grant school. These programs were to provide for the transmission of agricultural knowledge to the citizens of the respective states, who were not students of the land-grant institutions (Smith-Lever Act, 1914). In 1972, the 1890 extension programs received federal appropriations for conducting agricultural extension work (Public Law 89-106). In 1977, 1890 extension programs received direct appropriations from the USDA, which were to be continuous (Food and Agriculture Act, 1977).

NARETPA (1977) and AREERA (1998), however, stipulate a matching requirement for both 1862 and 1890 extension programs. Each program is to obtain a non-federal state match for their USDA appropriations. The 1862 extension programs are to attain a 100% match, while the 1890 institutions are to obtain a 70% match in FFY 2004 (NARETPA, 1977; AREERA, 1998). Any monies not matched by the extension program will result in a loss of federal funding in the subsequent fiscal year (NARETPA, 1977; AREERA, 1998).

As a result of the state match mandate, the acquisition of extramural funding from respective state governments has become an issue of vital importance for both 1862 and 1890 extension programs (Kellogg Commission, 1999; The Council of 1890 Presidents/Chancellors, 2000; ECOP, 2002). With respect to successful leadership in external fund acquisition, from which state governments are a source (Rosso, 1991; Day, 1998), the transformational style is considered to be critical (Grace, 1991; Rosso, 1996; Joyaux, 1997; Day, 1998).

Transformational leadership styles have been identified within cooperative extension programs by prior research-oriented studies (Paxson, Howell, Michael, & Wong, 1993; Sandmann & Vandenberg, 1995; Brown, Birnstihl, & Wheeler, 1996; Moore & Jones, 2001). These critical qualities of an effective leader are analogous to both earlier and concurrent works regarding the definition of transformational leadership (Bass, 1985; Kirby, King, & Paradise, 1991; Kark, Shamir, & Chen, 2003).

Bass (1985) predicates his description of transformational leadership upon Maslow (1954) and Burns (1978). Bass maintains that transformational leadership is

based upon the four constructs of charisma, individualized consideration, intellectual stimulation, and inspirational leadership (Bass, 1985).

In light of the state match issue, national cooperative extension organizations have called for further research into leadership styles and resource development. Said organizations have also found that aspects of transformational leadership are critical to the success of cooperative extension programs into the 21st century (Kellogg Commission, 1999; The Council of 1890 Presidents/Chancellors, 2000; ECOP, 2002).

In the fullest consideration of the literature, the following hypothesis serves as the foundation for this study. If cooperative extension administrators are seeking state funding, as per Circular A-21 (OMB, 2000), to satisfy the state match mandates of AREERA (1998) and NARETPA (1977); and, if characteristics of transformational leadership (Bass, 1985; Kirby, King, & Paradise, 1991; Kark, Shamir, & Chen, 2003) are most effective in the attainment of funds from state governments (Grace, 1991; Rosso, 1996; Joyaux, 1997; Day, 1998); and, if transformational leadership is found in cooperative extension (Paxson, Howell, Michael, & Wong, 1993; Sandmann & Vandenberg, 1995; Brown, Birnstihl, & Wheeler, 1996; Moore & Jones, 2001); and, if national cooperative extension organizations are calling for further inquiry into transformational leadership and resource development (Kellogg Commission, 1999; The Council of 1890 Presidents/Chancellors, 2000; ECOP, 2002); then, an investigation of the degree of transformational leadership displayed by 1862 and 1890 cooperative extension administrators may serve as a predictor for the attainment of state match in federal fiscal year 2004.

Chapter III

Methods

Purpose of the Study

The purpose of this study was to analyze the degree of transformational leadership exhibited by 1862 and 1890 cooperative extension administrators in states with both extension systems as a predictor for the attainment of state match in federal fiscal year 2004. An additional focus of this study was to analyze institution type, sex, age, and years of experience as predictors for the attainment of state match in federal fiscal year 2004.

Research Design

The research design utilized in this study was a basic (Johnson and Christensen, 2004), non-experimental investigation (Gay, 1996) utilizing logistical regression, contingency chi-square, and linear regression techniques.

Basic research seeks to generate fundamental knowledge (Johnson and Christensen, 2004). This study attempted to generate such knowledge in being a seminal quantitative study that focuses upon cooperative extension, transformational leadership, and the attainment of state match. Prior contentions that transformational leadership is a critical quality in the successful pursuit of extramural funds (Grace, 1991; Joyaux, 1997; Day, 1998) lacked any quantitative evidence to support such assertions.

Experimental designs are predicated upon manipulations of the independent variable(s) in order to determine a cause-effect relationship (Gay, 1996). This study manipulated neither the independent variables nor the dependent variable. Therefore, this design was non-experimental.

In addition, this study was based on nonparametric analysis because all administrators were surveyed (Gay 1996). Therefore, there was no sample population.

Logistical regression is a statistical technique employed when one of the research objectives is to utilize independent variables to predict a dichotomous dependent outcome (Gay, 1996). This method of statistical analysis can predict which two categories of an outcome are likely to occur.

In the case of the current study, the logistic model predicted the odds of the outcome of obtaining state match by extension administrators who have “high” and “low” levels of transformational leadership. Will those who exhibit “high” transformational leadership skills attain state match with statistical significance compared to those with “low” transformational leadership? Furthermore, the independent variables of type of land-grant institution (1862 or 1890), participant sex, age, and years of experience were integrated into the logistic model.

Whereas logistic regression is utilized to predict probabilities, linear regression is employed in order to predict outcomes (Gay, 1996). In the case of linear regression, independent variables are of the ordinal, interval, or ratio scales of measurement. Furthermore, the dependent outcome must be either interval or ratio data. In this study, the independent variable of transformational leadership was also operationalized using the ordinal scale of measurement. The independent variable of years of experience and the dependent variable of state match in dollars were both delineated by the ratio scale.

Population

Administrators of 1862 and 1890 cooperative extension programs in states containing both 1862 and 1890 institutions were surveyed. These potential participants

were obtained by accessing institutional information, such as cooperative extension websites and corresponding organizational structures. However, those administrators who were not involved in the pursuit of state match were excluded from the study. The expected population size was one hundred participants.

Research Questions

1. Can the degree of transformational leadership exhibited by 1862 and 1890 cooperative extension administrators predict the attainment of state match for federal fiscal year 2004 with statistical significance?
2. Does the type of land-grant institution predict the attainment of state match for federal fiscal year 2004 with statistical significance?
3. Does the sex of 1862 and 1890 cooperative extension administrators predict the attainment of state match for federal fiscal year 2004 with statistical significance?
4. Can the age of 1862 and 1890 cooperative extension administrators predict the attainment of state match for federal fiscal year 2004 with statistical significance?
5. Can the years of experience of 1862 and 1890 cooperative extension administrators in their current positions predict the attainment of state match for federal fiscal year 2004 with statistical significance?

Instrumentation

The Multifactor Leadership Questionnaire (MLQ) is the most widely used instrument to assess transformational leadership (Hartog, Den, Van Muijen & Jaap, 1997; Carlessa, 1998). The MLQ assesses four constructs of transformational leadership, defined as charisma, inspirational motivation, individual consideration, and intellectual stimulation.

The MLQ 5X-Short questionnaire contains 45 questions regarding the leadership behaviors of the respondent. A Likert Scale ranging from 0 (not at all) to 4 (frequently) is employed for each question. There have been a number of studies conducted regarding the statistical value of this measurement instrument.

Discriminant analysis measures the correlational level to which test scores from a focal test are not highly related to scores on another test. This process indicates that which a test does not measure (Johnson & Christensen, 2004). Carlessa (1998) conducted a study in which the MLQ was administered to 1440 staff members who worked in an Australian bank. Her analysis concluded that the MLQ is consistent with Bass' conception of transformational leadership (charisma; inspirational motivation; individual consideration; and intellectual stimulation). In addition, the study found that the MLQ essentially assesses a single overarching construct, which is transformational leadership (Carlessa, 1998).

Another study analyzing the internal consistency of the MLQ was conducted in 1999. Individuals (N=3768) representing 14 independent samples of US and foreign firms and agencies responded to the MLQ. Estimates of internal consistency, which indicates the stability of a measurement instrument (Gay, 1996), were above .70 for transformational leadership behaviors (Avolio & Bass, 1999).

Hartog, Van Muijen & Jaap (1997) assessed the internal consistency of the MLQ by administering it to approximately 1200 individuals representing commercial institutions, healthcare organizations, and local government organizations. The analysis found that Cronbach's alpha, a statistical measure of internal consistency (Gay, 1996), for transformational leadership was .95 (Hartog et al., 1997).

Bass and Avolio (2000) also conducted studies regarding the MLQ instrument. Nine samples (N=2154) were utilized to determine the consistency of the instrument. The average reliability score across the nine samples for the four transformational leadership characteristics was .89 (Bass & Avolio, 2000). In addition, intercorrelations among the four leadership constructs comprising transformational leadership in the MLQ ($p < .05$) were .76 and above (Bass & Avolio, 2000).

The MLQ was also reviewed in the *Mental Measurements Yearbook, 14*. In this analysis of said instrument, Pittenger concluded that the MLQ consistently measures the transformational leadership constructs initially explicated upon by Bass (Pittenger, 2001).

The MLQ 5X-Short questionnaire also requests the name and the organization of the respondent. This information, which could lead to the identification of the participant, will be deleted. Instead, the author will modify this format of demographic query by adding a number of other nominal demographic questions, specifically: institution type (1862 or 1890), sex, age, and years of experience in current position. In addition, two categorical questions will be appended: involvement in pursuing state match (as per Office of Management and Budget regulations), and status of state match for federal fiscal year 2004 (please see Appendix A).

Data Collection

This study utilized a self-reported questionnaire survey procedure (Johnson & Christensen, 2004). Questionnaire packets distributed to potential respondents consisted of a cover letter with instructions, the author-modified demographic questionnaire, the MLQ, and a self-addressed return envelope with postage paid.

A cover letter on Marshall University departmental letterhead was developed that explained the purpose of the study, assured confidentiality, emphasized the voluntary nature of participation in the study, and encouraged participation in the study.

Participants were also asked in the cover letter to complete both surveys within two weeks and return them to the author by using the enclosed envelope.

The responses received were coded for analysis. In addition, a return rate of 50% plus one was sought before any analysis. However, prior to any mailing of the survey packets, an exemption from the Marshall University Institutional Review Board was obtained.

Data Analysis

One of the requisites for the population of this study was that respondents be involved in the pursuit of state match, as delineated in the operational definitions of Chapter I. Those administrators who were not involved in the pursuit of state match were excluded from data analysis.

Demographic information (institution type, sex, age, years of experience), level of responsibility for pursuing state match, and status of state match for federal fiscal year 2004 were obtained using the demographic component of the Multifactor Leadership Questionnaire modified by the author. The dependent variable (attainment of state match) was delineated on the questionnaire by a “yes” or “no” notation. As such, the dependent variable was categorized for analysis by means of logistic regression. In addition, the questionnaire requested the participant to enter the percentage of state match obtained in FFY 2004. Therefore, monetary amounts of state match were calculated by comparing the percentages of state match attained against the total amount of state match

necessary for each respective institution. This latter information was available from the United States Department of Agriculture (USDA, 2004). In this manner, ratio scale data for state match was assessed, and utilized in linear regression analysis as well.

The degree of transformational leadership (independent variable) exhibited by the cooperative extension administrator was measured using the MLQ. In order to assess the respondent's transformational leadership score, all questions on the MLQ pertaining to transformational leadership constructs (attributed idealized influence, behavioral idealized influence, inspirational motivation, intellectual stimulation, and individual consideration) were summed and averaged. Those administrators with a transformational leadership average between 0.0 and 2.0 were assessed with a "low" transformational leadership degree. Those administrators with a transformational leadership average between 2.1 and 4.0 were assessed with a "high" transformational leadership degree. These two categories were analyzed with logistic regression. In addition, ordinal scale data for transformational leadership was also utilized for both logistic and linear regression analyses.

Type of land-grant institution was a predictor variable and was operationalized categorically (1862 or 1890). This variable was utilized to predict attainment of state match (dichotomous dependent variable) by means of logistic regression.

Sex of the 1862 and 1890 extension administrator was another categorical predictor variable. It was analyzed in the prediction of attainment of state match (dichotomous dependent variable) by using logistic regression.

Age of the 1862 and 1890 extension administrator, which was delineated on the questionnaire by five-year intervals, was another categorical predictor variable. This

variable was analyzed to determine the odds of obtaining state match (dichotomous dependent variable) by logistic regression.

Years of experience of the 1862 and 1890 extension administrator was an independent variable, and was analyzed by both logistic and linear regression. Years of experience was entered as ratio level data. This data was used to determine the odds of attaining state match (dichotomous dependent variable) by logistic regression. In turn, the same independent variable was used to determine the outcome of attaining state match (ratio scale of measurement) by linear regression techniques.

The aforementioned tests were conducted with the Statistical Packages for the Social Sciences (SPSS, Windows Version 12.0.1) software program. In addition, frequency distributions were obtained for the demographic variables utilizing said program and were reported as ancillary findings.

Summary

The MLQ and author-modified demographic component of the MLQ was used to analyze the degree of transformational leadership exhibited by 1862 and 1890 cooperative extension administrators as a predictor for the attainment of state match for federal fiscal year 2004. Logistical regression and contingency chi-square techniques were employed due to the binary operationalizations of the independent (transformational leadership, type of land-grant institution, respondent sex, and age) and dependent (attainment of state match) variables. The independent variables of transformational leadership (ordinal scale) and years of experience (ratio scale) were analyzed with logistic regression. In addition, linear regression techniques were employed for the

independent variables of transformational leadership (ordinal scale) and years of experience (ratio scale), and the dependent variable of state match (ratio scale).

Chapter IV

Presentation and Analysis of the Data

Introduction

The purpose of this study was to analyze the degree of transformational leadership exhibited by 1862 and 1890 cooperative extension administrators in states with both extension systems as a predictor for the attainment of state match in federal fiscal year 2004. An additional focus was to analyze institution type, sex, age, and years of experience as predictors for the attainment of state match. This chapter will present the data obtained by the investigation in the following framework: a) instrument, data collection, and response rate, b) demographic and variable data, c) research questions, d) data analysis, e) major findings, f) ancillary findings, and g) summary.

Instrument, Data Collection, and Response Rate

This study used a Likert style, self-report survey instrument known as the Multifactor Leadership 5X-Short Questionnaire (MLQ), which was designed to measure perception of transformational leadership style. The survey contained 45 declarative items that assessed the perceived frequency of leadership occurrences, and each item was set to a four-point rating scale, ranging from 0 (not at all) to 4 (frequently, if not always).

The MLQ was modified to incorporate a section with demographic items important to the study, including institution type (i.e. 1862 or 1890), sex, age, and years of experience in current position. In addition, two questions were added that addressed whether the administrator surveyed was involved in pursuing state match to obtain federal dollars and what the respective institution's status was in this regard for federal fiscal year 2004. A copy of the complete instrument is available in Appendix A.

Survey packets consisted of the author-modified demographic questionnaire, the MLQ, a self-addressed return envelope with postage paid, and a cover letter, a copy of which is available in Appendix B. The cover letter, on Marshall University departmental letterhead, explained the purpose of the study, assured confidentiality, emphasized the voluntary nature of participation in the study, and encouraged participation. Participants were asked in the cover letter to complete both surveys within two weeks and return them to the author by using the enclosed envelope. Prior to mailing the survey packets, an exemption from the Marshall University Institutional Review Board was obtained 22 December 2004.

Surveys were mailed to 110 potential participants in the second week of January 2005. By the first week of March 2005, a total of 98 surveys (89.1%) were returned. Responses excluded from the study due to nonparticipation in the pursuit of state match were 11 (11.2%). As illustrated in Table 1, the total responses included in the study were 87 (88.8%).

Table 1

Survey Return Rate

Total Surveys	Returned	Included in Analysis	Excluded in Analysis
110	98 (89.1%)	87 (88.8%)	11 (11.2%)

Demographic and Variable Data

Data obtained corresponded with the independent variables of transformational leadership, institution type, respondent sex, age, and years of experience. In addition, the

dependent variable of state match status and related monetary amounts was also garnered. This section presents the data in the framework outlined above.

Transformational leadership was operationalized in both nominal and ordinal scales. Respondents either scored as low transformational leaders (mean score of 0.0 to 2.0) or high transformational leaders (2.1 to 4.0). In addition, total mean score was calculated for each respondent. Table 2 shows that all of the 87 participants (100%) identified themselves to be highly transformational leaders, as their mean score was 3.35.

Table 2

Transformational Leadership (Ordinal)

	N	Minimum	Maximum	Mean	Std. Deviation
TL (Ordinal)	87	2.25	3.95	3.3455	.35711
Valid N (listwise)	87				

Type of land-grant institution was operationalized categorically (1862 or 1890). Responses were received from 63 administrators (N=87, 72.4%) of sixteen 1862 cooperative extension programs (out of a total of 17, 94.1%). Responses were also received from 24 administrators (N=87, 27.6%) of fifteen 1890 cooperative extension programs (out of a total of 18, 83.3%). Therefore, as Table 3 shows, 31 of 35 institutions are reflected in the data, or 88.6%.

Table 3

Administrator and Institution Type Composition

	1862 Extension	1890 Extension	Total
Respondent Frequency	63 (72.4%)	24 (27.6%)	87 (100.0%)
Institutional Frequency	16 (51.6%)	15 (48.4%)	31 (100.0%)

Sex of the 1862 and 1890 extension administrator was another categorical predictor variable. As illustrated in Table 4, of the 87 participants, there were 54 males (62.1%) and 33 females (37.9%) who responded to the survey questionnaire.

Table 4

Male and Female Composition

Frequency	Male	Female
87	54 (62.1%)	33 (37.9%)

Age of the 1862 and 1890 extension administrator was categorized on the questionnaire by five-year intervals. Respondents could select from 12 categories of age ranges, commencing with the 25-29 year interval and ending with the 80-84 year interval. Four respondents (4.6%) chose not to respond to this question. Therefore, there were 83 valid cases for which data could be analyzed. As noted in Table 5, the age range with the highest frequency of administrators was 50-54 years (32.2%).

Table 5

Age Intervals of Administrators

Age Range (years)	Frequency
25-29	0 (0.0%)
30-34	1 (1.1%)
35-39	1 (1.1%)
40-44	5 (5.7%)
45-49	16 (18.4%)
50-54	28 (32.2%)
55-59	22 (25.3%)
60-64	9 (10.3%)
65-69	1 (1.1%)
70-74	0 (0.0%)
74-79	0 (0.0%)
80-84	0 (0.0%)
Invalid	4 (4.6%)

Years of experience were entered as ratio level data. Of a total of 87 respondents, seven chose not to answer this open-ended question. Therefore, there were 80 valid cases from which data could be analyzed. The average years of experience of the participant in his/her respective current position were 10.1, as illustrated by Table 6.

Table 6

Average Years of Experience

Frequency	Mean	Standard Deviation	Minimum	Maximum
80	10.1	9.4	0.33	36.0

State match was operationalized in both nominal and ratio scales. Respondents reported either obtaining institutional attainment of state match in federal fiscal year 2004 or not attaining it. In addition, the monetary amounts received by each institution from its respective state legislature were also analyzed.

Of the 87 respondents, only one chose not to respond to this question. Because there were multiple respondents from each institution, however, data regarding state match were still ascertained from all 31 institutions responding. Twenty-three institutions received their corresponding state matches, while eight did not. The average amount of state funds received by each institution was \$6,519,431.00, as noted in Table 7.

Table 7

State Match for 1862 and 1890 Institutions

Respondent Frequency	Institutional Frequency	Mean	Standard Deviation	Minimum	Maximum
86	31	\$6,519,431.00	\$5,463,841.00	\$0.00	\$25,900,000.00

Research Questions

1. Can the degree of transformational leadership exhibited by 1862 and 1890 cooperative extension administrators predict the attainment of state match for federal fiscal year 2004 with statistical significance?
2. Does the type of land-grant institution predict the attainment of state match for federal fiscal year 2004 with statistical significance?
3. Does the sex of 1862 and 1890 cooperative extension administrators predict the attainment of state match for federal fiscal year 2004 with statistical significance?
4. Can the age of 1862 and 1890 cooperative extension administrators predict the attainment of state match for federal fiscal year 2004 with statistical significance?
5. Can the years of experience of 1862 and 1890 cooperative extension administrators in their current positions predict the attainment of state match for federal fiscal year 2004 with statistical significance?

Data Analysis

Variable data related to the research questions are analyzed in the proceeding section. Statistical significance was defined at the $p < .05$ value for all analyses.

Research Question 1. Can the degree of transformational leadership exhibited by 1862 and 1890 cooperative extension administrators predict the attainment of state match for federal fiscal year 2004 with statistical significance?

This question was statistically analyzed utilizing both logistic and linear regression techniques. In the case of logistic regression, the independent variable of transformational leadership was dichotomized as either “low” (0.0-2.0) or “high” (2.1-4.0). The dependent variable of state match was also dichotomized as either “attained” or “not attained” for the respective type of land-grant institution. However, because

transformational leadership was “high” in all 87 cases, the logistic regression analysis was not conducted because the values were read as a constant.

Linear regression was also used to analyze research question 1. Ordinal level data for the independent variable of transformational leadership were utilized to predict the outcome of state match, which was operationalized in ratio form. As shown in Table 8, however, a significance value of .600 indicates that transformational leadership was not a useful predictor of state match.

Table 8

State Match v. Transformational Leadership^a (Linear)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9451523.691	5602774.092		1.687	.095
	TL (Ordinal)	-875525.128	1663636.693	-.057	-.526	.600

a Dependent Variable: State Match (Dollars)

Research Question 2. Does the type of land-grant institution predict the attainment of state match for federal fiscal year 2004 with statistical significance?

The independent variable of type of land-grant institution (1862 or 1890) was statistically tested to predict the odds of attaining state match (yes or no). Results were that institution type did in fact predict the odds of attaining state match with statistical significance. As shown in Table 9, an Exp(B) value of 25.385 indicates that an 1862 extension program was approximately 25 times more likely to receive state funds than its 1890 counterpart.

Table 9

State Match v. Institutional Type (Logistic)

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 1(a)	InstType	3.234	.827	15.281	1	.000*	25.385
	Constant	-3.401	.719	22.390	1	.000	.033

a Variable(s) entered on step 1: InstType.

* p<.05

Research Question 3. Does the sex of 1862 and 1890 cooperative extension administrators predict the attainment of state match for federal fiscal year 2004 with statistical significance?

Sex of the respondent was analyzed to predict the odds of attaining state match (yes or no). An Exp(B) value of .430 indicates that sex was not likely to predict the attainment of state match, as Table 10 illustrates. Consequently, sex was not a useful predictor in the model.

Table 10

State Match v. Sex (Logistic)

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1(a)	Sex	-.844	.700	1.454	1	.228	.430
	Constant	-1.459	.351	17.261	1	.000	.233

a Variable(s) entered on step 1: Sex.

Research Question 4. Can the age of 1862 and 1890 cooperative extension administrators predict the attainment of state match for federal fiscal year 2004 with statistical significance?

The independent variable of age was operationalized into 12 categories, and was investigated to determine if it could predict the odds of attaining or not attaining state match. A significance value of .619 indicates that age was a random predictor of state match, and as illustrated in Table 11, was not likely to be a significant predictor.

Table 11

State Match v. Age (Logistic)

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1(a)	Age	-.128	.257	.247	1	.619	.880
	Constant	-1.112	1.331	.698	1	.403	.329

a Variable(s) entered on step 1: Age.

Research Question 5. Can the years of experience of 1862 and 1890 cooperative extension administrators in their current positions predict the attainment of state match for federal fiscal year 2004 with statistical significance?

Both logistic and linear regression techniques were employed to analyze this question. For logistic regression, the dependent variable of state match was operationalized as a dichotomous variable (attained or not attained). A significance value of 1.0, as noted in Table 12, shows that years of experience was not a significant predictor of state match.

Table 12

State Match v. Years of Experience (Logistic)

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1(a)	Experience	.000	.036	.000	1	1.000	1.000
	Constant	-1.931	.500	14.917	1	.000	.145

a Variable(s) entered on step 1: Experience.

In the case of linear regression, the independent variable of years of experience was operationalized at the ratio level of measurement. The dependent variable of state match was analyzed in its ratio form. As noted in Table 13, however, a significance value of .819 shows that years of experience was a random factor in the attainment of state match.

Table 13

State Match v. Years of Experience (Linear)

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6495802.828	932856.644		6.963	.000
	Years of Experience	15452.224	67331.271	.026	.229	.819

a Dependent Variable: State Match (Dollars)

Major Findings

Major findings associated with the five research questions are summarized as follows.

Finding 1. The degree of transformational leadership exhibited by 1862 and 1890 cooperative extension administrators was not a statistically useful predictor for the attainment of state match for federal fiscal year 2004.

Finding 2. The type of land-grant institution did predict the attainment of state match for federal fiscal year 2004 with statistical significance. 1862 extension programs were approximately 25 times more likely to receive state match than their 1890 counterparts.

Finding 3. The sex of 1862 and 1890 cooperative extension administrators was not a significant predictor for the attainment of state match for federal fiscal year 2004.

Finding 4. The age of 1862 and 1890 cooperative extension administrators did not predict the attainment of state match for federal fiscal year 2004 with statistical significance.

Finding 5. The years of experience of 1862 and 1890 cooperative extension administrators in their current positions did not statistically predict the attainment of state match for federal fiscal year 2004.

In addition to the major findings of this investigation, ancillary findings were also attained and are summarized as follows.

Ancillary Findings

Institutional type was the only statistically significant predictor for the attainment of state match. Further scrutiny of the respective data yielded ancillary findings.

Total United States Department of Agriculture (USDA) funding in federal fiscal year (FFY) 2004 for the respondent states, and for the 31 institutions, was \$124,197,329.00. The total matching requirement for the 31 extension programs was

\$117,009,640.00. The total state monies obtained by all 31 institutions were \$112,629,621.00 (90.7% of USDA funding, 96.3% of match requirement), as illustrated by Table 14.

Table 14

FFY 2004 State Match for 31 Extension Programs

USDA Funding (\$)	Match Requirement (\$)	Monies Attained (\$)	Proportion of USDA Funding (%)	Proportion of State Match (%)
124,197,329.00	117,009,640.00	112,629,621.00	90.7	96.3

Upon closer inspection, however, when the data are analyzed separately for the 1890 and 1862 institutions, the findings are much more disparate. Of the 31 land-grant institutions represented by the respondents, 23 attained state match, while eight did not. Of the eight who did not obtain their respective match, seven were 1890 institutions, and one was an 1862.

1890 Extension State Match

Eight (53.3%) of the fifteen 1890 extension programs responding received their match, while seven (46.7%) did not. When compared to the 1862 institutions, however, 1890 extension accounted for 34.8% of institutions receiving match, and 87.5% of all institutions not receiving match, as noted in Table 15.

Table 15

1890 Match Status Compared to Total Institutions

1890 Institutions Attaining State Match	1890 Proportion of 23 Extension Programs Attaining State Match	1890 Institutions Not Attaining State Match	1890 Proportion of 8 Extension Programs Not Attaining State Match
8 (53.3%)	34.8%	7 (46.7%)	87.5%

Total USDA funding for the 15 responding 1890 extension programs was \$23,958,963.00. The total match requirement from the respective state legislatures, at 70%, was \$16,771,274.00. The total monies attained by these institutions were \$13,618,023.00. This latter figure represents 56.8% of federal funding matched, and 81.2% of the required state match attained. Therefore, the average amount of state match attained for each of the fifteen 1890 institutions was \$907,868.00. The total funding lost for FFY 2005 was \$3,153,251.00 (match requirement less monies actually obtained). As shown in Table 16, this figure resulted in an average institutional loss of \$210,217.00.

Table 16

State Match Status for Fifteen 1890 Extension Programs

USDA Funding (\$)	70% Match Requirement (\$)	Dollars Attained	Dollars Lost	Dollars Lost per Institution
23,958,963.00	16,771,274.00	13,618,023.00	3,153,251.00	210,217.00

1862 Extension State Match

Fifteen (93.7%) 1862 extension programs received their match, while one (6.3%) did not. When compared to the 1890 institutions, however, 1862 extension accounted for 65.2% of institutions receiving match, and 12.5% of all institutions not receiving match as noted in Table 17.

Table 17

1862 Match Status Compared to Total Institutions

1862 Institutions Attaining State Match	1862 Proportion of 23 Extension Programs Attaining State Match	1862 Institutions Not Attaining State Match	1862 Proportion of 8 Extension Programs Not Attaining State Match
15 (93.7%)	65.2%	1 (6.3%)	12.5%

Total USDA funding for the 16 responding 1862 extension programs was \$100,238,366.00. The total match requirement for FFY 2004 from the respective state legislatures, at 100%, was \$100,238,366.00. The total monies attained by these institutions were \$99,011,598.00. This latter figure represented 98.8% of federal funding matched. Therefore, the average amount of state match attained for each of the sixteen 1862 institutions was \$6,188,225.00. The total funding lost for FFY 2005 was \$1,226,768.00 (match requirement less monies actually obtained). This figure resulted in an average institutional loss of \$76,673.00, as illustrated by Table 18.

Table 18

State Match Status for Sixteen 1862 Extension Programs

USDA Funding (\$)	100% Match Requirement (\$)	Dollars Attained	Dollars Lost	Dollars Lost per Institution
100,238,366.00	100,238,366.00	99,011,598.00	1,226,768.00	76,673.00

The above referenced information illustrates a disparate proportion of state match not obtained from respective state legislatures by 1890 extension programs when compared to their 1862 counterparts. The 1890 share of total USDA funding was 19.3%, while the 1862's was 80.7%. As Table 19 illustrates, however, for the institutions included in this study, the 1890 share of monies lost (not matched) was 72.0%, while the 1862's was 28.0%. In essence then, 1890 institutions accounted for approximately \$0.19 of every federal dollar appropriated, and \$0.12 of every state dollar allocated. For every state dollar that was not allocated, however, 1890 institutions lost \$0.72.

Table 19

Shares of FFY 2004 State Match for 1862 and 1890 Extension

Institution Type	Share of Total USDA Appropriations	Share of State Match Attained	Share of State Match Not Attained
1862	80.7%	87.9%	28.0%
1890	19.3%	12.1%	72.0%

Summary

This study was a basic, non-experimental investigation that utilized logistical regression and linear regression techniques. The purpose of this study was to analyze the degree of transformational leadership exhibited by 1862 and 1890 cooperative extension administrators in states with both extension systems as a predictor for the attainment of state match in federal fiscal year 2004. An additional focus of this study was to analyze institution type, sex, age, and years of experience as predictors for the attainment of state match.

The MLQ and author-modified demographic component of the MLQ were used to analyze the degree of transformational leadership exhibited by 1862 and 1890 cooperative extension administrators as a predictor for the attainment of state match for federal fiscal year 2004. Logistical regression techniques were employed due to the binary operationalizations of the independent (transformational leadership, type of land-grant institution, respondent sex, and age) and dependent (attainment of state match) variables. The independent variables of transformational leadership (ordinal scale) and years of experience (ratio scale) were analyzed with logistic regression. In addition, linear regression techniques were employed for the independent variables of transformational leadership (ordinal scale) and years of experience (ratio scale), and the dependent variable of state match (ratio scale).

Surveys were mailed to 110 potential participants. A total of 98 surveys (89.1%) were returned. Responses excluded from the study due to nonparticipation in the pursuit of state match were 11 (11.2%). The total responses included in the study due to participation in the pursuit of state match were 87 (88.8%). The 87 respondents

represented 31 cooperative extension programs (sixteen 1862 institutions and fifteen 1890 institutions).

The only major finding of this investigation was that the type of land-grant institution did predict the attainment of state match for federal fiscal year 2004 with statistical significance. 1862 extension programs were approximately 25 times more likely to receive state match than their 1890 counterparts. The other independent variables of transformational leadership, sex, age, and years of experience, did not predict the attainment of state match for federal fiscal year 2004 with statistical significance.

In addition to the major findings of this investigation, one ancillary finding regarding institutional type and attainment of state match was found. 1890 institutions accounted for approximately \$0.19 of every federal dollar appropriated, and only \$0.12 of every state dollar allocated in FFY 2004. For every state dollar that was not allocated, however, 1890 institutions lost \$0.72.

The ensuing chapter will include a discussion of the implications of the data, in conjunction with conclusions and recommendations for further study.

Chapter V

Summary, Conclusions, and Recommendations

This chapter presents the summary of purpose, conclusions, and recommendations for further study. It is divided into the ensuing eight sections: a) summary of purpose; b) summary of procedures; c) summary of descriptive data; d) summary of findings; e) summary of ancillary findings; f) conclusions; g) implications; and h) recommendations.

Summary of Purpose

The purpose of this study was to analyze the degree of transformational leadership exhibited by 1862 and 1890 cooperative extension administrators in states with both extension systems as a predictor for the attainment of state match in federal fiscal year 2004. An additional focus was to analyze institution type, sex, age, and years of experience as predictors for the attainment of state match.

The following research questions guided the investigation.

1. Can the degree of transformational leadership exhibited by 1862 and 1890 cooperative extension administrators predict the attainment of state match for federal fiscal year 2004 with statistical significance?
2. Does the type of land-grant institution predict the attainment of state match for federal fiscal year 2004 with statistical significance?
3. Does the sex of 1862 and 1890 cooperative extension administrators predict the attainment of state match for federal fiscal year 2004 with statistical significance?
4. Can the age of 1862 and 1890 cooperative extension administrators predict the attainment of state match for federal fiscal year 2004 with statistical significance?

5. Can the years of experience of 1862 and 1890 cooperative extension administrators in their current positions predict the attainment of state match for federal fiscal year 2004 with statistical significance?

Summary of Procedures

One hundred and ten (110) administrators of 1862 and 1890 cooperative extension programs in states containing both institutions were surveyed. Participants were obtained by accessing institutional information, such as cooperative extension websites and corresponding organizational structures. Administrators not involved in the pursuit of state match were excluded from the study.

The investigation used a Likert style, self-report survey instrument known as the Multifactor Leadership 5X-Short Questionnaire (MLQ), which was designed to measure perception of transformational leadership style. The survey contained 45 declarative items that assessed the perceived frequency of leadership occurrences. Each item was set to a four-point rating scale, ranging from 0 (not at all) to 4 (frequently, if not always).

The MLQ was modified to incorporate a section with demographic items important to the study, including institution type (1862 or 1890), sex, age, and years of experience in current position. In addition, two questions were added that addressed whether the administrator surveyed was involved in pursuing state match to obtain federal dollars and what the respective institution's status was in this regard for federal fiscal year (FFY) 2004.

Survey packets consisted of the author-modified demographic questionnaire, the MLQ, a self-addressed return envelope with postage paid, and a cover letter. The cover letter, on Marshall University departmental letterhead, explained the purpose of the study,

assured confidentiality, emphasized the voluntary nature of participation in the study, and encouraged participation in the study. Participants were asked in the cover letter to complete both surveys within two weeks and return them to the author by using the enclosed envelope. Prior to mailing the survey packets, an exemption from the Marshall University Institutional Review Board was obtained.

Surveys were mailed in the second week of January 2005. By the first week of March 2005, a total of 98 surveys (89.1%) were returned. Responses excluded from the study due to the respondent not being responsible for pursuing state match were 11 (11.2%). The total responses included in the study due to participation in the pursuit of state match were 87 (88.8%).

Data analysis in this basic, non-experimental investigation involved logistical and linear regression techniques. All analyses were conducted with the Statistical Packages for the Social Sciences (SPSS, Windows Version 12.0.1) software program.

Summary of Descriptive Data

Data obtained corresponded with the independent variables of transformational leadership, institution type, respondent sex, age, and years of experience. In addition, the dependent variable of state match status and related monetary amounts was also garnered.

Transformational leadership was operationalized in both nominal and ordinal scales. Respondents either scored as low transformational leaders (mean score of 0.0 to 2.0) or high transformational leaders (2.1 to 4.0). In addition, total mean score was calculated for each respondent. All 87 participants (100%) identified themselves to be highly transformational leaders, as their mean score was 3.35.

Type of land-grant institution was operationalized categorically (1862 or 1890). Responses were received from 63 administrators (N=87, 72.4%) of sixteen 1862 cooperative extension programs (out of a total of 17, 94.1%). Responses were also received from 24 administrators (N=87, 27.6%) of fifteen 1890 cooperative extension programs (out of a total of 18, 83.3%). Thirty-one (31) of 35 institutions are reflected in the data, or 88.6%.

Sex of the 1862 and 1890 extension administrator was another categorical predictor variable. Of the 87 participants, there were 54 males (62.1%) and 33 females (37.9%) who responded to the survey questionnaire.

Age of the 1862 and 1890 extension administrator was categorized on the questionnaire by five-year intervals. Respondents could select from 12 categories of age ranges, commencing with the 25-29 year interval and ending with the 80-84 year interval. There were 83 valid cases for which data could be analyzed. The age range with the highest frequency of administrators was 50-54 years (32.2%).

Years of experience were entered as ratio level data. There were 80 valid cases from which data could be analyzed. The average years of experience of the participant in his/her respective current position were 10.1.

State match was operationalized in both nominal and ratio scales. Respondents reported either obtaining institutional attainment of state match in federal fiscal year 2004 or not attaining it. In addition, the monetary amounts received by each institution from its respective state legislature were also analyzed.

Data regarding state match were ascertained from all 31 institutions responding. Twenty-three institutions received their corresponding state matches, while eight did not. The average amount of state funds received by each institution was \$6,519,431.00.

Summary of Findings

The following section is organized according to the sequence of the five research questions that guided this study. Statistical significance was defined at the $p < .05$ value for all analysis.

The first research question addressed whether or not the degree of transformational leadership exhibited by 1862 and 1890 cooperative extension administrators could predict the attainment of state match for FFY 2004 with statistical significance. Transformational leadership was “high” (2.1-4.0) in all 87 cases. As a result, the logistic analysis was not conducted because the values were read as a constant. In the case of linear regression, a significance value of .600 indicated that transformational leadership was not a useful predictor of state match. Therefore, the degree of transformational leadership exhibited by 1862 and 1890 cooperative extension administrators was not a statistically useful predictor for the attainment of state match for federal fiscal year 2004.

The second research question addressed whether the type of land-grant institution could predict the attainment of state match for FFY 2004 with statistical significance. Results were that institution type predicted the odds of attaining state match with statistical significance. An Exp(B) value of 25.385 indicated that an 1862 extension program was approximately 25 times more likely to receive state funds than its 1890 counterpart.

The third research question focused on whether the sex of 1862 and 1890 cooperative extension administrators could predict the attainment of state match for FFY 2004 with statistical significance. An Exp(B) value of .430 indicated that sex was not likely to predict the attainment of state match. Therefore, the sex of 1862 and 1890 cooperative extension administrators was not a significant predictor for the attainment of state match for federal fiscal year 2004.

Research question four assessed whether the age of 1862 and 1890 cooperative extension administrators predicted the attainment of state match for FFY 2004 with statistical significance. A significance value of .619 indicated that age was random and was not likely to be a significant predictor. As a result, the age of 1862 and 1890 cooperative extension administrators did not predict the attainment of state match for federal fiscal year 2004 with statistical significance.

The final research question focused on whether the years of experience of 1862 and 1890 cooperative extension administrators in their current positions could predict the attainment of state match for FFY 2004 with statistical significance. In the case of logistic regression, a significance value of 1.0 showed that years of experience was not a significant predictor of state match. With regard to linear regression, a significance value of .819 illustrated that years of experience was a random factor in the attainment of state match. As a result, the years of experience of 1862 and 1890 cooperative extension administrators in their current positions did not statistically predict the attainment of state match for federal fiscal year 2004.

Summary of Ancillary Findings

When state match data were analyzed separately for the 1890 and 1862 institutions, the findings were disparate. Of the 31 land-grant institutions represented by the respondents, 23 attained state matches, while eight did not. Of the eight who did not obtain their respective matches, seven were 1890 institutions, and one was an 1862.

Eight (53.3%) of the fifteen 1890 extension programs responding received their matches, while seven (46.7%) did not. When compared to the 1862 institutions, however, 1890 extension accounted for 34.8% of institutions receiving match and 87.5% of all institutions not receiving match.

The 15 responding 1890 extension programs were able to match 56.8% of federal funding by acquiring 81.2% of their required state match. This resulted in a funding loss for FFY 2005 of \$3,153,251.00 (match requirement less monies actually obtained). The average amount of state match attained for each of the fifteen 1890 institutions was \$907,868.00, corresponding to an average institutional loss of \$210,217.00.

Fifteen (93.7%) 1862 extension programs received their matches, while one (6.3%) did not. When compared to the 1890 institutions, however, 1862 extension accounted for 65.2% of institutions receiving match, and 12.5% of all institutions not receiving match.

The 16 responding 1862 extension programs were able to match 98.8% of federal funding by acquiring 98.8% of state match. This resulted in a funding loss for FFY 2005 of \$1,226,768.00 (match requirement less monies actually obtained). The average amount of state match attained for each of the sixteen 1862 institutions was \$6,188,225.00, corresponding to an average institutional loss of \$76,673.00.

Summarily, 1890 programs' share of total USDA extension funding was 19.3%, while the 1862's was 80.7%. For the institutions included in this study, however, the 1890 share of monies lost (not matched) was 72.0%, while the 1862's was 28.0%. In essence then, 1890 institutions accounted for approximately \$0.19 of every federal dollar appropriated, and \$0.12 of every state dollar allocated. For every state dollar that was not allocated, however, 1890 institutions lost \$0.72.

Conclusions

This section will present the conclusions of the study by comparing the investigation's findings with the literature. The first research question addressed the issue of transformational leadership's predicting the attainment of state match for federal fiscal year 2004. The findings indicated that transformational leadership was not a significantly useful predictor, a finding that was both congruent with and contradictory to the literature addressed in the study.

Past research concluded that aspects of transformational leadership exist within cooperative extension (Paxson, Howell, Michael, & Wong, 1993; Sandmann & Vandenberg, 1995; Brown, Birnstihl, and Wheeler, 1996; Moore & Jones, 2001), and 87 administrators (100%) reported to be highly transformational leaders, as their mean score was 3.35. These data supported the literature in the aforementioned area.

The data did not support the literature maintaining that transformational leadership was the most effective style in attaining extramural funds (Grace, 1991; Rosso, 1996; Joyaux, 1997; Day, 1998). A significance value of .600 indicated that transformational leadership was not a useful predictor of state match.

The second research question pertained to institutional type, as defined by federal legislation (Morrill Act, 1862; Morrill Act, 1890; Smith-Lever Act, 1914). Responses received from 1862 and 1890 extension administrators indicated that institution type did in fact predict the odds of attaining state match with statistical significance. An 1862 extension program was approximately 25 times more likely to receive state funds than its 1890 counterpart.

The third research question assessed the predictive character of sex with the attainment of state match in FFY 2004. This question was predicated in part on the work of Moore and Jones (2001), who found that female African-American administrators of 1890 cooperative extension programs displayed leadership characteristics similar to those of the transformational style (e.g. fostering teamwork, serving as mentors for aspiring leaders, and supporting each other).

The demographic data obtained in the study, specifically with female administrators, did support the contention of Moore and Jones (2001). Said participants were all transformational leaders. Sex, however, unlikely to predict the attainment of state match. Consequently, sex was not a useful predictor in the model.

Age was a categorical independent variable addressed in research question four. Given the demographic character of the construct, age was not expressly addressed in the literature. Nonetheless, the data indicated that age was unlikely to be a significant predictor for the attainment of state match.

The final research question addressed the predictive character of period of employment. The average years of experience of current professionals within 1862 and 1890 cooperative extension was 20 (USDA, 2004). In this study, the average years of

experience of the administrator in his/her respective current position were 10.1, which was nearly half that of the average cited in the USDA literature. Nonetheless, years of experience was both a random and an insignificant predictor of state match.

Summarily, although transformational leadership was found among all administrators, it was still not a significant predictor of state match. The variables of age, sex, and years of experience were likewise not significant predictors. The only statistically useful predictor was institution type, in which an 1862 program was approximately 25 times more likely than an 1890 program to receive its respective state match monies.

Implications

This study responded to prior investigations of cooperative extension calling for further inquiry into transformational leadership and resource development (Paxson, Howell, Michael, & Wong, 1993; Sandmann & Vandenberg, 1995; Brown, Birnstihl, & Wheeler, 1996; Kellogg Commission, 1999; The Council of 1890 Presidents/Chancellors, 2000; Moore & Jones, 2001; ECOP, 2002). The demographic data did find evidence of transformational leadership within extension administrators. The investigation, however, did not find a link between transformational leadership and resource development (state match). Therefore, it is possible that transformational leadership has no statistically significant bearing on the attainment of state match.

There is also a lack of empirical data in the research pertaining to the relationship between transformational leadership and resource development. Although this seminal investigation searched for empirical evidence of linkages among cooperative extension, transformational leadership, and extramural fund acquisition, it found no such statistically

significant relationships between/among the three. Transformational leadership, however, was found among all extension administrators. As such, given the funding patterns for 1890 programs, transformational leaders may be in a better position to manage organizational changes precipitated by a decrease in funding (Joyaux, 1997; Day, 1998).

The research data did find disproportionate losses of funding between the two different types of institutions. 1890 extension accounted for 34.8% of institutions receiving match, and 87.5% of those not receiving match. This situation is further compounded by the fact that average institutional loss for the 1890 programs was \$210,217.00, while that of the 1862 programs was \$76,673.00. Given the larger extension budgets of the latter, such a fiscal deficiency may be managed more easily than that of the former's which, for some institutions, composed approximately 20% of their federal appropriations.

The above referenced information illustrates a disparity of funding by respective state legislatures for 1890 extension programs when compared to their 1862 counterparts. In seven cases, state legislatures funded 1862 programs and failed to fund 1890 extension programs. Institutional type was the only factor having any statistically predictive relationship with the amount of state match obtained. Why were 1862 institutions nearly 25 times more likely to obtain state match than the 1890 institutions?

This trend in funding undermines 1890 extension programs' ability to provide invaluable educational outreach services to limited-resource and underserved clientele. These programs include 4-H, youth development, health and wellness, community development, workforce preparation, and family finance initiatives to persons not

enrolled in college. If this pattern of lack of funding continues, 1890 extension programs will cease to exist, and tens of thousands of individuals will no longer have access to educational programs that could assist them in bettering their quality of life.

In addition, with regards to the 1890 system, \$0.72 of every state dollar not allocated are lost, and only \$0.12 of every state dollar allocated are obtained. From a historical perspective, land-grant institutions were founded by a public trust, in which federal lands were granted to states for the perpetual maintenance of at least one agricultural and mechanical college. If 1890 extension programs collapse, then one portion of the land-grant university's teaching, research, and extension mission will be negated. A university's pact with the public will be violated, and a unique component of the American higher education enterprise will no longer exist.

Historically, legalized segregation in states whose mechanical and agricultural colleges did not admit African-American students led to the founding of similar colleges for black students. One could reasonably question whether or not the funding streams of these same states for 1890 cooperative extension initiatives, which are all housed in Historically Black Colleges and Universities (HBCUs), is actually a latent reflection of manifest patterns of historical socioeconomic and racial segregation.

One less pessimistic explanation for the disparity in state funding of 1862 and 1890 extension programs could be a matter of politics. It could, for example, be presumed that extension administrators of 1862 programs are more politically astute than their respective 1890 counterparts. This factor of political savviness could be a more cogent predictor of attainment of state match.

Another potential explicator of successful attainment of state match may be in the framework through which it is attained by the two types of institutions. Given the larger sizes and related organizational complexities of the 1862s compared to the 1890s, the former may have active institutional lobbying efforts and coordinated development (fundraising) offices with associated personnel that their larger budgets could afford. Such resources tied into the attainment of state monies, regardless of the budget lines from which they originate (e.g. education and general, special appropriations, state code, executive discretionary spending, etc.) could lead directly to the attainment of state match monies for the 1862 extension programs.

If, during difficult financial times in state spending, legislatures are able to find the necessary revenues to support 1862 programs in successfully matching their comparably larger federal allocations, it is fair to ask why they find themselves unable to acquire the funding needed to support 1890 institutions in the same fashion. While the explanation for such a discrepancy may not lie in any conscious or unconscious bias on the part of legislators, the fact remains that the 1862 institutions' ability to attract their full matching requirements came at least in part at the expense of their 1890 sister schools. *Brown v. Board of Education* found "separate but equal" an untenable policy in a society which rests on principles of genuine equality in 1954. The funding pattern that emerges in this study brings to mind the even earlier separate-and-unequal practices, which were the legacy of *Plessy v. Ferguson* in 1896, and suggests that a closer examination is necessary on simple fairness grounds alone. Potential reasons for such an obviously different standard of funding are worthy of further study.

Recommendations

The following recommendations have emerged from analysis of both the data and findings of this investigation.

1. This study's findings can be generalized only to the cooperative extension administrators surveyed in both 1862 and 1890 institutions that are located in states with both 1862 and 1890 extension programs, for federal fiscal year 2004.
2. Studies investigating the relationship between institution type and attainment of state match should be pursued.
3. Because this study revealed a fairly uniform funding discrepancy that benefited the 1862s (i.e., fifteen of sixteen 1862 extension programs attained their matches, while only eight of fifteen 1890s obtained theirs), the relationship between founding status of the land-grant institution (e.g. historically black 1890 university) and historical patterns of state funding deserves further exploration.
4. Given the quantitative focus of this study, a qualitative longitudinal study conducted for FFYs 2000 (when state match was first mandated) thru 2004 could be employed in which strategies for the successful attainment of state match by 1890 extension administrators are analyzed.
5. Studies analyzing 1890 extensions' history of state match attainment since FFY 2000, when state match was mandated by the United States Department of Agriculture, could be carried out. Such an investigation could reveal

patterns of funding ranging for four years, as this current study was limited only to one.

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Appendix A

Author-modified Demographic Component of the MLQ

Appendix B

Cover Letter to Participants

January 1, 2005

Dear Extension Administrator,

Greetings. You are invited to participate in a study entitled “An Analysis of the Degree of Transformational Leadership Exhibited by Administrators of 1862 and 1890 Cooperative Extension Programs in States with Both Systems as a Predictor for the Attainment of State Match in Federal Fiscal Year 2004.” I am conducting this research as a part of my dissertation for the Ed.D. in Educational Leadership at Marshall University.

The state match mandates of the Agricultural Research, Extension, and Education Reform Act of 1998 (AREERA) for both 1862 and 1890 Land-grant Institutions has become an issue of importance for the entire system. As an associate director of cooperative extension programs at West Virginia State University, state match is a critical and necessary component for our programs to continue serving the needs of West Virginia’s citizens.

The literature suggests that transformational leadership is the most effective leadership style for the successful attainment of funds from state governments. Determining your level of transformational leadership utilizing the Multifactor Leadership Questionnaire (MLQ) and demographic survey will help determine which variables were significant predictors for the attainment of state match in federal fiscal year 2004. This study attempts to respond to the calls of NASULGC, the Kellogg Commission, and ECOP for further research into leadership and resource development. Approximately 110 participants are expected to take the survey.

Your participation in this study is entirely voluntary. You may withdraw from the survey at any time. Please do not put your name anywhere on the survey. Your responses are completely confidential, and anonymity will be maintained by the reporting of data in aggregate form. Please take the next 10-15 minutes to complete the attached surveys. Once complete, please return the instruments in the self-addressed, stamped envelope by February 1, 2005. To receive an electronic copy of the study, or if you have any questions whatsoever, please do not hesitate to contact me at (304) 768-7413, or aliray@wvstateu.edu. This study received approval from the Marshall University Institutional Review Board. If you have any questions regarding your rights as a participant in a research study, you may contact Dr. Stephen Cooper, Marshall University IRB #2 Chair, at (304) 696-7320.

I greatly appreciate your cooperation in this study, and thank you for your time and consideration.

Sincerely,

Dennis P. Prisk, Ed.D., Principal Investigator

Ray Ali, Ed.D. Candidate