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I am submitting herewith a dissertation written by Wm. Herbert Byrd, III entitled "The Performance Predictive Effectiveness of Two Personnel Assessment Profiles for Tennessee Extension County Directors." I have examined the final paper copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Education.

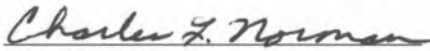


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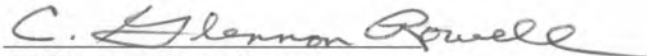
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Vice Chancellor and Dean of
Graduate Studies

**THE PERFORMANCE PREDICTIVE EFFECTIVENESS OF
TWO PERSONNEL ASSESSMENT PROFILES FOR
TENNESSEE EXTENSION COUNTY DIRECTORS**

**A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville**

**Wm. Herbert Byrd, III
December 2005**

THE PERFORMANCE PREDICTIVE EFFECTIVENESS OF
TWO PERSONNEL ASSESSMENT PROFILES FOR
TENNESSEE EXTENSION COUNTY DIRECTORS

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A dissertation
presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Wm. Herbert Byrd, III
December 2005

DEDICATION

To:

Resa

Kristin, Heather and Resa-Marie

who heard

too often,

“Sorry, I’m writing.”

Thanks, I love you too!

*“And Jesus said to him, ‘If you can believe,
all things are possible to him who believes.’ ”*

Mark 9:23 Modern King James Version

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ABSTRACT

Leadership effectiveness is a complex phenomenon involving personality traits, learned and natural skills and abilities, and the resulting behaviors as leadership is performed within context. Because of leadership influences upon organizational outcomes, it is critical for an organization to identify job-specific leadership indicators, to recognize potential leaders, and to recognize the absence of desirable traits in existing leadership. This descriptive study explored the relationships between performance and leadership traits for county directors, the first-line administrative personnel in the University of Tennessee Extension. Performance appraisal scores were compared to items measured in a Managerial Assessment of Proficiency (MAP™) and an inventory measuring aptitude and personality dimensions currently utilized as a pre-employment evaluation (Personal Style Inventory, PSI) in Tennessee Extension. Statistical relationships were expressed using Pearson's Correlation coefficient (ρ) and multiple regression was utilized to express predictive potential.

Relationships did exist between Tennessee Extension County Director performance and MAP and PSI constructs. Though inconsistent, seven MAP constructs (communication and MAP overall proficiencies; advising, theory X and theory Y communication response styles; and the sensor and feeler personal style) were significantly ($p < 0.05$) correlated with one or more performance scores/years. Correlation coefficients ranged from 0.22 to 0.32. A total of sixteen PSI constructs were correlated with one or more performance scores/years. Pearson's ρ values ranged from 0.19 to

0.49. The constructs work drive and overall personality score demonstrated the most frequent and strongest relationships with performance. The PSI constructs of interest in community development, conscientiousness, customer responsiveness, openness to new experience, optimism, achievement/status striving, potential for long tenure, work drive, big 5 model of personality and overall personality score all exhibited one or more moderate ($r>0.30$, $p<0.05$) relationships with performance. The PSI construct of work drive was the strongest predictor variable in both the correlation and regression analysis. Regression analysis produced a workable model of MAP, PSI and demographic variables that accounted for 50.2 percent of the variance in program performance, 56.7 percent of administrative and 51.5 percent of total performance score. Major non-demographic contributors to the model were work drive, theory X and theory Y management styles, the advising communication response style, verbal cognitive reasoning, big 5 model of personality score, MAP communication and cognitive composites, and customer service/responsiveness score.

Demographically, male county directors scored higher in the theory X management style than did female county directors. Female county directors scored higher in the PSI constructs of agreeableness, child management skills, conscientiousness, extroversion, integrity & values, optimism, achievement/status striving and overall personality score. County directors with an earned master's degree exhibited higher work drive scores than did those with a bachelor's degree only.

Recommendations for practice and for further study are offered.

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NOMENCLATURE / LIST OF ABBREVIATIONS

4-H	UT Extension conducts educational programs in four main subject-matter areas identified by name according to the research base which informs the program. 4-H Youth Development programs, or simply 4-H, primarily refers to Extension programs for young people ages 9-19. Subject-matter areas include those related to Agriculture, Family and Consumer Sciences, Leadership, Citizenship, Workforce Preparation, Service Learning and other areas focused on Life-Skill development.
Adult Ag	References to Adult Ag in Extension generally denote those programs targeted to farmers, agribusinesses and homeowners. Agents working in this area rely on a scientific research-base in Agriculture and may work in any of several areas including Ag Economics; Ag Education; Animal Science; Bio-systems Engineering & Environmental Soils; Entomology & Plant Pathology; Forestry, Wildlife & Fisheries; and Plant Science. Agriculture is one of the four major program areas which are components of Extension educational efforts.
CED	The County Extension Director is the first-line administrative representative of The University of Tennessee. An Extension Agent in each county of Tennessee carries this assignment in addition to her/his educational program duties. Prior to January 1, 2001 the County Director was called the County Extension Leader or County Leader and is directly responsible to a Regional Director.
CES	Cooperative Extension Service. The Federal designation of state land-grant partners that deliver Extension educational programs. Cooperative Extension Service programs are charged with the delivery of informal education through the land-grant universities to citizens. This education is not part of a formal undergraduate or graduate degree-granting program of the university.
CSREES	Cooperative State Research, Education, and Extension Service. The United States Department of Agriculture (USDA) component charged with oversight of state Extension programs.
Dean	The Dean of the University of Tennessee Extension is responsible for and gives leadership to statewide educational programs. He/she is also referred to at times as the State Director of Extension or Administrator, 1862 Extension Programs. This position bears direct responsibility to the Federal partner, USDA, for use of Federal funds and related policies. The Dean is the direct supervisor of Regional Directors.

FCS	Family and Consumer Sciences. FCS is one of the four primary educational program areas in UT Extension. Some areas of subject-matter concentration include family nutrition and health, child development and care, gerontology and aging issues, family and consumer economics, and family relationships. FCS programs have also been known under other names such as Home Economics or Human Ecology.
MAP TM	Managerial Assessment of Proficiency (Training House, Inc. 1996) is an instrument which seeks to quantify twelve different competencies relative to management and leadership in an organizational setting. The final profile also includes a Communication Response Style (Training House, Inc. 1997), Personal Style Assessment (Training House, Inc. 1997, based upon Jung or Myers/Briggs personality tests) and a determination of Theory X, Theory Y orientations (based upon work of McGregor, 1960).
PSI	Personal Style Inventory is a psychometric indication of Extension Agent job-related attitudes, interests, tendencies and preferences. This instrument was developed within Tennessee Extension by comparing agent responses with an assessment of agent performance in various job-related indicators by their Regional Director. The PSI is currently administered to all applicants with Tennessee Extension to give an indication of expected performance in the job if hired.
Pgm. Ldr.	Each region has a program leader responsible for coordinating Agricultural programs and another to coordinate Family and Consumer Sciences programming region-wide. Together the two Program Leaders share responsibility for 4-H Youth Development programming in their region.
RD	Resource Development. Another of the four main educational program areas in UT Extension, RD programs include those associated with community-wide or regional issues related to economic development, rural leadership, small business needs, value-added and alternative agriculture, and local governmental concerns.
Regional Dir.	Effective July 1, 2004 Tennessee is divided into three geographic regions. Each region has an administrative officer responsible for overall educational programming in the region, regional budget, personnel and other administrative duties. The Regional Director is the immediate supervisor of the County Director. Prior to July 1, 2004 there were four Extension Districts and the Regional Director was called a District Director.

UT Extension The University of Tennessee Extension. UT Extension was established as the service arm of the land-grant system with the Smith-Lever act of 1914. Originally called the Division of Extension (Sims, 1952) the name was changed to The University of Tennessee Agricultural Extension Service in 1923. The current nomenclature, UT Extension, was adopted July 1, 2004.

Background

Local office administration in Tennessee was reorganized in the Cooperative Extension Service when after the federal land-grant act of the Land Grant University was established. As early as 1929, some states changed the county agent assigned responsibility for agricultural programs with the duties of office management and maintenance in addition to educational program responsibilities (Lyles & Wamboldt, 1994). By 1967, 36 states had designated a person as chairman, coordinator or director of the county Extension staff (Clark & Abdallah, 1964). In the fall of 1970 the Tennessee Extension organization followed suit by formally establishing a first-line management position in each of the 95 counties of Tennessee. Following the example of other states, the Dean and Director of The University of Tennessee Agricultural Extension Service, Vernon W. Daries, appointed the agent in each county Extension office responsible for all agricultural programs to the position then called the County Extension Leader (Clark & Abdallah, 1964; Hambrick & Sowell, 1993; Turner 1974).

James Rickard, an Extension Management Scientist at Auburn University, has observed (1977, p. 33, "The county extension agent is a corporate office with a role of liaison on the telephone, but jobs will have a county agent." This statement has both positive and negative implications when applied to the agent administratively responsible for operations of the county Extension office and county-wide educational programs.

CHAPTER I

INTRODUCTION AND BACKGROUND INFORMATION

Background

Local office administrative leadership needs were recognized in the Cooperative Extension Service soon after this informal educational arm of the Land Grant University was established. As early as 1929, some states charged the county agent assigned responsibility for agricultural programs with the duties of office management and maintenance in addition to educational program responsibilities (Lyles & Warmbrod, 1994). By 1963, 36 states had designated a person as chairman, coordinator or director of the county Extension staff (Clark & Abdullah, 1964). In the fall of 1970 the Tennessee Extension organization followed suit by formally establishing a first-line management position in each of the 95 counties of Tennessee. Following the example of other states, the Dean and Director of The University of Tennessee Agricultural Extension Service, Vernon W. Darter, appointed the agent in each county Extension office responsible for adult agricultural programs to the position then called the County Extension Leader (Clark & Abdullah, 1964; Humberd & Sewell, 1990; Turner 1974).

James Buford, an Extension Management Scientist at Auburn University, has observed (1993, p. 3), "You can put a county agent in a carpeted office with a row of buttons on the telephone, but you still have a county agent." This statement has both positive and negative implications when applied to the agent administratively responsible for operations of the county Extension office and county-wide educational programs.

On the plus side, county agents tend to be skilled in identifying individual, community, and county-wide problems; and working toward solving problems by developing educational programs to meet these specific needs. According to an Extension Public Issues Education Competencies Task Force, agents often fill roles of a networker, convenor, program designer, diplomat, forecaster, facilitator, trainer, information provider, researcher and technical expert (Cooperative Extension National Public Policy Education Committee, 2002). Many of the same problem-solving and program development skills have been identified as applicable to management situations within an Extension office (Turner, 1974; Whiteside, 1985; Whiteside & Bachtel, 1987).

Skillful leadership is critical to success of county programs. Because of the critical nature of the county director position, it is likely a negative situation when the county agent gets the phone bank, carpet on the floor and the new administrative title, yet remains solely a county agent. Kenneth and Miriam Clark, in *Choosing to Lead* (1994, p. vii), state the problem in these words:

People cannot be assigned to be leaders; it is not enough to be assigned a position, given a challenge to take charge, asked to be the tough one in tough times, or want to straighten around a particular situation. Rather, leaders must make a choice; they must commit themselves to lead. *This commitment is more than a contract to fill a position...*In every case, leadership occurs only when one chooses to lead.

Many would agree that desire to lead is an ingredient pursuant to effective leadership, but wanting to lead is not enough by itself. Individuals must also possess certain knowledge, skills and experience to be effective. Haynes (2000) argues that

effective management¹ is especially needed in the county Extension office because there is often geographic and programmatic fragmentation; managers must effectively utilize human, economic and material resources to address specific and general issues; and these functions must be performed while remaining inside the parameters of organizational mission, vision and values. “The leadership¹ role of county Extension directors has become an increasingly critical element in the successful implementation of county Extension programs” (Radhakrishna, Yoder, & Baggett, 1994, p. 1). Unfortunately, excellent educators do not necessarily bring to the position the skills required to be excellent administrators¹ (Hyatt, 1966; Pittman & Bruny, 1986). Ferguson (1964), writing about the county level Extension administrator, observes: “Too often good county agents with brilliant careers of leadership have faltered under the morass of management operation chores or with the assignment that they organize and guide the efforts of others” (p. 21). If “good county agents” stumble when placed in a county director role, we must seek to find contributing factors and determine corrective strategies.

Some writers familiar with Extension believe, primarily on the basis of anecdotal observations, that at least one reason for county director failure lies within the selection process. Ayers & Stone (1999) suggested that county director selection should be based upon desired, observable behaviors rather than traditional methods which have been utilized. Recorded histories of county director appointment, as previously mentioned,

¹ There is a substantive body of leadership literature devoted to debate upon whether there are palpable differences in leadership and management, and where administration falls in the spectrum (Bennis & Nanus, 1997; Clark & Clark, 1994; Kotter, 1996). For the purpose of this study these terms are used interchangeably.

indicated that initially the only requirement was to be the incumbent agent in charge of Agricultural programs (Clark & Abdullah, 1964; Humberd & Sewell, 1990; Lyles & Warmbrod, 1994; Turner 1974). Other county directors were perceived to have been selected primarily because they demonstrated program success as county agents (Bachtel & Whiteside, 1987; Lyles & Warmbrod, 1994; Patterson, 1997; Pittman & Bruny, 1986). These instances of county director selection without overt consideration of needed abilities directly related to county administrator duties have contributed to questions of the effectiveness of the selection process.

Patterson (1997) described the county director selection process as being “fundamentally flawed” (p. 1) because leadership, management, and/or administrative training or preparation before appointment has infrequently been required. William L. Carpenter observed an absence of administrative training as early as 1966 when he stated that, “Many county Extension chairman are administrators not by choice or training” (p. 23). Minimum qualifications for county agents include among requirements a baccalaureate degree and often stipulate an advanced degree must have been earned. Yet for county Extension directors no formal study, preparation or specific educational requirement in administration is demanded (Lyles & Warmbrod, 1994). Linder (2001) observed that of all extension managers, county administrators were least likely to have had formal education or specialized training in critical impact areas such as human resources. As a result, “many states are looking for more effective ways to identify and prepare potential county extension leaders, chairs, directors and coordinators” (Lyles & Warmbrod, 1994, p. 11). Others are calling for changes to be made in the criteria for

selection of individuals placed in leadership roles within Extension organizations (Apps, 1993; Buford, 1990; Patterson, 1997; Patterson, 1998; Patton, 1987; Smith, 1990). These calls to change county director selection criteria lead us to investigate what objective criteria are available for this purpose.

Howard Gardner, in *Leading Minds: An Anatomy of Leadership* (1995), points out that by the time we are a five-year-old child we have developed the ingredients necessary for entering into a leader-follower relationship. In fact, since early childhood many of us have practiced leadership in the form of games, sports, family or school activities, and a number of other ways. Yet, Gardner (1995, p.32) states, “few systematic efforts have been undertaken to pinpoint the early markers of leadership.” Efforts to systematically identify early markers of leadership in Extension are largely absent from the literature.

In The University of Tennessee Extension there would be great benefit in being able to “pinpoint the early markers of leadership” (Gardner, 1995, p.32) near the beginning of an extension agent’s career. This would enable the organization to provide a leadership training track for agents who showed promise and interest in leadership competencies. Recognizing and training such a cadre of potential leaders would strengthen the organization by allowing hiring decisions to be made from agents who demonstrate leadership aptitudes and/or are trained and prepared for the position. Current practice often relegates hiring decisions to factors other than those desirable for effective leadership. The selected agent must then learn and develop her/his leadership skills and abilities in “on the job training” if these qualities are developed at all. Those that hover near the lower end of the leadership learning curve are often costly to the organization in

terms of increased turnover of employees and decreased effectiveness of team-delivered educational programs.

The desire to find measurable criteria with potential for use in the identification and selection of effective county directors has led to the use of various assessments in Extension circles, examples of which appear in table 1. Two other assessments currently being used in Extension, the Managerial Assessment of Proficiency (MAP™; Training House Inc., 1996) and the Personal Style Inventory (PSI; Gibson, 1999), may have application in assessing Extension leadership potential. Each instrument seeks to quantify traits, characteristics, behaviors or styles in individuals that have been identified in various studies as contributors to effective leadership.

MAP™ and PSI were each developed, at least in part, to assist in making employment decisions. As the developers of MAP™ suggest, the assessment can be used “to diagnose individual and organizational training-development needs; to evaluate competency and style gains from training-development programs; and to make personnel selection decisions” (Kehoe, 1992, p. 500). The PSI was developed specifically for UT Extension as a pre-employment evaluation tool intended to provide additional information on applicants considered for Extension positions. No research is currently available about the ability of these assessments to predict effective leadership potential in UT Extension county directors.

The Managerial Assessment of Proficiency (MAP™, Training House Inc., 1996) was first utilized in Extension's Southern Region in April, 1994 (Ladewig & Rohs, 2000). As of June 2000, MAP™ had been administered as part of the Southern Extension

Table 1. Assessments utilized in recent Extension studies of County Director leadership

Assessment Instrument	Reference or Source	Extension Studies
Myers-Briggs Type Indicator (MBTI)	Myers (1962)	Barrett & Horner (1989) Earnest (1994)
Multi-factorial Leadership Questionnaire (MLQ)	Bass (1985) Bass & Avolio (1990)	Brown, Birnstihl, & Wheeler (1996) Woodrum & Safrit (2003)
Leadership Orientations Survey	Bolman & Deal (Bolman, 2001)	Bowen (2004) Hollingsworth (1995)
Leadership Practices Inventory (LPI)	Kouzes & Posner (1995)	Rudd (2000) Lowery (1996) Woodrum & Safrit (2003)
Least Preferred Co-Worker Scale (LPC)	Fielder (1996, 1967)	Radhakrishna et al. (1994) Dvorak (1975)
Quality Potential Assessment, Productive Practices Survey, Management Styles Inventory	Teleometrics International, Woodlands, TX	Broshar & Jost (1995)

Leadership Development (SELD) program with over 900 participants. Past participants in SELD MAP™ workshops have included upper-level administrators, middle managers, county directors, faculty and potential leaders for Extension in 13 southern states plus Delaware. Data obtained from MAP™ workshops have been utilized for individual assessment/reflection, in developing individual and/or organizational professional development plans, and as information for making hiring/promotion decisions (Ladewig & Rohs, 1998, 2000; Rohs, 2004). The current wide-spread use of MAP™ in Extension increases the need to determine if results of the assessment are valid, reliable and

applicable to Extension management and leadership needs. However, little research currently exists to determine validity and applicability in Extension settings.

According to Howard Ladewig (personal communication, August 31, 2004) the SELD committee selected MAP™, in part, because of the perceived face/content validity of the video-based assessment. Ladewig and Rohs (2000) indicated “the competency-based approach builds around the skills individuals and groups in Cooperative Extension need to be effective in the future” (p. 9). Ladewig & Rohs (1998) also reported that 91 participants evaluating MAP™ workshops rated the statement, “MAP™ would provide a good assessment of the managerial skills” needed in Extension, a 9.6 on an 11-point scale (1=strongly disagree, 11= strongly agree). Therefore, MAP™ program evaluations seem to support content validity of the MAP™ assessment.

There are other factors offered in support of using MAP™ as an assessment tool. Proponents of MAP™ cite the value of the large database from which norms are derived – as of August 2004 over 70,000 managers in 500-plus organizations had completed MAP™ (Rohs, 2004). Detractors note that the only published information regarding the norming population is relative to the industry type in which MAP™ participants work (Kehoe, 1992). Data relative to gender, race, age and other demographic type variables have not been reported in literature or promotional materials to date. The use of MAP™ is further supported by one study in which Rohs (2002, 2003) found a higher turnover rate (26% versus 5%) among 145 Extension agents who did not complete MAP/EXCEL™ assessments and training versus a group of 40 Extension agents who completed

MAP/EXCEL™. More complete data on Rohs' norming population and group make-up would contribute to more objective conclusions relative to instrument validity.

In promotional materials for MAP™, Rohs (2004, p. 2) states, “MAP™ is the premier tool to provide your managers and your trainers with a valid, reliable, objective data base on which to build HRD decisions.” Ladewig & Rohs (2000) cited validity and reliability data from Training House, Inc. MAP™ instructor materials. Validation studies were done with over 250 managers in several organizations employing rank order correlation analysis where rank in job performance was paired with MAP™ composite scores. Validation correlation *r*-values ranged from 0.75 to 0.92. Assessment reliability, determined by the split-half method, was reported to be between 0.75 and 0.76. While these reliability values are acceptable and validity scores would be considered to be “high,” in Jerard F. Kehoe's (1992) review of MAP™ for the *Eleventh Mental Measurements Yearbook* the objectivity of scoring, reliability and validity of the instrument was called to question. Kehoe summarized:

The ease, orderliness, and attractiveness of the MAP materials belie the significant lack of supporting evidence for the reliability and validity of MAP scores. Certainly, the available reliability and validity evidence fails to meet even the most minimal professional standards for assessment procedures and fails to meet the regulatory requirements for selection procedures. (p. 502)

Gerald Stone (1992) reviewed another assessment utilized in a MAP™ workshop (the Personal Style Assessment, PSA), and categorized the assessment as a “parlor game” (p. 667) because of the lack of validity evidence presented. The disagreement in reports

regarding validity and reliability suggests more research is needed if the assessment is to be used for purposes of employee assessment and selection.

The Personal Style Inventory (PSI, Gibson, 1999), like MAP™, also appears to have a high degree of face or content validity. The instrument was developed by industrial psychologist Dr. Lucy Gibson of Resource Associates, Inc., after interviews with county, district and state level educators in UT Extension. A matrix of needed agent competencies and proposed aptitude and personality dimensions was composed following these interviews (table A-1). A concurrent criterion-related selection test was completed by extension agents to determine reliability and validity of the assessment. The overall PSI score was normed against a population of UT Extension employees and projects percentile ranges (10 groups) in which the employee's performance could be expected to fall. The PSI has been used in UT Extension with all applicants since January, 2000. Since then, regional directors and state-level administrators have expressed close agreement with the scores of new hires and their subsequent performance in the organization, thus supporting the face validity of the instrument.

Though MAP™ and PSI assessments are similar in sharing a perceived high face validity, they differ in methods of reliability and validity calculation. The PSI assessment reliability and validity coefficients were calculated by methods deemed to be more acceptable for psychometric measures (Gay & Airaisian, 2000; Gibson, 1999). Cronbach Alpha coefficients reflect a high degree of test reliability for the PSI, ranging from 0.70 to 0.90 ($\bar{x} = 0.82$) for the 14 different scales (table A-2). Validity correlations were calculated by comparing a regional director's 0-9 ranking of employee performance

on each item of the scale to the individual's test results relating to that item (table A-3). An average of the 14 performance scores was also correlated with an individual's overall test score, and three aptitude constructs (table A-4). Validity correlations calculated for the PSI were significant ($p < 0.05$) for all but three comparisons. However, correlation coefficients would be considered low to moderate (ranging between 0.10 to 0.35) by some standards (Gay & Airaisian, 2000; Miller, 1994). Therefore, if there is a problem with the use of PSI, it lies in the somewhat low correlation coefficients obtained.

The use of assessments to aid in the selection of leaders is supported from several perspectives. In more than fifty studies over a period of thirty years, Paul Meehl compared decisions based on statistical combinations of data with decisions based on the best clinical judgement of professionals. He found that in judging people, a formula based on objective data yielded a better prediction of future performance than the best judgement of the most qualified and experienced observers. Clark and Clark (1994) summarize Meehl's findings by stating:

...the use of tests, assessments, and items of information, properly combined, provide a better basis for prediction than does the judgement of an executive-search professional, a management team, the leader whose successor is being sought, or in fact, anyone else. (p. 54)

Further, in a "research roundup" of leadership measurement, Larry Lashway (1998) summarizes conclusions of Wendel, Schmidt and, Loch when he says:

...measuring leadership is still an inexact science requiring careful reflection and caution, yet the right test, "one that fits the purpose of the examiner, if

administered properly, if scored with exactitude, and if interpreted correctly, will yield good results.” Conversely, those who rely on intuition or unsystematic procedures are taking major risks. (p. 2)

Reducing organizational risk in making more accurate predictions of personnel performance is certainly a meaningful organizational pursuit which could positively effect UT Extension.

To summarize, in UT Extension the County Director fills a role critical for local program and organizational success. Too often, appointment decisions are based upon criteria other than those factors believed to result in effective county leadership. Two assessments, MAP™ and PSI, have been utilized in UT Extension that seek to measure a number of personality traits, aptitudes, behaviors and preferences connected with effective leadership in various studies. We do not know if these assessments predict either in part, alone, or together, effective leadership as measured by performance appraisal in UT Extension.

Statement of the Problem

The original selection method utilized in the appointment of the first County Extension Leaders (CEDs) in Tennessee resulted in a predominately male cohort² with lengthy employment in the organization, and usually that particular county. This newly

² Claire Nell Breeden, Meigs County, was the first female and the first non-agriculture educated county director to be appointed (Aug. 1, 1975). Twenty-five years were required to appoint a black county director, Steven Officer, who was appointed in DeKalb County in 1986. The first agent with a 100 percent 4-H assignment to be appointed county director was Eugene Medley, in Overton county in 1987 (Humberd & Sewell, 1990).

selected CED generally had a high level of technical expertise and knowledge in his subject-matter field (some area of agriculture) and had demonstrated excellence in his discipline. In all likelihood, the county agent was placed in the position of CED because of this observed program strength or sometimes his political ties in the county. In some cases he just happened to be in that place at an opportune time to receive what has been considered informally a “lifetime appointment.” Very few newly-appointed CEDs have had formal training in managerial and administrative duties. In other words, many CEDs in Tennessee are perceived to have entered an administrative position with a patriarchal, autocratic type of management style and were often hired based upon program-related performance, rather than an evaluation of the abilities needed in the CED role. This phenomenon is not particular to Tennessee but has been reported in other states with similar positions (Campbell, Grieshop, Sokolow, & Wright, 2004; Ganter, 1989; Hyatt, 1966; Ladewig & Rohs, 2000; Lowery, 1996; O’Neill, Thomasino & Barbour, 1987; Patterson, 1997; Pittman & Bruny, 1986; Prince, 1978).

The basis of this study rests on the premise that determining indicators of CED effectiveness would improve CED selection. Improved CED selection would in turn positively impact CED effectiveness with an overall benefit to the organization at large. Application of this information would be particularly useful in the organization in at least four levels of critical impact. These are at the selection and appointment of CEDs (Burden, 2003; Whiteside, 1985), identifying “high potentials” in early career (Berke, 2003), training newly appointed and existing CED’s in less-proficient areas (Bowen, 2004; Owen, 2004; Sortor, 2003), and in developing training programs for agents who

have an interest in preparing for the CED role (Bowen, 2004; Clark & Abdullah, 1964; Mees, 1963; Owen, 2004; Skelton, 1963).

Identifying indicators of CED effectiveness would support selection of new CEDs on the merit of observed traits, abilities, skills, knowledge and other measures related to the role of County Director. Anecdotal observations have indicated selection methods based upon these criteria, rather than the previous methods discussed earlier, may have a positive impact on the organization.

Currently, Tennessee County Director appointments are made on the basis of an individual's past program performance and the best subjective judgement of regional and state-level administrators. Though two assessments (MAP™ and PSI) have been utilized in Tennessee which purportedly should be used in making human resources decisions, there is no empirical evidence which demonstrates the capability of MAP™ and PSI in measuring or predicting leadership effectiveness in Tennessee County Directors or candidates for such positions.

Statement of Purpose

This study explored the relationships and potential predictive validity of two existing job-related assessments on county extension director effectiveness as reflected by annual performance appraisal scores in UT Extension.

Research Questions

This study sought answers to the following research questions:

1. What is the relationship between Tennessee County Director performance as measured by the UT Extension Performance Appraisal for County Extension Leaders and the competencies, management styles and personal values as determined by the Managerial Assessment of Proficiency (MAP™)?
2. What is the relationship between Tennessee County Director performance as measured by the UT Extension Performance Appraisal for County Extension Leaders and the personality traits, personal preferences and aptitudes determined by the Personal Style Inventory (PSI) currently used as a pre-employment evaluation in Tennessee Extension?
3. Are there differences in perceived leadership effectiveness, competencies, management styles and personal values in UT Extension relative to demographic indicators such as age, gender, race, tenure, time in administrative position, title/rank, program area assigned, and location?
4. What, if any, competencies, management styles, personal values, traits, preferences, and aptitudes represented by the PSI and/or MAP™ variables predict subsequent successful leadership in multiple regression analysis and what is the power of the prediction?
5. What is the relationship in the UT Extension between program-related performance and administrative performance as measured by the UT

Extension Performance Appraisal for County Extension Faculty and County Extension Leaders?

Significance

There are a number of leadership issues which have been explored across Land-Grant University System Extension programs. One area has been the need to identify and select first-line supervisors who have the skills and abilities to conduct first-rate programs. These supervisors must also be able to create a team within the county staff and other stakeholders to effectively address educational needs in the county. In Tennessee, these first-line supervisors in each county are the County Directors.

In speaking of the county director role, Campbell et al. (2004) commented, “While the job of county director necessarily involves a good deal of paperwork...it is more appropriately seen as a position of significant administrative and community leadership” (p. 28). This county director can have tremendous impact on personnel, funding, community and political support, overall county program direction, facilities, access to mass media outlets, and the longevity and long-term success of other agents in the county. The position is critical to organizational success.

However, the critical nature of the county director position has not always been reflected in the selection process employed. As previously mentioned, too often the County Director was selected because he/she was already located where the vacancy had occurred, had been at least somewhat successful in delivery of educational programs, and was one of the “senior” agents in the area / county. Few agents who have assumed the

administrative responsibilities of a County Director have had training or much relative experience prior to her/his appointment. Mees (1963) reminded us that we should not assume that someone with relative experience comes to us with an advantage because experience teaches different people different things. Some learn “right” and some learn “wrong” under the experience headmaster. Additional information to better inform selection decisions would be a significant contribution of this research.

There is another potential contribution related to county director selection. Tremendous benefit could result from an ability to identify agents early in their career who have skills and abilities pre-requisite to desirable leadership practice (Hyatt, 1966). Artner (2000) raised serious implications of missing talent in an article aptly entitled “Identify your star performers before you lose them.” He introduced “Artner’s Law 3.1.1 ‘Law of star performers,’” which states, “Taking care of your star performers is easy. Figuring out who they are is hard” (p. 13). Berke (2003) labeled this group “high potentials” and discussed critical organizational benefits to identifying them. He suggested that identifying an organization’s “high potentials” involves more than looking at performance and IQ. It is important to seek employees who are learning agile, learn from experiences, have a personality that fits organizational needs, and demonstrate strong analytical and problem-solving skill. Once employees with these characteristics are identified, potentially the desire for and ability to serve in administrative roles could be fostered with various strategies while employees early in their career. This is especially critical if an organization is to follow the recommendation offered by Berke (2002) to develop at least three potential internal candidates for any administrative position pool.

There are a number of potential benefits from identifying “high potentials” in Tennessee Extension. For instance, developmental programs could be designed and implemented to benefit individuals and the organization. Agents identified to have leadership aptitudes, interests, and potential early in their careers could be offered proactive training and developmental opportunities before they elected to pursue promotion to County Director. UT Extension's ability to prepare agents for the CED role in advance using proactive, job-related strategies ensures more qualified candidates for CED positions. Similar training offered to newly appointed and existing CEDs to expand the agent's leadership skills, behaviors, aptitudes and abilities could be conducted to enhance performance, hopefully before these must be developed, tested, practiced or exercised under fire.

If MAP or PSI are found to be reflective of CED performance, this research could make significant contributions to training programs in UT Extension. Gunderson and Haynes (2000) indicated that assessments are beneficial to the organization in three ways: better selection decisions are made with greater job-related information, competencies and skills lacking in employees are diagnosed, and agents are able to gain training in those areas as part of a developmental plan. Radhakrishna, Yoder, and Baggett (1994, p. 1) indicated that “Identifying leadership styles, behaviors, and practices is valuable and important for contributing to the professional growth and development of individual CEDs and attainment of organizational goals.” There are then at least three areas of potential impact relative to training. These include preparatory programs for agents desiring to later move into director positions, “survival” training for newly

appointed county directors, and training to address low-competency areas of existing county directors.

First, training programs could be developed for agents who show propensity for leadership early in their careers. As a result of the training we would expect a higher qualified group of applicants prepared in advance of CED vacancies which occur, and greater opportunities to have observed leadership-related growth and practice on the part of these participants (Hyatt, 1966; Mees, 1963; Skelton, 1963).

Training programs designed for newly appointed county directors are important from the standpoint of providing critical knowledge, skills and information necessary to establish success soon after being appointed to the role. Skelton (1963) noted that newly appointed County Directors understood their responsibility was to “secure maximum effectiveness of the county staff by using all available resources” (p. 38). However, he added that the new directors needed immediate answers to questions such as: “Where do I start? What is involved? How do I get this worked out? And, do I know what I am trying to do?” (p. 38). Early training of new appointees could help county directors answer these questions and to develop a strategy for meeting county educational and staff needs. It is also possible that participating in training with others under similar career demands would facilitate development of informal support networks and comradery among peers.

A third group that would benefit from a designed county director training program includes existing county directors (Clark & Abdullah, 1964; Cooper & Graham, 2001; Durfee, 1963; Lyles & Warmbrod, 1994; Mees, 1963). Carter (1968) stressed the importance of learning and relearning for persons in the county supervisory role and

stated, “We should learn something every day” (p. 96). Owen (2004) proposed using periodic self-assessments to determine competency areas of county directors which need improvement and addressing deficient areas with training. Rohs (2004) and Ladewig (also Rohs, 2000) indicated one use of MAP™ is to serve as an assessment to determine areas for followup training in workshops called EXCEL™. Someone once said, “You don't have to be sick to get better.” Strengthening existing county directors through training tailored to their assessed administrative needs could yield significant organizational returns.

Improvement in CED development and selection is likely to catalyze overall organizational effectiveness. Potential areas of impact include enhanced agent job satisfaction, reduced turnover and associated costs, stronger county teams and coalitions, increased budgetary and legislative support, and improved programs and student learning. Assessment and training programs in Ohio and Minnesota have demonstrated many of these desired outcomes (Smith & Clark, 1987; Haynes, 2000; Gunderson & Haynes, 2000).

In a more general sense, this study should contribute to the body of knowledge related to extension leadership in Tennessee. These findings may be of interest to those in administrative roles at the state, regional and county levels. Because most states have similar positions, the findings may further define the county leadership position at large. Contributions may include increased knowledge and understanding of leadership assessment, leader behaviors, and traits and skills needed for effective county leadership. Strengths, problems and opportunities may be revealed relative to leadership assessment

and appraisal of performance within UT Extension. This study may also add to the general body of research seeking to empirically define effective leadership.

The over-arching desire and objective of this research would be to impact the UT Extension organization in a manner which furthers an enhanced quality of life for Tennesseans through educational programs, the UT Extension mission.

Delimitations / Limitations

The population for this study is delimited to the County Extension Directors in one state, Tennessee. Because of the population, proprietary data in the PSI assessment, and uniqueness of Tennessee's performance appraisal system, findings of this study, though suggestive, may not be transferrable to a larger population.

This study utilized existing data collected during a MAP™ workshop March 16-18, 1998 and during the validation phase of development of the Personal Style Inventory in the summer of 1999. Though there may be additional assessments which could possibly reflect county director leadership effectiveness, this study was limited to the use of MAP™ and PSI. Thus, no determinations were made as to the relative predictive value of other assessments not a part of this study except where general findings in the literature are compared.

Overview of Research Methods

This was a descriptive correlational study of behaviors and traits consistent with effective leadership of Tennessee County Extension Directors. Specifically, the study

sought to describe existing relationships between data (competencies, management styles, personal values, traits, preferences, and aptitudes) measured by two existing job-related assessments that were completed by county directors of UT Extension and job performance as measured by annual performance review scores of these directors. The predictive ability of the data was evaluated where statistically significant relationships were found.

Relationships were determined by calculating Pearson's rho (ρ) correlation coefficients. Statistical significance was set at the five percent level ($p < .05$), a level consistent with much educational research (Schlotzhauer & Lettell, 1997). At this level of significance, the relationships observed would be expected to occur no more than five times out of a hundred by chance. Multiple regression was utilized in determining predictability and the extent to which any one variable contributed to an estimate of performance. "Goodness of fit" of the regression model was reflected by the R^2 value which is an indicator of the percentage of variation explained by the model.

Demographic data were also collected on County Directors from UT Extension records and personnel files and included in this analysis. Factors such as age, race, gender, total Extension service, time served in the county director position, area of responsibility, number of staff for which they are responsible, and educational level (though for recent appointments a master's degree was required) were considered as possible sources of variation, either individually or as they interacted with other dependent variables. The regression model was adjusted to remove the effect of any significant demographic influences.

Statistical analysis utilized SAS® (Copyright© 1999-2001 by SAS Institute Inc., Cary, NC, USA, SAS® Proprietary Software Release 8.2) to test for linear relationships, to construct scatterplots of data, to calculate descriptive statistics such as means and measures of variance, and to calculate Pearson's rho (ρ) correlation coefficients, tests of significance, and predictability of multiple regression models.

CHAPTER II

REVIEW OF THE LITERATURE

In beginning this literature review, it is interesting to think for a moment about those questions which are to be considered relative to identifying potential leaders: What do we know? What do we not know? What do we want to know? It is perhaps a philosophic paradox of mankind that the more we know, the more we want to understand, thus the generation of more questions. In the search for identifying measurable characteristics and forecasting effective leadership, there has been what appears to be an exponential increase in the number of volumes written in a relatively short period of time, particularly over the past 30 years. Extensive leadership reviews such as Bass and Stogdill's *Handbook of Leadership, 3rd Edition* (Bass, 1990), Clark and Clark's (1990) *Measures of Leadership*, or *Leadership Education: A Source Book* (Freeman, Knott, & Schwartz, 1994) can be evaluated by the inch or by the pound, impressive works by either measure. Yet, there is still much to learn about identifying effective leaders.

This study seeks answers to a number of organizational questions. Therefore, we will explore available knowledge anew in hopes we can add to our answers. Perhaps the process will also assist in framing future questions – some currently poorly formed, and others as of yet unknown. Could it be that the “asking of better questions” is the greater challenge in any search for answers? A review of pertinent literature in this chapter will explore leadership definitions, look at the evolution of leadership theory, review the importance of effective leadership in Extension and conclude with information related to appraising performance in organizations.

Leadership Defined

In his critique of leadership studies, Joseph Rost (1991) chastised the writers on leadership who failed to define it, citing 366 of 587 books or book chapters on leadership without a definition. Rost offered a detailed list and analysis of definitions, tracing what authors had written by decade from 1900 to 1989. In categorizing definitions of the 1980s, he labeled some “do the leader’s wishes” (p. 70), others “achieving group or organizational goals” (p. 75), then management, influence, traits, transformation, and finally named a miscellaneous category. As Dr. Grady Bogue (Chancellor Emeritus of LSU, Shreveport and Professor of Leadership Studies at The University of Tennessee) has often told his students, if it takes three different theories to explain the phenomenon of light, why should we be surprised at the variety of ways we seek to describe, explain, or otherwise make sense of complicated human interactions such as those we call leadership? Leadership, like light, is a single entity requiring multiple truths for description and explanation.

It also is striking that if one defined or described another human being to someone else, we would do so using relationships, unique or notable attributes, behaviors, special traits or abilities, accomplishments, labels, stereotypes or other such identifiers that described her/him within the realm of our common understanding. We will see that many have defined, or sought to understand leadership by similar means.

Heifetz (1994, p. 19) offered some guidance in evaluating leadership definitions. He recommended four criteria that a leadership definition should meet: (1) the “definition must sufficiently resemble current cultural assumptions so that, when feasible, one’s

normal understanding of what it means to lead will apply;” (2) it “must be practical so that practitioners can make use of it;” (3) it “should point toward socially useful activities;” and it should (4) “offer a broad definition of social usefulness” (Heifetz, 1994, p. 19) The definitions which follow are for the purpose of establishing a foundation for understanding common themes associated with the term leadership.

John Maxwell introduced two important leadership concepts, influence and followership, in his short and simple definition. He said, “Leadership is influence - the ability to get people to follow you” (2001, p. viii). He reinforced this implied leader – follower relationship when he stated: “He who thinketh he leadeth and hath no one following him is only taking a walk (p. vii).” However, Garry Willis (1994) reminded us in his book *Certain Trumpets*, “Influence is not, of itself, leadership. The weather influences us. So do earthquakes, or background music in public places” (p. 19). Willis also added that the leader who forgets that followers have some input on where they are led, will eventually be without a following. Therefore, his or her clear trumpet call to “rally the troops” must be to people who are capable and willing to respond.

In *The Leadership Challenge*, Kouzes and Posner (1995, p. 19) incorporated this concept of leader and follower choice into the definition having said, “Leadership is a reciprocal relationship between those who choose to lead and those who decide to follow.” James MacGregor Burns (1978), one of the scholars of leadership study, described a symbiotic relationship, an interdependence, between those who choose to lead or follow: “Leaders and followers are engaged in a common enterprise; they are dependant on each other, their fortunes rise and fall together, they share the results of

planned change together” (p. 426). Or, in the words of Murphy's (1996, p. 14) leader motto, “If I fail, we fail; if we fail, I fail.”

It is also worth being reminded that influence works two ways – leaders influence others but are also influenced themselves by peers, constituents and others. I saw a bumper sticker recently that reflects reciprocal influence at an extreme. It boldly said, “If the people lead, their leaders will follow.” This one statement could represent either the best or worst of leadership: leadership that has empowered people, or people filling the leadership void of a title-only incumbent. John Gardner warned of the cynicism that develops when so-called leaders find out where the parade will be and then hurry to get out front, giving the appearance, at least for a time, that they are leading the parade (Gardner, 1990).

Leadership involves relationships. A partnership of sorts exists between leader(s) and follower(s). As we look at this further, again quoting Burns (1978), leadership is “...inducing followers to act for certain goals that represent the values and the motivations – the wants and needs, the aspirations and expectations – *of both leaders and followers*” (p. 19). John Gardner (1990) tied methods of leader (or leadership group) influence together with shared objectives when he defined leadership as “the process of persuasion or example by which an individual [or leadership team] induces a group to pursue objectives held by the leader or shared by the leader and his or her followers” (p. 1). Burns (1978) later put a leader in the context of resources and conflict when he indicated leadership...

...is the reciprocal process of mobilizing, by persons with certain motives and values, various economic, political, and other resources, in a context of competition and conflict, in order to realize goals independently or mutually held by both leaders and followers. (p. 425)

After considering (and criticizing) hundreds of leadership definitions proposed between 1900 and 1980, Joseph Rost (1991) offered his own saying, “Leadership is an influence relationship among leaders and followers who intend real changes that reflect their mutual purposes” (p. 102). A leader, then, influences others (followers) to work toward some objective or goal. These concepts are critical to a good working definition of leadership, yet, there are still some other ideas to be considered.

Several authors framed leadership around the concept of a performing art. Max DePree, in his book *Leadership is an Art* (1989), stated his concept of the art of leadership as “liberating people to do what is required of them in the most effective and humane way possible” (p. 1). Kouzes and Posner (1995) expressed the artistry of leadership this way,

Leadership is a performing art – a collection of practices and behaviors – not a position. ... Excellence rises from within; it can’t be imposed from without. Thus we define leadership as *the art of mobilizing others to want to struggle for shared aspirations*. (p. 30)

In my personal favorite, DePree (1989) summed up progress of an artful leader with these words: “The first responsibility of a leader is to define reality. The last is to say thank you. In between the two, the leader must become a servant and debtor” (p. 11). Leader

acting in the role of servant is a concept Robert Greenleaf explored in his written “journey into the nature of legitimate power and greatness,” *Servant Leadership* (1977).

In addition to being a performing art, leadership is also a faith-based enterprise. Leaders hold organizations, people, and values in trust. Several researchers and authors (Bennis, 1993; Gardner, 1968; Kouzes & Posner, 1993) indicated that good leaders make people hopeful. Gardner stated, “The first and last task of a leader is to keep hope alive” (p. 134). Nanus and Dobbs (1999) credited Napoleon Bonaparte with saying “A leader is a dealer in hope” (p. 7). Lee Bolman and Terry Deal, in *Leading With Soul* (1995), combined several faith-based concepts when they indicated: “Leading is giving. Leadership is an ethic, a gift of oneself....It is offering oneself and one’s spirit” (p. 102).

Frances Hesselbein, CEO of Girl Scouts from 1976-1990 offered some insight useful in drawing our attempt to define leadership to a close. She said,

Leadership is a matter of how to be, not how to do it. We spend our lives learning how to do it, but in the end, it’s the “how to be” that defines the quality and character of our performance and contribution. A good leader embodies the vision, mission, and principles of the organization. (Vlami, 1999, p. 25)

One study of Extension excellence found the “how” to excellence included an acute sense of context, thoughtful loyalty to goals, consideration of alternative means and reflective judgement based upon balance (Sandmann & Copa, 1987). This balance included the leader’s need to navigate the tensions in her/his work such as being responsive vs. taking a stand, giving visibility to self and programs vs. empowering others, seeing the big picture vs. doing detail work, dealing with technical information vs. the people

knowledge required, or private life vs. job responsibilities and demands. Thus “how to be” requires reflexive as well as thoughtful choices on approach and implementation.

“How to be” can often be seen in the word pictures of various metaphors for leaders. Grady Bogue, Chancellor Emeritus of LSU, Shreveport, and Professor of Leadership Studies at UT, (1994, 1999, 2000) has offered such metaphors for today’s leadership as guardian, guerilla, coach, covenant maker, maestro, mentor, servant, steward, designer, mobilizer, team developer, role model, partner, moral exemplar, change agent, agent of adaptation and responsibility, and community builder. You can see the “how to be” choices for leadership practice are as varied as the colors of an artist’s palette and work together in similar fashion when the leadership portrait is well composed.

Definitions related to transformational leadership align well with the nature of Extension work. In fact, effective extension agents, and particularly County Extension Directors, embody what James MacGregor Burns (1978) introduced as transformative leadership. These leaders “shape and alter and elevate the motives and values and goals of followers through the vital *teaching* role of leadership” (p. 425). Warren Bennis and Bert Nanus further expanded the role when they wrote, “The new leader...is one who converts followers into leaders, and who may convert leaders into agents of change” (Bennis & Nanus, 1997, p. 3). From a very early point in Extension’s history to the present day, a phrase often used of extension workers is “Change Agent” (Clark, 1964; Humbert & Sewell, 1990 ; Rasmussen, 1989; Sims, 1939, 1952).

Effective extension agents and CED's build strong relationships, work to build influence such that clientele will learn and follow research-based practices, must analyze people and situations to prepare clientele to face present and future problems, lead by serving people and community needs, define what is and what can be, create community networks and work together toward shared goals. UT Extension directors operate on the principles of keeping faith and hope alive in the lives of those they touch each day as they transform those lives through educational leadership. The effective Extension worker, because of the very nature of her/his occupation, must embody most of the key components we have now observed in definitions of leadership.

Evolution of Leadership Theory

In the exploration of leadership definitions, evidence of leadership theory development over time is apparent. A closer look at leadership theory evolution is pertinent to this study as it informs us of ways in which others have attempted to identify, describe, recognize or quantify leadership capabilities.

Trait and Behavior Theories of Leadership

The 2002 Wisconsin Extension Calendar showcased a trait for each month which is considered to be desirable in an Extension agent. The following twelve traits were used to describe an effective Extension professional: honest, creative, scholar, risk-taker, dependable, passionate, mentor, fair-minded, inclusive, flexible, a visionary, and capable. Just as these traits were used to picture the ideal Extension agent, there is a body

of research that has sought to create an image of leadership by describing identifying characteristics or behaviors.

Trait or competency theories were among some of the first to be explored in researching effective leadership. Trait research, especially that done around the late 1800s or early 1900s focused primarily on physical attributes and was based upon a theory that leaders were born, not made. A related theory was later called the “Great Man” theory and captured much research attention. Several leadership study reviewers have documented trait research findings, including these early ones (Bass, 1990; Clark & Clark, 1990; Yukl, 1981). There remains a benefit in looking at characteristics of effective leaders, though studies more contemporary to our time lean more to observable behaviors or a combined trait and behavior study.

Warren Bennis and his co-writers/researchers (Bennis, 1993; Bennis & Nanus, 1997) continue to look at leader characteristics and indicated, “Leadership competencies have remained constant but our understanding of what it is, how it works, and the ways in which people learn to apply it have shifted”(Bennis & Nanus, 1997, p. 3). One study recorded observations of 90 successful leaders in 1984, resulting in the identification of four areas of leadership management (attention, meaning, trust, self). Bennis’ research also investigated the nature of leadership that requires multiple models for adequate description. *In Leaders: Strategies for Taking Charge* (Bennis & Nanus, 1997), and again in his latest venture, *Geeks & Geezers* (Bennis & Thomas, 2002), a “new theory of leadership” was proposed. This latest theory was built around what the authors called a crucible event – a defining point in a leader’s journey. In exploring these defining

experiences, Bennis & Thomas observed four leadership qualities at work that are described in the chapter entitled “The Alchemy of Leadership.” The 18 “geeks” and 25 “geezer” in the study were found to have a great (1) adaptive capacity, “an almost magical ability to transcend adversity, with all of its attendant stress, and to emerge stronger than before” (p. 121). They also (2) engaged others by creating shared meaning, and demonstrated the competencies of (3) voice and (4) integrity. The competency of voice was described as communicating purpose, exhibiting self awareness and confidence, and demonstrating “EQ”- emotional intelligence. Integrity was composed of ambition, competence, and a moral compass which the authors called the “Integrity Tripod” (p. 123), in the image of a 3-legged support where if one fails, all fall. Various traits were associated with the four qualities, including hardiness, being a “first class noticer,” seeking to actively learn leading, proactively seizing opportunities, creativity, encouragement of vocalized dissent, empathy, and obsessive communication. Bennis & Thomas (2002) claimed, though it is not fully supported in the text, that these qualities are evident in leaders in every culture and context.

Kouzes and Posner (1995) have also been involved in identifying personal traits desired in leaders. In 1987, from a study which combined qualitative interviews and quantitative surveys, they published their first list of the top 20 leadership traits desired in those who lead. The list was revised from further research in 1993 (Kouzes & Posner, 1993) and again in their revision of *The Leadership Challenge* in 1995. Of these 20 characteristics of admired leaders, the top four (honest, forward looking, inspiring, and competent) remained at the top of the list each time survey results were tabulated. A

mini-study identifying desirable traits of Tennessee County Directors (Byrd, 2000, unpublished manuscript) found traits consistent with these. Another study by Kouzes and Posner (1993) identified characteristics of credible leaders. This research determined there were six disciplines required: discovering your self, appreciating constituents, affirming shared values, developing capacity, serving a purpose, and sustaining hope. Each of these has particular application to the work of leaders in Extension.

The business world has defined desirable leadership traits, competencies and behaviors, as have researchers in public and private institutions. Human resources professionals have encouraged the definition of leader characteristics needed in response to the overall business strategy of a firm (Winters, 1997). For instance, Giber, Carter & Goldsmith (1999) listed fifteen case studies of top companies who had developed exemplary leadership identification and training programs. Of the fifteen companies listed, half used programs based upon desired leadership traits in different workforce functions and levels of management.

Other studies documented attempts to determine desirable leadership traits in the electronics manufacturing sector (Daniel, 1992), and of department leaders in industrial technology education (Paige, 1997), school principals (Perez, 1998), and vocational administrators (Finch, 1991). Similar trait-based competency models are now used in the USDA (USDA, 2001), and in Texas (Ayers & Stone, 1999; Boltes, Lippke, & Gregory, 1995), North Carolina (Lowry, 1996), Iowa (Broshar & Jost, 1995), Pennsylvania (Radhakrishna, Yoder & Baggett, 1991, 1994), and New Mexico (SeEVERS, Treat, Cummings, & Wright, 1996) Cooperative Extension Systems. The USDA leadership

competencies were proposed as those which should be required of anyone aspiring to the practice of leadership in USDA and related agencies. This USDA (2001) bulletin “Leadership Effectiveness Framework Core Competencies” included eight criteria in “Leading Change,” four items in “Leading People,” six indicators of being “Results Driven,” three aspects of “Business Acumen,” and six competencies within “Building Coalitions and Communication.” Much success has been reported when desirable leadership traits can be identified. But, leadership is also described effectively by behaviors which have been observed.

In addition to the traits mentioned earlier, Kouzes and Posner’s (1995, 2002) work also identified various behaviors. This research was interesting in that it included both quantitative and qualitative components. In the qualitative portion of the work, leaders were asked to describe their actions in leading others in situations where they were at their “personal best.” Five practices and ten commitments were identified that are representative of leaders at their best. Leaders at their best (1) challenged the process, (2) inspired a shared vision, (3) enabled others to act, (4) modeled the way, and (5) encouraged the heart. These behaviors were credited with helping organizations and the people in them to overcome sometimes great obstacles and to emerge even more prepared to reach organizational goals and objectives.

In another mixed-method study, Jim Collins (2001) looked at leadership that took companies from *Good to Great*. He and his research team identified what they called “Level 5” leaders. In this model, one was classified at Level 1 as a “highly capable individual,” at Level 2 as a “contributing team member,” and Level 3 as a “competent

manager.” A Level 4 leader was classified as an “effective leader” who “catalyzes commitment to and vigorous pursuit of a clear and compelling vision, stimulating higher performance standards” (p. 21). Level 5 Leaders possessed the traits of leaders at the lower four levels plus they built “enduring greatness through a paradoxical blend of personal humility and professional will” where their “ambition is first and foremost for the institution, not for themselves” (p. 21). Collins condensed the Level 5 leader’s characteristics into a two-factor formula, “[Personal] HUMILITY + [Professional] WILL = LEVEL 5 [Leadership]” (p.22). Especially interesting was a behavior he described as the “window and mirror.” Collins said that when things go well, Level 5 leaders look outward, crediting factors outside of self, even crediting “luck” if unassignable to another person or event. The outward-looking window became a mirror when the Level 5 leader apportioned responsibility, and in this case, bad luck was not blamed during poor circumstances. This behavior at its extreme could be a bit Pollyannaish. However, it also hinted of key leadership ingredients such as optimism, motivation, and expectancy theory.

Edwin Locke, writing in *The Essence of Leadership* (1991), proposed another approach to effective leadership which combined characteristics and behaviors. In this model developed in a qualitative study, four main components were involved. One component involved motives (drive and leadership motivation - socialized and personalized) and traits (honesty, integrity, self-confidence, originality, creativity, flexibility, and charisma). Another main component was made up of knowledge (technical and of organization), skills (people and management) and ability (cognitive). The last two components involved four aspects of developing a vision and then seven

steps to the final component, implementing the vision. Of the aspects involved in the model, Locke (1991) stated some are required of all leaders to be effective. These include “desiring to lead, having honesty and integrity, dealing effectively with people, and creating and communicating a vision” (p.11).

This discussion of traits and behaviors would not be complete without including comments of Max DePree. His list had some substantial variations from those already observed. DePree (1992) described leaders as being in a position of servanthood and in a posture of debt. While some see leadership in the vein of exercise of power, DePree described it as a forfeiture of rights. In his model, a leader must become vulnerable since an invulnerable leader can only “be as good as his or her own performance” (p. 221). Integrity, discernment, awareness of the human spirit, courage in relationships, a sense of humor, intellectual energy and curiosity, predictability, breadth, comfort with ambiguity, and presence were qualities on DePree's list. DePree also indicated that leaders must move constantly back and forth from the present to the future and therefore must have “respect for the future, regard for the present, and understanding of the past” (p. 223). He certainly offered a different perspective on what constitutes leadership than some list-makers.

A multitude of writers listed traits, characteristics, qualities and behaviors required of those who would be leaders. Traits, abilities, personality and certain behaviors are necessary to varying degrees, yet, leadership has not happened until these are exercised. Until they are exercised they are only potential energy stored in an object at rest. A decision or choice to lead puts these qualities into play as a would-be leader enters

an arena of relationships. But, we must keep in mind a fact regarding potential: Gardner (1984) reminded us that a person can have great gifts, but unless they are unwrapped and used, they benefit no one. In other words, traits are great, but to practice effective leadership, desire and action are required.

Therefore, the art of leadership is in the practical application of personal traits, skills, abilities, values, competencies and strategies to a leadership task, setting or situation. A meta-analytic study (Youngjohn, 1999) which looked at leadership effectiveness based upon Locke's (1991) model asked the question, "Is leadership trait theory fact or fiction?" The answer here was a resounding "fact." There are some detractors, however. Some writers labeled trait- and behavior-based investigation "faddish" and issued calls for "results-based" leadership identifiers (Ulrich, Zenger, & Smallwood, 1999, pp. 1, 21; also see Rost, 1991). Rost (1991) labeled trait-based leadership strategies as an industrial age model of leadership and called for everyone, especially researchers and scholars, to abandon the outmoded practice and join the post-industrial information age. One of his arguments also surrounded the inability of trait types of research to establish cause-effect relationships. Barker (1997) contended, however, that studies are most effective when conducted within the context of the leadership work done. In addition, he said, "If we limit ourselves to rational or scientific approaches to understanding leadership that presume cause-effect relationships, then we will exclude much of the experience of leadership" (p. 361).

Alternatives to the trait and behavior approaches to describing leadership are based upon the premise that no recipe of traits can be prescribed for all situations where

leadership is demonstrated. Thus, researchers turn to situational and contingency leadership theory where various moderating variables can be considered.

Situational and Contingency Theories of Leadership

William Pollard (1996) once stressed the relationship between two necessary components by saying one without the other “...makes about as much sense as dishing up flour, sugar, water, eggs, shortening and baking powder on a plate and calling it a cake” (p. 35). We have, so far, discussed some “ingredients” of effective leadership. Yet, none of these are meaningful until mixed together and finished in the fire of practice. Gardner (1990) reminded us that “Leaders cannot be thought of separately from the historic context in which they arise, the setting in which they function, or the system over which they preside” (p. 1) . This brings us to a look at some leadership and organizational theories that encompass more of the context in which the leadership takes place.

Douglas McGregor’s (1960) Theory X and Theory Y leader orientations is considered a landmark study in organizational and leadership theory. Each orientation has a different philosophy of how work gets done and how workers are motivated in the workplace. The leader’s opinion of colleagues becomes a self-fulfilling prophecy (Buford & Bedeian, 1988).

Theory X assumptions see subordinates as lazy, indifferent, and uncooperative, preferring to avoid work if possible. This orientation results in a command and control type of leadership described as a parent-child relationship. An administrator in a Theory X mind set may hold four assumptions: (1) The average person inherently dislikes work

and will avoid it whenever possible; (2) People who dislike work must be supervised closely, directed, coerced, or threatened with punishment to achieve adequate effort toward organizational objectives; (3) The average worker shirks responsibility and seeks formal direction from those in charge; (4) Most workers value job security above other job-related factors and have little ambition (Owens, 1998, p. 35). Theory X managers can exert control by being critical and coercive (hard X) or advising and manipulative under a soft X. Pugh (1977) described this as the “carrot and stick” theory of motivation.

In Theory Y orientations, the leader treats workers as responsible adults who exercise self-control and self-direction in what they do, allowing for imagination, ingenuity and creativity. This explanation of workers assumes: “(1) If it is satisfying to them, employees will view work as natural and as acceptable as play; (2) People at work will exercise initiative, self-direction, and self-control on the job if they are committed to the objectives of the organization; (3) The average person, under proper conditions, learns not only to accept responsibility on the job but to seek it; (4) The average employee values creativity – that is, the ability to make good decisions – and seeks opportunities to be creative at work” (Owens, 1998, p.36). Therefore, a leader’s Theory Y assumptions about those being led influences her/him to create a collaborative workplace. Again, Pugh (1977) described Theory Y as an integrative principle where members of the organization can achieve their own goals best by making their focus the success of the organization.

Rensis Likert, developed a leadership model similar to that of McGregor in what are called the “Michigan Studies” (Buford & Bedein, 1988). This model focuses on either job-centered or employee-centered leader behavior. In Likert’s nomenclature, System 1

management is exploitive and authoritative, System 2 is benevolent – authoritative, System 3 is consultative and System 4 is deemed participative – group. Systems 1-3 are analogous to Theory X beliefs, and System 4 is similar to Theory Y (Owens, 1998).

Other theories somewhat related to these mentioned above include Robert House's Path-Goal theory, Ralph Stogdill's Ohio State Leadership Studies, and Victor Vroom and Philip Yetton's Normative Theory of Leadership. They each involve leader effectiveness in motivating employees and leader choice of motivation.

In the Path-Goal theory, leader behavior is defined as either supportive, directive, participative or achievement-oriented. In this case, the situation moderates the type of leadership behavior used to achieve a certain employee motivation and satisfaction (Yukl, 1981). Stogdill's studies defined two types of leader behaviors that are used by the leader in appropriate situations. Consideration is defined as treating subordinates as equals, developing a closeness between leader and followers. The other behavior is initiating structure, or a concern for actively directing subordinates toward getting work done (Buford & Bedein, 1988). Finally, Vroom and Yetton offer five levels of leadership which progress in degree of subordinate participation. There are two autocratic levels: in Autocratic I the leader makes all decisions without consultation of others and in Autocratic II, the leader makes the decisions but gets necessary information from subordinates. There are also two levels of Consultative, where the leader shares problems and information with individuals (I) to get feedback, or with groups (II). Finally, at the Group Participation level, the leader and group solve the problems together. Vroom and

Yetton also offered a decision tree to determine what method should be used in various contexts (Buford & Bedein, 1988).

There is another body of leadership effectiveness research and theory that has received a good bit of attention in education and Extension (Radhakrishna, Yoder, & Baggett, 1994) which is called Contingency Theory (Buford & Bedeian, 1988; Fielder, 1996, 1967; Fielder & Chemers, 1976). In Fielder's model, leader effectiveness depends upon how well the leader's personality, abilities, and behaviors match the situation in which the leader operates. Three factors combine to influence whether or not the group being led is effective. These are (1) the task versus relationship orientation or leadership style of the leader, (2) position power of the leader, and (3) the favorableness of the group to being led. Combinations of these factors result in a total of eight possible situations that are comparably more, or less, favorable for group effectiveness. Examples abound of situations where we can imagine no other person accomplishing comparable results. We can also call to mind settings where highly credentialed, combat-decorated veterans from one campaign fail miserably when transferred to a different arena.

Fielder's contingency theory suggests that the leader who is successful when in favorable leader-member relations, may perhaps fail in conditions of poor leader-member relations. Guest, Hersey and Blanchard (1986) indicated that in Fielder's model, three variables determine situational favorability. These include personal relationships, the nature of tasks performed by followers, and the legitimacy of a leader's position-power and authority.

One negative to this model of leadership effectiveness is that it seems to place more importance on the situation and followers than the leader. In fact, Fielder and Chemers (1976) suggested that it would be best to design a job or position to fit the person, rather than asking a leader to adjust to the situation. It would stand to reason, however, that great leaders would change postures, for example from task to relationship orientations, build leader-member relations, and/or change leadership position-power when effectiveness is less than desired.

Though somewhat of a chimera of leadership theory – a blend of situational, contingency and other theories – Bolman and Deal's theory of frames as presented in *Reframing Organizations* (1997) assists the leader in viewing leadership opportunities from distinct perspectives. In this model, leaders should look at organizational problems through four different frames. These frames serve as both “windows on the world and lenses that bring the world into focus.” They “filter out some things while allowing others to pass through easily” (p12). Let's turn now to the descriptions of the frames; the structural, human resources, political and symbolic.

When looking at organizational issues from the structural frame, leaders see the organization as a factory or machine. Issues are addressed from the standpoint of rules, roles, goals, technology and physical environment. From the human resources perspective a leader is focused on people needs and empowerment. The organization is viewed as a family where relationships are central and leaders attempt to align organizational and human needs. The leader viewing the world through the political frame sees her/his role as an advocate, developing agendas and a power base. Power, conflict, competition and

organizational politics are central concepts here. In the symbolic frame, the leader seeks to inspire others in order to create culture, faith, beauty and meaning within the organization. This view of the organization can be described as a carnival, temple, theater or tribe. Now that we have some idea of what each frame looks like, we can look at effective leadership and leadership process within each one.

In the context of leadership effectiveness, “frames help us order experience and decide what to do” (Bolman & Deal, 1997, p. 12). The effective leader in the structural frame seeks excellence. Analysis and design are the elements of process he/she uses in functioning as an architect or analyst. However, at an extreme he/she begins to manage by detail and fiat, becoming an ineffective petty tyrant in the end. An effective leader from the human resources perspective operates as a catalyst and servant, and is known for caring about individuals. He/she is most effective in supporting and empowering others in the organization. A danger here is that he/she can be seen by others as a weakling and a pushover, with his/her actions viewed as an abdication of duty. Leaders of the political persuasion, when effective, operate as advocates and negotiators as they strive for justice. In their strength they are coalition builders, yet at their worst they are considered to be thugs and con artists who manipulate others with fraudulent ploys. Prophets and poets represent the symbolic leaders at their best as they inspire others, develop strong organizational culture and foster celebration, storytelling, and ritual within the organization. Faith, hope and significance are the organizational ethics they seek to endue. However, those who utilize this frame ineffectively are seen as fanatics and fools who try to manage with smoke and mirrors. They typically see situations in mirage-like

fashion, manufacturing a delusional image of reality. Therefore, each frame has its own strengths and weaknesses.

The artful leader uses each frame to view leadership tasks and to take appropriate action. Leaders who find co-workers in role confusion and budgets amuck in red ink, formulate strategies, policies, and organize the work environment from the structural frame. When desired outcomes are smothered in bureaucratic hierarchy, the leader operates in the human resources frame by developing training programs to ensure competence; a culture of participation and involvement is fostered; then, people are empowered to act and make decisions at the level where the work is done. When co-workers are in conflict and enlisting others to take sides, the leader enters the political frame as an advocate for those without power and negotiates outcomes which benefit the team. In the midst of dramatic change, the symbolic frame may be used to mourn the past, celebrate present gains and create stories about future promise. As Price Pritchett, in *Carpe' Mañana* (2000, p. 38), suggests, "Replace rules with a reason...capture people's hearts and their bodies will follow." Using each frame, a leader is then able to discover personal blind spots, see and address areas of organizational poverty, and expose the tactics of corporate charlatans who seek to avoid accountability for their own responsibilities.

Ken Blanchard and Paul Hersey add to the leadership effectiveness discussion with their theory of "Situational Leadership" (Blanchard, Zigarmi, & Zigarmi, 1985; Hersey & Blanchard, 1988). They first denoted three required leadership competencies: diagnosing (a cognitive competence), adapting (a behavioral competence) and

communication (a process competence). These competencies, leadership styles, and either directive or supportive behaviors are utilized in the situational leadership model. The four styles of leadership are described as directing, coaching, supporting and delegating. Either directive or supportive behavior and one of the four leadership styles are then chosen in combination to best correspond to the follower readiness or developmental level. Hersey and Blanchard define this follower development level based upon low or high competence, and low or high commitment. Therefore, situational leadership, by definition is changing style to fit the person and situation. In fact, these authors (Blanchard, et al., 1985, p. 27) indicated that the situational leader is eclectic – “someone who has both feet planted firmly in mid air!” The attraction of this theory is that the leader operates in the realm of decision and choice, armed with various strategies to apply artfully to the accomplishment of determined objectives. It is no surprise, then, that these authors subscribed to the belief that “There is nothing so unequal as the equal treatment of unequals” (p. 33).

Knowledge of situational and contingency theories of leadership management and effectiveness enable leaders to determine the circumstances in which they operate, evaluate their own abilities and available resources (including people assets), then set priorities for what can and should take place, and begin to achieve organizational objectives.

Leadership Importance in Extension

Howard Gardner (1995) seemed to be directly addressing the importance of leadership to Extension as he said we “must find or form leaders with some link to expert knowledge on the one hand, and some ability to communicate to non-experts on the other. Otherwise, our world is likely to spin further out of control” (p. 302). Extension agents are at different times both the expert and the link communicating to non-experts. They not only serve as the community link to the land-grant research base, but they also must investigate, analyze, and apply knowledge to local situations, then develop educational programs to help people change. It’s a highly responsible and lofty profession that keeps the world from spinning out of control! It is also one that functions in the realm of leadership most of the time.

James Buford and Arthur Bedeian (1988), co-authors of *Management in Extension*, devoted a chapter to effective leadership in Extension. Their leadership definition, “the art of influencing individual or group activities toward achievement of Extension objectives” (p. 163), is similar to some discussed earlier. They offer five reasons that an understanding of leadership is important in Extension: (1) work groups are bound together by leadership and it is the “catalyst that triggers motivation;” (2) to select managers to serve in leadership positions, you must know what constitutes effective leadership; (3) managers can better develop their own leadership skills if they understand leadership theory; (4) “knowledge of when and how leadership works is basic to the success of leadership training;” and, (5) effective leadership is a fundamental component of other managerial functions like planning, organizing, and staffing.

A look then at how these leadership and managerial functions play out in the county office setting is pertinent to our theoretical framework and significance of this study. To accomplish this, a more in-depth look at Extension's history, mission and organization in Tennessee is helpful.

UT Extension Background

Some background on the University of Tennessee Extension (UT Extension) is helpful to further set the stage for this study. History, mission, educational program staffing patterns and assignments, and County Director roles will be discussed.

The idea of informal agricultural education in the United States is believed to have begun in organized forms as early as the mid-1700s (Vines & Anderson, 1976). Societies, state boards of agriculture, and farmer's institutes were the primary avenues for educating the populace until three key acts of federal legislation made a formalized Extension system possible. The Morrill Act of 1862 established a land-grant university in every state. A second Morrill Act in 1890 required land-grant institutions to be open to both black and white students or that "separate-but-equal" facilities be established. The Extension system was officially established in 1914 with legislative passage of the Smith-Lever Act. With the Smith-Lever Act, a unique cooperative venture among federal, state and county governments was created with the state land-grant college(s) as the administrative center. Tennessee's Extension program is conducted by the 1862 and 1890 land-grant universities. Respectively, these are The University of Tennessee and Tennessee State University, each a partner in carrying out the Extension mission.

Extension, as the service arm of the University, was charged with a specific, but far-reaching educational mission from the very beginning. The reason for being is to “aid in disseminating among the people of the United States useful and practical information on subjects relating to agriculture and home economics, and to encourage application of the same” (Knowles, 1964, p. 44). In other words, Extension, in its role as an informal, non-degree form of education, is to “help people improve the quality of their lives by providing research-based information and informal educational opportunities focused on issues and needs” (USDA Extension Service Handbook, 1926, p. 55). Horner (1984, p. 15), further described the mission in terms of an Extension Agent’s role: “The Extension educator is the linkage between citizen and policymaker, between academia and the ‘real world,’ and between learners and leaders. Extension educators are ‘natural prime-movers’...they can link leaders-in-learning to leaders in the ‘real world.’” Seamon Knapp, a key figure in the early days of Extension, has said, “What makes a nation firm and great and wise is to have education percolate all through the people” (SeEVERS, Graham, Gamon, & Conklin, 1997, p. 1). Extension workers, then and now, are to take research-based knowledge from the University to the citizens of Tennessee who normally are not enrolled in the University in a formal degree-seeking program.

The resident Extension staff in each of Tennessee's 95 counties is composed of a minimum of one agent assigned to work predominately in that particular county. This county affiliation has led many to use the unofficial title, “The County Agent,” in referring to county Extension educators. County Extension Agents are considered, in part, county employees and receive a portion of their salary and benefits from county

appropriations. However, county Extension Agents are employed by the State of Tennessee as exempt staff of The University of Tennessee and/or Tennessee State University, the official employing entities. Until January 31, 2003 agents were also considered to be federal employees and held an Excepted, Schedule-A appointment with the United States Department of Agriculture. This cooperative venture between county, state and federal government has led to the nomenclature used Federally (and in most states) in referring to Extension as the Cooperative Extension Service or System.

Extension education generally falls within four major program areas: Agriculture and Natural Resources (ANR), Family and Consumer Sciences (FCS), 4-H Youth Development (4-H), and Resource Development (RD). To be employed as an Extension Agent in Tennessee, most prospective employees will have earned a bachelors degree in some field of Agriculture or Family and Consumer Sciences (also often called Home Economics, Human Ecology, Human & Environmental Sciences, etc.). Degrees in Education or other tracks dealing in youth issues are accepted for agents working with 4-H youth audiences only. Therefore, agents have received a minimum of a Bachelor's degree within the program area in which they teach. A Master's degree related to Extension education is strongly preferred and is required for some specialized field positions and for the county administrative role.

Extension programs in all four educational program areas are conducted in each county of Tennessee. However, the way programmatic responsibilities are assigned in each county may vary. Some county Extension Agents may be assigned only one major program area (either ANR, FCS, 4-H or RD), and may have a specialty in a discipline in

that program area. An example would be an agent who is assigned to work in adult ANR with a specific assignment in Commercial and Home Horticulture. A more common assignment would find an agent splitting responsibility in adult and youth programs (e.g. adult ANR and 4-H, adult FCS and 4-H, ANR and RD, or FCS and RD). In some cases, an agent will have responsibility in as many as three of these four educational program areas. Instances exist in UT Extension, for example, where an agent is responsible for ANR, 4-H and RD programs, while another agent works in FCS, 4-H and RD programs. When an agent also carries administrative responsibility as a county Extension Director (CED), this duty is in addition to the programmatic assignment(s). A good Extension Agent is definitely a “jack of all trades,” but a master of at least one program area or discipline.

While no Tennessee county has less than one agent, the ideal staffing pattern for an average sized county would have four agents: one agent in charge of adult agriculture programs, one agent leading adult family and consumer sciences programs and two agents working with 4-H youth development programs. As mentioned earlier, one of these agents, the CED, has additional administrative responsibility beyond his or her program assignment. Each county has at least one secretary and may have other employees, Program Assistants, who are non-exempt, usually part-time educators somewhat analogous to “teacher’s aides” in the school system. Figure 1 shows the number of agents recommended for each Tennessee county as stated in the UT Extension staffing plan which was effective on July 1, 2002 following a statewide strategic planning process.

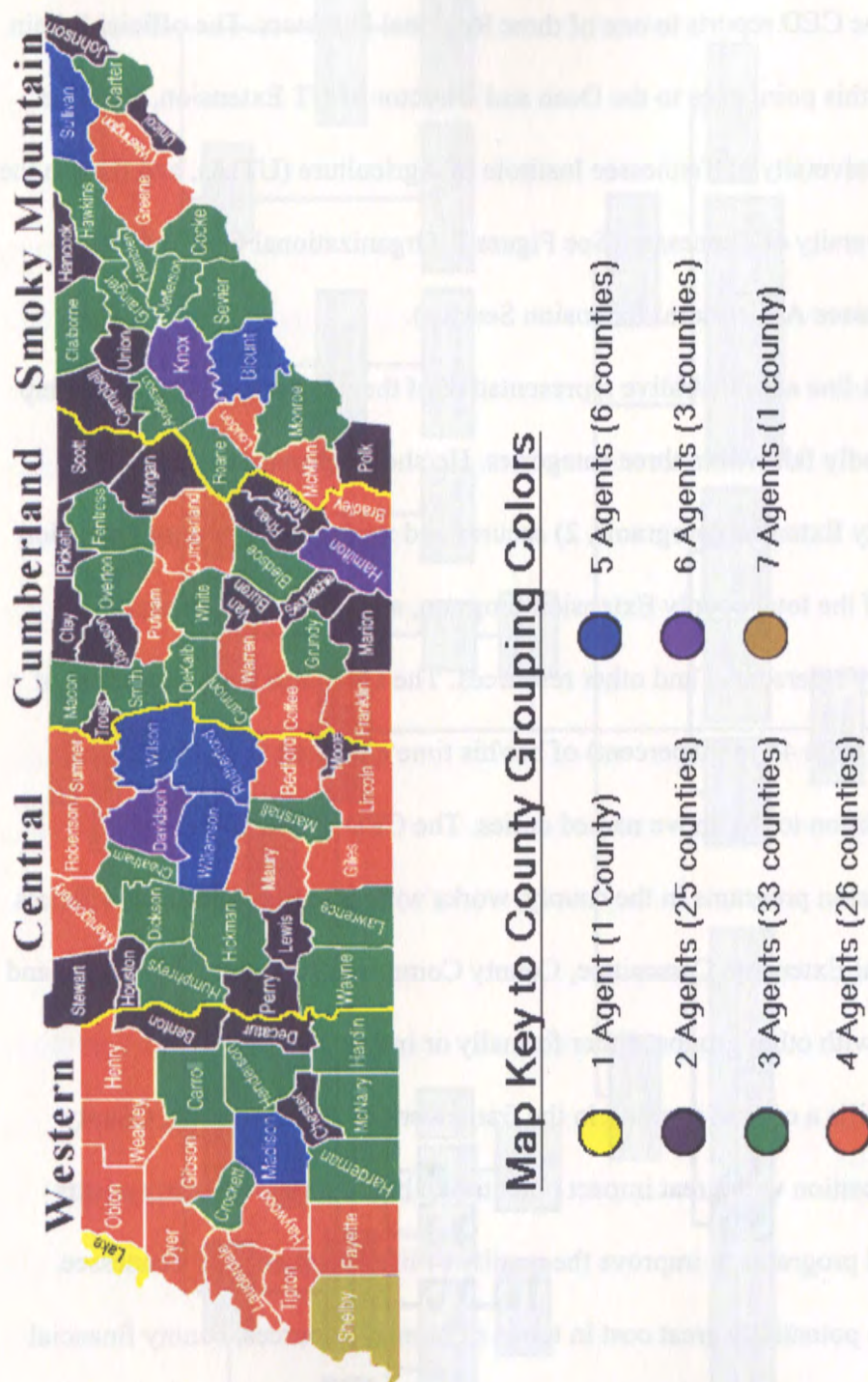


Figure 1. Staffing plan for Extension Agent allocation in the University of Tennessee Extension. Effective July 1, 2002.

A CED is appointed to this role in each of the 95 counties of Tennessee.

Administratively, the CED reports to one of three Regional Directors. The official “chain of command” from this point goes to the Dean and Director of UT Extension, the Vice President for The University of Tennessee Institute of Agriculture (UTIA), and then to the President, The University of Tennessee (See Figure 2. Organizational Chart of the University of Tennessee Agricultural Extension Service).

As the first-line administrative representative of the university, CED leadership responsibilities broadly fall within three categories. He/she: 1) provides effective leadership for county Extension programs, 2) secures and manages the county Extension budget in support of the total county Extension program, and 3) gives leadership in managing the county’s personnel and other resources. The CED also has a minimum of 45 percent (ranging from 45 to 90 percent) of her/his time allocated to an educational program area in addition to the above named duties. The CED is instrumental in marketing all Extension programs in the county, works with county government officials (County Agricultural Extension Committee, County Commission, County Executive) and forms partnerships with other groups, either formally or informally.

The CED fills a critical position in the framework of UT Extension. County Directors are in a position with great impact potential in helping fellow county agents develop educational programs to improve the quality of life for citizens of Tennessee. Conversely, there is potentially great cost in terms of human resources, county financial support, county facilities, and overall county program effectiveness in the absence of effective CED leadership.

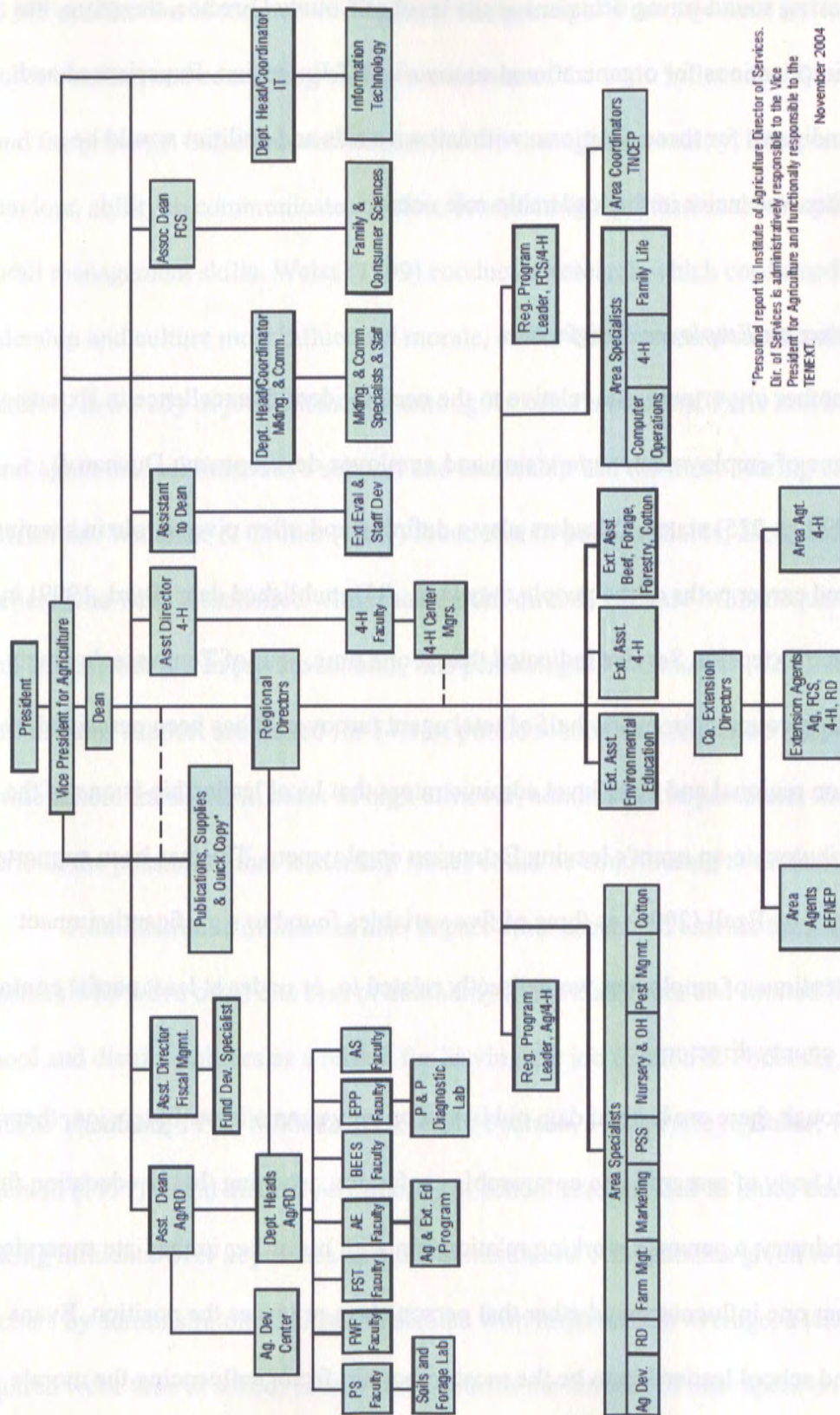


Figure 2. Organizational chart of UT Extension as of November 2004.

Making sound hiring decisions at the level of County Director, therefore, has substantial implications for organizational success in UT Extension. Experienced and prepared candidates for these positions, with known skills and abilities would be preferred when vacancies in the leadership role occur.

Leader Impact on Employee Satisfaction

Another important issue relative to the need to identify excellence in Extension Leaders is one of employment, supervision and employee development. Duncan & Warden (1999, p. 225) stated, “Leaders play a defining and often pivotal role in shaping the future and career paths of the people they lead...” Unpublished data (Byrd, 1999) in the Tennessee Extension Service indicated that at one time, four of Tennessee’s ninety-five counties accounted for nearly half of total agent turnover. It has been perceived by UT Extension regional and state-level administrators that local leadership is one of the major contributors to an agent's leaving Extension employment. This has been supported in recent work by Ezell (2003) as three of five variables found to significantly impact turnover intentions of employees were directly related to, or under at least partial control of the local county director.

Though there are limited data published on why agents leave Extension, there is a substantial body of research in a comparable profession, teaching. In the education field as well as industry, a person’s working relationship with his or her immediate supervisor is the number one influence on whether that person stays or leaves the position. Evans (1997) found school leadership to be the most important factor influencing the morale

and job satisfaction of teachers in England. The principal's management style, ability to resolve conflict, and counseling ability were some of the main influences. Directly, she found the principal impacted teacher satisfaction through personality, interpersonal behaviors, ability to communicate mission, establishing a professional workplace, and in overall management skills. Weiss (1999) conducted research which confirmed school leadership and culture most influenced morale, career choice commitment and intended retention. In a study of job satisfaction among America's teachers, Perie and Baker (1997) found again that administrative support and leadership had the most bearing on teacher satisfaction. Whitener & Gruber (1997) found that in public schools, 29.1 percent of teachers who were dissatisfied with teaching left directly because of inadequate support from administration. In private schools, this percentage is even larger (42.7). Inadequate administrator support accounted for 54.5 of public school transfers and 57.2 percent of private school transfers. In cases of high turnover, administrative personnel should not overlook the possibility that leadership issues could be contributing to turnover problems.

Administrative influences also impact other aspects of teacher turnover.

Teachers who leave often cite loss of autonomy in the classroom and limited influence on school and district policies as a reason for leaving the job (Ballou & Podursky, 1998; Gritz & Theobald, 1996; Mont & Rees, 1996; Pearson, 1998; Perie & Baker, 1997). Ingersoll (1997) found that only a minority of school teachers had as much decision-making influence over key issues as did administrators. Assignments given to new teachers by administrators are also associated with turnover. On average, a teacher's required work time at school is only three-fourths the amount of time spent on the job

(National Center for Education Statistics Report 97-371, 1997). Often, new teachers are given the highest classroom loads and are overburdened with extracurricular assignments and administrative paperwork (Norton, 1999). Mont and Rees (1996) found that as class size increased above the mean (21 students), the likelihood of that teacher quitting increased linearly. New teachers are also most often the ones assigned outside of their area of certification. In fact, emergency and temporary certification was highest in teachers with less than three years of experience (Lewis, Parsad, Carey, Bartfai & Farris, 1999). As this condition increases by ten percent, the leaving rate increases three percent. Miller et al. (1999) found a similar significant relationship with special education instructors where teaching out of certification had the highest influence of four factors measured on these teachers leaving. Workload, feelings of preparedness (Lewis et al., 1999) and involvement in decision-making (Bobbitt & Quinn, 1997; Hope, 1999) are all influenced by administrative policy and communication and can positively or negatively impact turnover.

Once a new teacher is in the classroom, school leadership and culture are the strongest influences upon the first-year teacher's desire to stay (Weiss, 1999). Weiss explained that principals have the greatest control in establishing a supporting and encouraging environment. In one of the Tennessee counties which at one time suffered from a high turnover rate, an agent responsible for 4-H Youth Development programs recounted his experience in his first day of work. He arrived early, excited to begin his new career. Since it was his first day, he did not yet have a key and had to wait 30-45 minutes before the secretary arrived. When he was shown to his desk and office, a note

was on his desk informing him that none of the other agents would be in that day. The note also informed him that he was to meet 4-H clubs at such-and-such school, provided the schedule (beginning at 9:00 a.m. until 3:00 p.m.), and offered driving instructions of how to get there. What a welcome to the world of work! This was one county director who was abandoning most of his responsibilities as a leader, lacked common courtesies of social order, and was failing as the administrative representative of The University of Tennessee in his county. Some of the important factors relating to whether educators stay in their teaching environment include clear communication of expectations, enforcement of student rules of conduct, instructional or management guidance when needed, and fair evaluation and recognition. Effective principals empower teachers by allowing teacher participation in, and influence over, school policy (Ballou & Podursky, 1998; Shen, 1997). Ingersoll (1997) adds his recommendation for a more distributed management style which empowers teachers. He found that in schools with high levels of teacher policymaking influence, 60 percent of teachers rated their commitment as high. In schools where faculty policy influence was low, only 18 percent of teachers were highly committed to their jobs. Principals must also work to create a shared vision, a cooperative, collaborative and sharing environment (Ballou & Podursky, 1998; Miller et al., 1999) which reduces teacher isolation to create a sense of community (Royal, DeAngelis, & Rossi, 1996). While this sense of community is much easier to create in small or private schools, it can exist when principals communicate shared beliefs, clear goals and priorities. Evans (1997) stressed the importance of setting realistic expectations of teachers. All of the above-mentioned factors combined to influence whether teachers

(especially new ones) felt they were doing their best work, whether they would choose teaching again as a career and whether they planned to remain in teaching. Most of these factors, if not all, would also have strong bearing in Extension.

Several studies conducted with Extension educators reflected similar relationships between county supervisors and employees. One study in Texas (Boltes et al., 1995) found significant relationships between county director leadership and employee satisfaction. Because a “top-down, “ paternalistic style of management was predominant, 75 percent of those participating in the survey indicated a change to a more shared type of leadership was necessary. Broshar and Jost (1995) also found a need to shift from patriarchal leadership traits in Extension to traits and styles which promote staff collaboration, commitment and creativity. They expressed a need for a wholesale change in management culture to be able to fully tap the competence of the staff at the county level in Iowa. In a study of Western state Extension Agents, three of the six major contributors to job satisfaction were directly related to supervision. These were: having authority to run their own programs, their immediate supervisor, and being given an opportunity for growth (Riggs & Beus, 1993). A 1998 study (deVries, Roe, & Taillieu) found a robust relationship between human-oriented leadership and employee job satisfaction. Also, task-oriented leadership styles substantially increased employee job stress. Richard Clark (1987, p. 6) observed that “employees are more satisfied, have less turnover, and are generally more productive when they feel that their employer is concerned about them as individuals.” In any case, there is substantial evidence that we

must select leaders who are effective in managing the complex interactions between their position of authority and the social environment in which they work (Fiedler, 1996).

A study by Shipper & Wilson (as cited in Clark & Clark, 1994) found a number of critical employee factors were directly influenced by supervisory leadership. These included worker loyalty, motivation and satisfaction, and subordinate attitudes toward supervisors. These factors were found to significantly enhance unit performance when positively influenced by effective leadership. The body of literature on this subject from the field of education, industry and also Extension indicates that there would be substantial gains to be made in agent turnover, overall employee job satisfaction and county educational programs when county supervisory leadership is effective.

Training and Assessment Implications Relative to Leadership

Recognizing the need for certain leadership traits, behaviors and contingencies is not enough by itself. A primary reason for discovery of leadership potential early in an employee's career is to enable training opportunities to be offered to further prepare her/him for future leadership roles (Ganter, 1989; Turner, 1974; Whiteside, 1985,). In his landmark work on leadership, Burns (1978, p. 1) stated "If we know all too much about our leaders, we know far too little about *leadership*." Barker (1997) developed the thesis that we must know what constitutes leadership in our context before we can adequately train leaders. He asked, "How can we train leaders if we do not know what leadership is?"(Barker, 1997, p. 343). It is such a simple question, yet the implications are somewhat

humbling. In our training, are we teaching the skills, behaviors, strategies, and ethics which will aid in the development of our present and future leaders?

At least some programs in Extension believe the answer is, “Yes!” Ohio has been a leader in exploring training options. In one example, Pittman and Bruny (1986) reported upon Ohio’s efforts to train future administrative staff before appointments were required because of vacancies. In this Supervisor-In-Training program, agents and specialists interested in future administrative roles gained actual on-the-job practice in addition to leadership training. Ohio also began developing what was called the Executive Development Center in 1984. Two years were spent putting together an experiential, county director job-related training program with an assessment component included. Training and assessment were conducted by utilizing actual “in-box” correspondence simulations, follow-up interviews surrounding the participant’s written responses, leaderless group problem-solving exercises with both assigned and unassigned roles and responsibilities, case studies, background interviews of the participants, office conflict simulations, and simulated performance appraisal interviews (Smith and Clark, 1987; Kutilek, Gunderson, & Conklin, 2002). Training modules were created using job analysis and descriptions of the county director role. Training and assessment were conducted in 16 areas: oral and written communications, leadership, initiative, planning and organization, decision-making and judgement, development of co-workers, behavioral flexibility, organizational sensitivity, assertiveness, objectivity, perception, sensitivity, management control, collaborativeness, and evaluation. Several benefits of the training and assessment are reported, particularly from the assessment function of the

center. These included greater validity for promotion and selection than traditional techniques they had used, a highly content-valid process since it was developed based upon the job analysis, a better indicator of future success than other tools they had tried, a very objective standards-based method of judgement, and a means of early identification of leadership potential and assessment of developmental needs. One important finding was that when job-related measures of leadership ability are utilized in training and assessment, there is also potential to further forecast future leadership success.

We must note, in the future it will become more and more important for all organizations to identify and develop new leaders. Properly structured training programs could also serve to meet a substantial need to further train existing CED's. This was particularly indicated by Earnest (1994) who found that in Ohio Extension, often the poorest leaders, particularly in dealing with conflict, were those who had the longest tenure in the organization.

In short, then, the connection between identifying characteristics of effective leaders and training has at least three facets. One aspect is to inform any training programs which are developed to develop the skills and abilities of potential and existing leaders. Another could include selection of those who would participate. Evaluation of employee growth and development could also involve the characteristics if identified.

Attempts to Measure and Forecast Leadership Abilities

There have been a number of attempts to quantify, measure, assess or predict leadership abilities of managers and administrators. Freeman et al. (1994), in a list of

leadership educational programs and tools, described a total of 63 different inventories, questionnaires, and surveys designed to do so. There were an additional 59 simulations, exercises or games listed, many of which made some assessment of leadership-related tendencies, styles or behaviors.

Projections of leadership from various assessment tools have taken several forms. One of these, used in some Extension circles, is the MBTI (Myers-Briggs Type Indicator; Myers, 1962; Keirsey & Bates, 1984). Keirsey and Bates expanded on MBTI by listing professional tendencies for each combination of their four pairs of preferences (Extroversion-Introversion, Sensing-iNtuitive, Thinking-Feeling, Perceiving-Judging). Combinations perceived to relate to leadership include ENTJ (Fieldmarshal), ENFJ (Pedagogue), ESTJ (Administrator) and ISTJ (Trustee). The implication is that certain identifiable personality types predispose one toward various leadership roles. Williams & Deal (2003) proposed a Management-Leadership Model which places management in the Myers-Briggs Thinking-Sensing pair and leadership in the Feeling-iNtuition combination. Their ideal leader is able to balance the management-leadership aspects in order to be most effective.

Related to extension, Barrett & Horner (1989) looked at types of agricultural leaders. They found that county extension leaders were 61 percent SJ, sensing - judging. This SJ-type tended to be a traditionalist, stabilizer, and consolidator. He/she valued caution, carefulness and accuracy. According to these authors, the SJ-type tended to be higher in rural areas. They liked to be of service to others and found the call to extension

positions appealing. In a paradoxical behavior, they were good at putting ideas of others into practice but resisted change themselves.

In another study, Earnest (1994) compared MBTI preferences to conflict management styles of county and district directors in the north central extension region. Intuitive administrators were more likely to use an integrating/collaborating style to resolve conflict. Administrators with a Judging preference were more likely to deal with conflict by the Avoiding method. As tenure in extension increased, administrator use of the Avoiding style also increased. As time in the administrative position increased, styles tended to shift from an Integrating or Obliging style to one of Dominating. Therefore, tenure in the organization, and time in the administrative role was negatively correlated to positive conflict resolution.

Broshar and Jost (1995) utilized three instruments developed by Teleometrics International, Woodlands TX to look at Iowa Extension's management and leadership culture. A Quality Potential Assessment determined three competence components: collaboration, commitment, and creativity. The administrators were also given a Productive Practices Survey and a Management Styles Inventory. Each of these instruments had a corresponding subordinate survey which was completed by 6 responders per manager. Relative to competencies, the group scored comparatively low on all three measures, but lowest in collaboration and highest in creativity. In management styles, administrators self-reported only 11 percent in the developer style which was seen as ideal. Eighty-three percent reported styles of regulator or comforter which are seen as the least desirable of the five for the organization. Staff ratings of their

administrators were 20 percent in developer and 69 percent in regulator and comforter. The regulator and comforter roles tend to translate to a patriarchal administrative style with a low propensity for risk.

Similarities of transformational leadership to extension work have already been mentioned. A Nebraska Extension study published by Brown, Brinstihl, and Wheeler (1996) looked at transformational vs. transactional leadership in a cross-section of extension professionals (n=57). The study utilized the Multi-factorial Leadership Questionnaire (MLQ; Bass, 1985; Bass, 1998; Bass & Avolio, 1990; Bass & Avolio, 1994) which claims to measure a full range of leadership. This range includes four I's (*individualized consideration, intellectual stimulation, inspirational motivation and idealized influence*) associated with transformational leadership, a measure of *contingent reward* representing transactional leadership, a type of problem-preventing and -solving leadership noted as *management by exception*, and finally *laissez fair* or inactivity and disassociation from leadership. In addition, the MLQ measures six organizational outcomes (follower willingness to expend extra effort, effective representation of follower needs to superiors, unit effectiveness, job effectiveness, organizational effectiveness and job satisfaction). Brown et al. (1996) found consistently high correlations (.62 to .95) of transformational leadership characteristics to organizational outcomes. Contingent reward also correlated positively to organizational outcomes, ranging from 0.60 to 0.75. Management by exception and laissez faire types were mostly very weakly positive or weakly negative, with correlation coefficients in the range of

-0.23 to +0.38. These authors concluded that the transformational qualities emanated exclusively from the leader and very strongly impacted organizational outcomes.

Fielder's Contingency Theory (Fielder, 1996, 1967; Fielder & Chemers, 1976; Buford & Bedeian, 1988; Guest et al., 1986) of leadership effectiveness is another measure that Pennsylvania and New York (Radhakrishna et al., 1994; Dvorak, 1975) researchers in Extension have used to evaluate county chair or director effectiveness. The instrument utilized to determine leadership style is the LPC – Least Preferred Co-worker Scale. The Radhakrishna et al. (1994) study also used other surveys to collect data relative to leadership behaviors and practices, team concepts, and background characteristics. Almost three-fourths of county directors were determined to have a relationship oriented style on the LPC. Leadership behaviors were positively correlated with team concepts with Pearson's r ranging from 0.30 to 0.48. Comparisons of the LPC to other measures were not reported.

Finally, at least two studies have been conducted in Extension ranks which used Kouzes and Posner's (1995) Leadership Practices Inventory to determine leadership behaviors. *The Leadership Challenge* (Kouzes & Posner's, 1995) was mentioned earlier in a discussion of leadership traits. Another portion of their work determined that when leaders were at their best, they exhibited five practices and ten commitments. The leadership practices were: (1) challenge the process, (2) inspire a shared vision, (3) enable others to act, (4) model the way, and (5) encourage the heart. There are two commitments which correspond to each of the practices. The leaders who *challenge process* are committed to searching out challenges in change, growth, innovation and improvement.

They also experiment, take risks, and learn from mistakes. In one who *inspires a shared vision*, not only is an uplifting and ennobling future envisioned, but others are enlisted in a common vision through their values, interests, hopes and dreams. Leaders who *enable others to act* foster collaborations and cooperation among people who are empowered to meet their responsibilities. Leaders *modeling the way* are committed to being an example of value-based action toward small wins, plus make consistent progress and commitments. Finally, when a leader *encourages the heart* he/she recognizes and celebrates individual contributions and team accomplishments regularly.

A study of Florida CEDs was reported by Rick Rudd (2000). Rudd envisioned CEDs as both managers and leaders. He utilized two instruments, the LPI-self assessment and the LPI-observer where the CEDs' district director, another county director familiar with them, and three agents or program assistants working under the CED evaluated the leader as well. Florida CED scores, converted to a nationally normed percentile were at the 50th in challenging the process, 53rd in inspiring a shared vision, 55th in enabling others, 60th in modeling the way, and 52nd in encouraging the heart. It is interesting to note that women (23.9% of the sample) scored significantly higher in every practice except modeling the way. Also, worthy of note was that observer scores for women were higher than the female CED self completed inventories. The men, however, rated themselves higher than observers in all LPI constructs. Other demographic variables were not included for comparison.

Another study based upon Kouzes and Posner's work was conducted by Cathie Lowery (1996) in North Carolina with 84 county directors. Survey data were collected on

each CED using a human patterns instrument. The responses collected on the 250 items were classified as proactive or reactive, assigned under one of the five LPI practices, were indicative of work tasks preferred, or related to a variety of leadership behaviors. Her work compared the five leadership practices to the preferred work tasks which were further classified as proactive or reactive. This study found no relationship of performance appraisal scores and LPI preferences, nor was work task preference found to be related to performance scores. Several demographic variables were significantly related to other factors. Staff size was positively correlated with CED job satisfaction. Younger CEDs tended to rate themselves higher on self-reported leadership abilities than did their observer group. A similar finding to Rudd was observed in that women rated higher in the leadership practices than did the men. Lowery suggested that male CEDs tended to spend more percentage time on the technical and program aspects of their job than did female CEDs.

We can see that researchers have utilized a number of instruments which attempt to measure leadership potential or effectiveness. Two that are not reviewed in Freeman et al. (1994) look interesting and bear mention. One plays on the trend for looking at multiple intelligence measures and is called “Leadership IQ” (Murphy, 1996). This instrument centers around seven guiding principles (be an achiever, be pragmatic, practice strategic humility, be customer focused, be committed, be a learned optimist, and be responsible) and the LIQ instrument identifies eight leader roles (Selector, Connector, Problem Solver, Evaluator, Negotiator, Healer, Protector, and Synergizer).

Another instrument has been in development at the Center for Creative

Leadership and is called the Campbell Leadership Descriptor (Campbell, 2002). Leaders rate themselves (1-4) in nine categories (Vision, Management, Empowerment, Diplomacy, Feedback, Entrepreneurialism, Personal Style, Personal Energy, and Multicultural Awareness). The first six of these relate to organizational leadership and then three relate to personal characteristics. In another part of the assessment, the leader rates someone he/she believes to be a good leader, and another one he/she believes to be a poor leader. In analysis, attention is focused on areas of excellence and areas which could be improved. Recognition of the need for leaders to have multicultural competence is one of the aspects of this instrument which set it apart from others.

Much discussion thus far has centered upon attempts to measure, quantify or describe leadership effectiveness. We cannot overlook the existence of a process to rate abilities, often including leadership aspects, that exists as regular practice in many organizations – individual performance appraisals.

Appraisal of Performance

Performance appraisal is defined as “evaluating an employee’s current or past performance relative to his or her performance standards” (Dessler, 1999, p. 321). Dessler (1999) indicated the performance appraisal process involves setting work standards, assessing an employee’s actual work performed relative to these standards, and providing the employee feedback relative to deficiencies and/or performance excellence. The aim is to motivate the employee to perform her/his job at the level (or above) required for the position.

There are four reasons offered by Dessler (1999) for appraising performance. First, performance appraisals provide information upon which salary and promotion (or termination) decisions can be made. Second, they give an opportunity for supervisors and employees to discuss work-related behaviors, allowing for reinforcement of positive performance and development of improvement plans to correct deficiencies. Third, career plans can be discussed based upon the organization's needs and the strengths and weakness of the employee. And fourth, appraising performance can improve the overall effectiveness of the organization and help meet organizational goals. Buford (1988, p. 126-127) acknowledged that, "A well-designed performance appraisal system can improve the effectiveness of the Extension Service, serve as a developmental tool, and provide a basis for many types of human resource functions." Dessler (1999, p. 320) reminded us, "You get what you measure."

In a study of performance appraisal in 13 southern region states, Davis and Verma (1993) reported extension agent perspectives of the process which confirmed many of the above mentioned purposes for using performance appraisal. Of 602 agents surveyed in six states, 95 percent wanted supervisors to help them grow more personally, become more competent in their job, and to discuss job-related performance using the system both as a scorecard and a counseling tool. Use of performance appraisal for merit pay decisions was desired by 66 percent of agents, but they also emphasized the need for accurate appraisal because salary increases were tied to the score. Eighty-two percent wanted to use the performance appraisal time to discuss career goals and opportunities for advancement. When agents participating in the study were asked what they believed were

the purposes of performance appraisal in extension, 91 percent indicated it was to make them more effective, 98 percent agreed that appraisals were to evaluate the quality of their work, 92 percent saw the process as a means to improve their ability to perform the job, and 92 percent agreed it was a time to provide feedback. Davis and Verma (1993) concluded by saying,

Agents are trained professionals and wish to be treated as professionals when they're evaluated on job performance. They want to know what's expected of them, have the system explained to them in advance, and be told in a professional manner whether they're accomplishing the job and supervisory expectations. A well designed and well-executed performance appraisal system...could lead to greater efficiency, effectiveness, and improved employee morale in the Cooperative Extension System. (paragraphs 12 and 13).

In discussing Extension management in the information age, Buford (1990) indicated that performance appraisal will be one key to organizational success. However, performance appraisal should be accurately measured and rewarded. He suggested that desired performance measures must be clearly linked to reward or else motivation and performance will be diminished. His evaluation of Extension appraisal systems was that their ratings were often vague, subjective and impressionistic, showing a need for appraisals concentrated on specific, well-defined objectives. Dessler (1999) believed that when performance appraisals have failed, they have done so because either the job was not well defined, the appraiser did not accurately evaluate the employee, or appropriate feedback was not given. Buford (1990) proposed that all extension workers should have a

copy of the “score” similar to the players in an orchestra. They would then be better able to “play” with the rest of the team and achieve desired results. Therefore, effective performance appraisal systems that are properly administered are expected by many to have a positive impact on organizational effectiveness.

Not all “experts” agree on the positive nature of performance appraisal on an organization – even when properly designed and administered. W. Edwards Deming has been proclaimed as one of the foremost management, organizational change, and quality innovators of our age. In his landmark book, *Out of the Crisis*, Deming (1986) listed performance evaluations, merit ratings and annual performance reviews as the third “deadly disease” standing in the way of organizational transformation. Deming stated that management by objectives (MBO) or management by numbers is really “management by fear” that...

...nourishes short-term performance, annihilates long-term planning, builds fear, demolishes team-work, nourishes rivalry and politics. It leaves people bitter, crushed, bruised, battered, desolate, despondent, dejected, feeling inferior, some even depressed, unfit for work for weeks after receipt of rating, unable to comprehend why they are inferior. It is unfair, as it ascribes to the people in a group differences that may be caused totally by the system that they work in (Deming, 1986, p.102).

Deming's strong opinions are somewhat vested in his belief that performance appraisals “do not require anyone to face the problems of people. It is easier to rate them; focus on the outcome” (Deming, 1986, p.117). Instead, Deming proposed eight methods to

improve organizational outcomes. Among these, he recommended educational programs in leadership obligations, principles, and methods; careful selection of employees; better training programs for employees once hired; rewarding team-work and group successes; interviewing employees at least once per year to gain information related to the work environment and to get system improvement suggestions; and use of performance figures to evaluate system successes or problems, not individual problems. Deming proposed the idea that when leadership is promoted in the organization, leadership displaces the need for individual performance reviews.

While some disagree on whether performance appraisals should be used at all, others disagree on the ways in which performance scores can be used. When performance appraisal scores are compared to leadership effectiveness, there is some debate as to whether a relationship exists. One would expect that if the performance instrument measured traits and behaviors exhibited by effective leaders that some relationship would exist. Clark and Clark (1990) in *Measures of Leadership* indicated that routinely collected performance appraisal records did not provide good criteria. They cited too much “error variance or noise” (p. 33), resulting from the wide variety of purpose for which performance appraisals are utilized. However, ratings collected for the purpose of determining leadership effectiveness and performance ratings by subordinates were found to be effective. Lowery (1996) cited four dissertations relative to extension leadership in North Carolina which found strong relationships between leadership indicators and performance scores. However, her own study found no relationship between performance scores and a leadership scale similar to that of Kouzes and Posner (1995). Chemers,

Watson and May (2000) reported a strong relationship between performance evaluations and leadership efficacy, whether completed by peers or routinely by supervisors. It is interesting that the leadership theory reviews by Yukl (1981) and Bass (1990) were largely silent in comparisons of performance appraisal to measures of leadership.

Just a few years after the county Extension Leader positions were created in Tennessee, Turner (1974) compared job descriptions to roles and performance appraisal scores. Findings indicated 31 of 39 roles listed in job descriptions were ideal for the job and 29 of the 39 roles were performed satisfactorily as indicated in performance scores.

In another study, Radhakrishna, Yoder, and Baggett (1991) compared time management skills of 52 Pennsylvania CEDs to performance appraisal scores. In this study a significant relationship between overall score and time management was apparent ($r = 0.64$, $p = .001$). Therefore, in this case a quality of successful leaders (time management) was found to relate to measured performance.

The usefulness and integrity of performance appraisal lies in effective supervisory implementation of the process. Properly administered, performance appraisal can offer benefits to individuals and the organization. Several Extension-based studies offered instances where performance scores were strongly correlated to traits, behaviors and other constructs representative of effective leadership.

Literature Review Summation

Leadership is a multi-faceted phenomenon. As such, multiple theoretical approaches are required to describe it. Trait and behavior, situational and contingency,

multiple intelligence, and power, influence and motivation theories are just some of the ways in which leadership has been scrutinized. The leadership art form is the manner in which an individual's knowledge and abilities are applied. Contextually, interpersonal relationships form the dance.

Various assessments have been developed in attempts to describe, categorize or predict effective leadership, or as a diagnostic tool to identify strengths and weaknesses for professional development purposes. For these assessments to be utilized effectively within an organization, they must be reliable and produce a valid construct. Routinely collected performance appraisal scores have been found in some studies as a criterion by which assessment validity can be determined. Organizations can benefit from a valid inventory of leadership capital and the ability to predict future leadership potential.

CHAPTER III

RESEARCH DESIGN

Population

The population for this study was composed of the County Extension Directors of The University of Tennessee Extension. As previously mentioned, if at full staff there are 95 CEDs, one in each county of the state. For some parts of this study the number participating was less than 95 because of vacancies or because corresponding data in one instrument or the other could not be matched to a participant.

Data Sources

This descriptive study explored relationships among data from four existing databases via correlational analyses. The first database included the criterion (dependant variable), consisting of performance appraisal scores collected annually for each Extension employee. The second database is comprised of UT personnel data from which demographic information on each individual was obtained. A third database contained scores obtained for 91 CEDs attending a MAP™ workshop March 16-18, 1998. The final database contained both raw and calculated scores gathered for a pre-employment evaluation and selection instrument validation study (Personal Style Inventory, PSI) during the summer of 1999. MAP™ and PSI scores were the predictor or independent variables. Demographic data were utilized for purposes of describing the sample group as well as included in statistical models to check for the possibility of their influence or

moderating effect on the dependant variable. More detailed information regarding the variables from each source and the statistical comparisons which were made is provided later in this chapter.

The instruments or assessments that were used to collect the data that will be examined in this study will be discussed in turn. Performance Appraisal in UT Extension will be followed by a look at the MAP™ assessments, the Personal Style Inventory and then demographic information that was included.

Performance Appraisal in UT Extension

Performance appraisals are completed at least annually in UT Extension for all employees. A standardized form is utilized for each group of employees (program assistant, secretary, agent, county director, area and regional field staff, specialists, etc.). Written material describing each item to be evaluated is provided each employee to be evaluated in addition to the appraisal form itself. In most cases, additional formal or informal training was provided for employees as well as supervisors involved in evaluating staff members. The appraisal interview is an opportunity to review job descriptions for accuracy and completeness, to review progress toward goals for the previous year, and to discuss any other issues surrounding the employee's work and working environment. The person being evaluated may supply her/his supervisor with materials and information to document or support her/his work, either in written or verbal form. While supervisors are encouraged to informally discuss performance successes and areas needing improvement frequently with employees, the annual performance appraisal

gives opportunity for formal two-way communication between an employee and her/his supervisor around job-related criteria important for individual and organizational effectiveness. The only other times formal performance evaluations take place is with new employees still in a probationary status, or employees being evaluated on a scheduled performance improvement plan.

In most cases, the county director is responsible for completing a performance review and interview with each employee in her/his county. A performance appraisal summary form is completed and signed by the employee and the county director. Before a later date specified statewide, the Regional Director, with input from Regional Program Leaders, is then responsible for reviewing all of the county appraisals and conducts the appraisal review and interview with each county director in his/her region, also completing and signing a form when the review is final.

After a look at reliability and validity considerations of performance appraisal instruments, the performance appraisal documents utilized in UT Extension will be discussed in more detail.

Reliability and Validity of Performance Appraisal Instruments

Buford & Bedeian (1988) discussed performance appraisal design and implementation for Extension in their work on *Management in Extension*. While important considerations in performance appraisal have already been discussed in the literature review, it is important to consider the reliability and validity of performance appraisal instruments.

Reliability was defined by Buford & Bedeian (1988, p. 129) relative to performance appraisal: “Results of appraisals should be consistent; in other words the ratings of equally qualified appraisers should generally agree on the performance of an individual.” With each instrument used in UT Extension, standards for each level of appraisal are described and training has been conducted with employees and supervisory staff reviewing each standard. In the current system, regional program leaders are involved in evaluating agents’ plans of work. The program leader then makes a final rating for the multiple plans of work and this rating is transferred to the performance appraisal form. Since two raters per district (eight total) were involved in evaluating performance measures relative to program planning ability, reliability concerns were addressed by having each program leader prepare sample plans and rate each plan he or she created as well as individually rating the plans created by the other program leaders. In two days of training, these program leaders came to a consensus on what each plan should be rated and they set criteria each would use in evaluating her/his own staff. Additional training sessions were conducted with regional level directors and program leaders reviewing each performance standard and how it was to be evaluated. Thus, the training sessions accompanied with written standards, help to ensure reliable and consistent evaluations. Having the regional director look over all performance appraisals for the region also works toward reducing rater variability which might occur.

Now we turn our discussion to performance appraisal validity. Again quoting Buford & Bedeian (1988), “Appraisals must measure what they purport to measure. They should be *job related* and criteria should be observable, measurable job-behavior

elements of the job”(p. 129). When the performance evaluation criteria are based upon major critical work behaviors of the job, the instrument is said to have content validity. Buford & Bedeian indicate that content validity is often the most practical and effective type of validity for performance instruments if based upon job analysis. To help ensure content validity, a panel of experts including agents, CEDs, Regional Directors, Specialists, Administrators and HR staff reviewed the performance appraisal instrument to confirm that it reflected a realistic measure of an extension agent’s critical job function. The standards for each performance appraisal instrument were derived from a detailed job analysis and determination of critical functions related to the job.

Each performance appraisal instrument was determined to have met the criteria for content validity (Buford & Bedeian,1988):

1. The systems were based on job analysis. Actual job behaviors and outcomes are part of the standards. Persons providing appraisal information were regularly and systematically observing job performance. Appraisers were trained in the process of performance counseling and measuring performance.
2. The purpose and use of each performance system was clearly stated including how often appraisals were to be completed, what documentation was required, recourse and other similar areas.
3. Individuals had access to all of their own performance appraisal materials.
4. Each appraisal process was periodically reviewed for effectiveness.

Reliability and validity are deemed to have adequate rigor for this study, recognizing that some variation from one regional director to the next has been found as previously mentioned (Byrd & Norman, 2002). Discussion will now be turned to the performance appraisal instruments which have been used in UT Extension from 1998 to the date of this writing.

Performance Appraisal of County Extension Leaders 1998-2001

Performance appraisals are, and have been for many years, an annual part of staff development and evaluation in Tennessee Extension. As recommended by Buford & Bedeian (1988) and other HR professionals, the process has been periodically reviewed and revised or updated. The first instrument which will provide data for this study was initially used beginning on October 1993. It was last revised in early 1998 for use in evaluating county director program and administrative performance annually from October 1, 1997 through September 30, 2001. The appraisal process utilizes a form of the Management by Objectives (MBO) method of performance evaluation where each standard is accompanied by a set of expected results for each level of rating given. Under this performance system, a county director actually completed two forms, one for program performance and another for the supervisory portion of her/his job.

Each agent in Tennessee was evaluated on 13 standards related to her/his educational program responsibility. Descriptions of the standards and scoring system are found in Appendix B. The performance system had an additional three supervisory items on which CEDs were evaluated (Appendix C). A county director's final score was

calculated by adjusting scores by the percentage program responsibility and percentage administrative duty to keep her/his overall score on the same scale as other agents. Table 2 shows the rating categories and the point value associated with each. Table 3 lists the appraisal items and a point value (weight) which would be multiplied by the rating value to get an item score. For example, as indicated in the table 2, a person could receive ratings of Special Merit, Merit, Good, Needs Improvement, or Unsatisfactory on each performance item listed in table 3. If an agent was rated Special Merit (point value, 4 from table 2) on the performance appraisal Item 1 (point value, 4 from table 3), that agent would have a score of 16 for that item. These individual item scores are summed to get overall performance score. Again looking at table 2, a top-performing agent with an overall performance score of 427 or above would be rated "Special Merit" overall.

All agents, including county directors were evaluated on Items 1-13 in table 3. In addition, county directors were evaluated on Items 14-16. A county director's final score was calculated to fall in the same point scale as all other agent scores. $(\text{Sum of Item 1-13 Scores}) \times (\text{Percentage of Program Assignment}) + (\text{Sum of Item 14-16 Scores}) \times (\text{Percent of Administrative Assignment})$. The sum of Program and Administrative Percentages must have equaled 100 percent.

For the purpose of this study, Raw Program Score (numeric value ranging from 0-488), Raw Administrative Score (value range from 0-120) and the final overall score as calculated above will be utilized as the criterion or dependant variables. The performance scores independently for each year (1998, 1999, 2000, and 2001) will be used in calculating correlations of performance with independent and demographic variables.

Table 2. Rating categories, point values, and final scores for performance appraisal, 1998-2001.

Rating Category	Point Value	Overall Rating Score Ranges
Special Merit	4	427 - 488
Merit	3	335 - 426
Good	2	213 - 334
Needs Improvement	1	122 - 212
Unsatisfactory	0	0 - 121

Source: Adm. F-142 (10-95), Appendix B

Table 3. Performance appraisal items 1998 - 2001 with weighting point value.

Performance Item	Point Value
1. Completed needs assessment to determine program direction.	4
2. Involved advisory committee	8
3. Completed/maintained an annual Plan of Work based upon documented needs assessment and national initiatives.	10
4. Implemented objectives described in the Plan of Work and worked to expand audiences.	18
5. Marketed Extension programs and used a wide variety of educational delivery methods appropriate for topic and clientele.	10
6. Documented the utilization of volunteers.	8
7. Networked and linked with other agencies/organizations	6
8a. Collected and reported evaluation data to show impact - Evaluated Programs	12
8b. Collected and reported evaluation data to show impact - Reported Accomplishments	8
9. Maintained good working relationships	5
10. Keep accurate records and submitted on time and complied with appropriate policies and procedures	5
11. Maintained proficiency in subject matter and teaching skills	10
12. Enhanced personal/professional proficiency through continued education	8
13. Effectiveness and impact of base programs	10
14. Provided effective leadership for County Extension Programs	10
15. Secured and managed the County Extension Budget in support of the total County Extension Program	10
16. Provided leadership in Managing of the County's Personnel and other resources	10

Source: Performance Appraisal for County Extension Faculty/Leaders, See Appendix B and Appendix C

Performance Appraisal of County Extension Directors 2002-2003

An electronic process was implemented for the appraisal of performance covering October 1, 2001 through December 31, 2002 for the initial transition year. Beginning January 1, 2003 the appraisal system is used to cover a calendar year running, January 1st through December 31st. Performance documents are completed, approved, and stored in a secure online personnel Lotus Notes / Domino database.

The rationale behind this instrument was that there are three critical areas of performance for all agents, and a fourth area for a county director's administrative responsibility. The assumption is that if agents do an exemplary job of program planning, do what they said they would do in exemplary fashion relative to program delivery, and meet an exemplary level of professionalism, they are rated as exemplary overall. Items in the appraisal, appraisal sections, and overall rating can be Exemplary, Meets Expectations, or Unsatisfactory. The additional section for CEDs and administrative responsibility uses the same ratings.

This performance appraisal system was designed as an “anytime system,” available year-round for agents or supervisors to file supporting information, or for goal review and progress documentation. Formally, agents prepare from one to three program plans comprising in aggregate sixty percent of planned work for the year. These are due to regional program leaders in the late fall. Regional program leaders rate plans and make suggestions for improvement through the electronic system. When final revisions are complete, each plan receives a final rating and the program leader completes a composite rating for all of the agent’s plans in the performance appraisal system. Agents, county

directors and regional staff can add documentation and comments to the performance appraisal document all during the year. At the end of the program and calendar year administrative personnel complete the performance instrument and finalize scores in a face-to-face performance appraisal conference.

Scoring is based upon the analogy of a chain and its weakest link. In general the lowest score assigned on one of the four sections becomes the overall performance rating. In the previous system, agents with low percentages of administrative responsibility could somewhat ignore those duties because their program related ratings would overwhelm CED administrative ratings. As mentioned earlier, letter scores E, M, and U are assigned to appraisal items, sections, and for overall appraisal rating representing performance that is Exemplary, Meets Expectations, and Unsatisfactory. At this time a numerical score is not a part of the score reported to CEDs or other agents. However, a rating score ranging from 0 - 600 is calculated for the purpose of ranking individuals based upon the performance rating overall, section ratings and individual ratings. Scores are calculated such that points are added for E's and points are deducted for U's. A rating of M is not adjusted point-wise and does not change the base score.

Items measured in the County Agent and Director Performance Appraisal standards are described in detail in appendix D. Table 4 lists the items which are evaluated under each section of the appraisal form, Program Planning, Program Accountability, Professionalism and for County Director Responsibilities.

For the purpose of this study, a Program Score will be calculated by adding section scores for Program Planning, Program Accountability, and Professionalism

Table 4. County Extension Director performance items (10-1-2001 to present)

Section	Performance Item
Program Development	Needs Assessment
	Communicates Program Issues
	Networking
	Funding
	Appropriate Delivery Methods
	Clear Implementation Steps
	Plans for Evaluation
	Reaches Diverse Audience
	Outcomes / Impacts Clearly Defined
Program Accountability	Impacts/Outcomes/Goals from Plan
	Effectively Marketed Programs
	Teaching Method Effectiveness
	Utilized Planned Evaluation Methods
	Reported Program Progress
	Reported Accomplishments
	Networking
	Utilized Available Funding Sources
	Civil Rights Parity and Diversity
Professionalism	Maintenance of Base Programming
	Effective Internal Relationships
	Effective External Relationships
	Trained in High Priority Program Areas
	Seeks Appropriate Professional Development
	Work Habits
	Knows / Follows Policy and Procedure
	Oral and Written Communication
	Effective Teaching Skills
County Director	Markets UT / TSU Extension
	Total County Program Leadership
	Guidance of Personnel
	Evaluation of Personnel
	Financial Management
	Management of Facilities/Equipment
	Public Relations
	Communications / Office Management
	Knows Policies / Meets Deadlines
County Director	EEO/CR/AA/ADA Policy & Implementation

Source: Performance Appraisal of County Extension Directors, See Appendix D.

resulting in a numeric value between 0 and 600. The score for County Director responsibilities is a numeric value between 0 and 100. The overall score as calculated in the database is a multiplication factor to adjust the scores back to a 600-point scale since a perfect score (E rating on every item and overall score) for a county director would actually total to 700. These three variables (overall performance score, program performance score and administrative performance score) were used as criterion or dependant variables in this study. The performance years 2002 and 2003 were used in calculating correlations with independent/criterion and demographic variables. Specific correlations computed are shown in detail under the statistical analysis section.

Managerial Assessment of Proficiency (MAP)

In looking at any assessment, several characteristics are important if one is able to gain an understanding of its function. In this section the purpose, application, organization, content, reliability and validity of the Managerial Assessment of Proficiency (MAP™) will be discussed. A summary of how it has been used and with whom will also follow.

Purpose of MAP

The Managerial Assessment of Proficiency (MAP™) “shows a participant's strengths and weaknesses in twelve areas of management competency and two dimensions of management style” (Kehoe, 1992, p. 500). Two other assessments which are part of the MAP workshop identify eight values or drives. The competency values

reflect abilities – what one is able to do. Styles, values or drives are more indicative of leanings – what one is likely to do (Training House, 1996).

Application of MAP

According to the developer of MAP™, the profile data has several applications: “...to diagnose individual and organizational training-development needs; to evaluate competency and style gains from training-development programs; and to make personnel selection decisions” (Kehoe, 1992, p. 501). Richard Rohs, an Extension Specialist in Georgia and a MAP workshop facilitator, also supports applying MAP™ profile data in making human resources choices related to selection and promotion. Rohs stated, “Map is the premier tool to provide your managers and your trainers with a valid and reliable objective data base on which to build HRD decisions” (Rohs, 2004, p.2). Thus, application of profile data provided by MAP™ is proposed to benefit individuals and organizations in evaluative and predictive capacities.

MAP Workshop Organization

The MAP™ assessments are usually completed and discussed in a workshop setting. A MAP workshop is generally organized across 2 ½ days, including an evening introductory session, a day spent completing three different assessment instruments (MAP™, Personal Style Assessment, Communication Response Style), and a third day interpreting results and developing learning plans. The MAP™ assessment itself is scored by computer overnight with individual and group profiles available for participants' use

on the final day (Ladewig & Rohs, 1998, 2000; Rohs, 2004). The Personal Style Assessment and the Communication Response Style assessment are self-administered and self-scored (Hall, 1992; Norris, 1992; Sadowsky, 1992; Stone, 1992).

Content of MAP Assessments

MAP™. MAP™ is a case method simulation of management and leadership situations presented in 12 video episodes (Training House, 1996). Participants watch video segments of interactions between five different managers and their staff in situations such as staff meetings, performance appraisal and discipline interviews, employee selection interviews, delegating sessions, goal setting meetings and progress reports. A participant workbook also provides supporting documents such as letters, performance appraisal forms, and other related material. After each video segment, the video is stopped and participants answer multiple choice questions relative to what they perceived in the film. Of the four choices offered there may be one, two, three or four correct answers. On average, 50 percent of the choices are correct. The assessment takes six to seven hours for participants to respond to 200 items, making 800 choices in that time. A second day is needed to discuss the meaning of the results and to formulate a personal development plan (Ladewig & Rohs, 1998; Ladewig & Rohs, 2000; Training House, Inc., 1996).

Now that the method of administration has been discussed, a look at the information generated by the assessments is in order. The data provided in a full individual profile are shown in table 5. As discussed above, these data are provided from

Table 5. MAP™ Managerial Assessment of Proficiency profile data

Title	Competency, Style or Value	Data Type / Scale	People/Task Orientation
Managing Your Job	Time Management	%-ile, 0-100	Task
	Setting Goals	%-ile, 0-100	Task
	Planning & Scheduling Work	%-ile, 0-100	Task
	ADMINISTRATIVE COMPOSITE	Avg., 0-100	Task
Relating to Others	Listening & Organizing	%-ile, 0-100	People
	Giving Clear Information	%-ile, 0-100	People
	Getting Unbiased Information	%-ile, 0-100	People
	COMMUNICATION COMPOSITE	Avg., 0-100	People
Building the Team	Training, Coaching, Delegating	%-ile, 0-100	People
	Appraising People & Performance	%-ile, 0-100	People
	Disciplining & Counseling	%-ile, 0-100	People
	SUPERVISORY COMPOSITE	Avg., 0-100	People
Thinking Clearly	Identifying & Solving Problems	%-ile, 0-100	Task
	Making Decision, Weighing Risk	%-ile, 0-100	Task
	Thinking Clearly & Analytically	%-ile, 0-100	Task
	COGNITIVE COMPOSITE	Avg., 0-100	Task
OVERALL PROFICIENCY COMPOSITE		Avg., 0-100	
Leadership Styles	Theory X (Parent-Child)	%-ile, 0-100	
	Theory Y (Adult-Adult)	%-ile, 0-100	
Communication Response Style	Empathetic	0 - 60*	* The four scores at left must sum to 60 points
	Critical	0 - 60*	
	Searching	0 - 60*	
	Advising	0 - 60*	
Theory X	Critical (hard) + Advising (soft)	0 - 60**	**The sum of Theory X and Y scores must equal 60
Theory Y	Empathetic + Searching	0 - 60**	
Personal Style Assessment (the 4 values must total 100)	Thinker	10 - 40	
	Intuitior	10 - 40	
	Sensor	10 - 40	
	Feeler	10 - 40	

Source: Training House, Inc., (1996).

completing three different assessment instruments and will be discussed separately according to the instrument from which the data are derived.

MAP™ profile data are comprised of 12 competency areas and two management styles. The competency areas are organized into four groups of three competencies each. One grouping relates to “Managing Your Job” and the three competencies under this heading are averaged to show an Administrative Composite. Another group is titled “Relating to Others” and these three competencies form a Communication Composite. “Building the Team” competencies make up the Supervisory Composite, and “Thinking Clearly” competencies combine for a Cognitive Composite. The 12 competency scores are averaged to show an overall “Proficiency Composite.” Ladewig & Rohs (2000) indicate that Training House believes good managers “manage tasks” and “lead people.” Therefore, the groupings “Managing your Job” and “Thinking Clearly” are indicative of “task” competencies, while “Relating to Others” and “Building the Team” reflect “people” competencies. Descriptions of the 12 competencies are offered in table 6.

Two other percentile scores are provided from the MAP™ assessment, a Theory X and Theory Y management style based upon McGregor's (1960) work. In the MAP™ assessment, 45 responses reflect an adult-child response, more prone to command and control, and 45 others an adult-adult response where the person addressed is trusted to complete the responsibilities of her/his job without close supervision and micro-management. According to Training House, Inc. (1996), someone with very low Theory X, Theory Y scores has not yet developed a management style; someone with one much higher than the other has developed a preference for that one style; and someone with

Table 6. Descriptions of 12 competencies determined by MAP™.

	Competency	Description
Administrative	Time Management	Effectively manages time of self and others. Determines and negotiates priorities according to goals and budgets time accordingly. Exercises self-discipline and control of others who interrupt, so as to achieve goals.
	Setting Goals and standards	Sets goals and standards according to organizational outcomes. Utilizes resources of manpower, methods, materials, machines, money, etc. to meet those goals.
	Planning & Scheduling Work	Plans, schedules and controls the work for which he/she and others are responsible. Is able to manage routine work as well as one-time affairs without precedent.
Communication	Listening & Organizing	Ability to understand, organize, and analyze what you are hearing so you can decide what to think and do in response to the message. Involves getting both facts and feelings as a means to quality information.
	Giving Clear Information	Constructing clear, concise, complete, well-organized and convincing messages. Recognizing and adjusting to communication barriers. Keeps on target. Uses persuasion effectively and builds climate of trust.
	Getting Unbiased Information	Use of questions, probes and interviewing techniques to minimize filtering and editing in information transfer from person to person.
Supervisory	Training, Coaching, Delegating	Ability to develop people. Transferring authorship and responsibility to employees. Reinforcing positive performance and giving appropriate rewards.
	Appraising People & Performance	Achieves joint appraisal of an individual's performance, agreement on future expectations and development of plans of how to achieve them. Gives ongoing feedback.
	Disciplining & Counseling	Restores employee performance to desired standards without loss of respect or trust. Describes measurable, observable behaviors. Establishes timed expectations.
Cognitive	Identifying & Solving Problems	Involves analytical skills and intuition to identify and solve problems. Able to move barriers to reaching goals, and determine strategies and courses of action.
	Making Decision, Weighing Risk	Explores options. Identifies limits, desirables and risks to be considered. Assesses risk and selects best options.
	Thinking Clearly & Analytically	Identifies valid premises and draws logical conclusions. Separates fact from inference and assumption. Uses inductive and deductive reasoning.

Source: Training House, Inc. (1996).

both scores high is able to adapt her/his responsive in either style depending upon the type of employee and situation. Another assessment, The Communication Response Styles also contributes information relative to Theory X and Theory Y as discussed next.

Communication Response Style. The Communication Response Style assessment also draws on McGregor's Theory X, Theory Y management styles. This assessment consists of twenty situations described in written form (not video as in MAP™) that commonly occur in the workplace. These situations are presented in most cases as a statement made by a hypothetical co-worker. Participants are asked to assign a total of 3 points among 4 responses, with the value (0, 1, 2, 3) being assigned according to the level of agreement or preferred response for that situation. The resulting profile (see table 5) is a score distributing 60 total points among the four communication styles of Empathetic, Critical, Searching, or Advising. The empathetic response is a non-judgmental reply mirroring the theme or feeling expressed without communicating personal values. A critical response expresses judgement or evaluation, may be perceived as a put-down or threat, and tends to thwart open and honest communication. Responses asking for additional information are searching responses, generally positive toward good communication but can become over-used and interfere with good listening. The fourth communication style, the advising response, gives advice and recommendations, wants to fix problems, and may also be a barrier to further communication. Training House (1996) indicated two response styles, Critical and Advising, are “parent state” responses and fall within a Theory X framework. Conversely, Empathetic and Searching styles are deemed “adult state” responses and correspond with more Theory Y management. Therefore, if

mind is racing ahead. All of us tend to have some portion of each of these personality types (Training House, 1997).

MAP Reliability

Ladewig & Rohs (2000) and Training House (2000) reported that MAP has strong assessment and predictive capacity because of the instrument's high reliability and validity. Reliability was tested using a matched, split-half method where two groups (n=22 and n=27) were trained on half of the proficiencies and were untrained on the other two areas before the assessment was taken. One group was assessed as a pre-test, and the other group post-test, groups were alternated on the material so they could serve as a control for the other. Improvements of 64.3% were demonstrated on the competencies that were taught with a non-significant decline on those that were not. In another reliability test, two different supervisors put the same 13 employees in rank-order by performance and then their scores were compared with MAP™. Rank difference correlations resulted in coefficients of 0.75 and 0.76. (Ladewig & Rohs, 2000; Training House Inc., 2000). Training House Inc. (1996) participant materials indicated an item analysis for determining internal consistency of responses within each category was conducted but no further details were provided. Based upon these data, Training House, Inc. (2000) stated they were able to verify the reliability of MAP™. Therefore, it comes as little surprise that in the review for *Mental Measurements Yearbook*, Kehoe (1992) contests the reliability data in saying, "In fact, no reliability evidence is presented" (p.501). Kehoe continues that the MAP developer "severely misconstrues" the meanings

one adds the paired scores together, another indication of Theory X, Theory Y tendency is given. Training House indicated that the Theory X and Theory Y scores derived from MAP™ and Communication Response Style assessments may not necessarily agree since the latter was a forced-choice assessment and MAP™ choices were independent of one another.

Personal Style Assessment. The Personal Style Assessment draws its theory base from the Jungian psychological functions of thinking, feeling, intuiting and sensing. A participant responds to 10 groups of 4 words each, assigning a 4 to the value perceived to be most like them, then 3, 2 and 1 in descending order (Training House, 1997).

An assessment of Personal Styles, is designed to reveal a participant's preferences regarding four styles reflecting how he/she understands and relates to the world around them and also to other people. These styles are labeled the intuitor, thinker, feeler and sensor. In this model the intuitor appears to sit alone and daydream, but all the while he/she is forming global concepts, looking for meaning in each, and looking for the why behind the concepts. Often, the intuitor learns best from personal experience. The thinker wants to be correct. The person with this personal style is structured, learns systematically and enjoys detail and precision. A person of the feeling type enjoys moods, feelings, and emotions of self and others. Empathy, sentiment and being in tune with other's feelings are important. Reactions of others are often more important to them than objective reality. Individuals who are sensors are action-oriented and prefer to learn-by-doing. Often restless, this person may be physically busy (like tapping feet) while her/his

of test-retest and split-half reliability, finding the results presented actually point toward the possibility of low reliability. Reliability results are questioned also on the basis of low numbers of participants involved in the tests and sensitivity of test results to “directly and indirectly related experiences, including the experience of taking the MAP itself” (Kehoe, 1992, p. 501). There appear to be concrete reasons to question the reliability of the MAP™ assessment. No information was given regarding the reliability of the other two assessments, The Personal Style Assessment and the Communication Response Styles assessment (Hall, 1992; Norris, 1992; Sadowsky, 1992; Stone, 1992).

MAP Validity

MAP™ construct validation studies utilizing rank-order correlation analyses have been conducted with over 250 managers in 11 organizations. Performance on the job paired with performance on MAP™ resulted in correlation coefficients ranging from 0.75 to 0.92 (significance level was not reported; Ladewig & Rohs, 2000). In other studies, managers ranked performance on each of the 12 constructs and also the two leadership styles and these rankings were compared to performance data deemed to be related by Training House. In these studies, individual construct proficiency score correlations to performance measures ranged from 0.39 to 0.83 while the leadership styles correlations to performance rankings ranged from 0.46 to 0.97. Based upon these scores, predictive validity would be considered moderate to very high.

Another validity measure explored by Training House was face validity. One way to look at face validity involves having knowledgeable “experts” examine the

instrument and resulting measures and determine if these seem to represent what they propose based upon accepted industry and “expert” understanding. In the case of MAP™, some managers who had completed the assessment were interviewed to determine face validity. These industry “experts” were asked to give an assessment of whether the instrument cases and questions actually reflected what was being measured. Interview findings indicated the situations closely reflected actual management and leadership work situations and resulting profiles were reflective of participant performance. During field tests of MAP, a panel of 10 experts (group not defined in source) reviewed answers on each item. If a minimum of 8 of the 10 experts agreed on the answers, the question went forward. About 1/3 of the questions were re-written until the 8 of 10 criterion was met. Further refinements were made by asking the original 256 managers involved in the field tests to identify questions they believed to be ambiguous or “trick questions.” These questions were reworked or eliminated. No further detail or supporting information was provided (Training House, Inc., 1996). According to this information, the face validity of the MAP™ assessment is not as solid as it might be since no supporting credentials are given on the “expert” managers and panel. Further, the criteria these experts used to evaluate the assessment statements and results is not discussed. Ladewig & Rohs (2000) agreed that the video portion of the assessment did seem to present realistic managerial situations, thus supporting the face validity of the instrument.

In the lone review of the MAP™ assessment, Kehoe (1992) raised several issues with the validity study as it was conducted. First, the developer of MAP™ claimed the

scores predict managerial job performance. However, in the validation studies, the predictor variable (MAP™ score) was used as the basis for the criterion, creating artificial circular bias for validity. As reported by Kehoe, other factors which weaken the validity results include: small sample sizes; differences in reported values from the 1985 vs. 1986 validity studies were not explained; the effects of revising items and scoring rules in the same trials as validity tests were not reported; and the rating procedure positively biased the individual competency validity r-values. These factors led Kehoe to recommend MAP™ not be used for personnel selection purposes, and to state that use for developmental purposes could yield flawed results.

Reviewers of the Personal Style Assessment and Communications Response Style assessments were not provided with validity data on these instruments (Hall, 1992; Norris, 1992; Sadowsky, 1992; Stone, 1992). In review of the Personal Style Assessment, Hall (1992) suggested no “thought to proper standards for psychological test development or theoretical postulates” (p. 665) is given. Stone (1992) referred to the Personal Style Assessment as a “parlor game” (p. 667), at least until validity evidence is presented supporting these Jungian-related constructs. In similar fashion, with the Communications Response Style Assessment, Norris (1992) suggested a lack of validity evidence made it inappropriate for any clinical or assessment purpose. Sadowsky (1992) was more specific in citing changes needed to make the Communications Response Style more acceptable: “research into the development, psychometric properties, and uses of the measure; a test manual; standardization and normative data; standard or transformed scores; protected scoring keys; the control of response sets; and reference to original sources” (p. 210).

Therefore, validity concerns with the other assessment instruments utilized in a MAP workshop seem consistent with those found with the MAP™ assessment itself.

MAP Use

The Managerial Assessment of Proficiency (MAP™) has been used to reflect leadership and management abilities in Extension through the Southern Region Leadership Development (SELD) initiative because the competencies, values and tendencies measured closely reflect those desired in Extension leaders. (Ladewig & Rohs, 2000). From April of 1994, when the instrument was first used with extension agents, to June of 2000 over 900 extension faculty, agents and administrators have completed the MAP™ assessment (Ladewig & Rohs, 2000). MAP™ was administered to 91 of Tennessee's 95 County Directors and several other administrative staff and subject-matter specialists March 16-18, 1998. At that time, the norming population (managers who had completed the MAP™ assessment) consisted of about 60,000 individuals (Ladewig & Rohs, personal communication, March 18, 1998). More recently, Rohs (2004) reports a norming population of over 70,000 records representing 500 organizations. However, published data are limited to that available from the 2002 MAP™ instructor manual on 62,841 records. No information was available that indicated if these were unique individuals or if the data included those who had completed the MAP™ instrument multiple times. Descriptive data included some breakdown by gender, industry, rank, education, and culture.

While 2002 instructor manual data included over 62,000 records, the published gender data were limited to 1,700 human resource [sic] managers who were directors of personnel and/or training (Training House, Inc., 2002). These data reported an overall average MAP™ composite proficiency score of 63 for males and females (n=850 males, n=850 females). Differences were observed for this group in individual competency areas where females scored higher on Listening and Organizing (61 vs. 57), and on Giving Clear Information (69 vs. 64). Females also were higher in the MAP™ score for Theory Y (67 vs. 63). Higher style scores for females were observed in the Empathetic Communication Response Style (64 vs. 54) and on the Feeling Personal Style Assessment (62 vs. 58). In contrast, males were higher on the MAP™ Theory X score (44 vs. 39), the Critical Communication Response Style (47 vs. 37) and the Thinking Personal Style Assessment score (44 vs. 35). No indication was given as to the statistical significance of these data.

Data were collected on the type of industry participants represent (by Standard Industry Code - SIC code) for use in preparing industry composite profiles. Overall MAP™ proficiency composite, Theory X and Theory Y scores (all are percentiles with 50 being average for the population) were given on the industries: Chemical (56, 43, 56), Communications (53, 46, 53), Education (56, 59, 59), Financial Service (53, 54, 53), Government (51, 53, 48), Health Service (55, 51, 59), Insurance (56, 49, 55), Manufacturing (52, 52, 51), Retailing (50, 49, 46), Service (53, 57, 52), Transportation (42, 64, 37), and Utilities (53, 56, 49). Training House indicated no group listed contained less than 1,000 members but no other population numbers or statistical significance was

offered. Training House (2002) commented that the top four highest scoring industry groups by MAP™ overall score were also strongest in Theory Y score. Conversely, the lowest four proficiency groups were highest in Theory X score (Training House, Inc., 2002). The meaning of this is unclear, however, since 1998 data (Training House, Inc., 2000) with more than 1,400 managers showed a correlation coefficient of 0.97 between an organization's overall MAP™ proficiency composite score to Theory Y proficiency percentile score. Clearly, these industry data serve descriptive purposes only, since supporting statistical parameters were not provided. One must wonder if Theory X and Theory Y are true constructs or if Theory Y is simply deeply nested within overall MAP™ proficiency composite.

When the 62,000 plus MAP™ participants were examined by rank, 4,427 senior managers scored in the 58th percentile, middle managers (n=18,479) scored 54, 11,335 individuals in a professional/technical role averaged 51, and the largest role group of 26,355 members, first-level supervisors, averaged a percentile score of 48. Training House perceives the score was higher for the professional group (who had no direct reports) over the first-level supervisors because of a difference in educational level (Training House, Inc., 2002). But again, statistical support was not provided.

Training House (2002) data indicate a person's highest educational level is a strong influence upon overall composite score and management style. Population size, MAP™ composite scores, Theory X and Theory Y scores were provided for individuals by highest educational level attained including those with a post-graduate degree (n=13,318; MAP=59; X=48; Y=60), a college degree (n=29,302; MAP=53; X=54;

Y=53), a high school diploma (n=16,827; MAP=43; X=60; Y=43) or less than a high school diploma (n=855; MAP=28; X=67; Y=26). No explanation for these data was offered by Training House except to describe management style of least educated individuals to trend toward a “carrot-and-stick” type of motivation (Theory X) while more educated individuals tried to persuade more with reasoning and logic (Theory Y).

Breakdown and analysis of MAP™ data was not offered by race. This presents potential problems for organizations utilizing MAP™ scores for employment-related decisions as no adverse impact determination on the basis of race has been made (or made public by Training House, Inc.). Data that may be considered for descriptive purposes only, since supporting statistical information was not given, were offered according to the label given by Training House as “Culture.” The 2002 instructor manual provided data on population number, Theory X, Theory Y, overall MAP™ proficiency composite, task composite and people composite scores listed by country of origin. The MAP™ video/assessment, available in seven languages, has resulted in its use in 17 countries. Assessment use has been greatest in the United States with 50,017 assessments recorded. Other countries and the number of assessments in each country group include Canada (1,676), Australia (482), the United Kingdom (480), Mexico (2,762), Brazil (30), Columbia (30), Jamaica (160), Panama (241), Indonesia (90), Singapore (384), Malaysia (721), the Philippines (218), Taiwan (4,256), India (161), South Africa (1,562) and Zimbabwe (115). These population group numbers make meaningful comparisons questionable. However, MAP™ may have a definite bias toward a European management and leadership style since the only countries in which overall composite scores were

above average (50%) included the United Kingdom, the USA, Canada, and Australia with respective scores in the 57th, 56th, 55th, and 51st percentiles. Scores from other countries ranged between a low of a 22nd percentile average for Mexico to the 47th for India.

Training House noted that five countries (Brazil, Columbia, Indonesia, India and South Africa) had a “marked preference” for task-handling preferences. However, the meaning of this must remain uncertain given that the total number of assessments for all five countries combined is 1873 with only 30 each for Columbia and Brazil. Again, a lack of statistical support for the information provided relegates the data to solely a descriptive role.

MAP Summary

According to materials in the MAPTM Participant Workbook (Training House Inc., 1996, 1998), the MAPTM assessment's 12 competencies were distilled from internal studies of management and leadership in the American Management Association, AT&T, Martin Marietta, Ford Motor Company, Kodak (Tennessee Eastman Company), and IBM. Two other theoretical foundations, the work of McGregor (1960) and Carl Jung (Myers, 1962; Kiersey & Bates, 1984), are critical components of the MAP workshop and contribute to assessments and the resulting individual profile.

While the MAP assessments have been promoted as having high reliability and validity (Ladewig & Rohs, 2000; Rohs, 2002, 20003, 2004), a critical review of the documentation provided by Training House, Inc. for the instruments is lacking in basic statistical and psychometric support. Therefore, Kehoe (1992) and other reviewers (Hall,

1992; Norris, 1992; Sadowsky, 1992; Stone, 1992) question the practical application of MAP profiles. In fact, critical review of the supporting materials leaves many questions, particularly questions impacting reliability and validity, and questions related to the impact of moderating variables (training, previously taking the MAP assessments, race, gender, time in position, etc.) on the results. One also wonders if the constructs are valid, especially since Theory Y and overall MAP™ proficiency scores are so closely correlated. These questions are magnified since scientific linkages to the McGregor and Jung theoretical bases of assessments used in MAP workshops are not provided.

The need for further research with MAP™ profile data is a combination of several factors. First is a lack of publicly published defining research on the part of the MAP assessment developers. If an organization is to have the confidence to provide MAP workshops and make any application of the resulting individual and group profiles, more information specific to the organization must be obtained. A second compelling contributor to the argument of needed research involves the perceived face validity of MAP™, particularly the perceived applicability to Extension leadership by Southern Region administrators, specialists, and previous participants who are in a position of knowledge to make educated recommendations. It seems problematic that the adoption and use of MAP™ has such little support from any quantitative or qualitative research perspective. Further, the widespread use of MAP™ in Southern Region Extension circles adds to the importance of determining if MAP™ can make real contributions to Extension individuals or organizations in theory, practice or at some combined level. The MAP™ return on investment study by Rohs (2003) and participant evaluations reported

by Ladewig & Rohs (1998) offer anecdotal evidence in support of MAP™ use in Extension. Other objective study is needed if confident and continued use of MAP™ is to be possible and prudent.

Personal Style Inventory (PSI)

The second human resources assessment instrument that provided data for this study is called the Personal Style Inventory (PSI). In the late 1990s, UT Extension sought increased information to be considered in hiring decisions with the hope of reducing agent turnover. Development of a pre-employment selection test was pursued through Dr. Lucy Gibson, a licensed Industrial Psychologist of Resource Associates, Incorporated. Human resources professionals (Dessler, 2000; Handler, 2001) have recommended utilization of a certified psychologist in the development of any selection test that is to be utilized as part of an employment process. After extensive interviews, Dr. Gibson developed a personal style, personality, and cognitive ability assessment specifically designed for UT Extension. The instrument and data collected from the assessment are discussed here in detail as previously explored for MAP (purpose, application, organization, content, reliability, validity and use).

Purpose of PSI

The purpose of the Personal Style Inventory was to develop a pre-employment evaluation to reflect potential performance and work preferences of applicants if hired into UT Extension. The PSI was the instrument used in a concurrent criterion-related test

validation study. This validation study resulted in a modified final assessment instrument currently being used in UT Extension with applicants for Extension Agent employment. Extension agents who participated in the validation study serve as the norming population to which new applicants' test results are compared.

Foss & Handler (2001) report that these types of instruments are valuable in decreasing the number of potential candidates a middle manager must sort through in filling positions, yields a higher quality of candidate to her/him, and provides more information on which employment decisions can be made. An eventual purpose of the PSI as currently used will be to set a score minimum where lower scoring applicants for employment would be screened out of the applicant pool and would no longer be considered for employment.

For this study, data on County Extension Directors will be extracted from the database for the purpose of seeking to identify personality, preference, and aptitude indicators of effective county leadership.

Application of PSI

The PSI instrument and related materials that were used in the validation study were distributed to district directors at their regular monthly administrative meeting (March 1999). District directors, in turn, provided county directors with enough copies for all agents in her/his county including instruction sheets, test booklets, answer sheets and a letter from Dr. Bill Hicks, Dean (appendix E) explaining the purpose of the validation study. District directors were also given a performance form, with written

explanations, based upon 14 PSI dimensions to complete on each agent. Completed answer sheets and performance forms were returned directly to Resource Associates, Inc. Individual contacts were made with those not returning the answer sheet by April 20, 1999 by phone and by letter. A total of 269 complete and useable forms were returned – a response rate of 71 percent (Gibson, 1999). Dr. Lucy Gibson of Resource Associates prepared a summary report of validity, reliability and supported measures for evaluation by UT Extension administrative personnel. No ratings of Extension Agents or PSI results were shared with UT Extension personnel as the purpose was to develop the pre-employment test with existing Extension Agents serving as the norming population.

PSI Organization

The PSI validation study consisted of two components. The self-administered PSI assessment included a total of 196 statements or questions to which a value of 5, 4, 3, 2, or 1 were assigned to indicate level of agreement or preference. Another 30 items gathered information from which verbal, numerical and analytical aptitude could be measured. With current applicants, answers to test items result in an overall personality score reported as a percentile range. For instance, a person scoring in the 50-59th percentile would be expected to perform at a level similar to an average, or slightly above average, agent's performance. Other assessed items are reported on applicants as a level of low, below average, average, above average or high. Each record in the validation database consists of similar scores including a numeric value calculated from test answers.

The second component involved a measure of agent performance. Each district director evaluated every Extension Agent's performance on the scales and dimensions the PSI sought to assess with a Likert-type scale of one to eight . The performance appraisal scores routinely used in UT Extension were not utilized because the performance instrument used in Extension did not directly relate to the constructs of the inventory. Therefore, a specific appraisal form relating directly to the test dimensions was developed and then used as the criterion variable for validity tests. These performance dimensions upon which each agent was evaluated in the validation study are shown in table 7. The eight-point evaluation scale which was utilized is shown in table 8. An overall performance score was calculated by averaging the scores for the 13 dimensions. Individual performance items and overall performance scores were the criterion variables for the validation study.

Resource Associates, Incorporated matched the individual's PSI assessment with the appropriate supervisor's evaluation and keyed these data values into spreadsheet form. Reliability of the PSI instrument was assessed with Chronbach's Alpha. Statistical analysis included calculation of Pearson's rho correlation coefficients as a test of validity and regression analysis to test for adverse impact upon EEO protected demographic groups.

Content of the PSI Assessment

Dessler (2000) indicated that employment screening tests must be based upon observable and critical job related behaviors and criteria. Individuals who should be

Table 7. PSI validation study performance dimensions and descriptions (criterion variables).

Dimension	Description
Ability to process information	Is able to handle and prioritize large amounts of information. Learns new job-related information quickly. Profits from information gained from other more experienced workers.
Reasoning ability	Appears to make good judgements based upon multiple sources of information. Demonstrates insight into complex problems. Demonstrates good reasoning whenever making an exception to a standard procedure. Shows insight into finding good solutions for given situations.
Job skills competencies	Effective in conducting needs assessments, planning and evaluation, designing and implementing programs for clientele. Demonstrates competency in subject matter relative to assignment. Learns new information needed for job regardless of academic background.
Capacity for growth	Adept at gaining new information and insights on own. Strives to understand community-wide issues. Analyzes work to find better ways of doing things. Seeks input from others on way in which he/she can improve. Interested in career development and growth.
Productivity	Highly productive on the job. Puts forth much effort and works hard to meet deadlines. Takes initiative rather than being told what to do. Meets or exceeds expectations in accomplishments. Effectively uses time, even 'downtime.' Arrives early or on time.
Teamwork	Coordinates work with others in the office. Readily provides assistance to others. Is known to support co-workers. Collaborates with others on new ideas or solutions. Has best interest of entire office at heart. Relates well to all staff, not just peers.
Relationships with AES leaders	Collaborates with director in program planning. Coordinates development and implementation of programs with other AES personnel statewide. Keeps administration informed of program accomplishments and other important information.
Relationships with local community	Initiates good working relationships with community representatives. Has political savvy, part of community fabric. Established as a community leader. Involved in leadership roles in other county organizations. Relates well to groups. Effectively markets AES programs to community groups.
Relationships with clientele	Sensitive to developmental needs of clientele. Establishes warm, friendly, helpful, trusting relationships with clientele. Is approachable and knowledgeable of clientele needs.
Relationships with young people	Relates easily to young people and enjoys being around them. Communicates well and develops effective developmental appropriate activities and programs. Establishes a mentoring relationship. Manages young people effectively, uses appropriate discipline.
Professional attitudes	Respectful, positive attitude, takes pride in self/job, dedicated, serves.
Dependability and integrity	Always keeps word, rules and policies, is honest, uses time well, has valid excuse if absent, is on time and meets obligations.
Ability to function under stress	Even-tempered at all times, calm and rational in crisis. Handles conflict in mature, professional manner. Seeks constructive win/win solutions.

Source: Gibson (1999).

Table 8. Rating categories for evaluating employees on PSI validation study dimensions.

Score assigned	Description
1	Performance <u>does not meet or rarely meets</u> minimum job standards.
2	Performance is <u>less than satisfactory</u> in many respects.
3	Performance is <u>satisfactory in most respects</u> but not all.
4	Performance is <u>satisfactory in all</u> respects.
5	Performance is <u>above average</u> performance but not superior.
6	Performance is <u>superior in almost all respects</u> .
7	Performance is <u>definitely superior</u> in all respects.
8	<u>Single best</u> performance I have ever observed or even hope to observe.
NA	Cannot make a rating on this dimension because employee's performance has not been observed in this area.

Source: Gibson (1999).

involved in development of an assessment include members of the job group the inventory is designed to reflect, experts involved in the evaluation (regional directors), and other knowledgeable individuals (human resources personnel, legal counsel). Interviews conducted by Dr. Lucy Gibson to determine what factors contribute to effective Extension Agent performance included each constituent group mentioned by Dessler. Dr. Gibson then made recommendations on various aptitudes, traits, and preference measures for UT Extension's Personal Style Inventory. These are described in the appendix, table A-1.

Handler (2001) recommended that personality testing should be utilized as only one part of a broader selection system and that cognitive assessments, interviews,

simulations or other assessments which measure critical job skills should accompany personal style results. The combination of personality and individual preference measures with cognitive aptitudes strengthens this PSI inventory.

PSI Reliability

As previously mentioned, assessment tools must be valid and reliable if they are to be helpful in assessment or prediction. For the PSI instrument validation and reliability calculations, significance levels were set at the 5 percent level. The predictor variables for which validity and reliability were tested are listed in table 9. Criterion variables have already been listed in table 7.

Scale reliability coefficients are listed for each personality or preference dimension utilized in the PSI in table A-2. Reliability was determined for each of the 14 predictor variables using Cronbach's Alpha. Scores ranged from a low of 0.70 to a high of 0.90, while they averaged 0.82 ($p < 0.05$). This average is well above the overall minimum of 0.75 recommended by Handler (2001) when reliability is evaluated for any assessment which is being considered for use in employment situations.

PSI Validity

Validity determinations were made by two methods, criterion related concurrent validity and construct validity. In the criterion validity, job performance criteria (tables 7 and 8) were correlated with the personality, preference and cognitive measures (table 9) to see if the constructed PSI personal styles could predict performance. Results of the

Table 9. PSI predictor variables: personality, preferences and cognitive constructs.

Type of Dimension	Predictor Variable
Personality*	Conscientiousness
	Agreeableness
	Extroversion
	Emotional Stability
	Openness to New Experience
Cognitive Ability	Numerical Reasoning
	Verbal Reasoning
	Abstract Reasoning
Other Dimensions	Customer Responsiveness
	Work Drive
	Optimism
	Potential for Long Tenure
	Achievement Striving / Status Striving
	Integrity and Values
	Nurturance
	Child Management Skills
	Interest in Community Development

* 'Big Five Model of Personality'

Source: Gibson (1999).

concurrent criterion relationships revealed tremendous variability with most significant relationships ranging from a correlation coefficient of 0.107 to a high of 0.348 (see tables A-3 and A-4 for details). There were 196 comparisons made, and of this number only 16 failed to meet the significance test at the five percent level. This is mainly a function of degrees of freedom, and though significant, most would suggest the relationships were low to very low. Gibson (1999) indicated that correlation coefficients in the range of 0.18 and 0.30 were to be expected in social science research.

At the highest correlation found in the validation study (+0.348), a bit over 12 percent of the common variance in performance is explained by the predictor variable. The predictor criteria averaged 0.23 when correlated to overall or average performance score. Gay & Airasian (2000) reported that correlation coefficients will often be low when data compared have a small range of values over which they can vary. This could perhaps be the case since a 1-5 scale was utilized. Also, as earlier discussed, having four raters and not adjusting for rater variability could impact correlation values obtained.

Validity can also be estimated by a method called construct validity. In this case, an instrument is said to have construct validity if it is based on specific job-related criteria. In the development of this instrument, Dr. Gibson traveled over Tennessee and interviewed county office staff members and district office staff members which were representative of the variability of Extension programming in Tennessee. Counties visited were Hamilton, Grundy, Sevier, Madison and Lauderdale. These are representative of small and large rural counties, medium and large urban programs, and a county heavily oriented to tourism. The Central District office staff were also interviewed. Interview

questions centered on characteristics of highly desirable employees, characteristics of less desirable employees, and key task responsibilities of county extension agents. Specific job dimensions were charted with corresponding instrument dimensions which are reflective of those skills psychometrically. These materials were reviewed with county, district and state staff for relevance and determined to be applicable. The criteria therefore met Buford and Bedeian's (1988) published requirements for meeting construct validity.

Another type of validity which can be of importance is face validity. Face validity answers the question, "When the construct dimensions are observed in action, do the instrument projections seem to hold true?" Reflections here are purely anecdotal, yet in some situations where results were questioned, the PSI results have been deemed accurate. An encouraging observation has been that applicants ranking in the upper percentiles on the PSI seem to be among the brightest staff members in their regions. It will be important to later correlate actual performance scores to the initial PSI scores of extension agents hired in the past three years (Foss & Handler, 2001).

Use of PSI

The validation study resulted in a PSI instrument which is administered to every applicant for Extension Agent and Area Specialist positions with UT Extension. To date, just over 300 assessments have been completed. Applicants are given up to one hour to complete the assessment, normally preceding or following an interview with a UT Extension Regional Director or state-level administrator. Answer sheets and a personal information form with demographic information are sent to Resource Associates where

they are scored. Individual results are returned to UT Extension where the results are keyed into an applicant database. A sample summary form and explanation sheet are included in appendix F. These individual summary sheets with an explanation of results are available to all Regional Directors and state-level administration in an online applicant database and are used in making hiring and placement decisions.

PSI Summary

The Personal Style Inventory, or PSI, was developed for UT Extension to help the organization identify effective Extension Agents pre-employment. An initial inventory of personality trait tendencies, personal work preferences, and cognitive aptitudes was developed and administered to Tennessee Extension Agents in order to establish a valid and reliable assessment for use with applicants. Because this instrument was based upon factors determined to be critical for Extension Agent effectiveness, there is the possibility that effective county leadership on the part of the County Extension Director could also be predicted from one or more of the items measured by PSI.

Confidentiality and Data Protection

These data sources utilized in this study were collected under written promises of confidentiality and careful use. Since the data resided in separate databases, a person authorized to handle all records who was not in a supervisory role aggregated all data. A code was created to use in consolidating data for each individual so that this researcher could not identify a person with his/her PSI or MAP™ profiles. Original data and keys

were destroyed once surety of data integrity was reached. All data were handled according to University of Tennessee records policies.

Demographic Data

Haynes (2000) found significant differences in gender, tenure, time in administrative position and program area served in his study of management skills of 127 County Extension administrators in Ohio and Minnesota. Rudd (2000) found significant differences among men and women in leadership and management traits reflective of effectiveness. Lowery (1996) found the number of employees supervised to be an indicator of CED success and job satisfaction. Demographic indicators are often sources of variation that can have substantial bearings on study conclusions and implications.

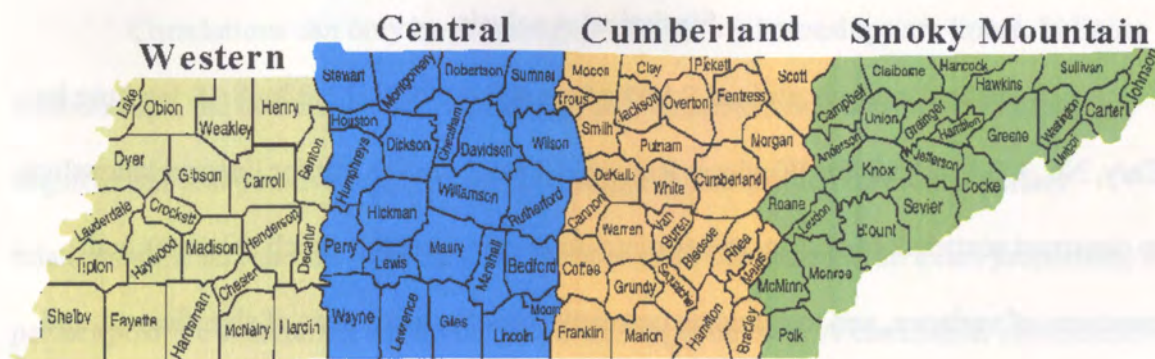
Demographic data were be collected on County Directors from UT Extension records and personnel files to include in this analysis. Factors such as age, race, gender, total service time, time served in county director position, area of program responsibility, number of staff for which they are responsible, and educational level (though for most a MS was required) were collected from personnel files and other UT Extension sources. Table 10 offers an operational definition of each of these demographic variables.

When demographic data were found to be statistically significant contributors to variation, the regression model was adjusted for this moderating influence. Therefore, any prediction models listed include demographic influences unless otherwise noted.

Table 10. Definitions of demographic variables considered in this study.

Demographic Variable	Definition
Age	Age in years at the time the MAP assessment was completed.
Audience Served	Assigned audience in county program delivery, either primarily Adult, Youth or a mixed assignment of Both.
District / Region *	The district or regional geographical area to which the county is assigned. District or region sets the administrative channel in which county Extension Directors operate. Districts were Western, Central, Cumberland and Smoky Mountain. Regions are Western, Central and Eastern.
Gender	The sex or gender of the individual, Male or Female
Greatest Educational Level Attained	Last terminal degree attained by the County Director at the time the MAP assessment was completed. County Directors hired after 1990 were required to have an earned Master's degree, minimum.
Number of Staff	Total number of staff members assigned in the county under the County Director's supervision at the time the MAP assessment was completed.
Program Area	Primary Extension program area served: Agriculture, Family and Consumer Sciences, 4-H Youth or Resource Development. Primary responsibility is determined by the larger percentage of program assignment as listed in personnel records or job description.
Race	Race or Ethnicity of the individual: White, Black, Hispanic, Asian or Pacific Islander, American Indian or Alaskan Native
Rater *	The supervisor conducting the performance rating for the county director appraisal score. In some cases this is synonymous with district or region. Classification data will be rater's last name.
Subject Matter Base	The area of training of all county directors at the bachelor level was either Agriculture or Family and Consumer Sciences
Time in County Director Role	Total years served in a county director role, including time served in a similar role in any other state Extension organization, measured at the time the MAP assessment was completed.
Total Extension Service Time	Total years served with Extension, including service time in any another state Extension organization, measured at the time the MAP assessment was completed.

* See Figures 3 and 4 for district and regional maps and supervisory raters over time.



WESTERN

James McKee
501/1988-6/30/2001

Mike Gordon
12/1/2001-Present

CENTRAL

Stephen H. Lester
8/1/1996-Present

James Stewart *
1/1/2000-3/31/2000

CUMBERLAND

Ivory W. Lyles
7/1/1997-9/30/2000

Brenda Kucharski *
10/1/2000-2/28/2001

John Jared
3/1/2001-Present

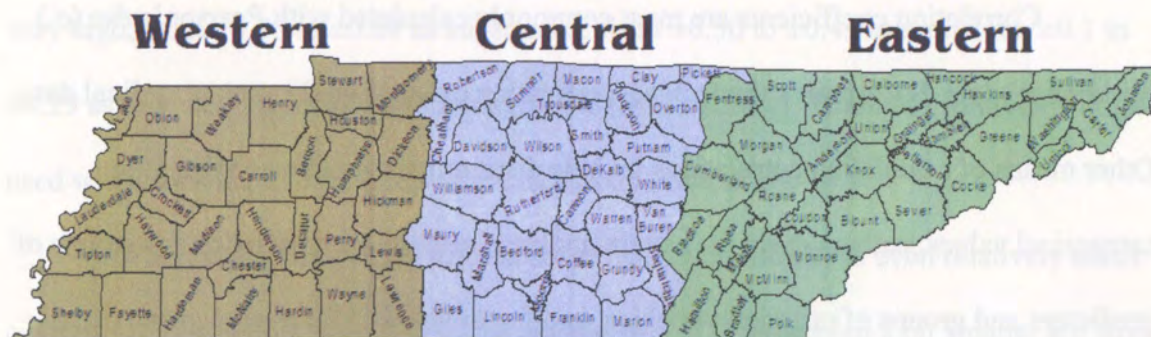
SMOKY

MOUNTAIN
Alice Ann Moore
9/1/1992-11/30/2002

Connie Heiskell
7/15/2003-Present

* Acting District Director

Figure 3. University of Tennessee Extension Districts and District Directors (10-1-97 to 6-30-04).



Mike Gordon
Western Region Director

Stephen H. Lester
Central Region Director

Connie Heiskell
Eastern Region Director

Figure 4. University of Tennessee Extension Regions (7-1-2004 to present).

Statistical Analysis

Statistical analysis utilized SAS® (Copyright© 2002-2003 by SAS Institute Inc., Cary, NC, USA, SAS® for Windows Release 9.1) software to test for linear relationships, to construct scatterplots of data, to calculate descriptive statistics such as means and measures of variance, and to calculate correlation coefficients, tests of significance, and linear regression for predictability and level of contribution to the model.

This was a descriptive, correlational study in that no cause and effect relationship was determined. Correlation research attempts to determine whether, and to what degree, a relationship exists between two or more variables. The objective was to quantify the degree of correspondence between variables termed predictor (x or independent variable) or criterion (y or dependant variable). It was descriptive in that it described an existing condition (Gay & Airasian, 2000). Care must be taken to compare variables that should be expected to have a relationship since two variables could show a significant correlation because they each really relate to a common third factor (Huntsberger & Billingsley, 1981).

Correlation coefficients are most commonly calculated with Pearson's rho (ρ) for nominal data. Spearman's rho (ρ) is a correlation calculation for rank or ordinal data. Other means of calculating correlations include discriminant function analysis for categorical values, path analysis for pattern analysis, canonical correlation for groups of predictors and groups of criterion variables, and factor analysis for a large group of variables to put them into a smaller number of clusters (Gay & Airasian, 2000).

Correlations can only be meaningful when the relationships are linear. In linear relationships, the correlation coefficient will be a numeric value between or including negative one and positive one (-1 to +1). A negative one would represent a perfect relationship where as one variable increased the other decreased in an exact proportion. A perfect positive correlation would be true in the opposite case. A correlation coefficient of zero indicates no relationship between the two variables (Schlotzhauer & Lettell, 1997).

There has been much discussion on what levels of correlation coefficients are meaningful. Gay & Airasian (2000) suggested that scores below ± 0.35 indicate the relationship is low or not related, from ± 0.35 to ± 0.65 there is a moderate relationship, and if above ± 0.65 the variables are highly related. Further, they indicated coefficients below ± 0.50 are generally useless for group or individual prediction, coefficients in the ± 0.60 to ± 0.70 range can be used for group predictions, and coefficients above ± 0.80 can be used to make individual predictions.

Another writer in the field of agricultural education suggested a bit different scale. He proposed that scores be classified at ± 1.0 as perfect, from ± 0.70 to ± 0.99 as very high, from ± 0.50 to ± 0.69 as substantial, from ± 0.30 to ± 0.49 as moderate, ± 0.1 to ± 0.29 as low, and ± 0.01 to 0.099 as negligible (Miller, 1994). These conventions will be used when correlation coefficients are discussed in this study.

Clark and Clark (1994) offered some insight on the use of even relatively small correlation coefficients, suggesting that coefficients of 0.30 or even a bit smaller are large enough to make real-life differences. They indicated that a correlation coefficient of 0.28 relative to work output made a 2.3 million dollar difference in income for a Virginia

study. In a medical study that recommended an aspirin a day to prevent heart attacks, the doctors halted the study early because of moral implications over withholding aspirin from the control (placebo) group – over a correlation in the study of 0.03.

Another measure of correlational relationships is also useful. When the correlation coefficient (ρ) is squared, the resulting value is called the coefficient of determination. This value is indicative of the shared variance accounted for in the two related variables (Gay & Airasian, 2000).

Significance is also an important consideration in looking at correlation coefficients. When significance levels are reported, they are testing the null hypothesis represented by the formula $H_0: \rho=0$. In other words, significance level gives us an idea of the probability of accepting a relationship as valid when it could have really happened by chance. In most educational and social research, a level of significance is set to five percent or higher ($p=.05$, $p=.01$, etc.). At a significance level of $p=.05$, there would be five times out of a hundred that we could determine a relationship existed when, in fact, it happened by chance (Miller, 1994).

Finally, correlation coefficients do not tell us a lot about the regression line. To predict outcomes, linear or multiple regression statistics are used. The simple regression equation is $y=ax+b$ where, y =the dependent variable, a = the slope of the line or the estimate of the independent variable, x =the independent variable and b = the y intercept or where the value of $x=0$. Multiple regression equations calculate a three dimensional model along the same principles. Regression equations allow us to predict a value of “ y ” when we know “ x ” (Gay & Airasian, 2000).

Multiple regression analyses were conducted with UT Extension Performance (Overall, Administrative, and Program scores) scores by year as a function of MAP, PSI and Demographic predictors ($P_{\text{Overall}}, P_{\text{Admin}}, P_{\text{Program}} = f(\text{MAP}_{1-19}, \text{PSI}_{1-22}, \text{Demo}_{1-10})$).

Expressed in formula form, the regression equations are as follows:

$$P_{\text{Overall } 1998-2003} = \text{MAP}_{1-19} \quad P_{\text{Overall } 1998-2003} = \text{PSI}_{1-22} \quad P_{\text{Overall } 1998-2003} = \text{Demo}_{1-10}$$

$$P_{\text{Admin } 1998-2003} = \text{MAP}_{1-19} \quad P_{\text{Admin } 1998-2003} = \text{PSI}_{1-22} \quad P_{\text{Admin } 1998-2003} = \text{Demo}_{1-10}$$

$$P_{\text{Program } 1998-2003} = \text{MAP}_{1-19} \quad P_{\text{Program } 1998-2003} = \text{PSI}_{1-22} \quad P_{\text{Program } 1998-2003} = \text{Demo}_{1-10}$$

$$P_{\text{Overall}} P_{\text{Admin}} P_{\text{program}} = \text{MAP}_{1-19} \text{ PSI}_{1-22}$$

$$P_{\text{Overall}} P_{\text{Admin}} P_{\text{program}} = \text{MAP}_{1-19} * \text{Demo}_{1-10}$$

$$P_{\text{Overall}} P_{\text{Admin}} P_{\text{program}} = \text{PSI}_{1-22} * \text{Demo}_{1-10}$$

$$P_{\text{Overall}} P_{\text{Admin}} P_{\text{program}} = (\text{MAP}_{1-19} \text{ PSI}_{1-22}) * \text{Demo}_{1-10}$$

where P_{Overall} = Overall UT Extension Performance Score by year 1998-2003, P_{Admin} = Administrative Performance Score by year 1998-2003, P_{program} = Program Performance Score by year 1998-2003, MAP_{1-19} = the 19 variables listed in table 11 from an individual MAP profile, PSI_{1-22} = the 22 variables listed in table 12 derived from PSI data, and Demo_{1-10} = the Demographic variables listed in table 10.

Correlation coefficients were calculated between the variables shown in tables 11 and 12. Statistical regression models were run including MAP data, PSI data, and with MAP and PSI together. The effects of the demographic variables previously listed in table 10 were also evaluated individually and in interaction with MAP and PSI via regression. Means, standard deviations and other descriptive statistics were also reported.

Table 11. Correlation analysis utilizing MAP data.

Predictor Variables	Criterion Variables									
	By Year 1998-2001			By Year 2002-2003			Theory X Percentile Score	Theory Y Percentile Score	Theory X from CRS	Theory Y from CRS
	UT Total Perf. Score	UT Admin. Perf.	UT Program Perf.	UT Total Perf. Score	UT Admin. Perf.	UT Program Perf.				
Administrative Comp.	X	X	X	X	X	X				
Communication Comp.	X	X	X	X	X	X				
Supervisory Comp.	X	X	X	X	X	X				
Cognitive Comp.	X	X	X	X	X	X				
Task=(Admin.+ Cog.)/2	X	X	X	X	X	X	X		X	
People=(Com.+Sup.)/2	X	X	X	X	X	X	X			X
Overall MAP Score	X	X	X	X	X	X	X	X	X	X
Theory X from MAP	X	X	X	X	X	X			X	
Theory Y from MAP	X	X	X	X	X	X				X
Empathetic Comm. Style	X	X	X	X	X	X				
Critical Comm. Style	X	X	X	X	X	X				
Searching Comm. Style	X	X	X	X	X	X				
Advising Comm. Style	X	X	X	X	X	X				
Theory X from CRS	X	X	X	X	X	X	X			
Theory Y from CRS	X	X	X	X	X	X		X		
Thinking Personal Style	X	X	X	X	X	X				
Intuitive Personal Style	X	X	X	X	X	X				
Sensing Personal Style	X	X	X	X	X	X				
Feeling Personal Style	X	X	X	X	X	X				

Table 12. Correlation analysis utilizing PSI data.

Predictor Variables	Criterion Variables					
	By Year 1998-2001			By Year 2002-2003		
	UT Total Perf. Score	UT Admin. Perf.	UT Program Perf.	UT Total Perf. Score	UT Admin. Perf.	UT Program Perf.
PSI Performance Score	X	X	X	X	X	X
Overall PSI Percentile	X	X	X	X	X	X
Big 5 Personality (Avg. of five below)	X	X	X	X	X	X
Conscientiousness	X	X	X	X	X	X
Agreeableness	X	X	X	X	X	X
Extroversion	X	X	X	X	X	X
Emotional Stability	X	X	X	X	X	X
Openness to New Experiences	X	X	X	X	X	X
Overall Cognitive (A+N+V)/3	X	X	X	X	X	X
Overall Cognitive 2 (N+A)/2	X	X	X	X	X	X
Abstract Reasoning	X	X	X	X	X	X
Numeric Reasoning	X	X	X	X	X	X
Verbal Reasoning	X	X	X	X	X	X
Customer Responsiveness	X	X	X	X	X	X
Work Drive	X	X	X	X	X	X
Optimism	X	X	X	X	X	X
Long Tenure Potential	X	X	X	X	X	X
Status-Striving	X	X	X	X	X	X
Integrity/Values	X	X	X	X	X	X
Nurturance	X	X	X	X	X	X
Child Management Skills	X	X	X	X	X	X
Community Development Interest	X	X	X	X	X	X

CHAPTER IV

RESULTS

The purpose of this study was to explore the predictive validity of two existing job-related assessments on UT Extension county director effectiveness as measured by annual performance appraisals. In pursuit of this end, statistical analyses included calculating frequencies, sample means, exploring relationships among variables with correlation, t-test and regression analyses, and testing predictive models with multiple regression.

In this results chapter, sample demographics and related descriptive statistics are first presented. Because data from two separate assessments administered about one year apart were utilized, individual assessment analyses reflect some differences in these sample demographics. Therefore, the data reported are organized around the Managerial Assessment of Proficiency (MAP) and the Personal Style Inventory (PSI) assessments, individually and then combined. Following presentation of sample descriptive statistics, the data related to each research question are provided.

Sample Demographics and Descriptive Statistics

The population for this study consisted of the 95 individuals assigned administrative responsibility in each of Tennessee's counties, namely the County Extension Director (CED). Two counties, Humphreys and Campbell, had a vacancy in this role and another county's CED (Madison) was not in attendance. These counties with

missing directors represented three different districts and included both males and a female, and were all Caucasian. Therefore, had they been present, they would not have significantly altered the make-up of the participating group. Because this study was investigating the predictive ability of MAP and PSI, agents who would later become CEDs for whom relevant data existed were also included in the study. Therefore, the resultant sample for the MAP analysis totaled 93 individuals, and the PSI group totaled 104 individuals. However, when these two databases were combined, there were 76 individuals with both MAP and PSI scores who were serving as a county director at the time of the assessments, or who would later become a county director. A more detailed description of MAP and PSI groups follows.

MAP Sample and Descriptive Statistics

A total of 120 UT Extension educators participated in a MAP workshop March 16-18, 1998. The group consisted of state- or district-level administrators, state or area specialists, county extension directors or agents that would later become county directors. Included in this study was a subset made up of 93 individuals, 86 who held a county director title in March 1998 and seven others that would later become county directors. These seven agents were serving in the role of acting county director at the time they participated in the MAP workshop.

Table 13 lists breakdowns of the group by various demographic delimitations. Mean and median values for five numeric demographic variables are listed in table 14. These data indicate that the sample was mostly male (79.6 %), white (98.9 %) and

Table 13. Distribution of study MAP participants* by demographic variables.

Demographic Variable	Frequency (n)	Percent
Gender		
Female	19	20.4
Male	74	79.6
Age		
40 or greater	82	88.2
Under 40	11	11.8
30 to 39	11	11.8
40 to 49	44	47.3
50 to 59	33	35.5
60 or greater	5	5.4
Race / Ethnicity		
African American	1	1.1
Caucasian	92	98.9
Extension Years of Service		
0 to 4.9	3	3.2
5 to 9.9	7	7.5
10 to 14.9	10	10.7
15 to 19.9	18	19.4
20 to 24.9	22	23.7
25 to 29.9	20	21.5
30 to 34.9	9	9.7
35 or greater	4	4.3
Educational Level Attained		
Bachelor's Degree	9	9.7
Master's Degree	84	90.3
Subject Matter Base		
Agriculture	75	80.6
Family & Consumer Sciences	18	19.4
Primary Audience Assignment		
Adult	70	75.3
Youth	5	5.4
Adult and Youth	18	19.3
Extension District Where Assigned		
Central	24	25.8
Cumberland	26	28.0
Smoky Mountain	23	24.7
Western	20	21.5
Total MAP Participants*	93	100.00

* MAP participants listed here include all holding a county director title in March 1998, individuals filling an acting county director role, and/or those who later became a county director. Any date calculations listed above were computed as of March 18, 1998.

Table 14. MAP sample descriptive statistics for five numeric demographic indicators.

Demographic Variable	Mean $\pm$ Std. Dev.	Median	Min.	Max.
Age*	48.1 $\pm$ 7.4	48.4	32.0	69.8
Years of Service in Extension* ^a	21.7 $\pm$ 8.6	21.7	0.1	46.6
Years in Present Title*	11.2 $\pm$ 7.5	10.9	0.1	27.3
Years as a County Director*	10.1 $\pm$ 7.8	10.5	-1.23	27.3
Employees Supervised**	6.45 $\pm$ 4.5	5.0	2.0	28.0

* Date values were calculated from March 18, 1998.

** All county staff members, including the county director. Mode = 4.0.

^a Includes Extension service, if applicable, in another state or states.

in the EEO protected class of 40 years of age or older (88.2%). Average age of the group was 48 with a mean length of service in Extension of nearly 22 years. Over 89 percent of the group had worked for UT or another state Extension program for more than ten years. Nearly 60 percent had twenty years of service or greater.

Relative to educational background, just over 90 percent of the group had an earned master's degree. The subject matter base in which the county directors were trained closely mimics gender proportions with 80.6 percent trained in some field of agriculture and the remaining 19.4 percent trained in an area within family and consumer sciences. According to area of assignment, 75 percent were assigned to work primarily with adult audiences, 19.3 percent had split assignments working with adult and youth programs and 5.4 percent of the group worked largely with youth audiences (4-H).

UT Extension titles are a reflection of length of service, relative experience and indicate administrative responsibility with the county director tag. Within the 86 agents

officially assigned the county director title, 14 (15.1 %) were an Extension Agent II & County Director, and 72 (77.4 %) were an Extension Agent III & County Director. Of the seven agents in an acting role, four were an Extension Agent II and three carried the Extension Agent III title (4.3 and 3.2 % respectively). In regard to titles, the vast majority of the group (77.4%) held the highest title possible at the county level.

The seven agents who would later become county directors differed slightly from the group at large. All seven were white. Five were male and two female. All seven had earned a master's degree, with five trained in agriculture and two in family and consumer sciences. Four individuals were forty or older, three were in their 30s, three in their 40s and one was in his/her 50s. Most (4) had served Extension from between 10 and 14.9 years, with one individual in the 5 to 9.9 year bracket, one between 15 and 19.9 years and one between 25 and 29.9 years. Each district was represented in this group with three from the Central District, one each from the Cumberland and Smoky Mountain Districts and two were located within the Western District. On average, these agents officially assumed the role of county director within six months of March, 1998 (appointment to this role for the group ranged from within one month up to 15 months later).

With the demographic make-up of MAP participants included in this study having been presented, table 15 presents descriptive statistics for the group as reflected in the MAP assessment variables. Competency composite scores for UT Extension county directors reflect group averages at or near the norming group mid-point which was comprised of approximately 60,000 records in March, 1998 (Howard Ladewig, personal communication, March 17, 1998). Of the four composite areas, the Administrative

Table 15. Competencies, management styles and personal values of UT Extension County Directors*.

MAP Variable		Mean $\pm$ Std. Dev.	Median	Mode(s)	Min.	Max.
Administrative Composite (AC) "Managing Your Job"		55.5 $\pm$ 15.6	52	47	22	87
Communications Composite (CC) "Relating to Others"		50.6 $\pm$ 18.3	51	46	13	93
Supervisory Composite (SC) "Building the Team"		51.0 $\pm$ 15.3	50	50, 54, 65	13	89
Cognitive Composite (GC) "Thinking Clearly"		49.5 $\pm$ 18.1	49	48	8	94
Total MAP Proficiency Composite		51.8 $\pm$ 12.4	50	44	22	80
Task Composite (AC+GC)/2		52.5 $\pm$ 13.9	52	59.5	21	83
People Composite (CC+SC)/2		50.8 $\pm$ 14.0	49	45	23	87
Theory X Management Style		60.8 $\pm$ 28.6	62	44, 96	0	96
Theory Y Management Style		59.5 $\pm$ 22.2	64	56, 64	1	96
Communication Response Styles	Empathetic (E)	16.6 $\pm$ 6.7	16	16	2	34
	Critical (C)	7.3 $\pm$ 5.0	7	5, 9	0	22
	Searching (S)	15.3 $\pm$ 7.0	15	6, 10	3	31
	Advising (A)	20.6 $\pm$ 7.1	21	22	7	40
	Theory X (C+A)	27.9 $\pm$ 8.4	28	26, 35	10	47
	Theory Y (E+S)	32.0 $\pm$ 8.6	32	25, 34	13	50
Personal Styles	Thinking	26.5 $\pm$ 5.2	26	25	14	38
	Intuiting	22.1 $\pm$ 5.4	23	25	12	36
	Sensing	27.7 $\pm$ 4.2	27	26	16	38
	Feeling	23.7 $\pm$ 4.3	24	24	13	38

* Includes 93 MAP workshop participants of which 86 held the title of County Director. Seven individuals were in an acting county director role and would later be assigned the County Director title and responsibility.

Composite reflected the highest level of competency at nearly the 56th percentile. Overall, the group ranked at just under the 52nd percentile (51.8). Task and People orientations were calculated by averaging the Administrative and the Cognitive Composite scores for Task, and the Communications and Supervisory Composite scores for the People orientation. These scores were again just over the mid-point with the Task orientation slightly higher at 52.5 versus a score of 50.8 for the People orientation. Of scores computed during the video-based MAP assessment, the last are the Management Styles referred to as theory X (parent-child) and theory Y (adult-adult). These scores are very similar with theory X at 60.8 and theory Y at 59.5. Because these are percentile scores, a score at the mid point (50th percentile) would reflect competence above half of the population and below half of the population. Therefore, theory X and theory Y style scores are higher than about 60 percent of those who have completed the assessment.

Communication Response Styles were assessed with a forced choice instrument that distributed a total of 60 points among the four style choices or preferences. The Tennessee county director group on average scored highest in the advising style (20.6) and lowest in the critical style (7.3). The empathetic and searching styles were similar with scores of 16.6 and 15.3 respectively. According to MAP developers, the critical score represents a “hard” theory X response and an advising score represents a “soft” theory X response. These two scores are added together to reflect a theory X response score of 28. Conversely, the empathetic and searching communication response styles are considered a theory Y form of communication. The county directors averaged a score of 32 on this scale, indicating a slight preference for theory Y.

The last part of the MAP workshop scores is represented by an assessment of Personal Styles that attempts to reflect a personality style similar to a Jungian or Myers-Briggs Personality Typology. In this scale, 100 points were allocated between the four styles but no one style could have a score less than 10 or more than 40. Group averages show the intuitor and feeler styles were the lowest scores at 22.1 and 23.7, respectively. The sensor personality style was highest at 27.7 with the thinker style just behind at 26.5. Therefore, the group was fairly evenly distributed among all four personality styles.

The dependant or criterion variables in this study consisted of performance appraisal scores collected for each individual as part of her/his annual performance review. For county directors, the score consists of a program score and an administrative responsibility score which make up the final or total performance score. Averages for the sample in this study are shown by year in table 16. Mean performance scores from 1998 to 2001 performance appraisals would have been in the “Merit” category and considered to be above average performance. Scores in the 2003 to 2003 performance system, on average, would be classified in the upper end of “Meets Expectations.”

Table 16 also illustrates one of the problems often observed with time-series oriented studies - a declining population over time. UT Extension offered early retirement and retirement incentives on two occasions from 1998 to 2003. Therefore, the impact of retirements, promotions to positions beyond the county level, and county directors leaving for other positions outside Extension is evident in the decline from 93 county directors at the outset of the study time frame to 61 useable records in 2002 and 2003.

Table 16. MAP data set annual performance appraisal score averages for UT Extension county directors* from 1998 to 2003.

Yr	Performance Score	No. of Observations	Mean $\pm$ Std. Dev.	Median	Min.	Max.
1998	Program	92	352.4 $\pm$ 49.3	350	193	473
	Administrative	88	65.0 $\pm$ 12.6	70	20	110
	Total	92	361.5 $\pm$ 48.0	359	179	464
1999	Program	90	364.2 $\pm$ 44.3	358	273	483
	Administrative	88	83.8 $\pm$ 18.5	80	30	120
	Total	90	372.3 $\pm$ 43.9	369	260	468
2000	Program	85	365.3 $\pm$ 44.0	361	273	452
	Administrative	84	85.3 $\pm$ 18.6	90	30	120
	Total	85	373.3 $\pm$ 46.1	372	260	453
2001	Program	66	353.0 $\pm$ 42.5	344	266	442
	Administrative	65	93.6 $\pm$ 13.2	90	60	120
	Total	67	359.8 $\pm$ 41.6	354	236	444
2002	Program	61	392.8 $\pm$ 91.5	365	205	600
	Administrative	61	75.3 $\pm$ 15.3	80	30	100
	Total	61	397.9 $\pm$ 95.0	371	176	600
2003	Program	61	423.5 $\pm$ 100.1	380	280	590
	Administrative	60	76.6 $\pm$ 12.6	80	50	100
	Total	61	426.0 $\pm$ 100.0	382	285	593

* Includes 93 MAP workshop participants of which 86 held the title of County Director. Seven individuals were in an acting county director role and would later be assigned the County Director title and responsibility. The performance appraisal system was changed to a 600 point scale in 2002. Administrative scores in the 2002 and 2003 systems could range from 0 to 100.

One assumption that is made in this research analysis is that these data are normally distributed. Comparisons of the measures of central tendency (mean, median and mode) in tables 14 -16 reflect the accuracy of this assumption. Two additional indications of the distribution and shape of the normal curve include skewness and kurtosis. A high positive value for skewness indicates data to the right of the mean are more spread out than the values located to the left of the mean. A high negative value indicates the opposite. High values for kurtosis indicate the distribution has “heavy tails” or is “flat,” or some values are distant from the mean compared to most (Schlotzhauer & Littell, 1997). Table 17 lists the MAP data set variables with the most disagreement in central tendency measures along with skewness and kurtosis variables. It is also helpful to

Table 17. Comparison of selected MAP data set measures of central tendency and distribution skewness and kurtosis estimates.

Variable Name	Mean $\pm$ Std. Dev.	Median	Mode(s)	Skewness	Kurtosis
Administrative Composite	55.5 $\pm$ 15.6	52	47	0.1299	-0.8968
Searching Communication Response Style	15.3 $\pm$ 7.0	15	6, 10	0.3524	-0.7901
Task Orientation Comp.	51.8 $\pm$ 12.4	52	59.5	0.1132	-0.7901
MAP Proficiency Score	51.8 $\pm$ 12.4	50	44	0.1373	-0.5646
Number of Employees Supervised	6.45 $\pm$ 4.5	5	4	2.7221	9.3125
2002 Program Performance	392.8 $\pm$ 91.5	365	310	0.9070	-0.1083
2002 Total Performance	397.9 $\pm$ 95.0	371	360	0.7702	-0.1939
2003 Program Performance	423.5 $\pm$ 100.1	380	330	0.4477	-1.5359
2003 Total Performance	426.0 $\pm$ 100.0	382	375, 551 558.75	0.4588	-1.5596

view the data distribution graphically in testing for normality. Figures 5 and 6 demonstrate these relationships for the MAP Administrative Composite and Searching Communication Style predictor/independent variables. A review of the distributions and the relatively low skewness and kurtosis values for the four MAP variables in question support the assumption of normality for the purpose of this study.

Figure 7 shows the distribution for the only demographic variable to indicate potential distribution problems. This variable, the number of employees supervised, shows a heavy distribution left of the mean, a very short left tail and a long and extended right tail. Skewness and kurtosis values of 2.7 and 9.3 are indicative of this effect. Because this variable is not considered a main effect and will be included in a multiple regression model, no adjustments were made in the experimental design.

When looking at performance appraisal scores, the widest disagreement in mean, median and mode values was in the 2002 program performance and 2003 total score. Table 17 values for skewness show the 2002 program score with the highest of the four, 0.9070, and this is visible in figure 8. Total performance score in 2003 displayed the highest kurtosis score of the four listed in table 17 and is represented graphically in figure 9. Again, these differences were not deemed sufficient to change the analysis and design of this study.

This concludes the section of this chapter describing the population included in the MAP portion of the study. A description of the population of county directors (or agents who later became county directors) included as part of the Personal Style Inventory portion follows the figures shown on the next three pages.

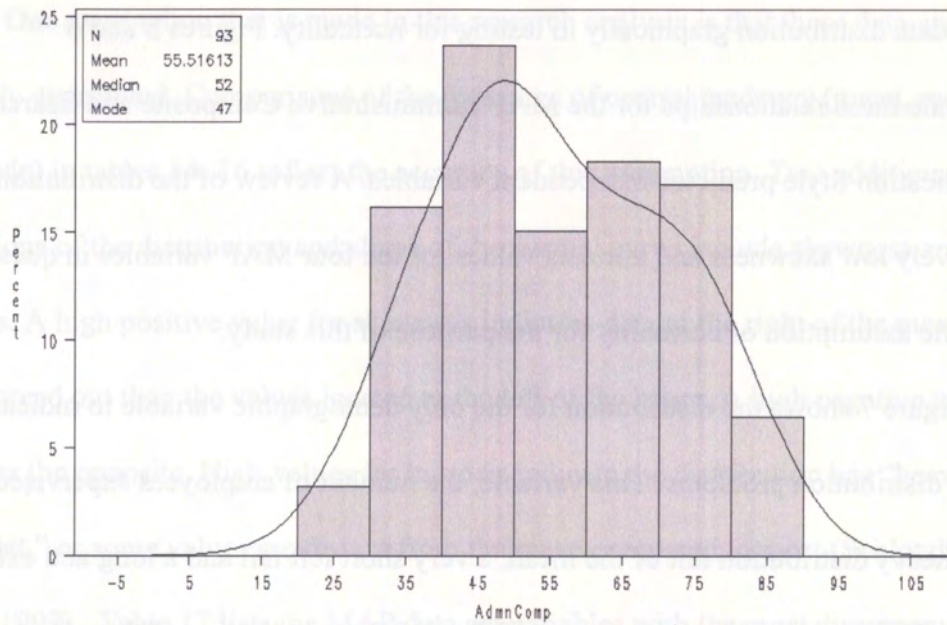


Figure 5. Distribution histogram for the MAP Administrative Composite variable.

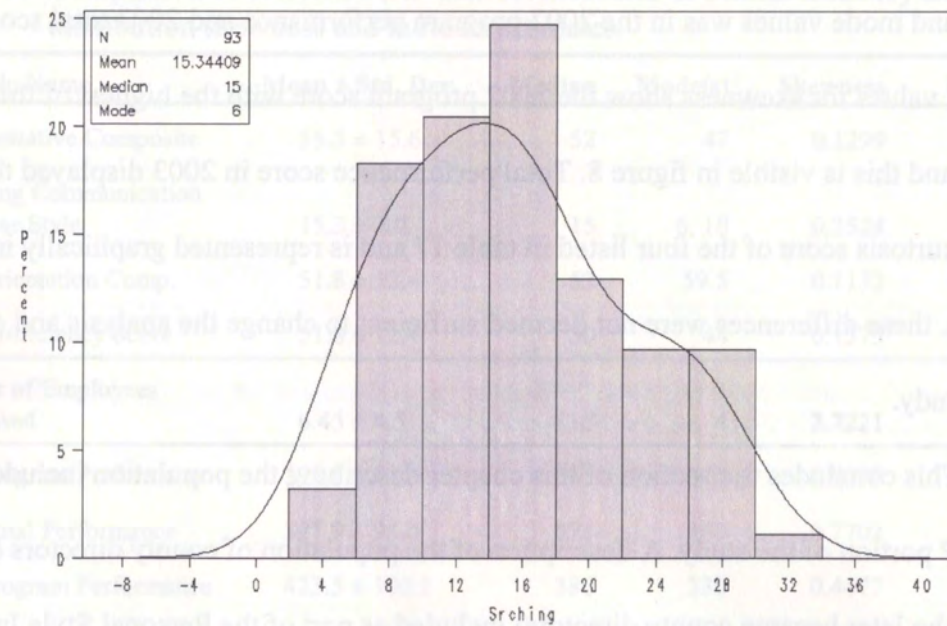


Figure 6. Distribution histogram of the MAP variable Searching Communication Style.

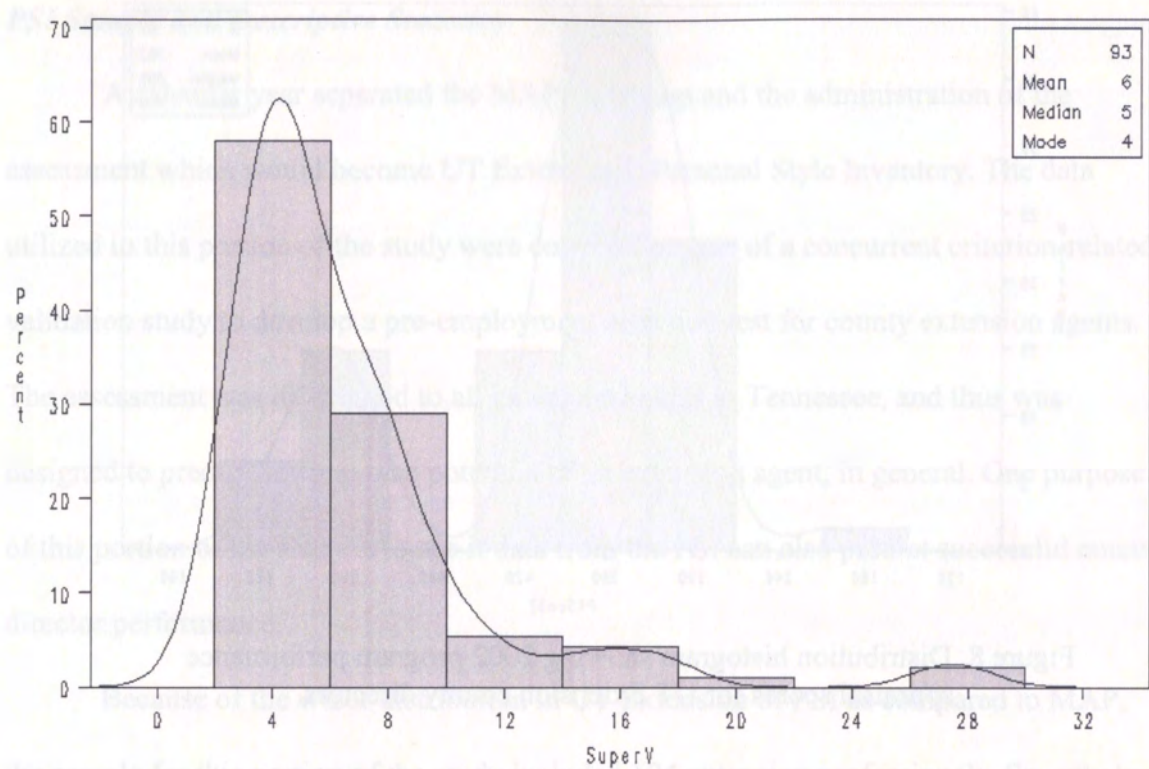


Figure 7. Histogram showing the distribution of values for the demographic variable representing the number of employees a county director supervises in her/his assigned location.

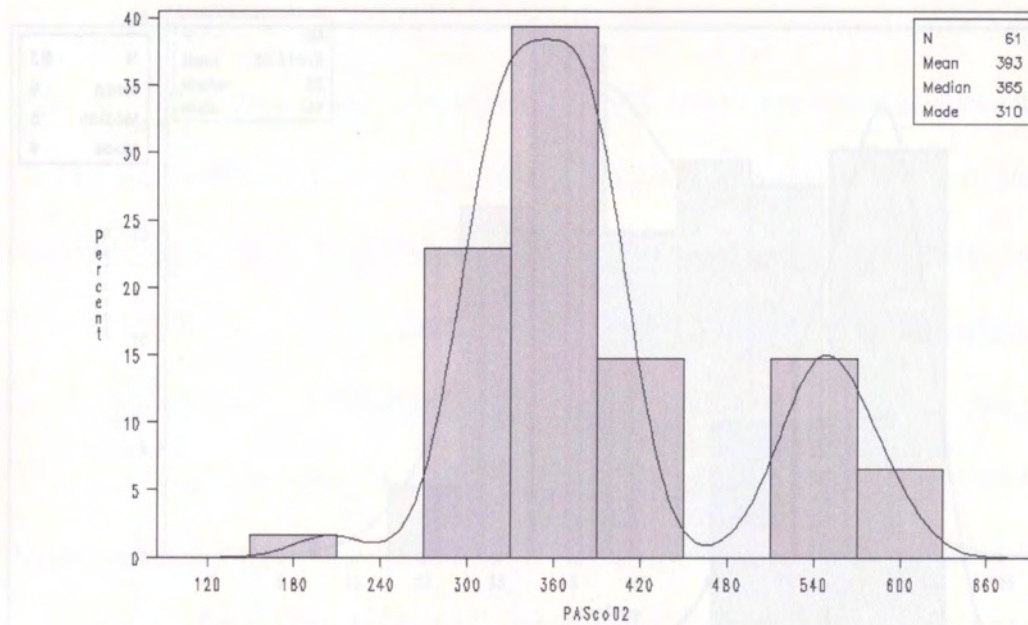


Figure 8. Distribution histogram showing 2002 program performance appraisal scores for UT Extension county directors.

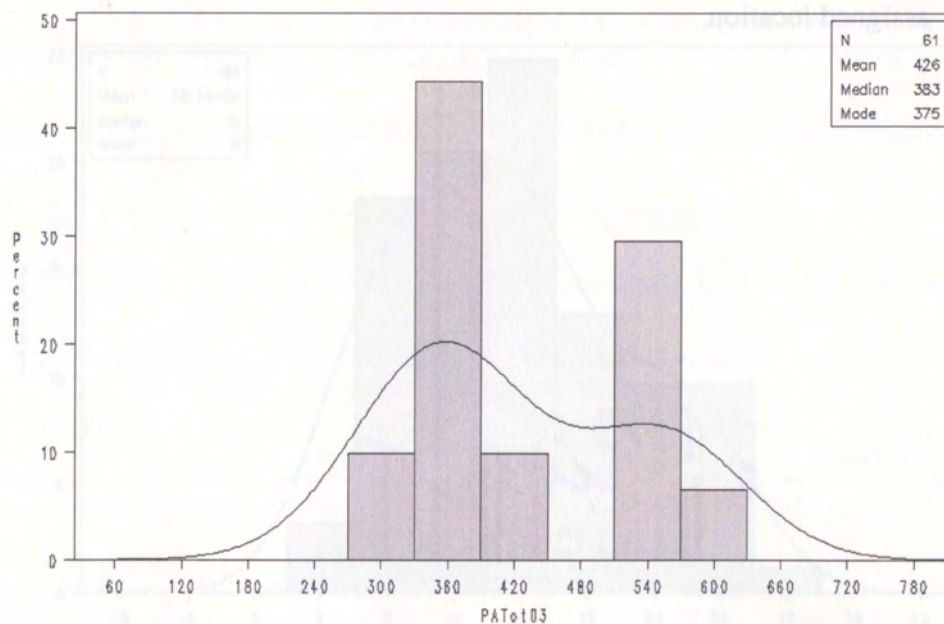


Figure 9. Distribution histogram showing 2003 total performance appraisal scores for UT Extension county directors.

PSI Sample and Descriptive Statistics

A calendar year separated the MAP workshop and the administration of the assessment which would become UT Extension's Personal Style Inventory. The data utilized in this portion of the study were collected as part of a concurrent criterion-related validation study to develop a pre-employment selection test for county extension agents. The assessment was distributed to all extension agents in Tennessee, and thus was designed to predict performance potential of an extension agent, in general. One purpose of this portion of the study is to see if data from the PSI can also predict successful county director performance.

Because of the wider distribution in UT Extension of PSI as compared to MAP, the sample for this portion of the study included 104 extension professionals. Seventy two of this number carried the official county director title when the MAP workshop was held. Seven agents of the group were acting county directors at the time of MAP and were named a county director over the months that followed. The sample also included an additional 25 agents who were appointed to the county director role from 1999 through 2004. The criteria for inclusion were that performance data were available for the individual and that the individual had completed the PSI assessment in 1999.

A demographic data profile of the PSI sample is shown in table 18. This group, like MAP, was predominately male (78 %), white (96 %) and over 40 years old (79 %). Most (87 %) had earned a master's degree with 81 percent having trained in some field of agriculture. Seventy-nine percent had worked in Extension at least 10 years with nearly half of the group (49%) having served 20 or more years. A full three-quarters of the

Table 18. Distribution of study PSI participants* by demographic variables.

Demographic Variable		Frequency (n)	Percent
Gender			
	Female	23	22.1
	Male	81	77.9
Age			
	40 or greater	82	78.8
	Under 40	22	21.2
	20 to 29	3	2.9
	30 to 39	19	18.3
	40 to 49	49	47.1
	50 to 59	29	27.9
	60 or greater	4	3.8
Race / Ethnicity			
	African American	4	3.8
	Caucasian	100	96.2
Extension Years of Service			
	0 to 4.9	7	6.7
	5 to 9.9	15	14.4
	10 to 14.9	11	10.6
	15 to 19.9	20	19.2
	20 to 24.9	19	18.3
	25 to 29.9	22	21.2
	30 to 34.9	7	6.7
	35 or greater	3	2.9
Educational Level Attained			
	Bachelor's Degree	13	12.5
	Master's Degree	91	87.5
Subject Matter Base			
	Agriculture	84	80.8
	Family & Consumer Sciences	20	19.2
Primary Audience Assignment			
	Adult	78	75.0
	Youth	7	6.7
	Adult and Youth	19	18.3
Extension District Where Assigned			
	Central	27	25.9
	Cumberland	29	27.9
	Smoky Mountain	24	23.1
	Western	24	23.1
Total PSI Population*		104	100.00

* PSI participants listed here include all who held a county director title in March 1998, individuals filling an acting county director role, and/or those who later became a county director. Any date calculations listed above were computed as of March 18, 1998.

group worked primarily with adult audiences, followed by 18 percent that worked with both adults and youth, and nearly seven percent worked totally within the 4-H youth program. The group was fairly well distributed across districts with 27 and 29, respectively, from the Central and Cumberland districts and 24 each from the Western and Smoky Mountain districts.

Table 19 below describes the group from the perspective of five different interval demographic indicators. Forty-six years separate the youngest (23 years old) and most elder (69 years old) of the PSI group that averaged 46 years in age. The group averaged just under 20 years of service to Extension. Agents/county directors represented had held their current title almost 10 years (9.5), and the 72 that had a county director title by March 1998 averaged holding the title for that role for nearly 12 years (11.5). In the county supervisory role, the county directors were responsible for 6.5 staff members on

Table 19. PSI sample descriptive statistics for five numeric demographic indicators.

Demographic Variable	Mean $\pm$ Std. Dev.	Median	Min.	Max.
Age*	46.0 $\pm$ 7.1	46.3	23.6	69.8
Years of Service in Extension* ^a	19.4 $\pm$ 9.3	19.6	-0.5	46.6
Years in Present Title*	9.5 $\pm$ 7.1	8.1	-0.5	27.3
Years as a County Director*	11.5 $\pm$ 7.3	10.7	0.0	27.3
Employees Supervised**	6.5 $\pm$ 4.2	5.0	2.0	28.0

* Date values were calculated from March 18, 1998.

** All county staff members, including the county director. Mode = 4.0.

^a Includes Extension service time, if applicable, in another state(s).

average. However, in this statistic an average is somewhat deceptive because of a heavy concentration of offices around the mode of four employees per office (see the distribution histogram for number of employees supervised in figure 7 noted earlier).

The independent or predictor variables for this portion of the study consisted of the personal styles, values and aptitudes reflected by the Personal Style Inventory. A tabular representation of the group averages and other descriptive statistics can be found in table 20.

PSI scores consisted of three different scales. First, the PSI performance scores were completed by district directors for each agent in the district using an eight point Likert scale. The performance scale listed in table 20 labelled PSI Performance consists of averages for 12 personality, preference and performance rating areas. In the case of the second, a 13th area is averaged with the others, rating an individual's ability to function under stress. Scores on the PSI performance scales could have ranged from a low of one to a high of eight. The actual range of 1.75 to 7.92 is shown in table 20. PSI performance data could be matched to PSI personality scales for 79 of the 104 records in this data set.

A second scale included the personality and personal style preferences which were coded with a 5-point Likert scale (1-5). These included the "Big 5 Personality Model" scores for agreeableness, conscientiousness, emotional stability, extroversion and openness to new experience; along with the scales for customer responsiveness, work drive, optimism, potential for long tenure, achievement- or status-striving, integrity and values, nurturance, child management skills, and interest in community development. The overall personality score is an average of the 11 personality scales indicated in table 20.

Table 20. Personal styles, values and aptitude scores of UT Extension county directors.*

PSI Variable	Mean $\pm$ Std. Dev.	Median	Mode(s)	Min.	Max.	
PSI Performance	5.15 $\pm$ 1.25	5.25	4.00, 5.25 5.67, 5.87	1.75	7.92	
PSI Performance + Stress Tolerance Scale Value (all scales)	5.11 $\pm$ 1.24	5.31	4.0, 5.38	1.77	7.77	
Agreeableness ^a	3.94 $\pm$ 0.59	3.91	3.80, 3.90	1.27	5.00	
Conscientiousness ^a	3.38 $\pm$ 0.60	3.33	3.33	1.17	4.92	
Emotional Stability ^a	3.53 $\pm$ 0.62	3.54	3.21, 3.35 3.50, 3.57 3.71, 4.00	1.64	4.86	
Extroversion ^a	3.80 $\pm$ 0.65	3.92	3.75, 3.92	1.50	5.00	
Openness to New Experience	3.35 $\pm$ 0.70	3.40	3.00, 3.50	1.50	5.00	
Big 5 Model of Personality Total	18.0 $\pm$ 2.39	17.96	--	7.08	24.26	
Cognitive Ability Measures	Numerical Reasoning (NR)	0.83 $\pm$ 0.19	0.90	1.00	0.00	1.00
	Verbal Reasoning (VR)	0.61 $\pm$ 0.15	0.57	0.57	0.21	1.00
	Abstract Reasoning (AR)	0.58 $\pm$ 0.24	0.58	0.66	0.00	1.00
	Average of NR, AR	0.70 $\pm$ 0.19	0.72	0.88	0.09	1.00
	Average of NR, VR, AR	0.66 $\pm$ 0.15	0.67	0.77	0.28	1.00
Other Dimensions	Customer Responsiveness ^a	4.09 $\pm$ 0.62	4.13	4.00	1.00	5.00
	Work Drive ^a	3.52 $\pm$ 0.68	3.54	3.00	1.62	5.00
	Optimism ^a	3.82 $\pm$ 0.67	3.89	3.57, 4.11	1.22	5.00
	Potential for Long Tenure ^a	3.62 $\pm$ 0.63	3.72	3.78	1.11	4.89
	Achievement/Status Striving ^a	3.61 $\pm$ 0.65	3.63	3.63	1.63	5.00
	Integrity and Values ^a	3.98 $\pm$ 0.57	4.06	4.00, 4.06	1.13	5.00
	Nurturance	3.62 $\pm$ 0.62	3.64	3.55, 4.09	1.36	4.91
	Child Management Skills	3.60 $\pm$ 0.71	3.60	3.60	1.00	5.00
Interest in Community Development ^a	3.74 $\pm$ 0.67	3.86	3.86	1.00	5.00	
Overall Personality Score	3.73 $\pm$ 0.48	3.77	--	1.31	4.82	

* Includes 79 individuals completing the PSI assessment with the title of County Director. Twenty-five individuals later were assigned the County Director title and responsibility, for a total of 104 observations.

^a These eleven scales are averaged to compute the overall personality score.

The last scale utilized in the PSI assessment is a zero to one scale which corresponds to incorrect or correct answers on the numeric, verbal or abstract reasoning portion of the inventory labeled Cognitive Ability Measures in table 20. A total cognitive score was calculated by averaging the three (numeric, verbal, and abstract). A secondary cognitive measure was obtained by averaging just the numeric and abstract scores. Because these scores are averages of responses scored 0 or 1, the minimum and maximum values are respectively 0 and 1, also.

When the three measures of central tendency for each variable listed in table 20 were compared, no apparent areas of concern were noted. Distribution histograms supported the assumption of a normal population.

Table 21 displays average performance scores and other descriptive statistics for 104 county directors, or county directors to be who also participated in the PSI assessment. As observed in MAP, the number of observations declined as years advanced through the time-series. However, in the case of PSI, the number of administrative scores increased in the last two years as new county directors came into the system.

Performance scores for this group were very close to those of the MAP group throughout. The largest difference was for the MAP group's 1999 total performance score which was 4.6 points higher than the same mean score for the PSI population. There were some differences, however, in the PSI group composition as compared to MAP.

The PSI group included 79 county directors who were part of the MAP group (including the seven agents who became a county director in the year following MAP), plus another 25 agents who participated in the PSI only but also were named to a county

Table 21. Annual performance appraisal score averages for UT Extension county directors* from 1998 to 2003 from records in the PSI data set.

Yr	Performance Score	No. of Observations	Mean $\pm$ Std. Dev.	Median	Min.	Max.
1998	Program	103	352.1 $\pm$ 52.3	352	193	473
	Administrative	74	64.9 $\pm$ 13.3	70	20	110
	Total	103	358.2 $\pm$ 52.0	361	179	464
1999	Program	102	362.5 $\pm$ 45.7	358	266	483
	Administrative	74	83.0 $\pm$ 19.2	80	30	120
	Total	102	367.7 $\pm$ 46.0	368	260	468
2000	Program	98	363.9 $\pm$ 46.3	362	233	452
	Administrative	72	85.5 $\pm$ 18.6	90	30	120
	Total	98	369.6 $\pm$ 48.0	369	233	452
2001	Program	82	354.1 $\pm$ 42.2	344	266	442
	Administrative	61	93.8 $\pm$ 13.5	90	60	120
	Total	84	359.5 $\pm$ 41.0	349	263	443
2002	Program	79	396.8 $\pm$ 89.7	375	205	600
	Administrative	71	73.9 $\pm$ 15.1	80	30	100
	Total	79	398.2 $\pm$ 91.4	375	176	600
2003	Program	76	423.3 $\pm$ 105.9	380	105	590
	Administrative	71	74.7 $\pm$ 14.8	80	20	100
	Total	76	424.3 $\pm$ 106.9	379	94	593

* Includes 79 individuals completing the PSI assessment with the title of County Director. Twenty-five individuals later were assigned the County Director title and responsibility. The performance appraisal system was changed to a 600 point scale in 2002. Administrative scores in the 2002 and 2003 systems could range from 0 to 100.

director role at some later date. Comparatively, the CED group had held their present county director title for nearly 11 ½ years, while the “later” group had held their present title for five years and would not be assigned the county director role for another 3.3 years. Existing CEDs were on average 48.3 years old, had served Extension for 22.3 years and supervised 5.8 employees. In contrast, the agents who would later become CEDs had worked five years in Extension and were assigned a county director title 3.4 years later. On average they would supervise 4.8 employees.

Combined MAP and PSI Sample Demographics and Descriptive Statistics

When MAP and PSI data sets were combined the merged data set had 76 records. To be included in this data set, records for an individual must have included complete MAP and PSI data and at least one year of UT Extension performance data. A comparison of data for the three data sets revealed only minute differences in independent variables, dependent variables, and sample demographics.

Table 22 describes the sample according to demographic categories. Percentages of the various measures displayed here closely follow those already discussed for MAP and PSI.

In table 23, interval demographic data for the group is listed, followed by frequencies and percentage distributions by Extension Title in table 24. Means of MAP variables are shown in table 25 and PSI means are listed in table 26. The section on demographic and descriptive statistics is concluded with table 27 showing mean performance scores for the group from 1998 to 2003.

Table 22. Distribution of participants* by demographic variables in the combined MAP and PSI data set.

Demographic Variable		Frequency (n)	Percent
Gender			
	Female	16	21.1
	Male	60	78.9
Age			
	40 or greater	66	86.8
	Under 40	10	13.2
	30 to 39	10	13.2
	40 to 49	37	48.7
	50 to 59	25	32.9
	60 or greater	4	5.3
Race / Ethnicity			
	African American	1	1.3
	Caucasian	75	98.7
Extension Years of Service			
	0 to 4.9	2	2.6
	5 to 9.9	7	9.2
	10 to 14.9	8	10.5
	15 to 19.9	17	22.4
	20 to 24.9	13	17.1
	25 to 29.9	19	25.0
	30 to 34.9	7	9.2
	35 or greater	3	4.0
Educational Level Attained			
	Bachelor's Degree	9	11.8
	Master's Degree	67	88.2
Subject Matter Base			
	Agriculture	61	80.3
	Family & Consumer Sciences	15	19.7
Primary Audience Assignment			
	Adult	60	78.9
	Youth	3	4.0
	Adult and Youth	13	17.1
Extension District Where Assigned			
	Central	20	26.3
	Cumberland	22	28.9
	Smoky Mountain	16	21.1
	Western	18	23.7
Total PSI Population*		76	100.00

Table 23. Sample descriptive statistics for five numeric demographic indicators in the combined MAP and PSI data set.

Demographic Variable	Mean $\pm$ Std. Dev.	Median	Min.	Max.
Age*	47.8 $\pm$ 7.7	48.2	32.0	69.8
Years of Service in Extension* ^a	21.6 $\pm$ 8.6	21.0	2.5	46.6
Years in Present Title*	10.8 $\pm$ 7.4	10.1	-0.5	27.3
Years as a County Director*	10.5 $\pm$ 7.7	9.9	0.0	27.3
Employees Supervised**	6.7 $\pm$ 4.6	5.0	2.0	28.0

* Date values were calculated from March 18, 1998.

** All county staff members, including the county director. Mode = 4.0.

^a Includes Extension service time, if applicable, in another state(s).

Table 24. Combined MAP and PSI data set composition by Extension Title*.

Title	Frequency	Percent
Extension Agent II	4	5.3
Extension Agent II and County Director	11	14.5
Extension Agent III	3	3.9
Extension Agent III and County Director	58	76.3
Total	76	100.0

* Title held as of March 18, 1998.

Table 25. Mean MAP competencies, management styles and personal values of UT Extension County Directors* making up a combined MAP and PSI data set.

MAP Variable		Mean $\pm$ Std. Dev.	Median	Mode(s)	Min.	Max.
Administrative Composite (AC) "Managing Your Job"		54.7 $\pm$ 15.4	51.5	47.0	28.0	87.0
Communications Composite (CC) "Relating to Others"		49.6 $\pm$ 18.0	50.0	38.0	15.0	93.0
Supervisory Composite (SC) "Building the Team"		51.4 $\pm$ 16.0	50.0	50.0 65.0	13.0	89.0
Cognitive Composite (GC) "Thinking Clearly"		48.3 $\pm$ 18.3	48.0	48.0	8.0	90.0
Total MAP Proficiency Composite		51.1 $\pm$ 12.2	50.0	44.0	22.0	80.0
Task Composite (AC+GC)/2		51.5 $\pm$ 13.7	50.3	44.0, 47.0 61.0	21.0	83.0
People Composite (CC+SC)/2		50.5 $\pm$ 14.1	48.8	36.0	23.0	87.0
Theory X Management Style		61.6 $\pm$ 28.9	62.0	96.0	1.0	96.0
Theory Y Management Style		58.4 $\pm$ 23.1	64.0	56.0, 64.0	1.0	96.0
Communication Response Styles	Empathetic (E)	16.7 $\pm$ 6.9	16.0	16.0	2.0	34.0
	Critical (C)	7.2 $\pm$ 4.9	6.5	5.0	0.0	22.0
	Searching (S)	15.4 $\pm$ 7.2	14.5	6.0	3.0	31.0
	Advising (A)	20.5 $\pm$ 7.0	21.0	22.0	8.0	40.0
	Theory X (C+A)	27.7 $\pm$ 8.5	27.0	35.0	11.0	47.0
	Theory Y (E+S)	32.1 $\pm$ 8.7	33.0	25.0	13.0	49.0
Personal Styles	Thinking	26.5 $\pm$ 5.3	26.0	25.0	14.0	38.0
	Intuiting	22.0 $\pm$ 5.5	22.5	19.0	12.0	36.0
	Sensing	27.7 $\pm$ 4.2	28.0	30.0	16.0	37.0
	Feeling	23.9 $\pm$ 4.4	24.0	24.0	13.0	38.0

* Includes 69 county directors assigned the title and seven agents that would later become county directors.

Table 26. Mean PSI personal styles, values and aptitude scores of UT Extension county directors* making up a combined MAP and PSI data set.

PSI Variable		Mean $\pm$ Std. Dev.	Median	Mode(s)	Min.	Max.
PSI Performance		5.20 $\pm$ 1.35	5.33	4.00, 5.25	1.75	7.92
PSI Performance + Stress Tolerance Scale Value (all scales)		5.16 $\pm$ 1.34	5.35	4.00, 5.38	1.77	7.77
Agreeableness ^a		3.94 $\pm$ 0.64	3.95	3.45, 3.90	1.27	5.00
Conscientiousness ^a		3.41 $\pm$ 0.61	3.37	3.08	1.17	4.92
Emotional Stability ^a		3.52 $\pm$ 0.67	3.50	3.71	1.64	4.86
Extroversion ^a		3.80 $\pm$ 0.71	3.92	3.92	1.50	5.00
Openness to New Experience		3.35 $\pm$ 0.72	3.40	3.50	1.50	5.00
Big 5 Model of Personality Total		18.0 $\pm$ 2.60	18.11	--	7.08	24.26
Cognitive Ability Measures	Numerical Reasoning (NR)	0.85 $\pm$ 0.18	0.90	1.00	0.10	1.00
	Verbal Reasoning (VR)	0.61 $\pm$ 0.15	0.57	0.57	0.21	1.00
	Abstract Reasoning (AR)	0.58 $\pm$ 0.24	0.58	0.67	0.00	1.00
	Average of NR, AR	0.71 $\pm$ 0.19	0.73	0.87, 0.92	0.09	1.00
	Average of NR, VR, AR	0.66 $\pm$ 0.15	0.67	0.78	0.28	1.00
Other Dimensions	Customer Responsiveness ^a	4.12 $\pm$ 0.66	4.13	4.00	1.00	5.00
	Work Drive ^a	3.63 $\pm$ 0.68	3.69	3.69	1.62	5.00
	Optimism ^a	3.82 $\pm$ 0.67	3.89	3.56, 4.11	1.22	5.00
	Potential for Long Tenure ^a	3.69 $\pm$ 0.61	3.78	3.78	1.11	4.89
	Achievement/Status Striving ^a	3.66 $\pm$ 0.72	3.69	3.63	1.63	5.00
	Integrity and Values ^a	3.98 $\pm$ 0.62	4.06	4.06	1.13	5.00
	Nurturance	3.63 $\pm$ 0.63	3.64	3.64, 3.91 4.09	1.36	4.91
	Child Management Skills	3.58 $\pm$ 0.74	3.70	3.70, 3.90 4.10	1.00	5.00
Interest in Community Development ^a		3.81 $\pm$ 0.66	3.86	3.86	1.00	5.00
Overall Personality Score		3.76 $\pm$ 0.52	3.79	--	1.31	4.82

* Includes 69 county directors assigned the title and seven agents that would later become county directors.

Table 27. Mean annual performance appraisal score averages for the combined MAP and PSI data set of UT Extension county directors* from 1998 to 2003.

Yr	Performance Score	No. of Observations	Mean $\pm$ Std. Dev.	Median	Min.	Max.
1998	Program	75	355.4 $\pm$ 50.4	352	193	473
	Administrative	72	65.3 $\pm$ 13.2	70	20	110
	Total	75	363.7 $\pm$ 49.2	365	179	464
1999	Program	74	365.6 $\pm$ 45.0	359	273	483
	Administrative	72	83.7 $\pm$ 19.0	80	30	120
	Total	74	373.3 $\pm$ 44.6	371	260	468
2000	Program	70	365.4 $\pm$ 45.3	362	273	452
	Administrative	69	85.9 $\pm$ 18.4	90	30	120
	Total	70	373.4 $\pm$ 47.5	374	260	453
2001	Program	56	353.6 $\pm$ 44.1	344	266	442
	Administrative	54	94.3 $\pm$ 14.0	90	60	120
	Total	56	361.2 $\pm$ 43.6	357	263	444
2002	Program	51	393.9 $\pm$ 93.4	375	205	600
	Administrative	51	75.8 $\pm$ 15.8	80	30	100
	Total	51	396.5 $\pm$ 95.9	379	176	600
2003	Program	50	429.8 $\pm$ 100.9	383	280	590
	Administrative	49	76.9 $\pm$ 12.8	80	50	100
	Total	50	431.7 $\pm$ 101.0	384	285	593

Research Questions

Five research questions were framed to guide this study. The first two questions explored the relationships of two different personnel assessments (MAP and PSI) to annual performance appraisal scores in UT Extension. A third research question investigated demographic differences among the data analyzed in this study. The fourth question dealt with the validity of the assessments, separately and together, in predicting performance. Finally, the fifth question sought to determine if relationships existed between county director program performance and administrative performance. The research findings relative to each of these research questions will be presented in turn.

Research Question One

Research question one asked, “What is the relationship between Tennessee County Director performance as measured by the Tennessee Agricultural Extension Service Performance Appraisal for County Extension Leaders and the competencies, management styles and personal values as determined by the Managerial Assessment of Proficiency (MAP™)?” To explore this relationship, MAP competencies, styles and preference scores were compared to the annual program, administrative and total performance appraisal score for 1998 to 2003. The performance time frame began the year the MAP assessment was administered and continued through 2003, the last year for which performance scores were available at the time of this writing.

Pearson’s correlation coefficient (ρ) was utilized to reflect the magnitude and direction of linear relationships. An assumption of a linear relationship is made when

correlations are reported. Therefore, MAP variables vs. performance data scatter plots were constructed to visually appraise the relationships. Predictor / criterion scatter plots confirmed linearity, and ruled out potential logarithmic, quadratic, quartic or other curvilinear expressions of data relationship. Scatter plots were consistent across performance years within score type (program, administrative and total). Scatter plots of the MAP predictor variables versus average program, administrative and total performance are included in appendix G, figures G-2 through G-5.

Table G-6 lists correlation coefficients by year and by performance score type for all MAP variable comparisons. Probabilities that the coefficient is statistically different than zero and the number of observations included in the calculation of the coefficient are also listed.

The criterion group of performance appraisal scores consisted of six years (1998-2003) and three scores per year (program, administrative and total) for a total of 18. Predictor variables were made up of seven MAP composite scores (administrative, communication, supervisory, cognitive, task, people, overall MAP proficiency score), two management style scores (theory X, theory Y), six communication response styles (empathetic, critical, searching, advising, theory X, theory Y) and four personal styles (thinker, intuitor, sensor, feeler) for a total of 19. Therefore there were 342 correlation combinations computed (18 x19). Of these 342 correlations, a total of 17 (4.97 %) were found to meet the level of significance specified ($p < 0.05$).

Table 28 lists the 17 correlation coefficients that met the criterion of a five percent level of significance. The largest correlation was found between a theory Y

Table 28. Statistically significant Pearson's rho correlation coefficients for MAP predictor vs. UT Extension performance appraisal criterion variables.

MAP Predictor Variable	Performance Appraisal Criterion Variable	n*	Correlation Coefficient	Prob. > r H₀: Rho=0
Communication Composite	1998 Program	92	-0.24081	0.0208
	1998 Total	92	-0.23213	0.0260
MAP Overall Proficiency	1998 Program	92	-0.22286	0.0327
	1998 Total	92	-0.22758	0.0291
Advising Comm. Response	2001 Program	66	-0.30365	0.0132
	2001 Total	67	-0.31805	0.0087
Theory X Comm. Response	1998 Administrative	88	-0.22130	0.0383
	2001 Program	66	-0.30365	0.0098
	2001 Total	67	-0.31810	0.0087
Theory Y Comm. Response	2001 Program	66	0.32001	0.0088
	2001 Total	67	0.31440	0.0096
Sensor Personal Style	1998 Administrative	88	0.24938	0.0191
	1998 Total	92	0.21974	0.0353
	2000 Administrative	84	0.22431	0.0402
	2002 Program	61	0.25215	0.0499
Feeler Personal Style	1999 Administrative	88	-0.22767	0.0329
	2000 Administrative	84	-0.22279	0.0417

* n = number of observations

communication response style and 2001 program performance. With a correlation coefficient of 0.32, 10.24 percent of the common variance between the two variables was explained. The smallest statistically significant correlation was between the sensor personal style and 1998 total performance. In this relationship, 4.8 percent of the variance in total performance score was attributable to the sensor style ($r = 0.21974$). Figure 10 shows a graphical representation of the predicted linear relationship for both of these values. The correlation coefficient is the slope of the predicted line, resulting in the slightly flatter line evident in the lower graph.

Eleven of the relationships were negative, indicating that as the predictor variable increased in value, the performance criterion decreased, or vice-versa. Negative correlations were observed for the communication composite, overall MAP proficiency, the advising and theory X communication response styles, and the feeler personal style. Six positive correlations were observed between the theory Y communication response style, the sensor personal style and performance scores. Figure 11 depicts a graphical representation of two correlations similar in magnitude, but one a negative and the other a positive correlation.

The greatest number of significant correlations was observed in the years 1998 and 2001 with a total of seven and six, respectively. There were two correlations significant in 2000, and one in each of the years 1999 and 2002. The only year to show no significant correlation was 2003.

Four of the seven MAP variables had significant relationships with scores in only one year of performance appraisal. Composites for communications and MAP overall

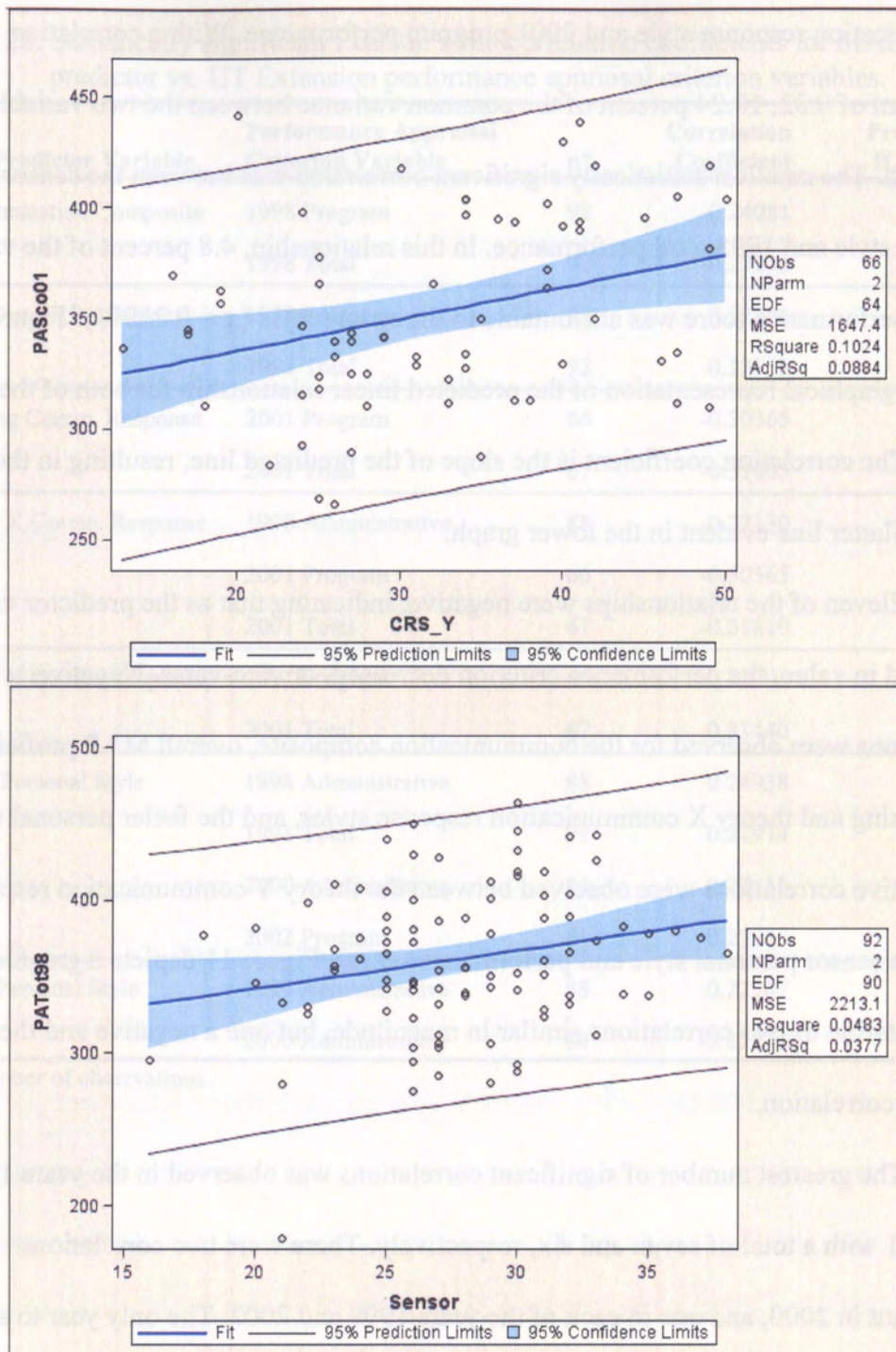


Figure 10. Graphical scatter plot comparison of the highest (0.32) and lowest (0.22) statistically significant MAP vs performance correlations.

KEY

PASco01	Program Performance Score 2001	PATot98	Total Performance Score 1998
CRS_Y	Theory Y Communication Resp. Style	Sensor	Sensor Personal Style

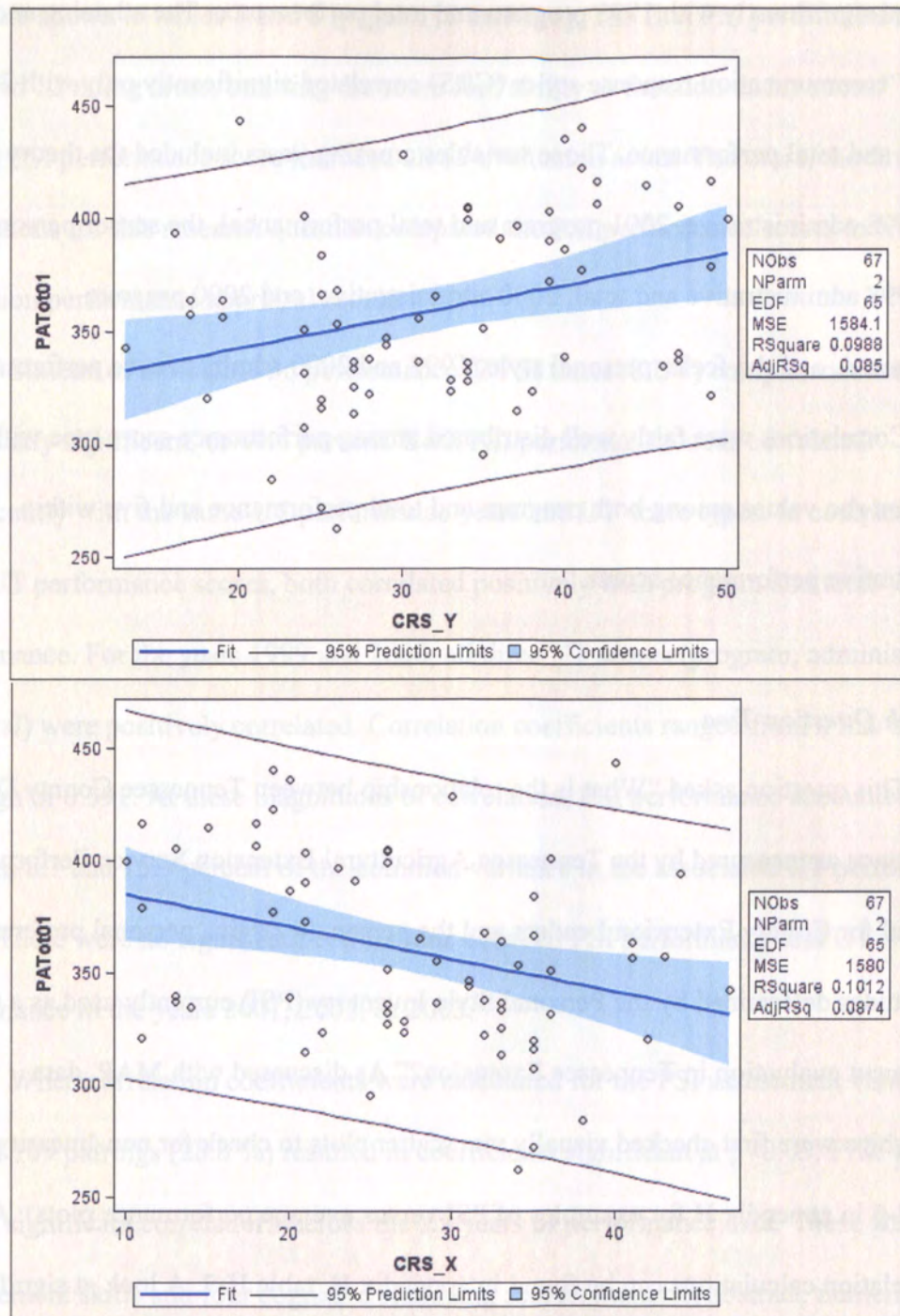


Figure 11. Graphical comparison of the impact of a positive vs. a negative correlation coefficient on the slope of the predicted regression line.

Top - Pearson's $r = 0.314$

Bottom - Pearson's $r = -0.318$

KEY

PATot01 Total Performance Score 2001

CRS_X Theory X Communication Resp. Style

CRS_Y Theory Y Communication Resp. Style

correlated significantly with 1998 program and total performance. The advising and theory Y communication response styles (CRS) correlated significantly only with 2001 program and total performance. Those variables crossing years included the theory X CRS (1998 administrative, 2001 program and total performance), the sensor personal style (1998 administrative and total, 2000 administrative, and 2000 program performance), and the feeler personal style (1999 and 2000 administrative performance).

Correlations were fairly well distributed among performance score type with six significant rho values among both program and total performance and five within administrative performance scores.

Research Question Two

This question asked “What is the relationship between Tennessee County Director performance as measured by the Tennessee Agricultural Extension Service Performance Appraisal for County Extension Leaders and the personality traits, personal preferences and aptitudes determined by the Personal Style Inventory (PSI) currently used as a pre-employment evaluation in Tennessee Extension?” As discussed with MAP, data relationships were first checked visually via scatter plots to check for non-linearity (see figure H-6 in appendix H for examples of PSI versus average performance plots). All of the correlation calculations can be found in appendix H, table H-7. A look at significant correlations of PSI variables with UT Extension performance appraisal follows.

When the PSI validation study (the source of these data) was conducted, a rating of employee performance was completed by district directors according to the standards

and scale shown in tables 7 and 8 (pages 110 and 111). The first PSI performance score averaged 12 rating areas, omitting the score for “ability to function under stress.” The second PSI performance score included all 13 evaluation areas. Therefore, the first set of correlations for this research question compared the PSI performance scores to UT Extension performance appraisal scores.

Sixteen of a possible 36 performance (2 PSI times 18 UT) comparisons were statistically significant, or 44.4 percent. Both PSI performance areas correlated significantly with the same UT performance years and UT score types. In comparison to 1998 UT performance scores, both correlated positively with program and total performance. For the years 1999 and 2000, all three UT scores (program, administrative and total) were positively correlated. Correlation coefficients ranged from a low of 0.295 to a high of 0.391. At these magnitudes of correlation, PSI performance accounted for between 8.7 and 15.3 percent of the common variance in the associated UT performance score. There were no significant correlations between PSI performance and UT performance in the years 2001, 2002, or 2003.

When correlation coefficients were calculated for the PSI assessment variables, a total of 109 pairings (28.8 %) resulted in coefficients significant at $p < 0.05$. Five variables had no significant correlations across the six years of performance data. These were child management skills and four cognitive reasoning scores, numeric, abstract, numeric + abstract, and the total cognitive score. Significant correlations are listed in table 29.

Table 29. Statistically significant Pearson's rho correlation coefficients for PSI predictor vs. UT Extension performance appraisal criterion variables.

PSI Predictor Variable	Performance Appraisal Criterion Variable	n	Correlation Coefficient	Prob. > r H ₀ : Rho=0
Agreeableness	1998 Program	103	0.19399	0.0496
Interest in Community Dev.	1998 Program	103	0.26088	0.0078
	1998 Total	103	0.26494	0.0068
	2002 Administrative	71	0.30603	0.0094
	2003 Administrative	71	0.24658	0.0382
Conscientiousness	1998 Program	103	0.30863	0.0015
	1998 Administrative	74	0.23676	0.0423
	1998 Total	103	0.29122	0.0028
	1999 Total	102	0.21542	0.0297
	2003 Program	76	0.27524	0.0161
	2003 Administrative	71	0.38092	0.0010
	2003 Total	76	0.29134	0.0107
Customer Responsiveness	1998 Program	103	0.35178	0.0003
	1998 Administrative	74	0.36876	0.0012
	1998 Total	103	0.35277	0.0003
	1999 Program	102	0.27571	0.0050
	1999 Total	102	0.33286	0.0006
	2000 Program	98	0.31128	0.0018
	2000 Administrative	72	0.29969	0.0105
	2000 Total	98	0.36352	0.0002
	2002 Administrative	71	0.26329	0.0265
	2003 Administrative	71	0.24743	0.0375
Emotional Stability	2002 Program	79	0.22738	0.0439
	2002 Total	79	0.22167	0.0496
Extroversion	1998 Program	103	0.21148	0.0320
	1998 Total	103	0.20967	0.0335
	2002 Administrative	71	0.28584	0.0157
Integrity and Values	1998 Program	103	0.26029	0.0079
	1998 Administrative	74	0.23274	0.0460
	1998 Total	103	0.24085	0.0144

n = number of observations

Table 29. Continued.

PSI Predictor Variable	Performance Appraisal Criterion Variable	n*	Correlation Coefficient	Prob. > r H ₀ : Rho=0
Nurturance	1998 Program	103	0.25181	0.0103
	1998 Administrative	74	0.25167	0.0305
	1998 Total	103	0.24085	0.0143
	1999 Total	102	0.20286	0.0409
	2000 Program	98	0.20790	0.0400
	2000 Total	98	0.21607	0.0326
	2002 Administrative	71	0.24608	0.0386
Openness to New Experience	1998 Program	103	0.30367	0.0018
	1998 Total	103	0.30329	0.0018
	1999 Program	102	0.26551	0.0070
	1999 Total	102	0.29399	0.0027
	2000 Program	98	0.32687	0.0010
	2000 Total	98	0.34403	0.0005
	2001 Administrative	61	0.28955	0.0236
	2003 Program	76	0.24932	0.0299
Optimism	2003 Total	76	0.24041	0.0364
	1998 Program	103	0.32255	0.0009
	1998 Total	103	0.29546	0.0024
	1999 Total	102	0.23242	0.0187
	2000 Program	98	0.23281	0.0211
	2000 Total	98	0.28137	0.0050
	2002 Program	79	0.34398	0.0019
	2002 Administrative	71	0.37999	0.0011
	2002 Total	79	0.34449	0.0019
	2003 Program	76	0.35649	0.0016
	2003 Total	71	0.25591	0.0312
	2003 Administrative	76	0.35119	0.0019
Achievement Striving & Status Striving	1998 Program	103	0.23716	0.0159
	1998 Total	103	0.23836	0.0153
	1999 Total	102	0.20929	0.0348
	2002 Administrative	71	0.35215	0.0026

* n = number of observations

Table 29. Continued.

PSI Predictor Variable	Performance Appraisal Criterion Variable	n	Correlation Coefficient	Prob. > r H₀: Rho=0
Potential for Long Tenure	1998 Program	103	0.27936	0.0043
	1998 Administrative	74	0.31486	0.0063
	1998 Total	103	0.28704	0.0033
	1999 Program	102	0.25568	0.0095
	1999 Total	102	0.30807	0.0016
	2000 Program	98	0.27797	0.0056
	2000 Administrative	72	0.25862	0.0283
	2000 Total	98	0.28051	0.0051
	2002 Administrative	71	0.30170	0.0106
	2003 Administrative	71	0.27608	0.0198
Work Drive	1998 Program	103	0.47981	<0.0001
	1998 Administrative	74	0.33390	0.0063
	1998 Total	103	0.48374	<0.0001
	1999 Program	102	0.42854	<0.0001
	1999 Total	102	0.47210	<0.0001
	2000 Program	98	0.44473	<0.0001
	2000 Administrative	72	0.32164	0.0059
	2000 Total	98	0.48611	<0.0001
	2001 Administrative	61	0.30439	0.0171
	2002 Administrative	71	0.34724	0.0030
	2003 Program	76	0.31153	0.0062
	2003 Administrative	71	0.34360	0.0033
	2003 Total	76	0.30977	0.0065
Cognitive- Verbal Reasoning	2003 Total	98	0.20051	0.0477

n = number of observations

Table 29. Continued.

PSI Predictor Variable	Performance Appraisal Criterion Variable	n	Correlation Coefficient	Prob. > r H ₀ : Rho=0
Big 5 Model of Personality	1998 Program	103	0.30071	0.0020
	1998 Total	103	0.27913	0.0043
	1999 Total	102	0.22544	0.0227
	2000 Program	98	0.22608	0.0252
	2000 Total	98	0.25713	0.0106
	2002 Program	79	0.22967	0.0417
	2002 Administrative	71	0.28790	0.0149
	2002 Total	79	0.23100	0.0405
	2003 Program	76	0.29347	0.0101
	2003 Administrative	71	0.27757	0.0191
	2003 Total	76	0.29751	0.0091
Overall Personality Score	1998 Program	103	0.36741	0.0001
	1998 Administrative	74	0.27775	0.0166
	1998 Total	103	0.35430	0.0002
	1999 Program	102	0.22957	0.0203
	1999 Total	102	0.29477	0.0026
	2000 Program	98	0.26230	0.0091
	2000 Total	98	0.30169	0.0025
	2002 Program	79	0.25058	0.0259
	2002 Administrative	71	0.37418	0.0013
	2002 Total	79	0.25835	0.0215
	2003 Program	76	0.31795	0.0051
	2003 Administrative	71	0.33092	0.0048
	2003 Total	76	0.32400	0.0043

n = number of observations

Statistically significant correlation coefficients for the 109 PSI/UT performance score pairings were all positive. Of these, 37 were with program performance scores, 30 were with administrative scores, and the balance (42) were with total performance scores. Correlation coefficients ranged from a low of 0.194 (1998 program vs. agreeableness) to a high of 0.486 (2000 total performance vs. work drive), accounting for 3.8 and 23.6 percent of the common variance between the paired variables, respectively. An average of correlation coefficients by performance score type resulted in little difference between the three. Significant administrative performance correlation coefficients averaged 0.303, program performance averaged 0.290, and total performance averaged 0.289.

Looking at how the significant correlations were dispersed among years, 1998 had the largest number at 34. Of these, 14 were with program performance, seven with administrative, and 13 with the total performance score. The years 2000 and 2003 each had 20 significant correlations with PSI variables, 2002 followed with 18, 1999 with 15 and the year 2001 with two. Significant correlations in 1999 fell mostly within total score (10), but five were with program performance. In 2000, nine significant correlations were with total, eight with program, and three were with administrative performance.

Administrative performance correlated significantly with more PSI variables than other performance score types in the years 2001 to 2003. In 2001 the only two correlations significant ($p < 0.05$) were with administrative performance. There were 10 administrative performance correlations significant in 2002 and eight in 2003. Figure 12 depicts a graphical comparison of the number of statistically significant correlations for all PSI variables with UT Extension performance scores.

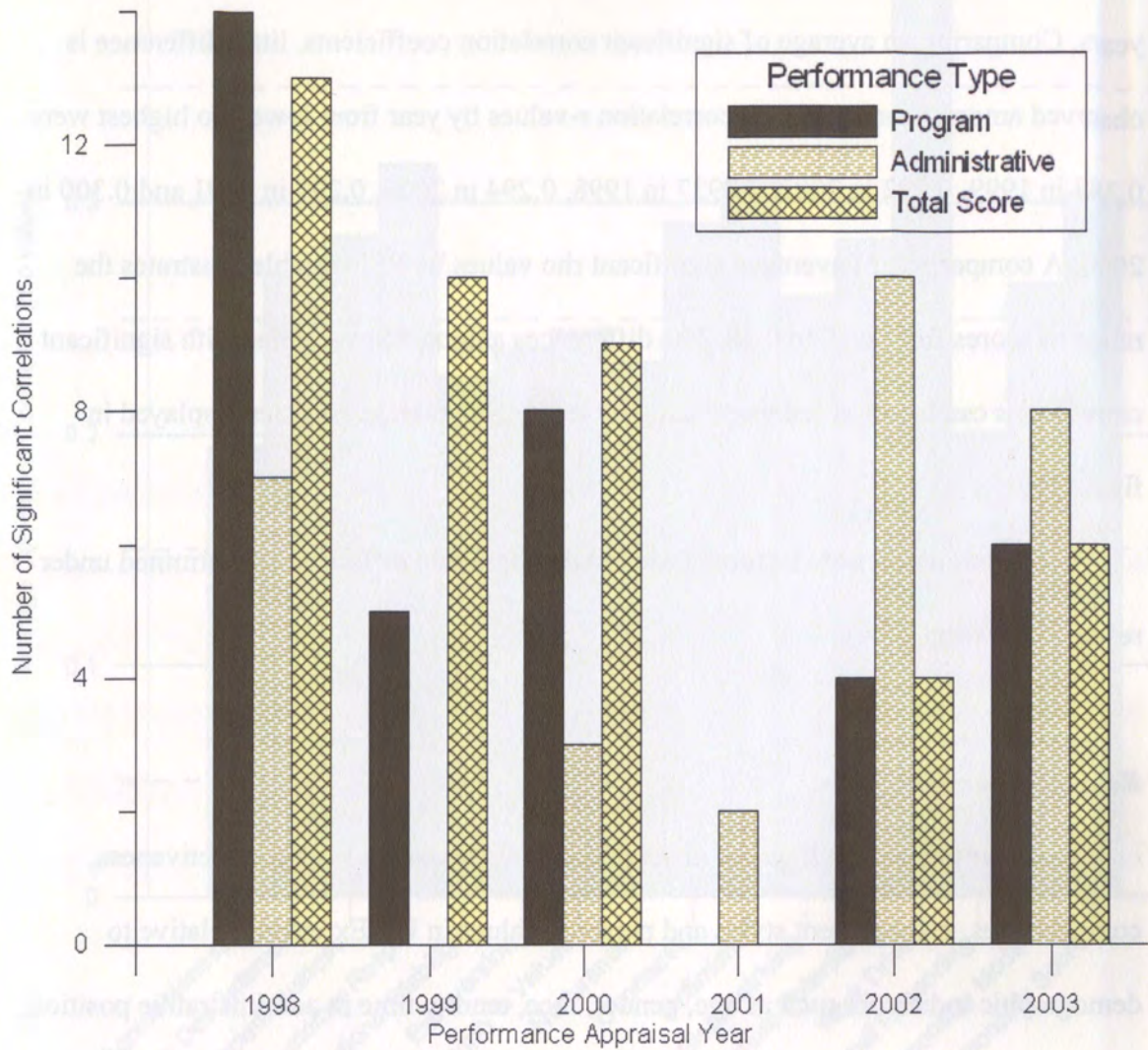


Figure 12. Number of statistically significant correlations of PSI variables with UT Extension performance appraisal scores by score type and year.

Significant correlation coefficients averaged 0.29315 across all PSI variables and all years. Comparing an average of significant correlation coefficients, little difference is observed among years. Average correlation r-values by year from lowest to highest were 0.283 in 1999, 0.292 in 2002, 0.2937 in 1998, 0.294 in 2003, 0.297 in 2001 and 0.300 in 2000. A comparison of averaged significant rho values by PSI variable illustrates the range of scores from 0.19 to 0.38. The differences among PSI variables with significant correlations can be observed graphically by looking at average r-values displayed in figure 13.

Attention will now be turned toward demographic differences determined under research question 3.

Research Question Three

Under this research query, differences in perceived leadership effectiveness, competencies, management styles and personal values in UT Extension relative to demographic indicators such as age, gender, race, tenure, time in administrative position, title/rank, program area assigned, and location were explored. Relationships with continuous numeric demographic measures were reflected by Pearson's correlation coefficients (appendix I). For categorical demographic variables, mean scores were compared with analysis of variance (ANOVA) and statistical differences calculated with the student's t-test. Means were considered to be statistically different if the probability of the null hypothesis ($\mu_1 = \mu_2$) being true was less than 0.05 ($p < 0.05$). All means for demographic variables within MAP and PSI variables are listed in appendix I.

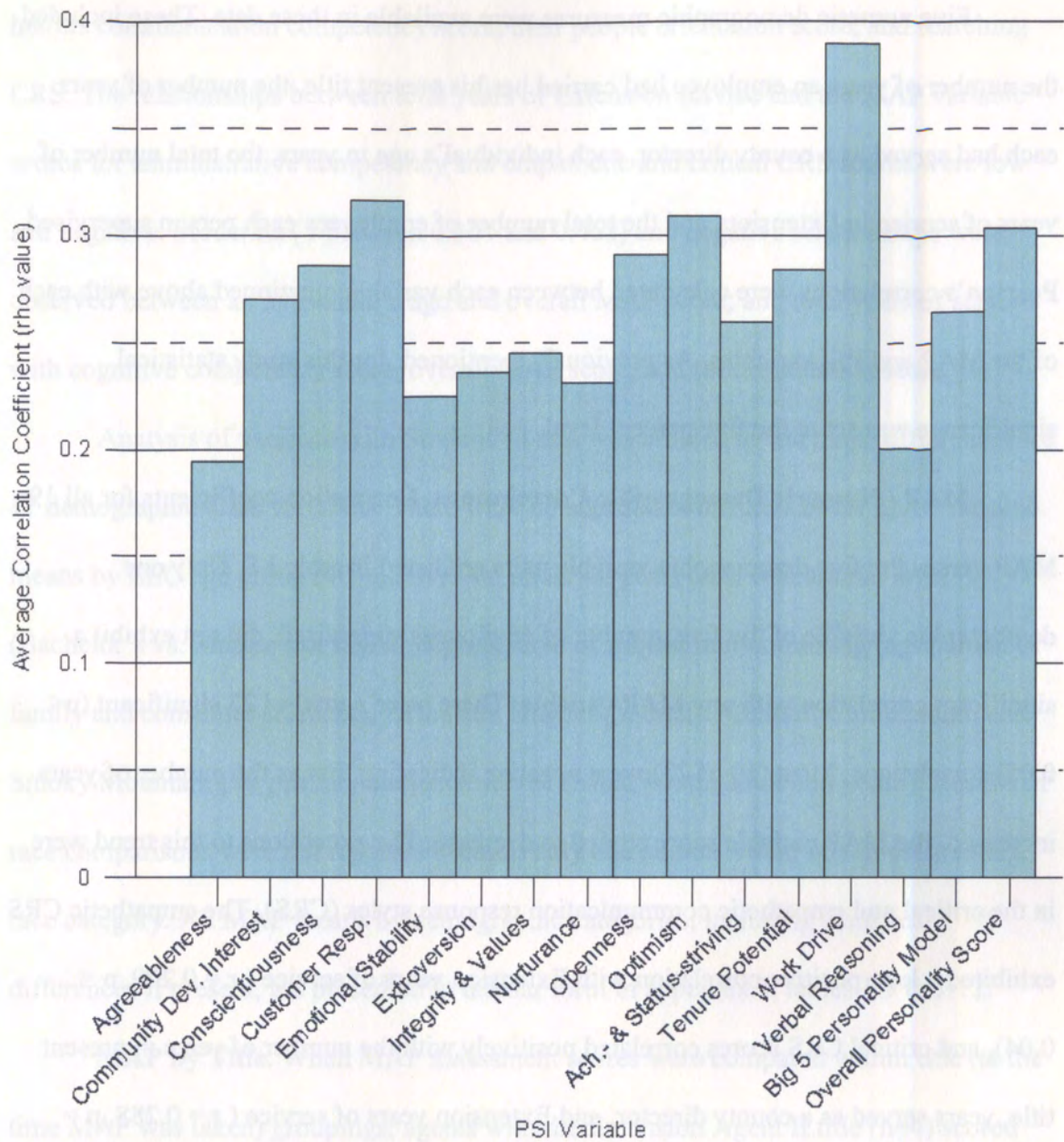


Figure 13. Average of significant correlation coefficients for each PSI variable across all years and performance appraisal score types.

Five numeric demographic measures were available in these data. These included the number of years an employee had carried her/his present title, the number of years each had served as a county director, each individual's age in years, the total number of years of service in Extension, and the total number of employees each person supervised. Pearson's correlations were calculated between each variable mentioned above with each of the MAP and PSI variables. As previously mentioned, for this study statistical significance was set at the five percent level.

MAP / Numeric Demographic Correlations. Correlation coefficients for all 19 MAP versus the five demographic variable pairs are listed in table I-8. Only one demographic variable of the five, number of employees supervised, did not exhibit a significant correlation with any MAP variable. There were a total of 23 significant ($p < 0.05$) correlations. Most (19 of 23) were negative indicating that as the number of years increased, the MAP variable score tended to decrease. The exceptions to this trend were in the critical and empathetic communication response styles (CRS). The empathetic CRS exhibited a low, positive correlation with Extension years of service ($r = 0.209$, $p = 0.04$), and critical CRS scores correlated positively with the number of years in present title, years served as a county director, and Extension years of service ($r = 0.288$, $p = 0.005$; $r = 0.294$, $p = 0.004$; and $r = 0.245$, $p = 0.018$, respectively). Low negative correlations (ranging from an r of -0.21 to -0.29) were observed between the number of years in current title, and years as a county director, versus the MAP variable scores for cognitive competency, overall MAP, task orientation score, and the searching CRS. In addition, low and negative correlations were found between an individual's age with

her/his communication competency score, their people orientation score, and searching CRS. The relationships between total years of Extension service and the MAP variable scores for administrative competency and empathetic and critical CRS scores were low and negative. Moderate (r between 0.301 and 0.468) and negative relationships were observed between an individual's age and overall MAP score; and total years of service with cognitive competency score, overall MAP score, and task orientation score.

Analysis of variance with Student's t-test was utilized to test mean differences for 11 demographic class variables. There were no significant differences for MAP variable means by EEO age group (40 and over vs. under 40 years old), educational level (Bachelor's vs. Master's or higher degree), area of subject matter training (agriculture or family and consumer sciences), Extension District (Western, Central, Cumberland, and Smoky Mountain), or primary audience served (adult, youth, adult and youth). Results of race comparisons were not reported because only one person would be represented in a race category. All MAP means by demographic categories, including statistical differences if present, are presented in tabular form in appendix J, tables J-9 to J-12.

MAP by Title. When MAP assessment scores were compared within title (at the time MAP was taken) groupings, agents with the Extension Agent II title ($n=4$) scored higher in the communication (68.5 vs. 45.1), supervisory (64.5 vs. 52.4) and people (66.5 vs. 48.1) composites than Extension Agent II and County Directors ($n=14$). The Agent II group also scored higher in the thinker personal style score (31.3 vs. 25.1). When Agent II scores were compared to Extension Agent III and County Director ($n=72$) scores, agents with the title Extension Agent II scored higher in the overall MAP score (63.5 vs. 50.7)

and people composite score (66.5 vs. 50.7). Agents holding the title Extension Agent II and County Director had higher scores than agents holding Extension Agent III and County Director titles in the cognitive (58.0 vs. 46.9) and task (58.5 vs. 50.4) composites. The Extension Agent II and County Director group also scored higher in their empathetic communication response style (15.4 vs. 6.7) than Extension Agent III's (n=3), and higher in the intuitor personal style than Extension Agent II's (24.0 vs. 16.8). No further statistical differences ($p < 0.05$) were found in MAP variable means within the title group.

MAP by Title Type. MAP scores were analyzed comparing County Directors who held that title at the time when the MAP assessment was administered (CED, n=85) versus agents who were named County Directors at some time after the assessment was given (later, n=8). Where statistical differences were found at the five percent level, the later group had higher scores than CEDs in four of five areas. These included MAP overall (62.6 vs. 50.9), administrative (66.7 vs. 54.6), Task (62.9 vs. 51.7) and people (61.6 vs. 49.9) composite scores. CED's scored higher in the empathetic communication response style (17.1 vs. 11.4). It should be noted that on average CED's had held their current title 7.5 years longer and had held a county director appointment over 12 years longer than the later group. The CED group also averaged six years older (48.5 vs. 42.6) and 7.5 years greater total Extension experience (22.2 vs. 14.75) than the later agents.

MAP by Age Group. There were six mean pairs that were statistically different when MAP scores were compared within ten-year agent age groups. Forty year olds scored higher than sixty year olds in MAP total, cognitive and people competencies, and higher than fifty year olds in the searching communication response style. In the

empathetic communication response style, fifty year olds scored higher than thirty year olds, but thirty year olds scored higher than fifty in the searching communication response style.

MAP by Gender. Only one statistical difference was found relative to gender. Males (n=74) scored higher in the theory X management style score (64.1 versus 47.8) than did females (n=19). Theory X and theory Y scores were found to exhibit a moderate and negative correlation ($r=-0.3285$, $p=0.0013$) to one another in this study as did the communication response style (CRS) theory X and theory Y constructs to each other ($r=-0.992$, $p<0.0001$). Theory X was correlated to CRS-X ($r=0.4414$, $p<0.001$) and theory Y was correlated with CRS-Y ($r=0.3264$, $p=0.0014$). Given this, one might expect significant differences in theory Y, CRS-X and CRS-Y score means by gender. Though, females scored higher in theory Y and CRS-Y, and lower in CRS-X than males, these differences were not found to be statistically significant.

MAP by Years of Extension Service. The final categorical demographic variable to show statistical differences among MAP variables was Extension years of service (YOS). Categories were <5 years, 5 to 5.9, 6 to 9.9, 10 to 14.9, 15 to 19.9, 20 to 24.9, 25 to 29.9, 30 to 34.9, and 35 or more years. Therefore, with these eight categories there were 28 possible mean pair comparisons within each of the 19 MAP variables. A total of 74 mean pairs were statistically different. There were 11 pair differences within MAP total score, one pair difference in the administrative competency, nine in the communications competency, four in the supervisory competency, 14 in the cognitive competency, 12 in the task composite, and three in the people composite. Within the

communication response styles, eight mean pairs were different in the empathetic style, two were different in the critical style and five were different in the searching style. Within personal styles, there were two differences in the intuitor style and three in the sensor style. Many of these differences followed no meaningful pattern. The exceptions to this statement are further noted. The mean differences further discussed below were significantly different at the five percent level of significance. Actual mean scores for each group are listed along with significant difference in appendix I, tables I-9 to I-12.

A trend existed in YOS category differences and total MAP score. Extension agents with less than 25 years of experience had overall MAP scores above those with 30 years of experience or greater. In addition, the 15 to 19.9 YOS group scored higher than the 25 to 29.9 YOS group. A similar trend was observed in the task orientation construct and cognitive competency scores. Agents with YOS below 20 years had higher task scores than agents with 25 or more YOS. Agents with 20-24.9 YOS had higher task scores than the 30-34.9 YOS group. Within cognitive competency scores, agents who had worked less than 20 years had higher scores than agents that had worked 25 or more. The group that had worked from 20 to 24.9 years had higher cognitive competency scores than those agents who had worked between 25 to 34.9 years.

Finally, in the people construct, mid-career agents (10-24.9 YOS) scored higher than agents serving 35 or more years. The mid-career group also scored higher on the communication composite score than did agents working 25 years or more. However, the 35 or more YOS group scored higher than the agents with 5 to 14.9 years in the critical communication response style score.

PSI / Numeric Demographic Correlations. Pearson's correlation coefficients were calculated between the five numeric demographic variables (years in title held at the time MAP was administered, years as a CED, age in years, Extension years of service, and number of employees supervised) and 23 PSI variables (including the two PSI performance measures). The r value and significance level for each pairing are shown in appendix I, table I-13.

Of 115 possible pairings, a total of 17 were significant at the five percent level. Two were moderate in magnitude with the balance classified as low. Six PSI variables correlated significantly with Extension years of service, four each with years in title and age in years, two with years as a CED, and one with the number of employees supervised.

Eight of the 17 significant correlations were negative relationships. With one exception, all negative correlations were with cognitive PSI constructs. Abstract cognitive reasoning correlated significantly with years in title ($r=-0.296$, $p=0.002$), years as a CED ($r=-0.233$, $p=0.017$), age in years ($r=-0.311$, $p=0.001$), and Extension YOS ($r=-0.203$, $p=0.039$). Overall cognitive score (numeric, verbal and abstract) exhibited low and negative correlations with years in title ($r=-0.198$, $p=0.043$) and age in years ($r=-0.217$, $p=0.027$). The correlation coefficient between overall cognitive score (numeric and abstract) and age in years was -0.226 ($p=0.021$). Number of employees supervised and child management skills formed the last of the negative correlations ($r=-0.229$, $p=0.019$). As noted before with negative MAP / demographic correlations, in this case when these demographic variable values increased, the corresponding PSI variable score tended to

decrease in value. Or, the converse would be where the PSI variable value increased, the corresponding demographic value decreased.

Analysis of variance with Student's t-test was utilized to test PSI variable mean differences within the 11 demographic class variables. There were no significant differences ($p < 0.05$) in means for the variable title type which delineated the group holding a County Director title in March of 1998 and the group of agents who at some point in time later became a county director. Statistically significant differences among PSI / demographic variable grouping means are discussed below. All PSI means by demographic categories are listed in appendix I, tables I-14 thru I-17.

PSI by Title. Only one PSI variable, potential for long tenure, showed significant differences among score means by Extension title held in March 1998. Agents with the title Extension Agent III indicated a greater tendency for staying in their position than agents holding the title Extension Agent II and County Director (3.7 vs 3.4, $n=13$ in each title group). Further, agents with the title Extension Agent III and County Director exhibited a similar preference averaging 3.8 on the response scale as compared to 3.4 for those in an Extension Agent II and County Director title, 3.2 for Extension Agent II ($n=8$), and 3.3 for Extension Agent I ($n=5$).

PSI by EEO Age Group. Two PSI variables, potential for long tenure and achievement / status striving, exhibited statistically significant differences among means by EEO age group. In each case, the group of agents 40 years of age or older indicated stronger mean response scores than the group of agents under 40 years of age. In tenure potential, the 40 or more group averaged a score of 3.68 versus 3.35 for the younger

group. The older age category also had a higher interest for achievement and status within their community than the under 40 group (3.71 vs. 3.29). There were 22 agents in the group under 40 years of age and 82 agents in the EEO protected age class.

PSI by Age Group. Once again, potential for long tenure response scale average scores differed within age categories. Sixty year olds indicated stronger tenure potential than 20 or 30 year olds (4.06 vs. 3.04 and 3.28, respectively). Forty and 50 year olds had higher tenure tendencies than did 30 year olds (3.74 and 3.64 vs. 3.28).

PSI by Race. County Directors in Tennessee were made up of four black and 100 white individuals in the population of this study. White individuals expressed on average a higher propensity for child management skills (3.63 vs 2.88) and openness (3.38 vs. 2.60) than did black CEDs. It should be noted that all four people of color in this population were male, which may have contributed to the child management score as we will see next.

PSI by Gender. There were eight PSI variables in which statistically significant differences existed between means for males (n=81) versus females (n=23). In each case, women had higher scores than their male counterparts. Women scored higher in agreeableness (4.2 vs. 3.9), child management skills (4.1 vs. 3.7), conscientiousness (3.7 vs. 3.3), extroversion (4.1 vs. 3.7), integrity & values (4.3 vs. 4.0), optimism (4.1 vs. 3.7), achievement & status striving (3.9 vs. 3.5) and overall personality score (4.0 vs. 3.7). These PSI variable differences are shown graphically in figure 14.

PSI by Years of Service Categories. Three PSI variables (extroversion, achievement & status striving, and potential for long tenure) exhibited differences in

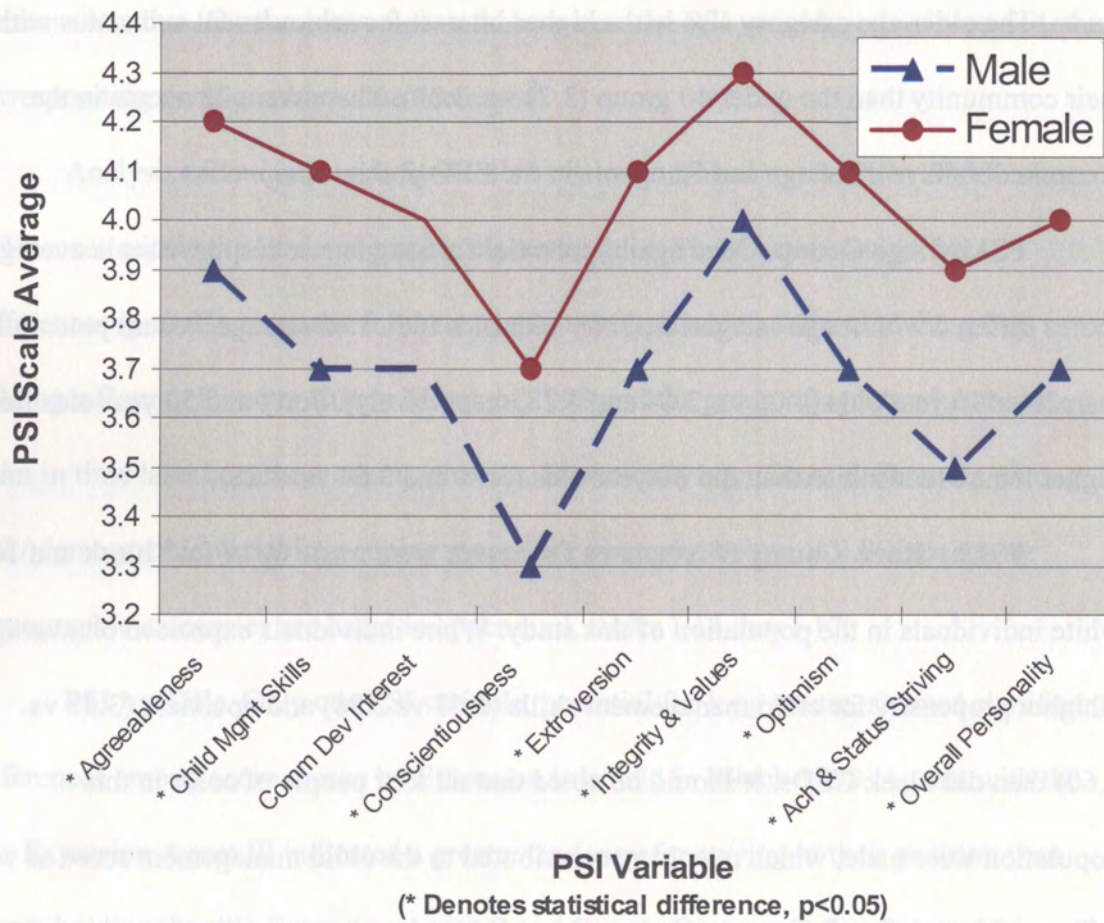


Figure 14. Selected PSI variable mean scores by gender.

score means when viewed within YOS categories. When analyzed for extroversion, the 11 individuals in the 10-14.9 YOS bracket scored lower (3.2) than all the other YOS categories except the under 5 YOS group (3.4). The under 5 group was statistically lower than the 5 to 9.9 and the 25 to 29.9 groups as each of these had a score of 4.0. The 35 and over group scored 4.1, then the 30 to 34.9, 20 to 24.9, and 15 to 19.9 groups each scored 3.9. Within the achievement & status striving preference scores, the 10 to 14.9 group was again lower (3.1) than the 15 to 19.9, 25 to 29.9, and 35 or more YOS groups (3.8, 3.9 and 4.0, respectively). A general trend within potential for long tenure was observed with agents serving 20 years or more indicating a stronger preference for continued tenure than agents working less than 15 years. These score means are found in table I-14.

PSI by Educational Level Attained. Only one PSI variable demonstrated significant differences when analyzed within the terminal degree categories of Bachelor's or Master's. This study found that CEDs who had completed a Master's degree scored higher on the work drive scale than did those CEDs whose highest earned degree was a Bachelor's (3.58 versus 3.11).

PSI by CED Subject Matter Base (SMB). The CEDs in this study all had at least one degree in either Family and Consumer Sciences (FCS) or Agriculture (Ag). When PSI means were viewed by SMB eight variables exhibited significant differences. CEDs with a FCS background scored higher than CEDs with an Ag background in each case. These included agreeableness (4.23 vs. 3.88), child management skills (3.9 vs. 3.53), community development interest (4.02 vs. 3.68), conscientiousness (3.74 vs. 3.30), extroversion (4.05 vs. 3.73), optimism (4.14 vs. 3.74), achievement & status striving

(3.72 vs. 3.53) and overall personality score (3.96 vs. 3.68). For a visual comparison of these SMB differences by PSI variable, see figure 15.

These areas of significant difference vary from the gender differences only in the exchange of integrity & values for community development interest. This similarity may be at least in part because all 20 of the FCS group were female while the Ag group included 81 males and three females.

PSI by Primary Audience Served. All Extension Agents, including CEDs, have an assigned primary audience with whom they work. Assignments may be with adults, youth, or both. The population for this study included 78 CEDs working primarily with adults, 19 working with both audiences seven assigned to youth. Looking at means in this light, youth CEDs scored lower (3.1) in nurturance and potential for long tenure scale scores than did the adult group (3.6) or CEDs working with both (3.8).

PSI by District. At the time MAP and PSI were administered, Tennessee was divided into four Extension Districts: Western, Central, Cumberland and Smoky Mountain. Comparing PSI means within these groups indicated the following statistical differences. The Smoky Mountain (3.6) and Cumberland (3.5) District CEDs indicated a higher level of openness than did CEDs serving in the Western District (3.1). The other two areas of difference were in the PSI performance scores where CEDs were rated higher by the District Director in the Western District than in the Smoky Mountain and Central Districts. Also, the Cumberland and Smoky Mountain District CEDs were rated higher than the Central District CEDs. These mean scores are listed in table I -14.

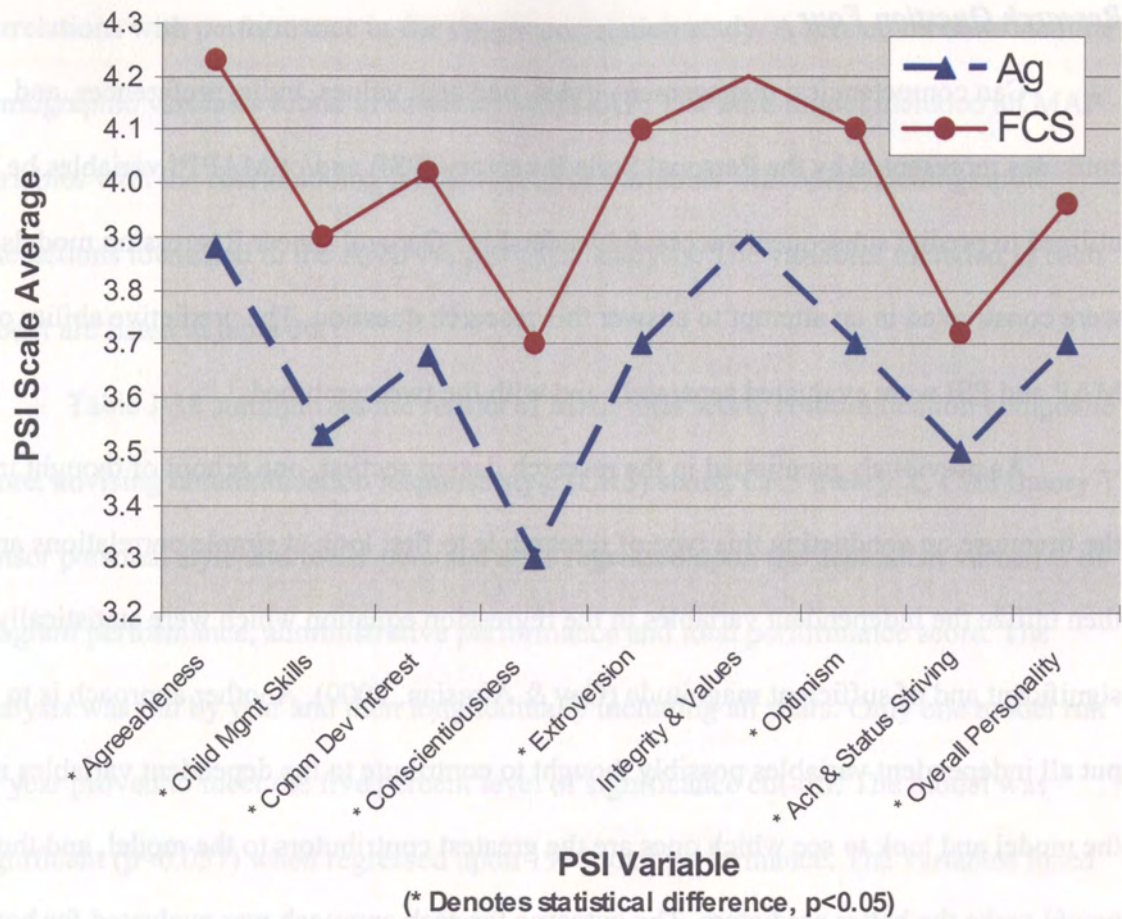


Figure 15. Selected PSI variable mean scores by subject matter base.

Research Question Four

Can competencies, management styles, personal values, traits, preferences, and aptitudes represented by the Personal Style Inventory (PSI) and/or MAP™ variables be utilized to predict subsequent successful leadership? General Linear Regression models were constructed in an attempt to answer this research question. The predictive ability of MAP and PSI were evaluated separately and with the two combined.

As previously mentioned in the research design section, one school of thought in the literature on conducting this type of research is to first look at simple correlations and then utilize the independent variables in the regression equation which were statistically significant and of sufficient magnitude (Gay & Airasian, 2000). Another approach is to put all independent variables possibly thought to contribute to the dependent variables in the model and look to see which ones are the greatest contributors to the model, and thus would make the better predictors. The outcome for each approach was evaluated for both MAP and PSI. Each regression model was run by performance appraisal year with program performance, administrative performance and total performance score as the dependent variable in each model. In addition, the data were combined longitudinally across years and the same regression models were run on this data set. In analyzing the data in longitudinal form, the model would be able to adjust for differences by performance appraisal year.

MAP Regression. Results of MAP variable regression upon UT Extension performance appraisal variables are summarized in appendix J, tables J-18 to J-21. Four different models were run. The first utilized the MAP variables found to have significant

correlations with performance in the simple correlation study. A second model added the demographic variables found to correlate with MAP. The third model included all MAP variables with the fourth adding all demographic variables with MAP/Demographic interactions identified in the ANOVA and t-test analysis. The variables included in each model are listed in table 30.

Table J-18 summarizes the results of MAP total score, communication composite score, advising communication response style (CRS) score, CRS theory X, CRS theory Y, sensor personal style and feeler personal style regressed upon the dependent variables of program performance, administrative performance and total performance score. The analysis was run by year and then longitudinally including all years. Only one model run by year proved to meet the five percent level of significance cut-off. The model was significant ($p=0.037$) when regressed upon 1998 total performance. The variables listed above accounted for 15.9 percent of the common variance in 1998 total performance score. The same model run upon longitudinal data resulted in significant models for all three dependant variables: program ($p<0.0001$), administrative ($p=0.0058$) and total performance($p<0.0001$). However, R^2 values indicated the model accounted for only 8.7, 4.4 and 9.4 percent, respectively of the common variance in the performance score.

Taking the regression models listed above, but adding demographic variables to the model resulted in two significant models in the 2000 performance year. The models for administrative and total performance demonstrated significance levels of 0.021 and

Table 30. Variables utilized in MAP regression models.

Run	Dependant Performance Variables	Independent PSI Variables	Independent Demographic Variables
1	1998 Program 1998 Administrative 1998 Total 1999 Program 1999 Administrative 1999 Total	MAP Total Score, Communication Composite Score, Advising Communication Response Style Score (CRS), CRS Theory X Score, CRS Theory Y Score, Sensor Personal Style, Feeler Personal Style	None
2	2000 Program 2000 Administrative 2000 Total 2001 Program 2001 Administrative 2001 Total	All MAP variables listed in Run 1 above	Title, Title Type, Age Group (by decade groupings), Race, Gender, Years of Extension Service, Years in Title, Years as CED, and Age
3	2002 Program 2002 Administrative 2002 Total 2003 Program 2003 Administrative 2003 Total	All variables listed in Run 1 above with the following ADDITIONS: Composite Scores (Administrative, Supervisory, Cognitive, Task, People), Theory Y Score, Communication Response Style Scores (Empathetic, Critical, Searching), and Personal Styles (Thinker, Intuitior)	None
4	1998-2003 Program 1998-2003 Administrative 1998-2003 Total	All MAP variables listed in Run 1 and Run 3 above. Interactions: Title*Task, Title*Empathic, Title Type*Map Total, Title Type*Thinker, Years of Service*Map Total, Years of Service*Communication Composite, Years of Service*Cognitive, Years of Service*Task, Years of Service*Empathetic, Race*Empathic, Race*Feeler, Gender*TheoryX	All variables listed for Run 2 above with the following ADDITION: Number of Employees Supervised

0.032 with respective R^2 values of 0.44 and 0.42. Again, in the longitudinal regressions, all three were significant ($p < 0.0001$). Though R^2 values increased, they were still too low for practical use in predictive capacity (program, 0.169; administrative, 0.1295; and total performance, 0.187).

A third attempt at a meaningful MAP regression model utilized all MAP variables on the independent side of the equation. In this case, the model results meeting statistical significance criteria were for the 2003 program and total Performance, and all three longitudinal models. All MAP variables accounted for 40.5 percent of the common variance in 2003 program performance ($p = 0.0334$) and 40.7 percent of the 2003 total performance score ($p = 0.0314$). In the longitudinal model program, administrative and total score regression results were all statistically significant, but again R^2 values were low accounting for only 13.5 percent, 7.5 percent and 15.2 percent of the common variance in respective program, administrative and total performance.

When all MAP variables, all demographic variables and MAP/demographic variable interactions were included in regression models, the 2002 program performance and longitudinal performance in all three categories were statistically significant. R-square values were increased substantially over other models previously discussed. The model accounted for 97.1 percent ($p = 0.0495$) of the common variance in 2002 program performance. In the longitudinal regressions, the model explained 51.5 percent of program performance, 59.6 percent of administrative performance and 52.4 percent of total performance ($p < 0.0001$). However, in these models many variables or variable interactions could not be uniquely estimated because of multicollinearity and had no

value for use in a prediction equation. Therefore, before these models could be useful for predictive purposes more refinement in the form of the elimination of duplicative variables would be necessary.

PSI Regression. Results of PSI variable regression upon UT Extension performance appraisal variables are summarized in appendix J, tables J-22 to J-25. Similar to PSI, four different models were run. The first utilized the PSI variables found to have significant correlations with performance in the simple correlation study. A second model added the demographic variables found to correlate with PSI. The third model included all PSI variables with the fourth adding all demographic variables with PSI/Demographic interactions identified in the ANOVA and t-test analysis. The variables utilized in the MAP regression analysis are listed in table 31.

Regression analysis utilizing PSI variables which had significant correlation coefficients in the simple correlation portion of this study produced several models meeting significance criteria (table J-22). Program and total performance models for the years 1998, 1999 and 2000, plus all three performance categories in the longitudinal models were significant ($p < 0.05$). In 1998 the model accounted for 31.4 percent of program performance and 32.6 percent of total performance. The 1999 models accounted for 29.7 and 33.6 percent of respective program and total performance. Program and total performance models for 2000 had the highest common variance shared between dependent and independent variables at 35.1 percent for program and 40.7 for total performance score. While highly significant ($p < 0.0001$), the longitudinal models had low R^2 values for program (0.153), administrative (0.132) and total (0.167) performance.

Table 31. Variables utilized in PSI regression models.

Run	Dependant Performance Variables	Independent PSI Variables	Independent Demographic Variables
1	1998 Program 1998 Administrative 1998 Total 1999 Program 1999 Administrative 1999 Total 2000 Program 2000 Administrative 2000 Total	Agreeableness, Interest in Community Development, Conscientiousness, Customer Responsiveness, Emotional Stability, Extroversion, Integrity & Values, Nurturance, Openness to New Experience, Optimism, Achievement & Status Striving, Potential for Long Tenure, Work Drive, Cognitive-Verbal Reasoning, Big 5 Model of Personality, and Overall Personality Score	None
2	2001 Program 2001 Administrative 2001 Total 2002 Program 2002 Administrative 2002 Total	All PSI variables listed in Run 1 above.	Title, EEO Age Group, Age Group (by decade groups), Race, Gender, Years of Service Categories, Educational Level, Subject Matter Base, Audience, and District
3	2003 Program 2003 Administrative 2003 Total 1998-2003 Program	All variables listed in Run 1 above with the following ADDITIONS: Child Management Skills, Cognitive Reasoning (Abstract, Numeric, Numeric+Abstract, Overall),	None
4	1998-2003 Administrative 1998-2003 Total	All PSI variables listed in Run 1 and Run 3 above. Interactions: Race*(Overall Personality Score, Work Drive, Child Management Skills, Openness), Gender*(Overall Personality Score, Work Drive, Tenure, Agreeableness, Child Management Skills, Conscientiousness, Extroversion, Integrity & Values, Optimism, Achievement & Status Striving), Subject Matter Base*(Agreeableness, Child Management Skills, Community Development Interest, Conscientiousness, Extroversion, Optimism, Achievement & Status Striving, Overall Personality Score), Audience*(Nurturance, Tenure), Age Group*(Achievement & Status Striving, Tenure), Years of Service Categories*(Achievement & Status Striving, Tenure) and Educational Level*Work Drive	All variables listed for Run 2 above with the following ADDITIONS: Age, Years in Title, Years as CED, Years of Service, Number of Employees Supervised

The addition of demographic variables (run 2, table 31) to the model and keeping the same PSI independent variables utilized in run 1 increased the amount of common variation explained by the model substantially. Again, a complete summary of model results for each year and the longitudinal runs are listed in table 23. Models which met significance standards and the R^2 value for each are as follows. The model for 1998 total performance accounted for 51.9 percent and 1999 total performance, 54.7 percent. All three performance categories in 2000 were significant with the program model accounting for 60.4 percent, the administrative performance model 71.3 percent and the total performance model, 63.8 percent. The longitudinal models were all significant ($p < 0.0001$) and accounted for 24.9 percent of the variance in program, 23.6 percent of administrative, and 26.3 percent of total performance score.

Table J-24 in appendix J lists a summary of the regression models of all PSI independent variables upon performance of UT Extension county directors. Results closely mirrored those found when regression models were run utilizing variables that correlated significantly, with one to two percentage point gains in R^2 values. Program and total performance score models with all PSI independent variables produced R^2 values of 0.320 ($p = 0.0053$) and 0.335 ($p = 0.0028$) for the 1998 program year; 0.314 ($p = 0.0076$) and 0.345 ($p = 0.0021$) for 1999; and 0.373 ($p = 0.0011$) and 0.420 ($p = 0.0001$) for 2000. Models for all years longitudinally were significant ($p < 0.0001$) with R^2 values of 0.162 for program, 0.137 for administrative and 0.178 for total performance.

Regression model results for all PSI variables plus demographic variables and PSI/demographic variable interactions are listed in table J-25 (refer to table 31 for model

components). Under these models, only 1998 program and total performance, and 2000 total performance met statistical significance standards. Models did achieve high R^2 values, reaching 0.809 ($p=0.0398$) for 2000 total performance, 0.784 (0.0417) for 1998 total performance and 0.779 (0.0498) for 1998 program performance. Once again, longitudinal models were significant ($p=0.0001$). The model accounted for 52.7 percent of program performance, 62.4 percent of administrative performance and 52.9 percent of total performance. As evidenced with MAP regressions earlier, a high degree of multicollinearity existed, thus a substantial number of beta values could not be uniquely estimated. Therefore, these models were not useful for predictive equations.

Predictive Capacity of MAP and PSI. As one purpose of this study was to identify the best predictive model for identifying CEDs, the next step was to see if MAP and PSI data utilized in a regression model across performance better predicted scores than either assessment alone. For this purpose, regression models were run on all performance data longitudinally across all performance years (1998 to 2003). Table 32 indicates the level at which MAP total score and PSI total score together contributed to common variance in performance. In these simple models, MAP contributed least and was not significant in the model. The f -value and probability of a greater f for MAP total score in the program model was 0.91 (0.3412), administrative was 2.02 (0.1558) and total performance was 1.01 (0.3163). In contrast, total PSI score was significant in all three models ($p<0.0001$) with f -values of 19.5 for program, 16.33 for administrative and 23.3 for total performance. Except for offering a comparison of PSI and MAP overall scores

Table 32. Regression model results with independent variables MAP and PSI total scores regressed upon program, administrative and total performance.

Performance Type	Degrees of Freedom (Model, Error)	<i>f</i> -value	Probability of > <i>f</i>	R ² Value
Program	2, 373	9.82	<0.0001	0.050033
Administrative	2, 364	8.56	0.0002	0.044920
Total	2, 373	11.72	<0.0001	0.059129

and giving a minimalist model benchmark, these models have little further application as they accounted for only 4.5 to 5.9 percent of performance in UT Extension.

Full regression models including all MAP and PSI variables, all demographic variables and demographic x MAP and PSI interactions (table J-26) were run to evaluate the maximum amount of variation in performance measures that could be explained statistically. A summary of these model results is shown in table 33. The R² value for the administrative performance model is an improvement of 5.9 percentage points over the highest PSI model R², and 8.7 percentage points over the highest MAP model R². In the administrative performance model, independent variables accounted for 68.3 percent of the variation in administrative performance score. This R² value would correspond to a R-value of 0.826595 which would be classified in Miller's (1994) scale as very high.

However, the application of these models to producing prediction equations was hampered because many variables in the model moved so closely together (multicollinearity) that they were not uniquely estimable. Specifically, the program model produced 95 interactions and 14 main effects that were not estimable. In the administrative model, 71 interactions and 17 main effects were not estimable. For the

Table 33. Multiple regression results utilizing a model* including all MAP, PSI, and demographic variables with independent variable interactions.

Performance Score Type	Source	df	Sum of Squares	Mean Square	f-value	Pr > f	R ²
Program	Model	80	1135954.91	14199.44	6.97	<.0001	0.647685
	Error	295	617914.82	2094.63			
	Corrected Total	375	1753869.73				
Administrative	Model	80	84251.16	1053.14	7.71	<.0001	0.683260
	Error	286	39056.40	136.56			
	Corrected Total	366	123307.56				
Total	Model	80	1136482.61	14206.03	6.97	<.0001	0.653933
	Error	295	601436.96	2038.77			
	Corrected Total	375	1737919.57				

* See appendix J, table J-26 for a detail of variables included in this model.

total performance model 90 interactions and 14 main effects were not estimable because other variables in the model were so closely related. Therefore it was necessary to remove duplicative variables from prediction models while maintaining the highest possible model R² value.

Analysis results of the final performance prediction models are shown in table 34. The administrative model explained 56.7 percent of performance variance, the total performance model followed at 51.5 percent, and the program performance model accounted for 50.2 percent of score variation. When these R² values are translated into R-values (multiple correlation coefficients), they range from 0.708 to 0.753 and would be considered to be very high according to Miller's (1994) scale. The model consisted of 33 variables: 8 demographic, 11 from PSI and 14 from MAP.

Table 34. Multiple regression results* from final performance prediction models.

Performance Score Type	Source	df	Sum of Squares	Mean Square	f-value	Pr > f	R ²
Program	Model	39	879906.38	22561.70	8.67	<.0001	0.501694
	Error	336	873693.35	2601.08			
	Corrected Total	375	1753869.73				
Administrative	Model	39	69901.55	1792.35	10.97	<.0001	0.566888
	Error	327	53406.01	163.32			
	Corrected Total	366	123307.56				
Total	Model	39	894961.42	22947.73	9.15	<.0001	0.514961
	Error	336	842958.16	2508.80			
	Corrected Total	375	1737919.57				

* For detailed analysis results see Appendix J, table J-27 for program, table J-28 for administrative and table J-29 for total performance model type III sum of squares, variable f-value and level of significance.

More detailed final model results are provided for program, administrative and total performance in appendix J, tables J-27, J-28 and J-29. These tables list Type III Sum of Squares, *f* value and the probability of obtaining a greater *f* (significance level) for all model variables. Rankings based upon variable *f* value of the top ten independent variable contributors to each model are shown in table 35. Three variables ranked in the top five contributors to all three models. These variables included work drive, performance appraisal year and the theory Y management style. Three other variables, the advising communication response style, the big 5 personality score and the number of years in title were consistent within the top ten of the three performance score types. The advising CRS was the only one of these three to appear in the top five, ranking fifth in both program and administrative performance and tenth in the total performance model. Program performance was heaviest in demographic measures with five in the top ten,

Table 35. Top contributors to final performance prediction models based upon independent variable f -value.

Program Performance			Administrative Performance			Total Performance		
Rank	Variable	f -value	Rank	Variable	f -value	Rank	Variable	f -value
1	Work Drive	44.3	1	Year	36.2	1	Work Drive	47.2
2	Gender	19.3	2	Work Drive	26.5	2	Gender	19.0
3	Theory Y	18.1	3	Theory X	19.7	3	Theory Y	18.1
4	Perf App Year	16.9	4	Theory Y	9.3	4	Year	14.1
5	Advising CRS	11.6	5	Advising CRS	8.9	5	Verbal Cognitive	10.1
6	Race	10.4	6 T	Big 5 Personality Communication	8.1	6	Years in Title	9.9
7	Years in Title	9.9	6 T	Composite	8.1	7	Big 5 Personality	9.8
8	Verbal Cognitive	8.2	8	Years in Title	7.7	8	Race	9.7
9	Big 5 Personality	7.9			7.6	9	Cognitive Comp.	9.5
10	Extension YOS	7.4	9	Customer Service		10	Advising CRS	8.8
			10	Cognitive Comp.	7.5			

CRS = Communication Response Style YOS = Years of Service

total performance models utilized four in the top ten, and administrative two (performance appraisal year and number of years in title).

Several independent variables contributed much more strongly in one performance type than it did in the others. Extension years of service ranked tenth in program performance and eleventh in total performance but was insignificant in the administrative model ($p=0.2117$). Theory X and customer service had high f -values in the administrative multiple regression model, but did not meet a five percent level of significance in the program performance model.

This research question asked if CED leadership (as measured by performance appraisal scores) could be predicted from MAP, PSI or a combination of these along with demographic classifications. Equation coefficients that were generated by the statistical

models for total performance and for administrative performance are listed in tables 36 and 37, respectively. These estimates (often called beta values) could be utilized in predictive equations to calculate a predicted total or administrative performance score based upon the known independent variable measures listed. Program performance equation coefficients, though calculated, are not reported here as they were not an objective of this research question.

Research Question Five

The fifth research question seeks to respond to anecdotal observations that Extension CEDs are often selected based upon strength of program performance and not necessarily upon observed leadership or administrative traits. Therefore this question asked, what is the relationship in Tennessee Extension between program-related performance and administrative performance as measured by the Tennessee Agricultural Extension Service Performance Appraisal for County Extension Faculty and County Extension Leaders?

A comparison of program performance appraisal scores and administrative performance appraisal scores was made using data in the combined MAP and PSI data set. These data represented 122 individuals who were either existing county directors or later became county directors.

The mean and standard deviation of program scores was 367.5 ± 50.79 and ranged from a minimum of 248 and a maximum of 478. The score of 367 would fall in the lower range of what was called “Merit” performance in the system utilized thru 2001.

Table 36. Coefficients for MAP, PSI and demographic variables utilized in an equation to predict total performance appraisal score for CEDs in UT Extension.

Parameter	Beta Estimate	Standard Error	t Value	Pr > t
Intercept	-2438.906895	1184.551532	-2.06	0.0403
Total MAP Score	43.711279	15.830507	2.76	0.0061
Administrative Composite	-10.643422	3.953728	-2.69	0.0075
Communications Composite	-12.260382	3.971918	-3.09	0.0022
Cognitive Composite	-11.550317	4.005762	-2.88	0.0042
Supervisory Composite	-9.682570	3.963690	-2.44	0.0151
Theory X Management Style	0.311189	0.144415	2.15	0.0319
Theory Y Management Style	0.658392	0.154661	4.26	<.0001
Critical Communication Response Style	-1.219620	0.784835	-1.55	0.1211
Searching Communication Response Style	0.975637	0.740933	1.32	0.1888
Advising Communication Response Style	-1.776237	0.597424	-2.97	0.0032
Thinker Personal Style	25.926700	11.752701	2.21	0.0281
Intuitior Personal Style	25.308212	11.761456	2.15	0.0321
Sensor Personal Style	30.848749	11.922813	2.59	0.0101
Feeler Personal Style	28.886864	11.680604	2.47	0.0139
Overall Personality Score	-19.387384	7.127884	-2.72	0.0069
Big 5 Model of Personality	20.799294	6.635507	3.13	0.0019
Community Development Interest	-5.338333	14.361298	-0.37	0.7103
Customer Service	20.553389	9.791655	2.10	0.0366
Integrity and Values	35.028043	15.724304	2.23	0.0266
Optimism	21.590520	12.553827	1.72	0.0864
Achievement & Status Striving	22.987144	9.948985	2.31	0.0215
Potential for Long Tenure	-7.084817	11.473379	-0.62	0.5373
Work Drive	69.808268	10.159727	6.87	<.0001
Numeric Cognitive Ability	-38.367375	19.506373	-1.97	0.0500
Verbal Cognitive Ability	-117.651660	36.980424	-3.18	0.0016
Performance Appraisal Year 1998	-64.356339	9.294419	-6.92	<.0001
Performance Appraisal Year 1999	-54.897512	9.279739	-5.92	<.0001
Performance Appraisal Year 2000	-53.792933	9.381968	-5.73	<.0001
Performance Appraisal Year 2001	-72.092887	9.771590	-7.38	<.0001
Performance Appraisal Year 2002	-35.348673	9.982215	-3.54	0.0005
Performance Appraisal Year 2003	0.000000	.	.	.
Race (Black)	-87.413513	28.105069	-3.11	0.0020
Race (White)	0.000000	.	.	.
Gender (Female)	-45.193911	10.380249	-4.35	<.0001
Gender (Male)	0.000000	.	.	.
Central District	25.415268	8.986515	2.83	0.0050
Cumberland District	8.103551	10.047225	0.81	0.4205
Smoky Mountain District	-7.306082	10.597776	-0.69	0.4910
Western District	0.000000	.	.	.
Number of Years in Title	-8.199012	2.609411	-3.14	0.0018
Number of Years as a CED	4.538667	2.404492	1.89	0.0599
Extension Years of Service	1.919943	0.653411	2.94	0.0035
Number of Employees Supervised	-0.244756	0.826175	-0.30	0.7672

Table 37. Coefficients for MAP, PSI and demographic variables utilized to predict administrative performance scores of CEDs in UT Extension.

Parameter	Beta Estimate	Standard Error	t Value	Pr > t
Intercept	-491.3098780	311.2834232	-1.58	0.1155
Total MAP Score	10.8506631	4.0800856	2.66	0.0082
Administrative Composite	-2.6453394	1.0201945	-2.59	0.0099
Communications Composite	-2.9037938	1.0237282	-2.84	0.0048
Cognitive Composite	-2.8350823	1.0333700	-2.74	0.0064
Supervisory Composite	-2.5124553	1.0212131	-2.46	0.0144
Theory X Management Style	0.1650713	0.0372343	4.43	<.0001
Theory Y Management Style	0.1210915	0.0398081	3.04	0.0025
Critical Communication Response Style	-0.3681776	0.2021947	-1.82	0.0695
Searching Communication Response Style	0.2707357	0.1919236	1.41	0.1593
Advising Communication Response Style	-0.4571629	0.1535103	-2.98	0.0031
Thinker Personal Style	5.1277458	3.0908743	1.66	0.0981
Intuitior Personal Style	4.7465522	3.0889257	1.54	0.1253
Sensor Personal Style	5.9583940	3.1353971	1.90	0.0583
Feeler Personal Style	5.6462064	3.0757800	1.84	0.0673
Overall Personality Score	-3.1950568	1.8291442	-1.75	0.0816
Big 5 Model of Personality	4.8242793	1.7007580	2.84	0.0048
Community Development Interest	1.5915860	3.6933524	0.43	0.6668
Customer Service	7.0775029	2.5638457	2.76	0.0061
Integrity and Values	2.6200099	4.0280481	0.65	0.5159
Optimism	-2.9325582	3.2366977	-0.91	0.3656
Achievement & Status Striving	4.9569087	2.5576139	1.94	0.0535
Potential for Long Tenure	-2.8074516	2.9353114	-0.96	0.3396
Work Drive	13.6988845	2.6603142	5.15	<.0001
Numeric Cognitive Ability	-5.8577686	5.0547578	-1.16	0.2474
Verbal Cognitive Ability	-25.3874545	9.6920370	-2.62	0.0092
Performance Appraisal Year 1998	-9.3490170	2.4132604	-3.87	0.0001
Performance Appraisal Year 1999	8.6067092	2.3953984	3.59	0.0004
Performance Appraisal Year 2000	10.9716519	2.4133780	4.55	<.0001
Performance Appraisal Year 2001	17.5331564	2.5301986	6.93	<.0001
Performance Appraisal Year 2002	-1.5468492	2.5603440	-0.60	0.5462
Performance Appraisal Year 2003	0.0000000	.	.	.
Race (Black)	-17.2275571	7.3247711	-2.35	0.0193
Race (White)	0.0000000	.	.	.
Gender (Female)	-6.5050182	2.6661024	-2.44	0.0152
Gender (Male)	0.0000000	.	.	.
Central District	-3.2371121	2.3549555	-1.37	0.1702
Cumberland District	-11.3300851	2.5749124	-4.40	<.0001
Smoky Mountain District	-4.3570292	2.7453043	-1.59	0.1135
Western District	0.0000000	.	.	.
Number of Years in Title	-1.8549877	0.6688497	-2.77	0.0059
Number of Years as a CED	0.9597851	0.6145583	1.56	0.1193
Extension Years of Service	0.2269346	0.1813364	1.25	0.2117
Number of Employees Supervised	0.2212099	0.2137381	1.03	0.3015

Administrative performance averaged 76.26 ± 13.78 and ranged from 30 to 103. The score of 76 falls in the upper end of the category of “Good,” the level just below Merit. Overall performance scores averaged 372.7 ± 51.67 , ranged from 233 to 477 and also would be categorized as a solid “Merit” (the merit category ranged from 335 to 426 points) under the categorical scale utilized until 2001.

The above data offer one comparison of program versus administrative performance. A more direct comparison required scores to be converted to a common scale. This was accomplished by converting scores to a percentage of possible total score, allowing direct comparison of program and administrative scores within program year on an equal basis. In comparing these percentage score means, program performance was slightly higher than administrative percentage score means, 71.26 ± 12.09 versus 69.61 ± 15.79 , respectively. Student’s t-test analysis of these means indicated a statistical difference at the 5 percent level (the probability of $\mu_1 = \mu_2$ was less than 5 percent, $p < 0.0448$; $t = 2.01$). In percentage scores, program scores ranged from 17.5 to 100 and administrative scores ranged from 16.7 to 100.

Averages across all scores give one picture of performance. Another way to compare these scores is to average percentage scores of program performance and administrative performance across years and then to take their ratio. When an individual’s program percentage score was divided by her/his administrative percentage score, a score below one was indicative of stronger performance administratively, a score of 1.0 reflected equal program and administrative performance, and a score greater than one indicated stronger program performance than administrative. The distribution of scores is

shown in figure 16. Looking at program versus administrative scores in this way indicated that 64 individuals had higher administrative scores than program scores, seven had equal program and administrative scores and 51 were strongest in programmatic performance.

The correlation between scores was also reflective of relationships. Again, using percentage of potential performance scores for program and administrative performance, the correlation was positive ($r=0.47$, $n=510$) and significant ($p<0.0001$). As one would expect, percentage program and administrative performance was also positively and significantly correlated with total performance score. Pearson's correlation coefficient for program performance with total performance was 0.85 ($n=651$, $p<0.0001$), while the correlation coefficient for administrative and total performance was 0.62 ($n=512$, $p<0.0001$).

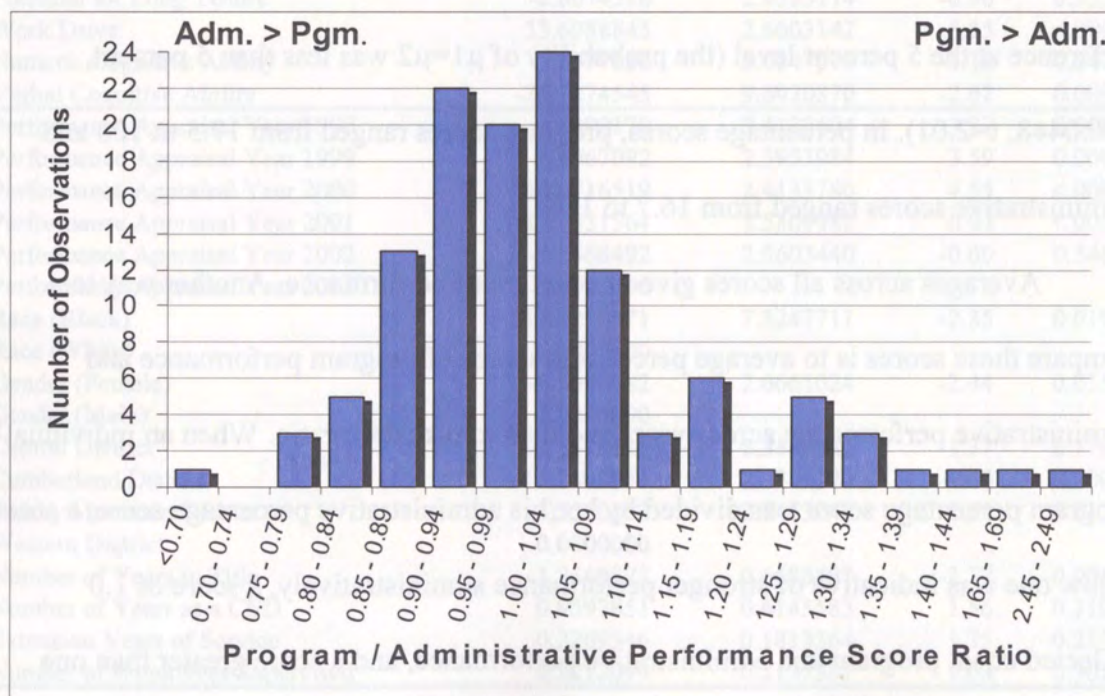


Figure 16. Distribution histogram of UT Extension performance appraisal program | administrative percentage score ratios.

CHAPTER V

SUMMARY, MAJOR FINDINGS, DISCUSSION, CONCLUSIONS, RECOMMENDATIONS AND IMPLICATIONS

This chapter reflects upon data and information presented. A brief review of the study purpose, research questions and methods is followed by a summary and discussion of the findings, particularly in light of related literature. Conclusions, recommendations and implications for practice and further research bring this study to a close.

Summary

Extension Agents who hold the added title and responsibility of County Director occupy a position critical to the success of Extension Programs. CED selection criteria have not always reflected the importance and long-term impact of the hiring or appointment decision in Tennessee Extension. Are there objective indicators that could be utilized as additional data upon which hiring decisions and forecasts of future performance as a CED could be based?

Two different assessments have been utilized with existing county directors that attempt to measure various skills, personality traits, preferences and behaviors. Many characteristics that the Managerial Assessment of Proficiency (MAP) and the Personal Style Inventory (PSI) claim to assess have been identified as contributors to effective leadership in various studies documented in available literature. A brief summary of MAP and PSI assessments is offered, followed by a summary of the research design.

Eighty-six CEDs and seven agents who would later become CEDs completed the Training House, Inc. MAP assessment March 16-18, 1998. The main MAP assessment instrument was a case-method, video-based simulation accompanied by a multiple choice questionnaire. Each question had one or more correct responses, for a total of approximately 200 decisions in the instrument. Scoring and individual results were generated overnight via computer and a proprietary software program. The result was a profile with the purpose of showing an individual's strengths and weaknesses in twelve areas of management competency and proficiency in two management styles (theory X, theory Y). Two other companion instruments accompany MAP, namely communication response styles (CRS) and Personal Styles.

The self-scored CRS instrument presents 20 written office scenarios with four types of responses offered to each. A participant assigns the value of 0, 1, 2 or 3 to each response, using no more than three points for any one scenario. The result is a distribution of 60 points across four communication response styles including empathetic, critical, searching and advising.

Personal Styles were assessed with a forced choice instrument where four responses per item were ranked from most like the individual (4 points) down to least like the individual (1 point). The instrument seeks to assess Jungian psychological functions of thinking, feeling, intuiting, and sensing and was also self-scored.

The Personal Style Inventory was developed by Dr. Lucy Gibson, an industrial psychologist with Resource Associates, Inc., as a pre-employment assessment tool specifically for UT Extension. Data utilized for this study were collected as a concurrent

criterion-related selection test validation study following a qualitative job analysis of the Extension Agent position. The instrument was a 232 item inventory consisting of personality styles, various workplace preferences and abstract, numeric and verbal cognitive dimensions. Personality styles and workplace preference scales were composed of dichotomous statements between which a 1 - 5 scale was interposed. Abstract, numeric and verbal aptitude scales were made up of multiple choice answer questions scored a zero for an incorrect response or one if answered correctly. Scale and style scores were averages of all responses for each category. Overall scores were computed for personality or preference styles and also the cognitive aptitudes.

Dependent variables for this study consisted of performance appraisal scores. Employee performance appraisals are conducted routinely on an annual basis for all Extension employees. As the population for this study consisted of Tennessee County Directors, the sample group in this study consisted of existing county directors or agents who would later be named a county director. Performance scores for these individuals were pulled manually from UT personnel files beginning in 1998, the year MAP was administered, through 2001. Scores for 2002 and 2003 were available in an online system. Total program performance, total administrative performance and overall score were captured on each individual who at some time held a county director title from 1998 to 2003.

Demographic data were also collected on each individual from UT Extension personnel files. Twelve items previously identified in available literature plus some

categorical breakdowns of continuous numeric demographic variables (eg. Age) were utilized in analyses.

This study sought to identify any relationships that might exist between MAP and PSI constructs and Tennessee CED leadership as reflected in annually collected performance appraisal scores. Contingent upon relationships, the predictive capacity of MAP, PSI or both was a second objective. Another purpose was to identify any demographic relationships that might exist with MAP, PSI and performance. And finally, information was sought to respond to an anecdotal belief that CEDs are selected because of successful program performance rather than perceived potential leadership ability. These objectives were framed within five research questions to guide the study.

Statistical analysis was conducted via SAS® (Copyright© 2002-2003 by SAS Institute Inc., Cary, NC, USA, SAS® for Windows Release 9.1) software. Where relationships between ratio (continuous numeric) data were explored Pearson's rho (ρ) correlation coefficients were calculated. Relationships between categorical data and dependent or other independent variables were tested for significant differences with Student's t-test. Multiple regression was utilized in efforts to evaluate the ability of independent data to predict performance of UT Extension CEDs. Other descriptive statistics were calculated and provided. Where statistical significance was determined, the five percent level of significance was utilized, accepting the probability that the relationship could have occurred by chance five times or less out of one hundred cases.

Background for the study, population, research questions and methods have been briefly summarized. Attention will now turn to a summary of major findings.

Major Findings

Based upon the research results presented in chapter 4, the following major findings are presented.

MAP Correlations

Statistically significant correlations of UT performance with MAP variables were few in number and low to moderate in magnitude. Slightly less than five percent of the possible correlate pairs produced significant ($p < 0.05$) relationships. Pearson's r values ranged from a low in magnitude of 0.21974 for 1998 Total score and the Sensor Personal Style. The largest correlation magnitude was between the 2001 Program score and the Theory Y Communication Response Style ($r = 0.32$). At these magnitudes, between 4.8 and 10.2 percent of the common variance among variable pairs was accounted for.

Of the 17 statistically significant correlation coefficients, the six of moderate magnitude were all with Communication Response Style (CRS) variables. Two were with the advising CRS (-0.304, -0.318), two with theory X CRS (-0.304, -0.318) and two with theory Y CRS (0.320, 0.314). Other variables with significant correlations included the MAP Communication composite (-0.241, -0.232), Overall MAP (-0.223, -0.228), and the Personal Styles, sensor (0.249, 0.220, 0.224, 0.252) and feeler (-0.228, -0.223). Eleven of the correlation coefficients were negative. No performance / MAP variable pairings produced significant correlations for the years 2002 and 2003.

PSI Correlations

Nearly 30 percent of UT Performance score / PSI variable pairings resulted in statistically significant relationships. All relationships were positive in value, ranging from 0.194 (agreeableness vs. 1998 program performance) to 0.486 (work drive vs. 2000 total performance). Calculating the coefficient of determination for these pairs (r^2), 3.8 percent of the common variance is accounted for on the low end and 23.6 percent at the upper magnitude of relationships. No year included in this study (1998-2003) had less than two performance / PSI pairings that were statistically significant at the five percent level.

In looking at PSI variable correlations, five variables showed no significant relationships. These included child management skills and the cognitive reasoning scores for numeric, abstract, numeric+abstract and total cognitive. In addition to two PSI performance scores, sixteen other PSI variables demonstrated statistically significant relationships. These variables are listed in table 38 along with the number of significant correlations with performance (1998-2003 program, administrative and/or total) and the range (low and high) of r-values for each variable. Work drive and overall personality score demonstrated the greatest number of significant correlations with 13 each. At eleven, were optimism and Big 5 model of personality, an average of agreeableness, conscientiousness, emotional stability, extroversion and openness scale scores. Customer responsiveness and long tenure potential followed with ten significant correlations. All of these had at least one correlation coefficient in the moderate range except agreeableness, emotional stability, extroversion, integrity and values, nurturance and verbal aptitude.

Table 38. Number of UT Extension performance score / PSI variable significant correlations with coefficient low and high value.

PSI Variable	Number of Significant (p<0.05) Correlations*	Low Coefficient Value	High Coefficient Value
Agreeableness	1	0.1940	
Community Development Interest	4	0.2466	0.3060
Conscientiousness	7	0.2154	0.3809
Customer Responsiveness	10	0.2474	0.3688
Emotional Stability	2	0.2217	0.2274
Extroversion	3	0.2097	0.2858
Integrity and Values	3	0.2327	0.2603
Nurturance	7	0.2029	0.2518
Openness to New Experience	9	0.2404	0.3440
Optimism	11	0.2324	0.3800
Achievement / Status Striving	4	0.2093	0.3522
Potential for Long Tenure	10	0.2557	0.3149
Work Drive	13	0.3044	0.4861
Cognitive - Verbal Reasoning	1	0.2005	
Big 5 Model of Personality	11	0.2254	0.3007
Overall Personality Score	13	0.2296	0.3742

* Number of statistically correlation coefficients between listed variable and program, administrative, or total performance from 1998 to 2003.

All thirteen significant r-values for work drive relationships were in the moderate range, between 0.30 to 0.49 in magnitude.

Trends in MAP and PSI Constructs by Numeric Demographics

Trends in MAP and PSI scores according to five numeric demographic measures were explored with Pearson's correlations. Four of the five variables were based upon time. These included age, years in title, years as a CED and total Extension service time.

A number of trends were consistent among time-related variables. There was a tendency of low to moderate magnitude for a number of construct scores to decrease as age or time increased. These included decreases in the scores for cognitive competency, overall MAP, task composite, and searching communication response style. Most r-values for these relationships ranged from -0.25 to -0.37. However, the correlation between Extension years of service and cognitive competency was -0.468, and with task composite was -0.459. The trend for decreasing cognitive scores continued with the PSI constructs as either abstract cognitive, overall cognitive, or both scores decreased with age, years in title and as a CED and Extension service time. Positive trends existed between work drive and time in title and as a CED. As one would expect, the potential for long tenure tended to increase with age($r=0.280$) and years in title ($r=0.427$). There was also a tendency for CEDs to use a critical response style more as years in title, as a CED and as total Extension service time increased. As years in Extension service increased, community development interest, nurturance and overall personality score also tended to increase.

Other comparisons were made with categorical demographic data within MAP and PSI constructs. Several differences in scores were found and are discussed next.

Demographic Differences in MAP and PSI Variable Means

There were a number of significant ($p < 0.05$) differences in MAP and PSI variable means when compared with Student's t-test. These findings will be briefly noted within demographic variable groups.

Extension Title. Extension title represents a combination of degree, years of service, professional accomplishment and expertise. As one might expect, agents holding Extension Agent III or Extension Agent III and County Director titles scored higher in potential for long tenure than agents holding other titles. Mid-career agents, Extension Agent II and Extension Agent II and County Director titles, scored higher in MAP cognitive and task composite scores and in the use of the empathetic communication response style than did Extension Agent III and County Directors.

Extension Title Type. Eight agents who became county directors at some time past March 1998 make up a group (Later) compared to agents that already held a county director title at that time (Existing). The Later group scored higher than Existing CEDs in overall MAP score and Administrative, Task and People composite scores. Existing CEDs showed a greater preference for the empathetic CRS than did the Later group. There were no differences by title type in any PSI variable.

Age Groups by Ten-year Periods. Extension agents were assigned to age groups based upon their age on March 16, 1998. Agents were either in their twenties, thirties,

forties, fifties or sixties. Agents in their forties scored higher than those in their sixties in MAP total score, and the cognitive and people composites. The forties group was also higher than the fifties group in the searching communication response style. Also in CRS, the fifties group scored higher than the agents in the thirties in empathetic; but the converse was true for searching CRS. Other differences existed in the PSI construct, potential for long tenure. Agents in their sixties scored higher than those in their twenties or thirties. The thirties group was also lower in potential for long tenure scores than agents in the forties or fifties age group.

EEO Age Group. The EEO Age groups were set up according to EEO categories of under forty and the protected class of forty and older. In this study, the forty and older group scored higher in potential for long tenure and in a preference for achievement and status striving. Both of these were PSI constructs. There were no differences in MAP variables by EEO age group.

Gender. This study found a number of statistical differences in MAP and PSI variable means when comparisons were made by male and female groups. On the MAP side, male CEDs scored significantly higher in the Theory X management style score than did females (64.1 vs. 47.8, respectively). In PSI variables, females scored significantly ($p < 0.05$) higher than males in scores for agreeableness, child management skills, conscientiousness, extroversion, integrity and values, optimism, achievement and status striving, and in overall personality score.

Educational Level Attained. There were no significant differences between MAP variable means by highest educational level attained (bachelors or masters).

However, in PSI variables, CEDs who had attained the MS degree scored higher in work drive than did agents earning a bachelors degree only.

Subject Matter Base. All county directors had earned at least one degree in either Agriculture or Family and Consumer Sciences. Agents with a FCS degree scored higher in the PSI constructs of agreeableness, child management skills, community development interest, conscientiousness, extroversion, optimism, achievement and status striving, and overall personality score. There were no differences in MAP variable means when compared within subject matter base.

Primary Audience Served. MAP data were not significantly different according to audience served. In PSI, agents serving adult audiences, or with split appointments serving both adults and youth, scored higher in nurturance as well as potential for long tenure as compared to agents assigned to 100 percent youth positions.

Extension Years of Service Categories and Extension District. There were a number of significant differences in MAP and PSI variable means when data were compared by years of service categories. Within district categories, only one PSI variable showed statistical differences. These differences lacked consistency or pattern and while earlier reported are not listed here. The one exception supports earlier differences observed, agents serving 20 years or over scored higher in potential for long tenure than did agents working less than 15 years.

Prediction of CED Performance

Multiple regression via SAS general liner model (GLM) was utilized to explore the ability of MAP and PSI data, with and without demographics, to predict CED leadership as measured by program, administrative or total performance appraisal scores.

Multicollinearity Effects In Regression. As mentioned in chapter 4, several models were limited by a phenomenon called multicollinearity. Younger (1985) indicated that multicollinearity is particularly present in social science research. A quick definition of multicollinearity and how it influences regression models is in order before continuing with discussion of the results.

Multicollinearity arises when two or more predictor (independent) variables are correlated (McClave & Benson, 1979; Younger, 1985). According to Younger (1985), collinear refers to a linear relationship and multicollinear signifies that any and all predictors may be related with any and all others. These correlated independent variables then contribute redundant information to the regression model, with the contribution of one variable overlapping that of others. Regression beta coefficients, if it is even possible to calculate them, become unreliable measures of the effects of their associated predictor variables because of the confounding effects of correlated predictors. The net result is that individual beta values may be far from what they should be in magnitude and even sign. While beta values average out to be correct, Younger (1985) explains, “not only does b_1 measure a lot of the effect of X_2 as well as the effect of X_1 , but you cannot trust b_1 to be anywhere near the correct magnitude or even have the correct sign” (p. 412).

When seeking to identify variables contributing to multicollinearity, several options are available beyond simple trial and error. McClave & Benson (1979) suggested stepwise regression will identify variables to eliminate since each new variable added to the regression model is tested for contribution in the presence of all variables already included. Younger (1985) recommended statistical tests for eigen value or characteristic root analysis to spot multicollinear relationships among predictor variables.

This study utilized regression analysis for predictive purposes. As discussed later, some models were not useful for predictive purposes because a number of regression beta coefficients were not uniquely estimable. Models where beta values are calculated can be utilized for predictive purposes since the estimates in aggregate are reliable. However, because of the effect of multicollinearity upon beta estimates, the individual beta values are not discussed.

Predictability of Performance by MAP. In the multiple regression model: program, administrative and total performance = all MAP variables across all performance years, 16.9 percent of program, 12.9 percent of administrative and 18.7 percent of total performance was accounted for by the model. When all MAP variables, all demographic variables and MAP/demographic interactions composed the independent variables in the model, it was possible to account for 51.5, 59.6 and 52.4 percent of the variation in respective program, administrative and total performance scores. This latter model was not useful for predictive purposes because of a high level of multicollinearity which prevented statistical beta values from being computed for a large percentage of

variables. Models run by individual performance years produced inconsistent results and few models statistically significant at the five percent level.

Predictability of Performance by PSI. Very similar results as reported above for MAP regressions were found with PSI data. When all PSI variables were included as the independent side of the equation, the program performance model had an R^2 value of 0.162, administrative was 0.137 and total performance was 0.178. The full model with all PSI variables, all demographic variables and the interactions between the two accounted for 52.7, 62.4 and 52.9 of the variance in program, administrative and total performance scores respectively. Again, problems with multicollinearity limited the usefulness of these models as not all variable beta values were estimable. PSI models were more often statistically significant when run by individual performance years than were MAP models. However, like MAP, meaningful patterns were lacking across years and models.

Predictability of Performance by MAP and PSI Together. MAP and PSI data sets were combined to analyze the ability of these data together in predicting performance. The longitudinal models where performance (pgm., admin., total) = MAP and PSI overall score, were statistically significant but had low R^2 values indicating only five percent of program, 4.5 percent of administrative and 5.9 percent of total performance variation was accounted for in the respective model. Further, in these three models, PSI total score was the only statistically significant contributor of the two in the model when looking at type III sum of squares. However, using various combinations of MAP, PSI and demographic independent variables, with interactions, it was possible to predict 64.8 percent of program, 68.3 percent of administrative and 65.4 percent of total

performance. Again, multicollinearity and the inability to generate beta values prevented use of these models for predictive equations.

Adjusting model independent variables by removing variables demonstrating high levels of multicollinearity and all demographic interactions did produce models with predictive capacity (refer to tables 34-37). For example, when the theory X and Y communication response styles were removed from the model, beta values were then calculated for the management styles of theory X and theory Y. Another instance was between the “big 5” personality variables (agreeableness, conscientiousness, emotional stability, extroversion, and openness). When these variables were included in the model in aggregate (big 5 personality score), the multicollinearity between them and other variables was mitigated.

The final models constructed included fourteen MAP variables, eleven PSI variables and eight demographic variables (33 total independent variables) that accounted for 50.2 percent of program, 56.7 percent of administrative and 51.5 percent of total performance variation. Some of the more significant contributors to the models as shown by f-values from type III sum of squares included work drive, theory X and theory Y management styles, big 5 model personality (agreeableness, conscientiousness, emotional stability, extroversion, and openness) scores, advising communication response style, MAP communication and cognitive composites, and the PSI verbal cognitive reasoning. Work drive was by far the largest single non-demographic contributor in all three models (program, administrative and total performance). Beta estimates were calculated for all 33 independent variables and the intercept.

Relationships of Program Performance and Administrative Performance

There has long been a perception that CEDs are often selected on the basis of strong program performance and not necessarily upon perceived leadership abilities or potential. This study looked at relationships between Tennessee CED program and administrative performance scores from four perspectives, averaged scores and ratings, percentage of total score, program | administrative score ratios and simple correlation.

Based upon averaged scores and the rating category assigned to the score, Tennessee CEDs appeared to be stronger in program performance than administrative. The averaged program score placed the rating description in the “Merit” category while averaged administrative performance would fall in the “Good” category.

Converting scores to a percentage of possible score basis allowed program and administrative scores to be compared more directly. On this basis, agents averaged a program score of 71.3 percent of maximum. Administrative scores averaged 69.6 percent of maximum. Therefore, agents were slightly stronger in program performance than administrative performance ($p=0.0448$, $t=2.01$).

The percentage scores mentioned above were manipulated again to give another look at the data. An individual’s program percentage was divided by her/his administrative percentage score to produce a ratio. Scores below 1.0 would indicate stronger administrative performance and scores above 1.0 would indicate stronger program performance. The distribution of these scores indicated 64 individuals had stronger administrative performance, seven were essentially equal, and 51 were strongest in program performance.

Correlation coefficients give another perspective on this relationship. The r-value for program/administrative performance was 0.47 ($p < 0.0001$), indicating a moderate and positive relationship between the variables. The correlation of program performance to total performance score was 0.85 with administrative/total performance rho calculated to be 0.62, each significant at $p < 0.0001$.

Many of the findings stated in this section will now be discussed in light of other pertinent research found in available literature.

Discussion

Various findings from this study merit further discussion. This section will include a further look at MAP and PSI; discuss specific findings relative to female leaders, management styles and work drive; and conclude with remarks on program versus administrative performance.

Relationship of MAP to UT Extension Performance

Research question one asked what relationship(s) existed between competencies and styles assessed by the Managerial Assessment of Proficiency and companion assessments utilized in a SELD MAP workshop with performance of Tennessee CEDs . Based upon simple correlation analysis performed in this study, the answer would be “very little.” Multiple regression, where variable interactions could be considered, reflected some potentially useful relationships.

Results in correlation analysis were somewhat surprising given published information on MAP.

First, there has been support for using MAP in Extension circles as it is perceived to build around the “skill individuals and groups in Cooperative Extension need to be effective in the future” (Rohs, 2004b, p. 30). Other proposed uses include using MAP data in making HRD decisions (Rohs, 1994a; Kehoe, 1992) and in the diagnosis of training needs of organizational leaders (Kehoe, 1992). Participants have indicated significant gains in knowledge based upon before and after surveys at SELD workshops. Further, participants rated the benefit of participating in MAP, and that MAP provided a good assessment of needed managerial skills, each a 9.6 on an 11 point Likert scale where 11 was “strongly agree.” Rohs (2002, 2003, 2004b) has also found that MAP workshops have produced a return on investment in Georgia Extension of \$3.86 for every dollar invested. Face validity for MAP seems to be supported.

Second, data published relative to the validity and reliability of the MAP assessment produced very high correlations of MAP scores to supervisor assessed performance. In the analysis, supervisors of eight organizations (184 individuals total) ranked the individuals in their organization according to performance. MAP overall proficiency scores were then correlated to performance rankings using a rank difference method. Correlations reported ranged from a low of 0.71 to a high of 0.90 (Training House, Inc., 2000). Another reported validation study was composed of 12 individuals where the supervisor rated each one on each of the 12 MAP competencies. Correlation

coefficients here ranged from 0.39 to 0.83 (Kehoe, 1992). Based upon these data one would expect similar findings when MAP is compared to performance scores.

Results of MAP variable correlation with performance of UT Extension CEDs resulted in significant correlations in less than five percent of variable pairs. Further, the highest correlation coefficient in magnitude was lower than any reported above (0.32). The correlations of largest magnitude found in this study were with the Communication Response Style variables; advising, theory X, and theory Y. Each of these had at least two correlation pairs above an absolute value of 0.30, indicating a moderate relationship. The only main MAP variables to show significant correlation with performance scores were the communication composite and the overall MAP proficiency score. In these cases, there was a low and negative relationship between MAP and performance. If MAP and performance appraisal scores both reflected the skills needed to be effective, one would expect a positive relationship between the scores.

These results lead one to reflect on why such differences were found in this study. Several considerations come to mind.

One might wonder if the UT Extension CEDs were just different from other groups that had participated in MAP. Table 39 compares scores of Tennessee CEDs to CEDs in the Extension Southern Region states as well as all Extension personnel in the Southern Region who had been assessed as of March 17, 1998. A non-statistical perusal of the scores shows little difference in any value.

Another consideration should focus on validity. First, is performance appraisal as conducted in UT Extension valid? The performance appraisal process and document do

Table 39. MAP profiles for Tennessee and Southern Region CEDs.

Cluster	Competency	TN CEDs (n=91)	So. Region CEDs (n=422)	All So. Region (n=822)
Managing Your Job	Time management & prioritizing	56%	52%	52%
	Setting goals & standards	51%	50%	50%
	Planning & scheduling work	59%	61%	62%
	ADMINISTRATIVE COMPOSITE	55%	54%	55%
Relating to Others	Listening & organizing	41%	47%	47%
	Giving clear information	52%	53%	56%
	Getting unbiased information	55%	49%	50%
	COMMUNICATION COMPOSITE	49%	50%	51%
Building the Team	Training, coaching & delegating	54%	56%	57%
	Appraising people & performance	52%	52%	54%
	Disciplining & counseling	46%	48%	52%
	SUPERVISORY COMPOSITE	51%	52%	54%
Thinking Clearly	Identifying & solving problems	55%	56%	58%
	Making decisions, weighing risk	58%	55%	57%
	Thinking clearly & analytically	36%	40%	41%
	COGNITIVE COMPOSITE	50%	50%	52%
Overall MAP Proficiency Composite		51%	52%	53%
Mgmt Style	Theory X	61%	58%	58%
	Theory Y	59%	58%	59%
Communication Response Style	Empathetic	17	16	16
	Critical	7	7	7
	Searching	15	16	16
	Advising	21	20	19
	CRS Theory X	28	27	26
	CRS Theory Y	32	32	32
Personal Style	Thinker	26	26	25
	Intuitior	22	22	22
	Sensor	28	27	27
	Feeler	24	24	24

Source: Howard Ladewig, personal communication, March 17, 1998.

follow the guidelines for appraisal as documented by Buford & Bedeian (1988). With the exception of rater differences, regression analyses have shown performance appraisal scores to be free of gender, ethnicity or other tangible bias. There is some disagreement in the literature as to whether performance scores reliably reflect leadership ability. Clark & Clark (1990) propose that routinely collected performance scores include too much error variance or noise, unless the performance was rated by subordinates. However, Chemers et al. (2000) found leadership efficacy to be strongly related to performance evaluations or reviews of both peers and supervisors. The Extension organization assumes performance scores to be valid enough that merit salary increase have been based upon these scores in recent years.

Based upon reviews of MAP assessments for the *Mental Measurements Yearbook*, one cannot help but to consider their validity and reliability. Kehoe (1992) indicated that no real reliability information for MAP was presented and the available information pointed toward the possibility of rather low reliability. Further, Kehoe stated that the evidence for validity was weak in spite of the high values Training House, Inc. reported. Kehoe concluded the assessment was attractive, but developmental applications of the instrument would be flawed by the lack of reliable and valid outcome measures. Reviewers of the Communication Response Style (Norris, 1992; Sadowsky, 1992) and Personal Style (Hall, 1992; Stone, 1992) instruments reached similar conclusions. Stone labels the Personal Style assessment a “parlor game,” until such a time as validity and reliability information could be provided.

The correlation portion of this study, while not designed to validate MAP instruments, does nothing to diminish the reviewer conclusions indicated above. In fact, the correlation data do not support the use of MAP as a reflection of CED leadership effectiveness in UT Extension. The absence of (or failure of Training House, Inc. to provide) demographic data on the entire norming population is another point on which the validity and reliability of the instrument and results are called to question. Without this data being provided, one cannot have confidence that the norming population is representative of various groups. For example, if the norming population was heavily one demographic group, the MAP scores of the minority group may artificially be different. These phenomena are potentially further confounded with the high degree of correlation of MAP variables with other MAP constructs.

Multiple regression analyses conducted as part of this study provide some ideas for further consideration. Multiple regression (GLM) including all MAP, CRS and personal style variables in the model produced results similar to correlation analysis, one of low relationships. These models resulted in R^2 values of 0.135 for program, 0.075 for administrative and 0.152 for total performance longitudinally. It was discovered in the regression analysis that MAP variables exhibited a high degree of multicollinearity. In other words, multiple variables moved so closely together that beta estimates could not be made for the variables independently. Correlations of CED MAP data with other MAP variables resulted in significant relationships in just over 40 percent of the comparisons. Correlation coefficients ranged from a low in magnitude of 0.20 up to -0.99 for the CRS theory X, CRS theory Y pair. The cognitive and theory Y composites and the advising

CRS demonstrated the greatest number of relationships with 14, 13 and 13 significant correlations out of a possible 18 each. Training House, Inc. (2000) reports a significant and very high correlation (0.97) between theory Y and the overall MAP proficiency score. With the exception noted above for the CRS theory X and Y pairs, none approached the very high r value reported by Training House. However, this level of correlation between constructs helps to explain the multicollinearity found in this study. One also wonders if assessment modifications to eliminate at least some of the similarities in constructs might not strengthen the instrument and participant understanding of results. If the constructs are not unique and distinguishable from each other, regression analysis for the purpose of prediction cannot produce unique and accurate estimates (beta values).

Training House, Inc. (2000) also indicates that there are differences in MAP scores when viewed within various demographic categories. Education is said to be the greatest factor in the score on the MAP proficiencies – more than experience. Education also increased the score for theory Y and the communication and cognitive competencies. This study found no differences according to educational level – bachelor's degree versus master's. Among genders, Training House reported females scoring higher in two of the three communication subscales, in theory Y, empathetic CRS, and the feeler personal style. Males scored higher in theory X, critical and advising CRS and the thinker personal style. The only difference found in this study was that males scored significantly higher in the theory X management style.

Comparisons of means was only one way to observe demographic and independent variable interactions. These were also observed in regression models.

Regression models with all MAP workshop independent variables accounted for 15 percent of total performance score and 7.5 percent of administrative performance. Adding demographic variables and MAP/demographic interactions increased the coefficients of determination to 52.4 and 59.6 percent, respectively. These multiple R values would be considered to be very high in most social research. As mentioned earlier, the problem of multicollinearity prevents effective use of these models because beta values cannot be calculated for these intertwined independent variables. When beta values cannot be estimated for each independent variable, construction of a prediction equation is not possible.

Relationship of PSI to UT Extension Performance

The Personal Style Inventory (PSI) was developed specifically for Tennessee Extension as a pre-employment selection test. While the validation study for the PSI included individuals holding any Extension Agent title, this study utilized a subset of the validation data made up only of agents who were assigned the County Director role in addition to their program assignment(s).

Relationships were found to exist between PSI data and UT Extension performance even though County Directors were not the sole object of the validation study. One would have expected this for at least two reasons. First, this assessment was developed for UT Extension after job analysis, including in-depth interviews. Second, validation was based upon a performance evaluation – one designed for the validation

study. District Directors who supervised the CEDs completed the PSI performance evaluation as well as UT's annual performance review instrument.

This study found that statistically significant correlations existed in almost 30 percent of PSI variable/UT Performance correlate pairs. A comparison of the earlier PSI validation study findings with findings of this study is in table 40. Correlation coefficients tended to be higher in this study with the exceptions of community development interest, conscientiousness, emotional stability and optimism. Agreeableness, child management skills, customer responsiveness, extroversion, integrity & values, nurturance, openness, long tenure potential and work drive produced higher r values when correlated with PSI performance than did the same variables in the PSI validation study. This may imply that the relationships of these variables to CED performance are stronger than they were for agents in general.

The five PSI variables for cognitive reasoning were found to be statistically significant in the PSI validation study with some of the higher r value magnitudes, but produced no significant relationships with PSI performance in this study. When correlated with UT Extension performance, verbal reasoning was the only cognitive measure to show significant r values. However, verbal reasoning was a consistent contributor with some of the higher f -values of the final regression models. Yukl (2002) relates several studies where cognitive skills such as analytical ability, logical thinking, concept formulation and inductive or deductive reasoning have been indicators of leadership ability. Hendrick (1990) found cognitive complexity to positively impact

Table 40. Comparison of correlation coefficients from this study to PSI validation study correlation r values (PSI variables/PSI Performance).

PSI Variable	This Study PSI vs UT Performance (r)	This Study PSI vs PSI Performance (r)	* Validation Study PSI vs PSI Performance (r)
Agreeableness	0.19	0.31	0.26
Child Development Skill	NS	0.33	0.24
Community Development Interest	0.25 - 0.31	0.23	0.30
Conscientiousness	0.22 - 0.38	NS	0.19
Customer Responsiveness	0.25 - 0.37	0.38	0.25
Emotional Stability	0.22 - 0.23	NS	0.14
Extroversion	0.21 - 0.29	0.30	0.25
Integrity and Values	0.23 - 0.26	0.23	0.21
Nurturance	0.20 - 0.25	0.24	0.21
Openness to New Experience	0.24 - 0.34	0.29	0.25
Optimism	0.23 - 0.38	0.26	0.27
Achievement / Status Striving	0.21 - 0.35	0.38	0.28
Potential for Long Tenure	0.26 - 0.31	0.33	0.31
Work Drive	0.30 - 0.49	0.32	0.28
Cognitive - Abstract Reasoning	NS	NS	0.27
Cognitive - Numeric Reasoning	NS	NS	0.31
Cognitive - Verbal Reasoning	0.20	NS	0.16
Overall Cognitive (A+N)	NS	NS	0.34
Overall Cognitive (A+N+V)	NS	NS	0.30
Big 5 Model of Personality	0.23 - 0.30	0.31	NR
Overall Personality Score	0.23 - 0.37	0.36	NR

* Source: Gibson, (1999).

NR = Not Reported

NS = Not Significant ($p < 0.05$)

several leadership functions, though several studies cited found low positive or no correlation between intelligence and cognitive complexity.

The ability of PSI variables to predict performance in UT Extension was explored with multiple regression analysis. When models were run individually by year and performance type, all models meeting a 5 percent level of significance were in the years 1998 to 2000. Only one model for administrative performance met the statistical significance minimum, the 2000 model that utilized PSI and demographic variables found to be significant in the correlation analysis. Clark & Clark (1990) reported that psychometric measures can tend to decline in prediction effectiveness as time from test validation progresses.

For the most part, PSI regression models mimicked MAP models in that a high degree of multicollinearity existed. This is due, in part, to variables such as overall cognitive reasoning or big 5 personality being made up of an average of other PSI variable values. Another factor is that many PSI variables correlate significantly and often at a very high magnitude with other PSI variables. PSI variable correlations with other PSI variables resulted in coefficients ranging from 0.20 to 0.94. None were negative.

A few specific PSI variables merit further discussion individually. Potential for long tenure was one of the larger magnitude and more often significant variables in the correlation study with r values ranging from 0.26 to 0.31. Correlations were significant with ten of the possible 18 criterion variables including program, administrative and total performance. However, the variable did not exhibit a similar effect in regression models

as f -values were not significant for program ($f=0.34$, $p=0.56$), administrative ($f=0.91$, $p=0.34$) or total ($f=0.38$, $p=0.54$) performance.

Another discussion item involves the variable integrity & values. A number of studies have found character traits such as honesty, fairness and caring to be top tier requirements for those in leadership roles (Byrd, 2000; Cooper & Graham, 2001; Kouzes & Posner, 1993, 1995; Owen, 2004). In an Extension study, Cooper & Graham (2001) found that “character traits were considered to be the most valued competency for both the agent and the supervisor” (p. 13). The construct of integrity & values did not correlate well with performance in this study. It was, however, a significant contributor to program ($f=5.76$, $p=0.017$) and total performance ($f=4.96$, $p=0.027$), but not administrative performance ($f=0.42$, $p=0.52$) as determined in multiple regression.

Gender Differences Reflected by MAP and PSI

Particularly in recent years, the topic of gender in leadership has attracted greater attention. Comprehensive reviews of women’s access to, and effectiveness in leadership are available (Bass, 1990; the winter 2004 issue of the Journal of Leadership Education is devoted to gender issues). While many studies indicate leadership effectiveness is not gender-specific, some studies published in recent years are finding that women leaders surpass men in many critical areas needed for leadership effectiveness (Aurora & Caliper, 2005; Bass, 1998; Rosenbusch & Townsend, 2004; Rudd, 2000).

Such was the case in this study. First, statistically significant gender differences were found for the MAP management style of theory X. Males scored higher (64.1 vs.

47.8, $p < 0.05$) than females. The importance of this may be seen in the caption of a Wyoming Extension Newsletter (Silliman, 1996). In commenting upon the kind of workers needed in today's organization, the caption read "Where from here: Only Theory Y Employees Need Apply" (p. 4). Therefore, the higher male theory X score could reflect a tendency for men to fall back upon parent-child, command and control management styles when a more adult-adult model exercising expectancy theory would possibly work best. Patterson (1997, 1998) equates using a theory X style of leadership in Extension to falling back on 100 year old assumptions, and calls for a new paradigm for Extension Administration.

A number of PSI variables also demonstrated strengths ($p < 0.05$) in women CEDs over males in similar roles (the reader may want to refer again to figure 14 on page 178). These included agreeableness (4.2 vs. 3.9), child management skills (4.1 vs. 3.7), conscientiousness (3.7 vs. 3.3), extroversion (4.1 vs. 3.7), integrity & values (4.3 vs. 4.0), optimism (4.1 vs. 3.7), achievement/status striving (3.9 vs. 3.5) and overall personality score (4.0 vs. 3.7). With the exception of child management skills, all of these personality traits have been identified as attributes, traits or characteristics contributing to effective leadership (Bass, 1990; Clark & Clark, 1990, 1994; Yukl, 1981, 2002).

One questions, then why these differences between men and women might exist. Are these differences intrinsic to the female persona? Could there be advantages within the training base of Family and Consumer Sciences? Were there other demographic influences between the male and female groups?

In this study, it is difficult to separate gender from subject matter background and training. All 28 family and consumer sciences trained county directors were female. Conversely, all but three of the 99 county directors trained in agriculture were male. As noted in chapter four, figures 14 and 15, where nine PSI variables were significantly different by gender and subject matter base, the only variables not in common were community development interest (not different by gender) and integrity and values (not different by subject matter base). There was no definitive means to determine if differences were because of gender, subject matter base or if they were practically one and the same.

The title of a research study in women's access to power in the United States (Black & Rothman, 1998) asked the question, "Have you really come a long way?" An Aurora & Caliper (2005) study concluded with a statement by Regina Sacha, Vice President of Human Resources for FedEx, that seemed to answer:

We're looking at a different paradigm of leadership, and it plays naturally to the strengths of women. The tide has turned. The leadership skills that come naturally to women are now absolutely necessary for companies to continue to thrive. It certainly is the reverse of how it was when I first started out in the workplace. It seems like poetic justice. (p. 4).

Given a seemingly growing body of evidence for the strengths women bring to today's workplace, one would expect to be seeing this trend in performance appraisals of the organization.

At least in UT Extension CED performance from 1998 to 2003, there has been no statistical difference in performance scores (program, administrative or total) according to gender. Gender and subject matter base were the only two demographic variables not to show significance in any of the regression models where performance score by year and type were run. This indicates there is no difference in performance score when viewed by gender and area of subject matter training.

Work Drive and Performance

Most who have assumed a leadership role would readily admit that hands-on leadership is hard work. While not all-inclusive characteristics of a more global work drive, Gardner (1990) lists physical ability, stamina and energy among the critical attributes of a leader. Therefore, it should not be surprising that work drive made a strong showing in this study (table 35).

Work drive was among the most prolific of the PSI variables, equaling overall performance score in the number of significant correlations with performance (13) by year and performance score type. All correlations of performance with work drive were positive and ranged from 0.30 to 0.49, the highest magnitude of all MAP or PSI variable correlations. Most statistically significant correlate pairs were with administrative (5) performance with total and program showing four each. Work drive also made the most contribution of any MAP or PSI variable to regression models as reflected in the type III sum of squares and f -ratio value. In program performance, work drive f value equaled 44.3 compared to the next variables gender ($f=19.3$) then theory Y management style

($f=18.1$). Total performance was similar with work drive f equal to 47.2, gender at 19.0 and theory Y at 18.1 again. There was some difference in the administrative performance model with performance appraisal year on top with an f of 36.2, then work drive at 26.5, theory X at 19.7 and theory Y at 9.3. County director's responses to PSI work drive were clearly the strongest contributor to predicting UT Extension performance of all variables in this study.

With the showing of the work drive construct in this study, it was a bit surprising to find relatively little research regarding work drive or work ethic in the leadership literature. In a review of 52 different leadership studies, nothing comparable to work drive made the list of leader attributes – an attribute was required to have been mentioned in three or more to be listed (Bass, 1990). In searching through several leadership reviews, the terminology “work drive” was found only in a study summarized by Bass (1990) where drive was a determinant upon who emerged as a leader in groups.

Perhaps a close synonym to work drive would be “work ethic.” Several studies used this terminology. In a study of Tennessee Extension home economists, Hollingsworth (1995) defined work ethic within three domains: dependability, initiative and interpersonal skill. She found overall work ethic score to be a predictor of the Bolman & Deal (1997) frames, predicting 48 percent of political, 40 percent of symbolic, 38 percent of structural and 35 percent of human resources scores. She later implied that home economists with higher work ethic scores were predicted to be more effective leaders and should be utilized more in the organization. Day (1983), as reported in Clark & Clark (1990), found health professionals that were promoted to be much more likely to

reference in interviews a family background that emphasized a strong work ethic compared to those that were not promoted. A group of successful minority executives listed a strong work ethic among the top professional attributes leading to their success, with “working hard” as one of the top personal attributes (Woods, 2004). In fact, “working harder than others” made the list of 94 percent of study participants and 84 percent indicated hard work was a “very significant” contributor to achievement.

Locke (1991) utilizes the term drive alone as a core motive of leaders and defines it in terms of achievement, ambition, energy, tenacity and initiative. In the Multifactor Leadership Questionnaire (MLQ), “extra effort” as a leader output was found to be a contributor to leadership effectiveness (Bass, 1998). Woodrum & Safrit (2003) found Extension 4-H agents scored an average of 3.75 (median was 4.0) in expenditure of extra effort where a 3 was “fairly often” and 4 was “frequently, if not always” on the 4-point scale.

Other studies have utilized other terminology related to work drive. Perhaps closest to work drive as represented in this study, Yukl (1981) summarized an AT&T study that found effective leaders to be energetic, ambitious and achievement-oriented. Energy (0.28), inner work standards (0.21) and primacy of work (0.18) all correlated significantly with leadership effectiveness. The inner work standards construct represented the extent to which the person wants to do a good job, even if lesser performance is acceptable to her/his boss and others. Primacy of work was the extent to which the person found satisfaction from work more important than satisfaction from other areas of life. In a longitudinal study of the progress of managers, Howard & Bray

(1988) found success as a manager after 20 years in the organization to be related to ambition, primacy of work and inner work standards. The correlations to score early in career to managerial success at 20 years were 0.37 for ambition, 0.55 for primacy of work and 0.47 for inner work standards. It appears work drive as utilized in this study may be capturing self-reported attitudes or preferences similar to these.

Work drive, as measured for this study, had an interesting interaction with highest degree earned. CEDs with a master's degree had a higher average work drive score than did CEDs who had earned a bachelor's only (3.6 vs. 3.1, $p < 0.05$). Therefore, the move of UT Extension to appoint only those holding a master's degree in the mid-1980s may have added a work drive benefit in addition to the academic credentials.

This finding will be encouraging to some. The Extension organization has a cultural history of "work hard and all will be well." After all, it's the American Way. However, agents who are already hard at work in programs and stretched near limits in their present assignment may not wish to assume additional responsibilities knowing success may depend to a large extent upon work drive. As an organization, it is important to communicate that in the results-based environment of today's workplace, hard work must be the companion of "work smart."

There is another aspect of work drive that must be considered. It is quite possible that work drive, if embedded in Extension culture, is inculcated into performance appraisal scores and is reinforced by county and regional directors as a part of the performance appraisal process and resulting score. It is true that the UT Extension performance appraisal process rewarded agents for outputs in performance appraisal

through 2001. The system put in place beginning in 2002 deliberately omitted outputs by putting emphasis upon planning, results, professionalism and administrative outcomes. This led many agents in initial training sessions to question how they were to be rewarded for “hard work.” Since correlation coefficients between work drive and performance are similar across all years; and since work drive makes a strong showing in all regression models across all years; either intrinsic work drive truly impacts performance, or work drive is still being rewarded by supervisors in the magnitude of performance appraisal scores and is still embedded in Extension culture.

Prediction of Leadership Effectiveness as Reflected by Performance

This study found that it was possible, using MAP, PSI and demographic variables to predict 50.2 percent of program performance, 51.5 percent of total performance and 56.7 percent of administrative performance score. Clark and Clark (1990) surmised from studies by Sparks and Bentz that initial screening of employees using test batteries including measures of mental abilities, personality characteristics, and measures of motivation and values can have long-term beneficial effects for the organization. Further, an example of the potential impact is given (p. 74):

If -

- You consider half of your managers satisfactory and wish all others were like the top half.
- You are willing to hire only four of every ten applicants (or promote from within only four of ten otherwise-acceptable candidates) who,

after meeting all your other requirements, also score in the top 40 % of applicants on the predictor device you have chosen.

Then -

Of the new ones you hire or promote who meet these criteria,

- 62 % will be satisfactory when $r = 0.30$
- 66 % will be satisfactory when $r = 0.40$
- 70 % will be satisfactory when $r = 0.50$.

If this process were to hold true for UT Extension, one could expect then to slightly exceed the 78 percent satisfactory level when the regression equations developed in this study were utilized as a pre-selection predictor (multiple R-values of 0.7083 for program, 0.7176 for total and 0.7529 for administrative performance). Clearly, the use of job-related pre-selection measures could benefit UT Extension.

Conclusions

Consideration of the research findings has led to the following conclusions:

1. Based upon weak and inconsistent relationships (as indicated in correlation and regression analysis) of Managerial Assessment of Proficiency, Communication Response Style and Personal Style constructs with Tennessee Extension County Director program, administrative and total performance scores, use of MAP as a human resources tool is not supported.
2. The low to moderate relationships of preferences, styles and aptitudes captured by the Personal Style Inventory to Tennessee Extension County

Director program, administrative and total performance scores show possible merit in human resources use. Work drive and overall personality score were the correlates of greatest frequency and magnitude with r values ranging from 0.23 to 0.37 for personality score and 0.30 to 0.49 for work drive. Before use in County Director selection, adverse impact analysis in areas protected by EEO legislation is advised.

3. There are statistically significant differences in MAP and PSI constructs when viewed within demographic categories. CEDs with longer service time and/or who were older were more likely to stay with UT Extension, utilized a critical communication response style more often and tended to have reduced scores in cognitive measures. Males scored higher on the theory X management style than did females, but females scored higher in agreeableness, child management skills, conscientiousness, extroversion, integrity & values, optimism, achievement & status striving and overall personality score. CEDs with a master's degree scored higher in work drive than did CEDs with a bachelor's degree only.
4. With a combination of MAP, PSI and demographic variables one can predict with significant confidence ($p < 0.0001$) 50.1 percent of CED program performance, 56.7 percent of administrative performance and 51.5 percent of total performance appraisal score.
5. This study both supported and further confused the anecdotal belief that CEDs are selected based upon program performance. Straight averages of program

and administrative performance resulted in program performance at the “merit” level, one level above administrative performance which was “good.” However, after scores were converted to a percentage of possible score, ratios of program divided by administrative performance resulted in more than half of CEDs scoring higher in administrative than program performance from 1998 to 2003. Disparity in program versus administrative performance in several cases, especially where very strong program performance was combined with very weak administrative performance, resulted in somewhat misleading mean values.

Recommendations and Implications

Based upon consideration of the research findings and literature review that were a part of this study, the following general recommendations are offered.

- Before MAP data alone are utilized to significantly influence human resources decisions, additional research-based information is needed in support of its validity, reliability and applicability to today’s organizations.
- This study determined the use of a prediction equation could add to the information to be considered in appointing UT Extension County Directors. However, before such an equation was put into practice, additional study in the potential for adverse impact, especially by race and age would be required.
- Females scored higher on a number of constructs included in this study. Yet, there was no significant difference in performance scores of men and women

across the six years of performance data (each year separately plus longitudinally) that made up the dependent / criterion variables in this study. If the constructs utilized as independent / predictor variables in this study are truly indicative of leadership effectiveness, the organization would benefit in discovering reasons as to why these differences are not showing up in actual performance scores.

This study uncovered a number of areas that bear consideration for further research:

- The strong showing for the variable work drive and its relationship to performance in this study, coupled with a lack of consistency in how the construct was defined in past research, a comparative silence in the literature on the relationship of work drive to leadership effectiveness, and the potential that organizational culture artificially influenced the construct results makes this a potential area for further investigation.
- There is a growing body of research finding that leaders who are women embody many of the attributes, skills and practices deemed necessary for effective leadership. These studies are finding that women are scoring higher than men in many cases. Thus far, studies tend to utilize inventories or surveys in making this determination. Perhaps it is time for more in-depth study to operationalize how this construct strength is playing out in the workplace.
- Finding that female CEDs scored higher in eight PSI constructs than males and that academic subject matter training closely mirrored gender results raises the

possibility of another area of potential research. Where females are scoring higher in measures of positive leadership traits is this a phenomenon intrinsic to being female, is it a function of background and training, a combination of these factors, or are there other defining influences?

- Leadership is a multi-faceted and complex phenomenon. A growing number of assessments are available that seek to predict, explain or inform individuals, groups and organizations relative to leadership effectiveness. Most of the research reported thus far has studied one assessment tool at time, or compared one leadership assessment to some other topic related either directly or indirectly. Practitioners could benefit from head-to-head comparisons of the most prominent instruments in a common and controlled environment with a focus upon the ability of each to predict leadership effectiveness.

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APPENDIX

APPENDIX A

Personal Style Inventory Matrix of Tasks, Aptitudes, Personality Measures
Recommended for UT Extension

PSI Reliability and Validity Coefficient Tables

Table A-1. Matrix of job tasks, aptitudes and traits, and recommended measures for the Tennessee Extension Personal Style Inventory (Gibson, 1999).

Task	Aptitude / Trait	Recommended Measure
Have confidence, initiative, and independence to function well despite minimal mentoring and little supervision. Be ready to look at the job expectations and figure out how to accomplish the goals on your own.	Dominance, Confidence / self-esteem, Optimism, Boldness / adventurous	- Cognitive Aptitude - Work Drive
Be knowledgeable about a wide range of subjects and/or be willing to educate yourself to meet the expectations of a particular situation.	Curiosity / openness	- Openness to New Experience
Gather information about your target group. Careful observation, insightful questioning, good analytical skills, networking for information.	Mental ability, Curiosity / inquisitiveness	- Cognitive Aptitude - Extroversion
Develop a broad perspective of the job at hand. Think long term about goals, objectives, specific activities. Recognize the responsibility for bringing new ideas and innovations to the target community. Understand issues related to community development.	Big picture thinker, Community-minded	- Interest in Community Development
Develop broad based plan of action with goals and objectives to meet community needs for your target group. Show insight, creativity, good organization, ability to prioritize, ability to translate lofty ideas into objective reality. Have confidence to stand by your ideas. Create a schedule and curriculum for activities during the year. Coordinate goals for the state with local issues and opinions.	Mental ability, Big picture thinker, Community-minded, Well organized	- Cognitive Aptitude - Optimism - Interest in Community Development
Manage groups of young people and organize them into cohesive, productive 4-H clubs, shepherding their progress, resolving system wide problems.	Enjoy youth work	- Child Management Skills - Conscientiousness
Solicit and manage a large number of volunteers to help manage the 4-H program.	Well organized, Good motivator	- Extroversion - Conscientiousness
Coordinate with school system authorities, teachers, and other community leaders to ensure a successful, thriving 4-H / FCS / Adult Agriculture program in the county.	Teamwork / networker	- Extroversion - Agreeableness
Relate to local farmers / agribusiness representatives in such a way that they develop trust and respect for what the agent has to say. Develop a positive working relationship that encourages free communication flow.	Good social skills	- Customer Responsiveness - Agreeableness - Integrity & Values
Relate to local farmers / agribusiness representatives in such a way that they develop trust and respect for what the agent has to say. Develop a positive working relationship that encourages free communication flow.	Good social skills	- Customer Responsiveness - Agreeableness - Integrity & Values

Table A-1. Continued.

Task	Aptitude / Trait	Recommended Measure
Develop positive bonds with young people in the 4-H program so that they are motivated, encouraged, excited, and willing to participate in development opportunities.	Motivator / encourager	- Nurturance - Agreeableness - Optimism
Uses opportunities to create a positive image of 4-H, FCS and other Extension programs with potential participants, parents, the school, community agencies, and the community.	Extroversion	- Extroversion - Interest in Community Development
Initiate opportunities in the community to teach FCS topics. Work through other community agencies to find an audience. Set up times for meetings, establish a curriculum.	Extroversion, Social boldness, Good organizational skills	- Work Drive - Achievement / Status-striving - Community Develop. Interest
Be willing to spend the time necessary to both schedule, attend, and coordinate meetings during non-standard hours. Be willing to travel as necessary to help coordinate / manage events such as 4-H camp.	Work drive	- Work Drive - Achievement / Status-striving - Emotional Stability - Conscientiousness
Motivate people in your target audience to get involved, to make an active contribution to the group, and to be excited about meeting challenges.	Enthusiasm	- Nurturance - Child Management Skills
Ability to deal with political issues in small groups and among community leaders and agencies. Tact, political finesse, excellent communication skills no matter whether you are meeting one-on-one or giving a talk to a large group.	Extroversion, Psychological mindedness	- Extroversion - Honesty / Integrity - Achievement / Status-striving
Deal with criticism and constructive feedback. Learn from mistakes.	Self-confidence, Receptivity	- Emotional Stability - Openness to New Experience
Work hard, put in a lot of hours, demonstrate drive, determination, enthusiasm, zeal, commitment, passion for your work. Burning desire to make a difference in people's lives. Take a great deal of pride in seeing change take place and people gaining new skills. Be more interested in job content / status than advancement. Want to stay with Extension for many years to develop own programs.	Work drive, Intrinsic work motivation	- Work Drive - Openness to New Experience - Conscientiousness - Potential for Long Tenure
Enjoy camaraderie among office staff. Be willing to help out on others' projects.	Teamwork	- Extroversion - Agreeableness - Integrity & Values - Conscientiousness

Table A-2. Scale reliabilities for personality dimensions utilized in the UT Extension Personal Style Inventory (Gibson, 1999).

Personality Dimension	Number of Items in Instrument	Reliability Coefficient- Cronbach Alpha
Agreeableness	11	.87
Attitude Toward Children	10	.86
Interest in Community Development	7	.76
Conscientiousness	12	.81
Customer Service Orientation	8	.83
Emotional Stability	12	.87
Extroversion	16	.90
Integrity and Values	11	.81
Nurturance	10	.80
Openness to New Experience	9	.82
Optimism	8	.70
Status Striving	14	.87
Potential for Tenure	9	.80
Work Drive	13	.83

Table A-3. Validity coefficients between the personality dimensions and the UT Extension job performance measures (Gibson, 1999).

Personality Dimension	Ability to Process Information	Reasoning Ability	Job Skills Competencies	Capacity for Growth	Productivity	Teamwork	Relations with UT Extension Leaders
Agreeableness	r =.168 p =.003	r =.219 p =.000	r =.148 p =.008	r =.205 p =.000	r =.124 p =.021	r =.296 p =.000	r =.190 p =.001
Attitude Toward Children	r =.089 p =.073	r =.138 p =.012	r =.082 p =.090	r =.152 p =.006	r =.085 p =.083	r =.201 p =.000	r =.078 p =.101
Interest in Community Development	r =.225 p =.000	r =.226 p =.000	r =.271 p =.000	r =.178 p =.002	r =.188 p =.001	r =.217 p =.000	r =.214 p =.000
Conscientiousness	r =.107 p =.041	r =.156 p =.005	r =.104 p =.044	r =.117 p =.028	r =.151 p =.007	r =.121 p =.024	r =.071 p =.124
Customer Service Orientation	r =.208 p =.000	r =.212 p =.000	r =.236 p =.000	r =.144 p =.009	r =.213 p =.000	r =.196 p =.001	r =.148 p =.008
Emotional Stability	r =.064 p =.148	r =.117 p =.027	r =.057 p =.174	r =.107 p =.040	r =.097 p =.055	r =.207 p =.000	r =.132 p =.015
Extroversion	r =.153 p =.006	r =.180 p =.001	r =.153 p =.006	r =.186 p =.001	r =.158 p =.005	r =.247 p =.000	r =.158 p =.005
Integrity and Values	r =.157 p =.005	r =.197 p =.001	r =.152 p =.006	r =.132 p =.001	r =.128 p =.018	r =.177 p =.002	r =.135 p =.014
Nurturance	r =.118 p =.026	r =.166 p =.003	r =.098 p =.055	r =.127 p =.019	r =.094 p =.063	r =.209 p =.000	r =.072 p =.120
Openness to New Experience	r =.201 p =.000	r =.216 p =.000	r =.242 p =.000	r =.198 p =.001	r =.230 p =.000	r =.196 p =.001	r =.159 p =.005
Optimism	r =.227 p =.000	r =.245 p =.000	r =.227 p =.000	r =.187 p =.001	r =.255 p =.000	r =.265 p =.000	r =.225 p =.000
Status Striving	r =.235 p =.000	r =.220 p =.000	r =.209 p =.000	r =.214 p =.000	r =.180 p =.002	r =.253 p =.000	r =.219 p =.000
Potential for Tenure	r =.202 p =.000	r =.255 p =.000	r =.212 p =.000	r =.128 p =.018	r =.232 p =.000	r =.250 p =.000	r =.204 p =.000
Work Drive	r =.242 p =.000	r =.242 p =.000	r =.311 p =.000	r =.265 p =.000	r =.312 p =.000	r =.169 p =.003	r =.213 p =.000

Table A-3. Continued.

Personality Dimension	Relations with Community Contacts	Relations with Clientele	Relations with Young People	Professional Attitudes	Dependability	Stress Tolerance	Average Performance Rating
Agreeableness	$r = .230$ $p = .000$	$r = .199$ $p = .001$	$r = .265$ $p = .000$	$r = .253$ $p = .000$	$r = .243$ $p = .000$	$r = .185$ $p = .001$	$r = .263$ $p = .000$
Attitude Toward Children	$r = .118$ $p = .027$	$r = .081$ $p = .092$	$r = .348$ $p = .000$	$r = .165$ $p = .003$	$r = .164$ $p = .004$	$r = .092$ $p = .066$	$r = .244$ $p = .000$
Interest in Community Development	$r = .288$ $p = .000$	$r = .231$ $p = .000$	$r = .220$ $p = .000$	$r = .157$ $p = .005$	$r = .191$ $p = .001$	$r = .200$ $p = .000$	$r = .298$ $p = .000$
Conscientiousness	$r = .133$ $p = .014$	$r = .124$ $p = .021$	$r = .136$ $p = .018$	$r = .141$ $p = .010$	$r = .155$ $p = .006$	$r = .062$ $p = .157$	$r = .185$ $p = .002$
Customer Service Orientation	$r = .222$ $p = .000$	$r = .180$ $p = .002$	$r = .227$ $p = .000$	$r = .218$ $p = .000$	$r = .229$ $p = .000$	$r = .169$ $p = .003$	$r = .252$ $p = .000$
Emotional Stability	$r = .132$ $p = .015$	$r = .109$ $p = .037$	$r = .107$ $p = .050$	$r = .130$ $p = .016$	$r = .141$ $p = .010$	$r = .160$ $p = .004$	$r = .142$ $p = .014$
Extroversion	$r = .227$ $p = .000$	$r = .171$ $p = .002$	$r = .215$ $p = .000$	$r = .190$ $p = .001$	$r = .191$ $p = .001$	$r = .110$ $p = .036$	$r = .251$ $p = .000$
Integrity and Values	$r = .201$ $p = .000$	$r = .171$ $p = .002$	$r = .140$ $p = .015$	$r = .157$ $p = .005$	$r = .209$ $p = .000$	$r = .105$ $p = .043$	$r = .210$ $p = .001$
Nurturance	$r = .142$ $p = .010$	$r = .097$ $p = .056$	$r = .196$ $p = .001$	$r = .179$ $p = .002$	$r = .192$ $p = .001$	$r = .045$ $p = .232$	$r = .210$ $p = .001$
Openness to New Experience	$r = .140$ $p = .011$	$r = .113$ $p = .032$	$r = .161$ $p = .007$	$r = .168$ $p = .003$	$r = .116$ $p = .002$	$r = .116$ $p = .029$	$r = .252$ $p = .000$
Optimism	$r = .236$ $p = .000$	$r = .213$ $p = .000$	$r = .207$ $p = .001$	$r = .218$ $p = .000$	$r = .274$ $p = .000$	$r = .225$ $p = .000$	$r = .265$ $p = .000$
Status Striving	$r = .321$ $p = .000$	$r = .249$ $p = .000$	$r = .251$ $p = .000$	$r = .175$ $p = .002$	$r = .212$ $p = .000$	$r = .143$ $p = .010$	$r = .284$ $p = .000$
Potential for Tenure	$r = .327$ $p = .000$	$r = .277$ $p = .000$	$r = .222$ $p = .000$	$r = .236$ $p = .000$	$r = .292$ $p = .000$	$r = .182$ $p = .001$	$r = .306$ $p = .000$
Work Drive	$r = .267$ $p = .000$	$r = .231$ $p = .000$	$r = .174$ $p = .004$	$r = .167$ $p = .003$	$r = .241$ $p = .000$	$r = .177$ $p = .002$	$r = .279$ $p = .000$

Table A-4. Validity coefficients between job performance measures and aptitude factors (Gibson, 1999).

Job Performance Measure	Numerical Reasoning	Verbal Reasoning	Abstract Reasoning	Overall Cognitive Aptitude 1 (V+N+A)/3	Overall Cognitive Aptitude 2 (N+A)/2
Ability to Process Information	r =.247 p =.000	r =.133 p =.015	r =.231 p =.000	r =.256 p =.000	r =.261 p =.000
Reasoning Ability	r =.284 p =.000	r =.146 p =.008	r =.252 p =.000	r =.284 p =.000	r =.286 p =.000
Job Skills Competencies	r =.263 p =.000	r =.110 p =.036	r =.162 p =.004	r =.216 p =.000	r =.280 p =.000
Capacity for Growth	r =.190 p =.001	r =.064 p =.150	r =.190 p =.001	r =.186 p =.001	r =.237 p =.000
Productivity	r =.183 p =.001	r =.073 p =.015	r =.174 p =.002	r =.180 p =.002	r =.262 p =.000
Teamwork	r =.291 p =.000	r =.105 p =.043	r =.266 p =.000	r =.277 p =.000	r =.292 p =.000
Relations with UT Extension Leaders	r =.313 p =.000	r =.114 p =.009	r =.233 p =.004	r =.282 p =.000	r =.241 p =.000
Relations with Community Contacts	r =.312 p =.000	r =.149 p =.007	r =.198 p =.001	r =.264 p =.001	r =.318 p =.001
Relations with Clientele	r =.281 p =.000	r =.127 p =.019	r =.209 p =.000	r =.251 p =.000	r =.264 p =.000
Relations with Young People	r =.269 p =.000	r =.081 p =.107	r =.251 p =.000	r =.247 p =.000	r =.266 p =.000
Professional Attitudes	r =.284 p =.000	r =.117 p =.027	r =.258 p =.000	r =.273 p =.000	r =.250 p =.000
Dependability	r =.183 p =.001	r =.073 p =.015	r =.174 p =.002	r =.235 p =.000	r =.288 p =.000
Stress Tolerance	r =.272 p =.000	r =.097 p =.056	r =.211 p =.000	r =.238 p =.000	r =.208 p =.000
Average Performance Rating	r =.311 p =.000	r =.156 p =.008	r =.268 p =.000	r =.299 p =.000	r =.341 p =.000

APPENDIX B

Tennessee Agricultural Extension Service .

Performance Appraisal for County Extension Faculty.

October 1, 1993 (Revised October 1, 1998).

Adm. F-142 (10/95)

**TENNESSEE AGRICULTURAL
EXTENSION SERVICE**

PERFORMANCE APPRAISAL

FOR

COUNTY EXTENSION FACULTY

October 1, 1993
(Revised October 1, 1998)

Table of Contents

The Tennessee Agricultural Extension Service Performance Appraisal System for county Extension faculty includes two separate components. These components are:

Component	Item
I.	Performance Standards Appraisal Instrument
II.	County Extension Leader Evaluation

Implementation Timetable

August 1	District Extension office sends appraisal material to appropriate county faculty based on performance appraisal schedule. Agents not scheduled for review during a program year, but who have had significant change in their performance during that year, may participate in the review process either at their or the District Supervisor's request.
September 15	County Extension leader (CEL) starts formal performance appraisal process with county faculty.
October 15	CEL sends all performance appraisal materials to district office.
Oct.-Nov.	District Supervisor discusses ratings with district staff and appropriate section personnel (especially ratings pertaining to area agents and area specialists).
Nov.	District supervisor meets with CEL to discuss each faculty member's performance appraisal and recommended rating.
December 1	CEL has final performance appraisal session with county faculty to discuss recommended rating and establish program goals, expectations and plans for the coming year. (Note: Ratings will become final unless faculty member is notified of a rating change.)
December 1	All performance appraisal material sent from district office to dean, TAES.
December	District supervisor meets with dean to discuss recommended ratings.
February 1	District Program Leaders will meet with CEL and county faculty to review program goals, expectations and plans.
February 1	Ratings approved by administration. (Note: All ratings established between the CEL and district supervisor will become final unless faculty member is notified by administration of a rating change.)
June-July	Dean provides all faculty confirmation of their final rating and salary adjustment for the coming year.

COMPONENT I

TENNESSEE AGRICULTURAL EXTENSION SERVICE PERFORMANCE APPRAISAL FOR COUNTY EXTENSION FACULTY

The performance appraisal system is an integral part of an organization's capacity to thrive in a continually changing environment. An appraisal system should be used primarily to assist faculty in developing to their greater (performance) potential, and secondarily to provide input into key decisions about employees, such as promotion salary, in-service education, transfer and related personnel actions.

Performance appraisal systems should be both logical and effective. To be logical, the system must concentrate on relevant faculty performance standards. To be effective, the system must be practical, equitable and clearly identify expected performance. The Tennessee Agricultural Extension Service (TAES) performance appraisal system attempts to achieve both goals.

Appraisal Philosophical Assumptions

- TAES field faculty are capable and dedicated professionals who want to do a good job.
- Appropriate planning, implementation and evaluation are necessary to attain acceptable program results.
- All activities of a faculty member cannot be formally evaluated.
- Effectiveness in programming is enhanced by providing professionals with specific performance standards.
- Appropriate training will be provided to those responsible for faculty appraisal.
- Effective and responsible appraisal is a continuing process.
- Models to appraise human behavior are never completely satisfactory.

Goals and Objectives

The overall goal of the system is to assist faculty to perform at their greatest potential as Extension professionals.

The specific objectives are to:

- Enhance faculty members' capacity to deliver effective Extension programs;
- Identify action needed for professionals to improve their performance;
- Promote greater individual motivation and productivity;
- Provide fair and equitable input for salary determination, promotion and other personnel actions.

Performance Appraisal Form

This performance appraisal system is based on the rating of Extension faculty member performance against specific standards. There are 13 performance standards common to all faculty. There are three additional performance standards associated with the county Extension leader assignment.

Following are the five rating categories and points on the rating scale.

Special Merit	-	4
Merit	-	3
Good	-	2
Needs Improvement	-	1
Unsatisfactory	-	0

Definitions:

Special Merit - Performance goes significantly beyond expected achievement levels. Exceptional accomplishment of goals and objectives is demonstrated. Special merit rating requires written documentation.

Merit - Performance goes beyond expected achievement levels. Accomplishment of goals and objectives, and overall performance of the task are above that normally expected.

Good - Performance meets expected achievement levels. Accomplishment of goals and objectives, and overall performance of this task are at normally expected levels.

Needs Improvement - Performance is below expected achievement levels and improvement is needed. Needs improvement rating requires documentation and a written plan for improvement.

Unsatisfactory - Performance is consistently below expected achievement levels. Improvement is required during the coming year. Unsatisfactory rating requires documentation and a written plan for improvement.

Instructions for Faculty member Appraisal

1. Assistant Extension Agents and other newly employed or reassigned faculty will complete the performance appraisal process each of the three years of their probationary period. Thereafter, the following schedule will be followed:
 - a. Assistant and Associate Extension Agents will complete performance appraisals every other year, re. 1998, 2000, 2002, etc.
 - b. Extension Agents will complete performance appraisals every third year, re. 1999, 2002, 2005, etc.
 - c. If Assistant, Associate or Extension Agents with performance ratings of Good, Merit or Special Merit have a significant change in their job performance during any year when they are not scheduled for review, a performance appraisal may be requested by either the Faculty member or District Supervisor by letter prior to the close of business on August 1 of the current program year.
 - d. A request for a performance appraisal by either party must be made in writing by the designated date during the year when the faculty member is not scheduled for review. Otherwise, the performance rating and score from the last scheduled performance appraisal will apply.
 - e. All faculty members with a rating of "Needs Improvement" or "Unsatisfactory" will complete a performance appraisal on an annual basis until their job performance improves to at least a rating of "Good" or until other appropriate measures are taken.
2. Each faculty member provides a brief narrative with sufficient written and specifically prepared documentation (approximately one typed page) in support of each performance standard.
3. Within the county unit, the county leader is expected to use the following procedures:
 - a. The County Extension Leader (CEL) will schedule a Performance Appraisal conference for each faculty member in his/her county, review documentation statements prepared by the faculty member and discuss each of the 13 items on the appraisal form. After each meeting the CEL completes a Performance Appraisal (P.A.) document for each faculty member. For any performance standard rated as "Special Merit," "Needs Improvement," or "Unsatisfactory," the CEL must provide written justification. Support material, other than the prepared statements for each of the 13 standards, may be collected by the faculty member but will NOT be sent forward unless asked for by the CEL and/or district supervisor. For each standard rated as "Needs Improvement" or "Unsatisfactory," the faculty member, after consulting with the CEL, will provide a written plan for improvement outlining what he/she is expected to accomplish during the coming year.
 - b. The CEL forwards to the district supervisor one copy of: 1) CEL's recommended performance appraisal with specifically prepared supporting justification for each faculty in the unit; and 2) Narrative documentation for each standard included in the leader's performance appraisal.
4. Upon receipt of documents in the district office, the appropriate district staff will review all material.

5. The district supervisor will review the following information in preparation for performance appraisal conference with each county Extension leader:
 - a. Supporting justification provided by faculty member.
 - b. County Leader's recommended appraisal ratings with his/her supporting justification.
 - c. Ratings by District Program Leaders (DPL) with documentation and justification.
 - d. Other performance information available to district supervisor (MIS printouts, POW, progress reports, staff development plan and related information).
6. The district supervisor will complete the County Extension Leader Performance Appraisal document with proposed rating for each standard before the performance appraisal conference.
7. After the district supervisor has reviewed all available material, he/she will meet with appropriate district staff and discuss the final rating to be recommended for each county Extension faculty member. Appropriate district staff should have had an opportunity to study all materials listed in item #5 above prior to this meeting. Any concerns about the ratings of the district supervisor will be addressed prior to the performance appraisal conference with each CEL.
8. The district supervisor will conduct a performance appraisal conference with each CEL using the following guidelines:
 - a. District supervisor and county Extension leader discuss each performance standard rating for all faculty members. If there is a concern with a rating, the CEL will provide justification. District supervisor and CEL determine rating to be recommended for each county faculty member.
 - b. The district supervisor will discuss and rate CELs on each performance standard in the county leader's performance appraisal document.
 - c. Following the conference, the district supervisor finalizes the performance appraisal document and prepares the Performance Appraisal Summary Sheet.
 - d. The district supervisor will require any faculty member who receives an overall rating of "Needs Improvement" or "Unsatisfactory" to develop, in consultation with the CEL and district staff, a written plan for improvement. The plan must be submitted to the district supervisor for approval within 45 days.
9. Following the appraisal conference between the CEL and the district supervisor, the CEL will schedule a final appraisal conference with each faculty member within the county to review appraisal scores. The CEL and faculty member will establish program goals, expectations and plans for the coming year.
10. The district program leader will schedule a conference with the CEL and county faculty review established goals, expectations and plans. The DPL will share the established goals, expectation and plans with the district supervisor for final approval.
11. The district supervisor forwards a copy of each faculty member's Performance Appraisal Summary and any necessary supporting documentation to the dean, TAES. A summary of district ratings by faculty member rank is to accompany materials furnished to the dean. For each faculty member receiving an overall rating of "Special Merit," the district supervisor will attach written justification with supporting documentation for such a rating. For each performance standard receiving a rating of "Needs Improvement" or "Unsatisfactory," the district supervisor will attach a plan for improvement outlining what the faculty member is expected to accomplish during the coming year.
12. The dean will conduct a review of all county, area and district faculty performance appraisals. A conference will be scheduled with the dean and district supervisor before appraisal scores become final. The dean and district supervisor will discuss performance ratings for each faculty member and the district supervisor will provide justification for each rating. The district supervisor is expected to verbally justify each overall "Merit" rating while each "Special Merit" rating will be accompanied by written justification and supporting documentation. The district supervisor is expected to verbally outline each area whereby an faculty member needs to make moderate enhancements in his/her performance. In cases where performance is not satisfactory and a plan for improvement is required, the district supervisor will discuss the elements of that proposed plan

with the dean. (Note: Plans for improvement for faculty members with an overall rating of "Needs Improvement" or "Unsatisfactory" may be submitted at a later date.)

13. Following the appraisal conference between the dean and the district supervisor, administration will review all material and approve final ratings.
14. The dean will notify any county faculty member if his/her rating has changed from the one previously discussed by his/her CEL or district supervisor.
15. The dean provides all faculty confirmation of their final rating and salary for the coming year.

APPEAL PROCEDURES

An employee who disagrees with his/her overall performance rating has a right to appeal. Both informal and formal appeal procedures are available; however, it is most desirable that the appeal be resolved at the immediate supervisor level. The employee may follow either the informal or formal appeal procedure or both.

Informal Procedure

The informal appeal should be resolved through the immediate supervisor or one of Extension's designated counselors. The names of individuals serving as counselors for Tennessee Agricultural Extension personnel may be found in the Program for Equal Employment Opportunity in Tennessee Agricultural Extension Service (revised 1998). Additional information is available by contacting Dr. Charles Norman, 121-B Morgan Hall, (423) 974-7108.

To initiate an informal appeal process, the employee should submit to the supervisor, within five working days following the final performance appraisal conference, a written request for an informal review conference. Within 10 working days after receipt of the request, the supervisor will establish a date and time for the conference. Within 10 working days following the conference, the supervisor will notify the employee in writing the outcome of the conference.

If satisfaction is not received at the supervisor or counselor level, the employee may proceed through the supervisory channels to the next higher level. When an informal appeal is received by a designated counselor, a memorandum shall be forwarded by the counselor to the coordinator advising him of the appeal, the circumstances of the appeal and a discussion of attempts to resolve the appeal. If the appeal was satisfactorily handled, the counselor should so state; if further action appears necessary, he/she should so advise.

Formal Procedure

If the disagreement is not resolved through the informal appeal procedure, or if the informal procedure is not chosen, the employee may make a formal appeal through appropriate channels. To file a formal appeal, the employee should follow the procedures spelled out in the Program for Equal Employment Opportunity in the Tennessee Agricultural Extension Service (revised 1998) or the UT Institute of Agriculture Faculty Handbook.

Performance Standards

Name: _____

Please check one:

Co. Ext. Ldr. _____

Program Year: _____

Dist. Supervisor _____

During the program year, the Extension Educator (Agent) was expected to have:

1. Completed needs assessment to determine Program Direction

Special Merit

The educator assessed the needs of the county, documenting the use of at least four (4) different types of information sources, such as county profiles, advisory committee reports, state and/or national initiatives, commodity groups, local agencies with shared interests, etc. The needs were reviewed throughout the program year and programs were adjusted as needed. Special programs were initiated to address needs of new audience(s). Strategies were defined and implemented to actively involve clientele in needs assessment.

Merit

The educator assessed the needs of county, documenting the use of at least four (4) different types of information sources, such as county profiles, advisory committee reports, state and/or national initiatives, commodity groups, local agencies with shared interests, etc. The needs were reviewed throughout the program year and programs were adjusted as needed.

Good

The educator assessed the needs of county, documenting the use of at least three (3) different types of information sources, such as county profiles, advisory committee reports, state and/or national initiatives, commodity groups, local agencies with shared interests, etc.

Needs Improvement

The educator used at least two (2) sources of resource information to determine program objectives.

Unsatisfactory

Program objectives were determined by the educator based only on the educator's experience and knowledge of the county and what he/she determined were clientele and community needs.

Areas of strength, areas needing strengthening: _____

Goals/Comments: _____

For Reviewer Use Only:
4X _____

2. Involved Advisory Committees

Special Merit	The program advisory committee was representative of county's population, geographic area, socioeconomic levels, racial-ethnic groups, gender and commodity groups. The advisory committee met on a formal basis at least twice during the program year and it's members gave leadership and direction to the Extension Program throughout the program year. Advisory committee members assisted in the marketing and support of the county's Extension program.
Merit	The advisory committee was representative of county's population, geographic area, socioeconomic levels, racial-ethnic groups, gender and commodity groups. The advisory committee met on a formal basis at least twice during the program year and it's members gave leadership and direction to the Extension Program throughout the program year.
Good	The advisory committee was representative of county's population, geographic area, socioeconomic levels, racial-ethnic groups, gender and commodity groups. The advisory committee met on a formal basis at least twice during the program year.
Needs Improvement	The advisory committee was identified and had at least one (1) formal meeting during the program year.
Unsatisfactory	The educator made little effort to work with advisory committees. The educator preferred to work independently on most projects and programs.

Areas of strength, areas needing strengthening: _____

Goals/Comments: _____

For Reviewer Use Only:
8 X _____ = _____

3. Completed/maintained an annual Plan of Work based on a documented needs assessment and county, district, state and national initiatives with planned efforts for meeting the needs of culturally diverse audiences

Special Merit

The educator completed/maintained an aggressive plan of work based on documented needs assessment and included county, district, state and/or national initiatives. The plan included measurable objectives, plans for implementation and a formal plan for effective evaluation and reporting of results. The educator placed a high priority on targeted programs designed to reach new audiences with specific plans to reach culturally diverse and disadvantaged audiences. The educator's plan is designed to be a part of a total county plan.

Merit

The educator completed/maintained an aggressive plan of work based on documented needs assessment of potential clientele with a planned approach to reaching culturally diverse and disadvantaged audiences. The plan also included county, state and/or national initiatives. The plan included measurable objectives and a plan for effective evaluation and reporting of results.

Good

The educator completed an acceptable plan of work based on documented needs assessment of potential clientele including culturally diverse and disadvantaged audiences. The plan included measurable objectives and a plan for evaluating results.

Needs Improvement

The educator completed a plan of work based on documented needs assessment. The plan included measurable objectives but no plans for formal evaluation of program results. No documentation of any specific efforts to involve culturally diverse groups in programming.

Unsatisfactory

The educator completed a plan of work which lacked measurable objectives. No documentation of efforts to target culturally diverse audiences.

Areas of strength, areas needing strengthening: _____

Goals/Comments: _____

For Reviewer Use Only:

10 X _____

4. Implemented objectives described in the Plan of Work and worked to expand audience(s)

Special Merit	The educator effectively used planned time to conduct impact and special emphasis programs with considerable depth. Consistently and effectively conducted and evaluated in-depth programming with observable results of knowledge, attitude and skill change. High priority placed on developing and delivering programs that reached new audiences. Implemented programs for reaching culturally diverse and disadvantaged clientele. Documentation was available showing the implementation of three (3) or more such program activities involving new clientele.
Merit	Major impact and special emphasis programs were integrated into traditional programming to build a strong quality program. Provided documentation of two (2) or more successful new program activities to involve new clientele and expand audiences. Implemented programs for culturally diverse and disadvantaged groups.
Good	Programming related to all plan of work objectives was conducted or altered as needs changed. Responded to clientele requests, but also directed these to program initiatives. Documentation provided for one (1) special effort to expand audiences and reach new clientele.
Needs Improvement	Minimum level of in-depth programming conducted and few evaluation results evident. Few efforts were made to expand audiences.
Unsatisfactory	Plan of work was approved, but most program activities conducted were not in the plan. Little or no program evaluation evident. No documentation of any significant effort to expand audiences to reach new clientele.

Areas of strength, areas needing strengthening: _____

Goals/Comments: _____

For Reviewer Use Only:
18 % -

5. Marketed Extension programs and used a variety of educational delivery methods appropriate for topic and clientele

Special Merit

The educator developed and implemented an Extension marketing program appropriate for the county. Innovative and creative promotional efforts have expanded traditional and non-traditional audiences. Educator used a minimum of four (4) marketing techniques. Utilized all available educational media and teaching strategies effectively. Wrote regular newspaper columns; broadcast radio/T.V. programs. Employed a variety of innovated program components. Was innovated in utilizing a variety methods. Reported in writing major program accomplishments to county officials, district supervisors, and administration. Published accomplishments in various media. Notified elected officials in county, state and federal offices of important accomplishments achieved through program efforts. Celebrated success through public invitation to witness successful conclusion of the program.

Merit

Educator developed and implemented an Extension program marketing plan for the county. Creative marketing efforts have expanded traditional and non-traditional audiences. Educator used a minimum of three (3) marketing techniques. Utilized available educational media and strategies. Wrote regular newspaper columns, broadcast radio/T.V. programs. Effectively instructed programs in his/her area of responsibility. Reported major program accomplishments to county officials, district supervisors and administration.

Good

Educator developed and implemented an Extension program marketing plan. Marketing efforts have increased clientele participation. Utilized a minimum of two (2) marketing techniques. Effectively utilized available educational media and teaching strategies (at least three). Reported some major accomplishments to various county officials.

Needs Improvement

Extension program marketing plan and implementation of plan was limited. No evidence of increased clientele participation. Utilized less than two marketing techniques. Minimal use of educational media resources.

Unsatisfactory

Educator demonstrated little effort in marketing Extension programs. Little evidence of teaching and use of teaching strategies. Limited use of available educational media. Prefers to work primarily one to one.

Areas of strength, areas needing strengthening: _____

Goals/Comments: _____

For Reviewer Use Only:

10 X

-

6. Documented the utilization of volunteers,* demonstrating that they performed significant roles and needed minimal direction

Special Merit	Educator operated from a well-rounded written plan to identify, recruit, train and involve sufficient numbers of volunteers to plan, conduct and evaluate events and activities plus program expansion efforts. Routine use of role descriptions (as appropriate for program area) and documentation provided to show effective training and involvement programs for volunteers.
Merit	Volunteers were involved in most events and activities with their leadership role being well defined through written role descriptions. Use of volunteers on a regular basis to plan, conduct and evaluate programs and activities. Documentation showed methods and procedures used to train and involve volunteers.
Good	Volunteers were involved in several events and activities. Use of volunteers on a regular basis to plan, conduct and evaluate programs and activities. Documentation showed methods and procedures used to train and involve volunteers.
Needs Improvement	Volunteers were involved on an informal basis. Very dependent on educator telling them what to do and when to do it.
Unsatisfactory	Little documentation to show a commitment to involve and train volunteer leadership in program planning, implementation and evaluation.

*** NOTE:** Cooperators should be considered as volunteers.

Areas of strength, areas needing strengthening: _____

Goals/Comments: _____

For Reviewer Use Only:
EX _____

7. Networked and linked with other agencies and organizations to strengthen programs - USDA, state, local, etc.

Special Merit	Regularly cooperated with other agencies and organizations in providing timely and applicable educational programs. New and/or on-going cooperative programs planned, conducted and evaluated. Was an integral part of the county leadership.
Merit	Frequently cooperated with other organizations and agencies in planning, implementing and evaluating cooperative programs. Was an integral part of the county leadership.
Good	Made some effort to cooperate with other agencies. Has initiated some new cooperative programs.
Needs Improvement	Educator worked with other groups on conventional programs as required or when convenient. Little initiative shown to establish new cooperative working relationships with other groups.
Unsatisfactory	Educator made very little effort to work with other agencies or organizations. Educator preferred to work independently on most projects and programs.

Areas of strength, areas needing strengthening: _____

Goals/Comments: _____

For Reviewer Use Only:
62 _____

8. Collected and prepared evaluation data for major programs which showed social and/or economic impact or clientele behavioral changes

A. Evaluated Programs

Special Merit	Developed evaluation strategies that included recommended techniques during program planning process and stated these in the POW. Followed and completed plan in a timely manner. Took advantage of unplanned opportunities. Evaluated issue-based programs stated in the POW. Met or exceeded established goals and expectations for current program year. Participation at district and state events/educational opportunities increased as a result of these efforts. Recorded progress toward achieving POW goals in progress report narratives. Utilized evaluation results to modify or redirect program efforts as needed. Elicited evaluation responses from representative sample of targeted audience. Made comparisons of previous year's results with results achieved during current programming cycle and drew accurate conclusions based on evaluation results. Accurately interpreted evaluation results to strengthen future Extension programs.
Merit	Developed evaluation strategies during program planning process and stated these in the POW. Followed and completed plan in a timely manner. Evaluated issue-based programs stated in the POW. Met established goals and expectations for current program year. Participation at district and state events/educational opportunities increased as a result of these efforts. Checked progress toward POW goals. Reported progress in progress report narratives. Modified educational programs based on effective evaluation findings. Included responses from representative sample of target audience. Made comparisons of previous year's results with results achieved during current program cycle and drew accurate conclusions based on evaluation results.
Good	Planned for evaluation techniques as identified in the POW. Attempted to follow plan and completed most areas in a timely manner. Evaluated issue-based programs stated in POW. Progress was achieved toward established goals and expectations for current program year. Participation at district and state events/educational opportunities improved as a result of these efforts. Periodically checked progress toward achieving goals in the POW. Reported progress in progress report narratives. Made comparison of previous year's and current year's results and drew accurate conclusions based on evaluation results.
Needs Improvement	Had inadequate plans for evaluation in the POW. Did very little evaluation of programs stated in the POW. Little reference to POW goals in progress report narratives during program year. Limited progress was achieved toward reaching established goals and expectations for current program year. Often drew erroneous conclusions based on inadequate evaluation results.
Unsatisfactory	Had no plan for evaluating programs stated in the POW. Did not evaluate programs stated in the POW. Made no effort to achieve established goals and expectations for current program year. Made no reference to POW goals in progress report narratives.

Areas of strength, areas needing strengthening: _____

Goals/Comments: _____

For Reviewer Use Only:
12 X

B. Reported Accomplishments

Special Merit	Submitted reports on time that were prepared according to instructions, complete and accurate. Submitted reports that included, who, what, when, where, why and how. Provided supplemental explanation/documentation useful in evaluating and improving educational programs. Interpreted value of achievement or non-achievement of goals. Made reports to appropriate publics and clientele through available media, personal contacts and group meetings to keep publics informed of progress of Extension programs. Provided summary of changes in clientele behavior in reports and gave specific examples of desired behavior changes. Used a system for maintaining records for reporting purposes. Assumed leadership when appropriate and cooperates with other faculty members in preparing joint reports.
Merit	Submitted reports on time that were prepared according to instructions, complete and accurate. Submitted reports that included who, what, when, where, why and how. Reported achievement or non-achievement of goals. Made reports to appropriate publics and clientele through available media and personal contacts. Provided summary of changes in clientele behavior in reports. Used a system for maintaining records for reporting purposes. Cooperated with other faculty members in preparing joint reports.
Good	Submitted reports on time that were prepared according to instructions, complete and accurate. Submitted reports that included who, what, when, where, why and how. Made most reports to appropriate publics and clientele through available media and personal contacts. Provided evidence of some changes in clientele behavior in reports. Kept adequate records for reporting purposes. Performed designated responsibilities on joint reports.
Needs Improvement	Frequently submitted reports that were late, not prepared according to instructions and inaccurate. Presented little evidence of reporting to appropriate clientele through available media or personal contacts. Provided little evidence of changes in clientele behavior. Kept poor records for reporting purposes. Provided little evidence of cooperation with other faculty members on joint reports.
Unsatisfactory	Did not complete or submit any reports. Did not report to appropriate clientele through available media or personal contacts. Did not keep records for reporting purposes. Did not cooperate with other faculty members on joint reports.

Areas of strength, areas needing strengthening: _____

Goals/Comments: _____

For Reviewer Use Only:
EX _____

9. Maintained good working relationships with co-workers and clientele including county, area, district and state staff

- Special Merit** Teamwork was a high priority. Worked well with a variety of clientele. Very cooperative with staff at all levels. There were never any instances of documented and justifiable interpersonal relations problems with staff or clientele.
- Merit** Educator worked at developing and maintaining staff and clientele relationships. Participated regularly in office conferences. Served as an effective educational team member.
- Good** Functioned as a cooperative professional most of the time. Regularly participated in office conferences. Maintained a good rapport with most clientele and other staff. Responded to supervisor's counsel.
- Needs Improvement** Ineffective communication skills. Infrequently consulted with co-workers. Late in informing supervisor(s) of problems. Showed negative response.
- Unsatisfactory** Educator displayed a pattern of inability to work effectively with co-workers and/or clientele. Frequent clientele and staff complaints to immediate supervisor. Did not respond effectively to supervision.

Areas of strength, areas needing strengthening: _____

Goals/Comments: _____

For Reviewer Use Only:

____ - ____

10. Kept accurate records; submitted reports on time, and complied with UT, TAES, and district policies and procedures

Special Merit	Reporting and record keeping served as a model for other staff. No more than one (1) report was late and/or needed revisions. There has been no instance of documented noncompliance.
Merit	Two (2) exceptions allowed, otherwise all reports and records and record keeping were complete, accurate and on time. Needed corrections or revisions were completed and returned within five (5) days of notification. There has not been more than one (1) instance of documented non-compliance which was communicated to the educator.
Good	Timeliness, accuracy, and completeness of reports and record keeping meets the basic standard. Three (3) exceptions per year were allowed provided needed revisions were received within five (5) days of notification. The educator complied with most of the policies and procedures. There have not been more than two (2) instances of documented non-compliance which were communicated to the educator.
Needs Improvement	Record keeping and/or reporting needed to be improved as to completeness, accuracy and timeliness. Reports submitted are late, inaccurate or incomplete. There have been three (3) documented instances of policy or procedure violations which were communicated to the educator.
Unsatisfactory	Records and reports show little regard for accuracy, timeliness or completeness. The educator often violates policies and procedures. There have been four (4) or more documented non-compliance which were communicated to the educator.

Areas of strength, areas needing strengthening: _____

Goals/Comments: _____

For Reviewer Use Only:
5 X _____

11. Maintained personal proficiency in technical subject matter and teaching skills.

Special Merit	Provided accurate and timely subject matter and technical assistance to clientele in assigned program area(s). Is recognized by clientele as being competent in all assigned program areas. Stays abreast of emerging issues and is aware of futuristic trends. Utilized innovative and creative methods and technologies in program development. Is respected as an educator and uses updated proven research in teaching. Expresses thoughts clearly and concisely through writing and speaking. Has sufficient verbal communication skills to explain and interpret technical terms and to communicate with people of various educational and cultural backgrounds. Is skilled in teaching subject matter information as evidenced by teacher evaluations.
Merit	Provided accurate and timely subject matter and technical assistance to clientele in assigned program area(s). Is recognized by clientele as being competent in all assigned program areas. Stays abreast of emerging issues. Utilizes innovative and creative methods and technologies in program development. Is respected as a field educator who uses research-based information teaching. Expresses thoughts clearly and concisely through writing and speaking.
Good	Provided accurate subject matter information to clientele in assigned program area(s). Is recognized by clientele as being competent and having knowledge to assist. Uses proven research-based information in teaching. Usually organizes and expresses thoughts clearly and concisely. Is able to communicate orally and in written presentations.
Needs Improvement	Frequently provided outdated and/or inaccurate subject matter information to clientele in assigned program area(s). Is not recognized as a valid source for technical information. Spends considerable time on activities outside the mission of Extension education. Often fails to communicate in oral or written presentations.
Unsatisfactory	Does not provide accurate subject matter information to clientele. Is not recognized as a valid source of any technical information. Does not effectively communicate in oral or written presentations.

Areas of strength, areas needing strengthening: _____

Goals/Comments: _____

For Reviewer Use Only:
10 X _____

12. Enhanced personal and professional proficiency through continuing professional education.

Special Merit	Followed an approved comprehensive plan for continuing professional education and continues to take formal course work and/or relevant subject matter training. Participated in appropriate in-service training and other opportunities, including industry-sponsored training. Demonstrated systematic application of knowledge acquired. Read, studied and learned from several job-relevant sources. Allocated time for keeping current in all assigned subject matter areas. Reviewed professional journals or abstracts and relevant periodicals. Belongs to and actively participates in related professional organizations and appropriate support/commodity organization(s).
Merit	Followed an approved comprehensive plan for continuing professional education. Demonstrated an interest in pursuing additional course work and/or relevant subject matter training. Participated in appropriate in-service training and other opportunities, including industry-sponsored training. Demonstrated systematic application of knowledge acquired. Read, studied and learned from several job-relevant sources. Subscribed to appropriate professional journals or abstracts. Is an active member of professional organization(s).
Good	Followed an approved plan for continuing professional education. Demonstrated an interest in pursuing additional course work and/or relevant subject matter training. Participated in an acceptable number of in-service training. Read, studied and learned from several job-relevant sources. Is a member of a professional organization.
Needs Improvement	Has an approved plan for continuing professional education but is not following it. Showed little interest in additional professional development. Participated in few optional in-service training programs. Read sparingly to keep current. Participated in no professional organizations.
Unsatisfactory	Does not have a plan for continuing professional education. Did not participate in any non-mandatory in-service training. Made no attempt to keep current through self-study. Participated in no professional organizations.

Areas of strength, areas needing strengthening: _____

Goals/Comments: _____

For Reviewer Use Only:
☒ X _____

13. Effectiveness and Impact of base programs

Special Merit	The educator proactively developed and implemented several special emphasis educational program efforts rising out of base program needs of the county. These program efforts, although not part of the original plan of work, were timely and based on critical and/or immediate needs of county clientele. Cooperated with other agencies/organizations in the implementation of educational program efforts. Evaluation of the impact of educational efforts was conducted and documented.
Merit	The educator developed and implemented special emphasis educational program efforts rising out of base program needs of the county. These program efforts, although not part of the original plan of work, were timely and based on critical and/or immediate needs of county clientele. Evaluation of the impact of educational efforts was conducted and documented.
Good	The educator developed and implemented special emphasis educational program efforts rising out of base program needs of the county. These programs were addressed as needs were identified. Impact of program efforts was included the county's annual report.
Needs Improvement	The educator provided minimal educational program support to address needs rising out of base program needs of the county. Little initiative was shown in the development of these "special" program efforts.
Unsatisfactory	Educator made very little effort to develop any special emphasis educational programs outside those planned in the plan of work.

Areas of strength, areas needing strengthening: _____

Goals/Comments: _____

For Reviewer Use Only:
10 X _____

I have reviewed my options regarding my involvement in the formal performance appraisal process and request to participate in my annual review as follows:

☐

I am still within my probationary period and understand that I will participate in a formal performance appraisal process.

☐

I have completed my probationary period, have a "Good" or better performance rating and elect NOT to participate in a "formal" performance appraisal this year.
I understand that my performance rating will be the same as last year's, which was _____.

☐

Due to what I feel are changes in my job performance, I am requesting a formal performance review during this appraisal period.

Name _____

County _____

Date _____

Signature _____

For district supervisor use only.

☐

Approve faculty member's request regarding performance appraisal.

☐

Reject faculty member's request and ask they participate in a formal performance appraisal because _____

Signature:

District Supervisor

Date

**COUNTY EXTENSION FACULTY
PERFORMANCE APPRAISAL SUMMARY**

Name _____ Title _____
County _____ Program Year _____

ITEM	PA SCORE
1. Completed needs assessment to determine Program Direction (4)	_____
2. Involved Advisory Committee (8)	_____
3. Completed/maintained an annual Plan of Work based on documented needs assessment and district, state and national initiatives (10)	_____
4. Implemented objectives described in the Plan of Work and worked to expand audience(s) (18)	_____
5. Marketed Extension programs and used a variety of educational delivery methods appropriate for topic and clientele (10)	_____
6. Documented the utilization of Volunteers (8)	_____
7. Networked and linked with other agencies/organizations (6)	_____
8. Collected and reported evaluation data to show impact	
a. Evaluated programs (12)	_____
b. Reported accomplishments (8)	_____
9. Maintained good working relationships (5)	_____
10. Keep accurate records and submitted on time and complied with appropriate policies and procedures (5)	_____
11. Maintained proficiency in subject matter and teaching skills (10)	_____
12. Enhanced personal/professional proficiency through continued education (8)	_____
13. Effectiveness and impact of base programs (10)	_____
Total Points	_____

Overall Rating: _____

Rating Categories

427 - 488	Special Merit
335 - 426	Merit
213 - 334	Good
122 - 212	Needs Improvement
0 - 121	Unsatisfactory

Overall Performance Comments (District Supervisor).

Suggestions for Future Performance (District Supervisor).

SIGNATURES:

We have discussed the information presented on this form and other relevant materials and have answered questions of all parties involved. Signing of this form does not imply agreement or disagreement with the reviewer's decisions.

Extension Faculty member / Date

County Extension Leader / Date

District Supervisor / Date

Distribution

Original to Dean, TAES

1 copy to Extension Faculty member

1 copy to the District Supervisor

1 copy to the County Extension Leader

Received and Reviewed by Administration:

Date

APPENDIX C

Tennessee Agricultural Extension Service

Performance Appraisal for County Extension Leaders

October 1, 1993

(Revised October 1, 1998)

Adm. F-143 (10/95)

**TENNESSEE AGRICULTURAL
EXTENSION SERVICE**

PERFORMANCE APPRAISAL

FOR

COUNTY EXTENSION LEADERS

October 1, 1993
(Revised October 1, 1998)

**County Extension Leader
Performance Standards**

Name: _____

Program Year: _____

During the program year, the county Extension leader was expected to have:

14. Provided effective leadership for County Extension Programs.

**Special
Merit**

The CEL provided aggressive county leadership by working with faculty and staff to develop and maintain imaginative and innovative programs in cooperation and in consultation with community partners to solve problems that address issues and concerns emerging in today's society. In order to provide this leadership, the CEL: Worked with the County Agriculture Committee and the district Extension office in the formulation and delivery of effective Extension programs designed to meet the needs of the community. Counseled and assisted faculty members in planning, implementing, evaluating and reporting all components of the county's educational program. Worked with district program leader(s) to establish and implement realistic program goals, expectations and plans of action for each county faculty member. Kept avenues of communication open at all levels. Was knowledgeable and supportive of state initiatives in all program areas. Used innovative methods to increase the year-round involvement of advisory committees in Extension programming. Coordinated appropriate planning with the district supervisor and the County Agriculture Committee related to recruitment, selection and (when necessary) termination of personnel necessary for effective county programs. Provided leadership in developing the county's Public Information Program which marketed the county's educational opportunities and encouraged clientele participation. Worked with other community agencies, organizations and firms to enhance faculty opportunity to collaborate and work with others in order to extend teaching opportunities in the county. Assured that the state's Equal Employment Opportunity program was carried out by the county. Ensured that all of the county's educational programs meet the needs of all eligible participants, regardless of race, color, national origin, sex, age, or disability. Leader exhibited a pro-active rather than re-active leadership style. There was no significant difference between actual and expected participation in the county's educational programs.

Merit

The CEL worked with county faculty to develop and maintain educational programs, in coordination with community partners, to solve problems that address emerging concerns and issues of local constituents. In order to provide this leadership, the CEL: Maintained two-way channel of communications regarding the county's educational programs and efforts in weekly office conferences. Advised staff of changes in policy and procedures. Kept staff informed on budgets and the budgets' affect on the county's educational programs and personnel. Worked with the County Agriculture Committee and the district Extension office in the formulation and delivery of effective Extension programs. Counseled and assisted faculty members in planning, implementing, evaluating and reporting all components of the county's educational program. Worked with district program leader(s) to establish and implement realistic program goals, expectations and plans of action for county faculty. Was

knowledgeable and supportive of state initiatives in all program areas. Provided leadership for staff to ensure advisory committees were actively functioning in all program areas. Coordinated appropriate planning with the district supervisor and the County Agriculture Committee related to recruitment, selection and (when necessary) termination of personnel necessary for effective county programs. Provided leadership in developing the county's Public Information Program which marketed the county's educational opportunities and encouraged clientele participation. Recruited, employed, and supervised office personnel according to EEO/Affirmative Action guidelines. Ensured that all of the county's educational programs meet the needs of all eligible participants, regardless of race, color, national origin, sex, age, or disability. The difference between actual and expected participation in the county's educational programs was less than 10 percent.

Good Leader maintained open channels of communication. Kept staff advised on pertinent matters related to Extension programs, personnel and policy. Worked with the County Agriculture Committee and the district Extension office in the formulation and delivery of effective Extension programs. Leader was objective and positive in staff relationships. Initiated regular office conferences. Counseled and assisted faculty members in planning, implementing, evaluating and reporting all components of the county's educational program. Worked with district program leader(s) to establish realistic program goals, expectations and plans of action for county faculty. Recruited, employed, and supervised office personnel according to EEO/Affirmative Action guidelines. Provided leadership in developing the county's Public Information Program which marketed the county's educational opportunities and encouraged clientele participation. Programs were provided to all regardless of race, color, national origin, sex, age, or disability. The difference between actual and expected participation in the county's educational programs was less than 20 percent.

Needs Improvement Leader was aware of some program thrusts and efforts, but provided little support to staff. Inadequate documentation to support assigned performance appraisal. Did not coordinate plans for the county's educational programs of personnel concerns with the County Agriculture Committee or the district supervisor. Did not work with district program leader(s) to establish realistic program goals, expectations and plans of action for county faculty. Staff communication frequently strained. Limited evidence of teamwork. Supervisors not kept informed. There was a substantial need to involve more diverse clientele in county programs. Participation by under-represented was less than 80 percent of expected.

Unsatisfactory Leader was not supportive of other staff and/or their progress. Staff communications were very limited. Little evidence of functioning advisory system. Supervisors not kept informed. Administrative reports often late. Did not provide justification for faculty being recommended for promotion. Participation by the under-represented is not acceptable. Improvements must be made immediately.

Areas of strength/Areas needing strengthening: _____

Goals/Comments: _____

For Reviewer Use Only:

10 X _____

- 15. Secured and managed the County Extension Budget in support of the total County Extension Program.**

**Special
Merit**

Leader had an aggressive budget procurement plan which included a complete knowledge of the county's financial situation and program needs. Served as liaison between the County Agricultural Extension Committee, other county officials, and district and state Extension offices on appropriate financial matters. A strategy to ensure key decision makers who were knowledgeable of Extension's accomplishments, plans and needs was employed. County provided not less than 110 percent of the "fair and equitable" level of funding for salaries and benefits. Successfully acquired, on a recurring basis, external funding to support new educational programs or renewed existing programs, as well as improved office facilities and equipment. The leader exhibited excellent management skills in the handling of funds, adhering to all policies and procedures.

Merit

Leader aggressively pursued county funding to maintain and/or expand office facilities and equipment according to the financial condition of the county. A plan was followed to involve the County Agricultural Committee, district and state staff, and advisory committee members in keeping budget decision makers informed of Extension's accomplishments, plans and needs. County provided not less than 100 percent of the "fair and equitable" level of funding for salaries and benefits. Successfully acquired external funding from local and/or other sources to augment the county Extension budget. Leader followed all approved fiscal policies and procedures.

Good Leader kept County Agriculture Committee and other budget decision makers informed and involved with Extension programs including knowledge of program accomplishments, goals and needs. Leader had an adequate budget procurement plan to maintain the present status of office facilities and equipment. County provided not less than 95 percent of the "fair and equitable" level of funding for salaries and benefits. Has put in place a process to acquire external funding from local and/or other sources to augment the county Extension budget. No major discrepancies were noted in the handling of Extension funds.

Needs Improvement Leader had a weak plan for budget procurement. Needs to do a better job of preparing decision makers on Extension budget requests. Decision makers were not knowledgeable of Extension program accomplishments, goals, and needs. County provided less than 95 percent of the "fair and equitable" funding for salaries and benefits. Discrepancies in the county's adherence to university accounting policies and procedures were noted.

Unsatisfactory Leader had no plan of action for budget procurement. Needs a better knowledge of the county's financial resources and a better working relationship with budget decision makers. Previously noted discrepancies in accounting procedures have not been corrected.

Areas of strength/Areas needing strengthening: _____

Goals/Comments: _____

For Reviewer Use Only:
10 X _____ = _____

16. Provided leadership in Managing of the County's Personnel and other resources.

Special Merit	Provided leadership in managing the county faculty and staff in a way that optimized their performance and satisfaction, resulting in high-quality programs with measurable result and impact. Conducted effective faculty and staff evaluations including the follow-up conference as specified in the guidelines and timetable. Provided strong recommendations for performance ratings and follow-up counseling and coaching as needed. Conducted performance reviews with an emphasis toward performance enhancement and goal setting. Provided opportunities and encouragement for staff to pursue professional development activities. Regularly involved faculty and staff in office conferences to enhance teamwork. Provided strong leadership in helping faculty develop their dossier and building a sound, justifiable document for promotion. Provided necessary support and/or direction for new agents in various work areas as necessary to maximize program accomplishment. Coordinated all county efforts in preparing and submitting county reports in a timely manner. Was effective in managing the county's facilities, furnishings, equipment and other resources.
Merit	Conducted an objective personnel appraisal for each county faculty member, provided documentation for ratings assigned and conducted follow-up conference as specified in the timetable. Conducted performance reviews with an emphasis toward performance enhancement and goal setting. Encouraged staff to pursue professional development in assigned areas. Provided leadership in helping faculty develop their dossier and building a sound, justifiable document for promotion. Provided necessary support and/or direction for new agents and ongoing guidance for all county faculty and staff. Coordinated all county efforts in preparing and submitting county reports in a timely manner. Was effective in managing the county's facilities, furnishings, equipment and other resources.
Good	Conducted an objective performance appraisal with each staff member and conducted follow-up conference as specified in the timetable. Encouraged staff to pursue professional development in assigned areas. Kept staff informed on all pertinent matters. Provided necessary support and/or direction for new agents and ongoing guidance for all county faculty and staff. Coordinated county efforts in preparing and submitting county reports. Encouraged positive staff relationships and promoted teamwork. Some effort was exhibited to improve facilities and/or equipment.
Needs Improvement	Leader was aware of some faculty weaknesses, but provided little support in improving these weaknesses. Inadequate documentation to support assigned performance ratings. Staff communication frequently strained with limited evidence of teamwork. New faculty were not provided necessary training or support. Limited effort in improving county facilities or equipment. Faculty were limited in conducting effective programs due to a lack of equipment and teaching materials.
Unsatisfactory	Leader was not supportive of faculty members' needs for training and/or professional development. New faculty were not provided necessary training or support. Faculty performance reviews were not conducted as outlined in the guidelines and timetable. Did not provide justification for faculty being recommended for promotion. Served more as a critic than a coach. County facilities and equipment were not maintained.

Areas of strength/Areas needing strengthening: _____

Goals/Comments: _____

For Reviewer Use Only:
10 X _____

**COUNTY EXTENSION LEADER
PERFORMANCE APPRAISAL SUMMARY**

Name: _____ County: _____ Pgm Yr: _____

- Total points for CEL responsibilities (maximum = 120) _____
- Total points from "Program" Performance Appraisal Summary _____
- To Calculate Overall Rating:

_____ X 4.1 X _____ = _____
(CEL points) (percent CEL responsibility)

_____ X _____ = _____
(program points) (percent program responsibility)

Overall Points _____

CEL Rating Categories

105 - 120 Special Merit
82 - 104 Merit
52 - 81 Good
30 - 51 Needs Improvement
0 - 29 Unsatisfactory

Program Rating Categories

427 - 488 Special Merit
335 - 426 Merit
213 - 334 Good
122 - 212 Needs Improvement
0 - 121 Unsatisfactory

Overall Rating Categories

427 - 488 Special Merit
335 - 426 Merit
213 - 334 Good
122 - 212 Needs Improvement
0 - 121 Unsatisfactory

Overall Rating: _____

Signatures:

County Extension Leader Date

District Supervisor Date

The district supervisor will use the CEL rating as a supplement to the performance appraisal (program) rating to determine the Extension agent's overall rating.

Adm F-143 (10/95)

(OVER)

EVALUATION (Must be comprehensive and thorough.)

A. Areas in which the Extension Leader's performance is strongest:

B. Areas in which the Extension Leader should improve or strengthen:

C. Improvements noted in areas listed in Item B last year:

D. Comments relating to accomplishments of Extension Leader's annual professional development goals:

APPENDIX D

The University of Tennessee Agricultural Extension Service

Descriptions and Explanations for the Tennessee

Extension Agent Performance Appraisal

(Effective October 1, 2001)

Descriptions and Explanations for the Tennessee Extension Agent Performance Appraisal

***PLEASE NOTE:** The following information is offered as a general guideline only. The descriptions of performance offered below are not (and therefore should not be considered as) an all-inclusive checklist or recipe for a particular rating. County and District Directors are responsible for defining specific applications of each standard to unique county needs and situations.*

Program Development Rating Section

Needs Assessment – The priority program is developed based upon clientele needs and priorities. A needs assessment documents reasons that the program should be conducted by Extension and serves to justify expenditure of agent and other resources in addressing the problem.

Unsatisfactory

Little or no information in the plan that identifies the issue(s) being addressed as a need or problem that should be addressed by Extension. Information identifying the issue(s) as a need or a problem is outdated, insufficient or otherwise inappropriate.

Meets Expectations

The needs assessment includes appropriate sources and information. The needs assessment provides evidence of a priority issue which can, and should, be addressed by a planned Extension educational program. Stakeholder input was obtained as a part of the process.

Exemplary

Needs assessment procedures are described that include input from a variety of sources, including non-traditional or under-served clientele, coalitions, other government agencies, local/grassroots bodies, and other stakeholders.

Communicates Program Needs – Agent(s) communicates program needs to appropriate internal and external stakeholders. Upcoming priority program plans are shared through available channels to communicate the circumstances which dictate the program, how you plan to deliver the program and what outcomes are expected.

Unsatisfactory

Program needs are discussed or shared at a minimal level. (i.e. County Director, Program Leader, District Director)

Meets Expectations

Program needs were discussed or shared with County Director, Program Leader, District Director, Ag. Committee, program committee, collaborators or other stakeholders.

Exemplary

Program needs have been shared with all appropriate stakeholders, internal and external. Effective mass media outlets and other publications will be utilized to communicate needs-based priority programming to the community or beyond.

Networking – The program plan identifies and plans for the involvement of other program partners.

Unsatisfactory

Plan does not identify possible partners to be involved in programs.

Meets Expectations

Appropriate program partners are identified and their expected role in the program is clearly defined.

Exemplary

Program partners include multi-county and/or multi-state professionals in a comprehensive effort to deliver effective Extension programs.

Funding – Alternative or supplemental funding sources are explored when appropriate.

Unsatisfactory

Planning process ignores opportunities for extramural funding.

Meets Expectations

Appropriate program funding sources are identified and plans for alternative or additional funds are formulated.

Exemplary

Possible program funding sources are identified and plans are identified for how extramural funds to help implementation of the program will be obtained (e.g., grants, donations, etc.).

Appropriate Delivery Methods – Delivery methods are appropriate for the intended audience(s) and subject matter involved.

Unsatisfactory

Planned program delivery methods are not specified. Audience, teaching environment or resources are inappropriate or insufficient to meet clientele needs. No plan for use of volunteers.

Meets Expectations

Proposed delivery methods are listed that are audience and program content appropriate. Planned use of volunteers as a resource.

Exemplary

Delivery methods described in the plan include non-traditional and innovative methods that are appropriate for the audiences and program content. Planned use of volunteers in program delivery.

Clear Implementation Steps – Planning includes program implementation steps which have reasonable potential to lead to desired program outcomes.

Unsatisfactory

Implementation steps planned are illogical, insufficient or inappropriate to achieving expected outcomes.

Meets Expectations

Program implementation steps follow a logical progression which likely would lead to achievement of expected program outcomes.

Exemplary

Program implementation steps include a proposed timeline for the program year with a description of the expected outcomes for each step. Alternatives are outlined to be pursued as ongoing evaluations dictate.

Plans for Evaluation (Tools/Methods) – Evaluation methods are planned for ongoing and end-of-program impact and outcome determination.

Unsatisfactory

No evidence provided of the methods or tools that will be used to evaluate program processes and outcomes.

Meets Expectations

Appropriate program evaluation methods are identified for measuring program outcomes and impacts identified in the plan.

Exemplary

Program evaluation methods planned provide for ongoing and end-of program measures, including the gathering of “soft” and “hard” data for determining success.

Reaches Diverse Audiences / Civil Rights Parity - Program planning identifies strategies for reaching diverse and underrepresented audiences. Plans are made for reaching potential audiences by race and gender. Planning groups are representative of the community's diversity.

Unsatisfactory

Diverse or underrepresented stakeholders or clientele were not included in the assessment of needs, the development of the plan or as the targeted audience for programs in the plan.

Meets Expectations

Diverse or underrepresented stakeholders or clientele were included in the assessment of needs, the development of the plan or as the targeted audience for programs in the plan.

Exemplary

Unique and innovative efforts were utilized to identify and include diverse or underrepresented stakeholders or clientele in the assessment of needs, the development of the plan and/or as the targeted audience for programs.

Outcomes/Impacts Clearly Defined - Measurable outcomes and impacts are planned which demonstrate clearly defined expectations for program results.

Unsatisfactory

Objectives or goals are poorly identified, are not clearly stated, and/or are unmeasurable. Or, outcomes and impacts listed are not reflective of problems and needs identified for the program.

Meets Expectations

Program objectives and goals are clearly stated, measurable, and at the KASA level or above. If accomplished, desired impacts on the problem or need identified are achieved.

Exemplary

Program objectives are clearly stated, measurable, and at the practice change or SEEC level in the Bennett/Rockwell Targeting Outcomes of Programs (TOP) Model.

Program Accountability Rating Section

Impacts/Outcomes/Goals from Plan - Impacts, outcomes and goals which were projected in Annual Plan(s) were accomplished or surpassed.

Unsatisfactory

Impacts/outcomes/goals reported do not match program impacts/outcomes/goals in annual plan. If program accomplishments are less than expected in annual plan, no explanation provided of extenuating circumstances / situations resulting in the lower accomplishment level or evidence that differences were discussed and resolved with supervisor. Outcomes and impacts are not reflective of identified needs.

Meets Expectations

Documented measurable outcomes and impacts of planned program efforts at the KASA level. Achieved desired impacts related to identified needs or problems.

Exemplary

Program impacts/outcomes/goals from annual plan are met and documented at the Practice Change or SEEC levels of the Bennett/Rockwell Targeting Outcomes of Programs (TOP) model. Annual plan expectations are met with documented measurable outcomes and impacts. Program accomplishments above and beyond expected annual plan impacts/outcomes/goals are also documented.

Effectively Marketed Programs - Collaborating agencies, appropriate stakeholders, clientele and the general public are familiarized with the Agricultural Extension Service and its specific programs through planned marketing efforts.

Unsatisfactory

Marketing outlets were underutilized. Little or no effort made to deliver information to decision makers and/or general public. There is little or no visibility of AES through collaborative efforts with organizations.

No efforts are made to disseminate program impact to stakeholders.

Meets Expectations

Planned efforts increased awareness of Agricultural Extension Service programs in the community. The Extension logo was used effectively in marketing materials to increase recognition of the AES. Reports to People reflect a team effort, show impact of the total Extension program and are distributed to a wide segment of the county. Regular mass media efforts are made and documented. Available outlets were utilized to market Extension programs and to recognize successes and results.

Exemplary

An aggressive marketing program is in place to inform all in the county of program availability and results. Professionals in the office utilize a team effort in promoting Extension. Innovative strategies are utilized to inform...ie, supporting materials, graphs, pictures, videos, documentation of major program impacts. Is seen within the community as a resource for advancement of total community and his/her collaboration, cooperation and/or facilitation is sought by individuals and organizations. Effectively uses all available mass media outlets to highlight extension programs, advertise current events, and /or show program impact.

Teaching Method Effectiveness - Teaching methods utilized are those most effective for the subjectmatter being taught and the audience involved.

Unsatisfactory

Did not locally prepare educational materials. Rarely assumed the role of an educator in a public setting. Limited scope of program to one-on-one contacts. Teaching methods utilized were not conducive to optimum learning.

Meets Expectations

Prepared accurate, timely, quality educational materials based on local needs. Demonstrated the ability to effectively present ideas, information and programs verbally and in writing, both to groups and one-on-one. A variety of effective teaching strategies were implemented to maximize participant learning; i.e. demonstrations, tours, workshops, meetings, etc. Proper use of technology in teaching was apparent.

Exemplary

Educator utilizes a variety of teaching methods within each program to stimulate learning. Prepared professional quality, well organized educational materials that were used beyond county level. A variety of methods are under development and use. Methods are evaluated for their effectiveness. Agent is a member of a team working together in developing educational materials. Contributed to a state-wide product and his or her name is listed as an author. Equipped leaders with materials to enable them to effectively transmit programs to others.

Utilized Planned Evaluation Methods - Appropriate and adequate evaluation methods are used and results are reported.

Unsatisfactory

Formal evaluation of program was not conducted. Evaluation methods used were not those described in annual plan. No evidence that evaluation results were included in program reports.

Meets Expectations

Evaluation methods described in annual plan were conducted. If evaluation methods were modified, they were discussed and agreed upon with supervisor and/or district program leader. Results of information collected through evaluation included in reports and utilized for future planning.

Exemplary

Either evaluation methods described in annual plan or appropriate alternate methods were used to collect evaluation information. Both quantitative (numerical) and qualitative (anecdotal) evaluation results included in reports. Plans formulated for program improvement based upon evaluations.

Reported Program Progress - Progress reported to stakeholders and Extension system to keep public informed concerning Extension Educational Programs.

Unsatisfactory

Reports were not adequate to inform of activities during program year or no program report completed and submitted. Did not cooperate with coworkers on joint reports.

Meets Expectations

Some program progress with adequate information to inform reader of what took place during program year. Made reports through Extension reporting process, available media and personal contact. Performed as a team member for joint reports.

Exemplary

Made reports to appropriate clientele and/or stakeholders through available media, personal contacts, and group meetings. Shared specific information with resource providers. Reports were timely, audience appropriate, complete and accurate. Instituted a system for maintaining records for reporting purposes.

Reported Accomplishments - Program accomplishments are included in reports to Extension organization and appropriate stakeholders.

Unsatisfactory

No evidence of program accomplishment reports submitted to Extension reporting system or to appropriate stakeholders. Program accomplishments reported do not match program impacts/outcomes/goals in annual plan.

Meets Expectations

Program accomplishments reported through Extension reporting procedures were directly related to the impacts/outcomes/goals of annual plan. Mass media outlets were utilized effectively in reporting accomplishments.

Exemplary

Program accomplishments reported through Extension reporting procedures. Highly visible special impact reports or informational pieces were created for and disseminated to program stakeholders and media. Reports include additional program accomplishments above and beyond expected impacts/outcomes/goals described in annual plan.

Networking - Identifies and cooperates with appropriate program partners in providing cooperative educational programs.

Unsatisfactory

Little or no effort to work with other Agencies or organizations in implementing educational programs.

Meets Expectations

Appropriate program partners are regularly involved in planning, implementing and evaluating Extension educational programs. Program partner roles are clearly defined.

Exemplary

Most educational programs are conducted with the cooperation of other agencies or organizations. Multi-county and/or multi-state professionals are involved in delivery of effective Extension Programming.

Utilized Available Funding Sources - Alternative or supplemental funding sources were sought to enhance programs where applicable.

Unsatisfactory

Extramural funding sources were not explored.

Meets Expectations

Appropriate funding sources were explored and efforts made to secure extramural program funding. Letters soliciting funding, grant pre-proposals and/or grant proposals were submitted.

Exemplary

Agent has worked to develop ongoing sources of extramural funds (e.g. grants, donations, etc.). New funding sources have been secured, enabling replacement of, or enhancement to traditional funds. Extramural funds were secured and utilized appropriately to implement programs.

Civil Rights Parity and Diversity - Planned programs are successful in reaching clientele which reflect the diversity of the community, county or area in which they are conducted or for those needing to be served.

Unsatisfactory

The audience involved in the program did not meet the 80 percent of the potential audience as identified by race or gender. Participants are not reflective of the diversity of the area served.

Meets Expectations

Program participants included the expected mix of clientele by race and gender. The diversity of the potential audience was reflected in participants. Alternative delivery methods were offered/utilized to serve disabled participants. Planned strategies for reaching the potential of a diverse audience were utilized.

Exemplary

Planned outreach efforts were expanded and modified to maximize participation of a diverse audience. Special efforts were made which resulted in the participation of underrepresented or non-traditional audiences. Programs were delivered in a manner accessible to participants with disabilities. The diversity of participants reflects that no group was marginalized or excluded.

Maintenance of Base Programming - Providing educational programs or special interest programs in response to county needs. These programs are outside of the Annual Plan program areas.

Unsatisfactory

Educational program needs were poorly addressed outside of Annual Plans. Unplanned time not effectively utilized.

Meets Expectations

Special emphasis educational program efforts were developed and implemented, to address base program needs of the county. Impact of base program effort was included in the county's annual report and other extension reporting mechanisms as appropriate.

Exemplary

Proactively developed and implemented several special emphasis educational programs in response to county needs. Program efforts were timely and based on immediate needs of clientele. Cooperated with other agencies. Evaluations documented program impact.

Professionalism Rating Section

Effective Internal Relationships - Promotes teamwork by supporting and communicating with co-workers. Partner in extension team on county, district, and state levels.

Unsatisfactory

Will work with team only when specifically asked or directed. Works only with agents in his/her respective program area. Does not work with others on the team to maximize resources. Does not recognize and work on District and State initiatives, priorities, or program teams.

Meets Expectations

The agent willingly works and communicates with co-workers within the county and also on an area/district basis. Regularly is a participating member of interdisciplinary teams. Uses available resources wisely (including specialists), efficiently, and shares with others. Active on District/State program teams and priorities.

Exemplary

Readily supports county and area team efforts and offers to assist co-workers. Offers information of similar efforts in programming to co-workers to help them avoid possible problems in program implementation. Assists others in development of resources which are available to all. Regularly serves on multi-county, district, state-wide, multi-state or national initiative and planning teams, search committees and task-forces. Seeks leadership roles on area and District activities and program teams.

Trained in High-Priority Program Areas - Prepared to deliver District, State and National Priority Programs which are applicable to county needs.

Unsatisfactory

Did not pursue training or participate in training offered in high-priority program areas.

Meets Expectations

Expertise was developed in high-priority program areas through in-service or other applicable training.

Exemplary

Experience and training have been attained such that individual is able to teach other professionals.

Effective External Relationships - Actively involved in county and community activities to cultivate relationships which increase the agent's effectiveness in an educational role. Relates well with all types of clientele. Collaborates with community groups/agencies to increase program effectiveness.

Unsatisfactory

The agent is not involved in any organizations outside of Extension. Openly takes sides in controversial issues in the community and becomes personally involved in supporting one of the opposing views of an issue. Evidence of prejudice in working with diverse audiences. Agent creates conflict or is demeaning to others. Does not meet with other groups or agencies or there is no evidence of significant collaboration as a result of the investment of time.

Meets Expectations

Connected to the county where he/she works by being a member of community organizations, i.e. civic clubs, interagency committees, chamber of commerce, etc. as an Extension Service representative. Uses good judgement in response to controversial issues, maintains objectivity, serves in an educational role, and avoids personal involvement and taking sides. Works well with all clientele groups and seeks to reach non-traditional, new and diverse audiences. Does programming in collaboration with community agencies and other groups, maintaining Extension's proper role. Actively recruits and works with volunteers.

Exemplary

Receives recognition as outstanding leader in community. Is actively sought out by other groups and organizations to give guidance and collaboration in community activities. Actively participates in conflict resolution, works to find root cause and seeks proper information and advice to help resolve conflict. Seeks out joint programs with community groups leading to a total comprehensive plan that has impact on community. Collaborates with community groups to secure additional program resources. An organized volunteer program includes training and recognition for volunteers.

Seeks Appropriate Professional Development - Demonstrates professional skills. Builds personal capacity to address local program needs. Involvement with professional associations and societies. Develops a professional development plan with both short and long-term goals.

Unsatisfactory

The agent's image is sometimes inconsistent or unbecoming with expectations for the employees of the Agricultural Extension Service and that of the clientele he/she serves. Does not join or participate in professional associations. Makes little or no effort to remain competent through reading program related resources available. Signs up for inservice training session but does not attend or level of participation is undesirable. Fails to attend inservice which would expand expertise base. Chooses inservice which offers little challenge or growth.

Meets Expectations

Presents a professional image in the community and reflects self-confidence to the clientele. Conducts programs that are professional, reflective of the quality of resources available. Is an active member of a professional association related to his/her respective area of program work. Attends inservice training sessions to become more knowledgeable in areas of on-going or emerging program needs. Seeks to stay current and competent through reading journals, periodicals, magazines and other resources available. Effectively uses the Internet, libraries, and other sources for information.

Exemplary

Demonstrates contagious enthusiasm for job performance which inspires others. Serves as a role model/mentor for others in appearance, attitude, and job performance. Is recognized as a leader, drawing praise from clientele and co-workers. Accepts leadership roles in professional association at area and state levels. Receives program awards through professional associations. Innovative programs reflect growing personal competence levels. Uses skills, abilities and knowledge to assist in the development of co-workers. Is recognized as an expert in one or more program areas.

Daily Work Habits - Maintains a functional, efficient, appealing office that presents a positive image. Demonstrates appropriate work habits, adequate punctuality, and time management.

Unsatisfactory

Agent's office does not look professional and little effort is done to make office more professional in appearance. Exhibits inappropriate work habits, poor punctuality, or insufficient use of time which is detrimental to job performance. Work style and lack of office communication creates difficulty in maintaining accessibility and accountability to clientele. Planning is done on an "as needed" basis. Fails to appropriately develop volunteers to assist in the delivery of educational programs.

Meets Expectations

Agent's office area is neat, clean, organized, and projects a professional image. Gets the job done in a timely and professional manner, working extra hours when necessary. Keeps others informed of location in order to stay in touch with colleagues and clientele. Keeps appropriate office hours to serve clientele. Delivers programs at opportune times for traditional and non-traditional audience participation. Advanced planning is conducted with leaders. Strong volunteer-led programs complement agent involvement.

Exemplary

Staff and leaders continually evaluate/upgrade office space and equipment. People of the community use the Extension office, feel at ease in seeking information there and find educational information easily accessible. Maintains a heavy work load while exhibiting efficient work habits and conducting high quality programs. Plans are in place that allow for handling emergencies as they arise. Agent's use of volunteers and innovative program delivery serves as a model for others.

Knows/Follows Policy & Procedures - Agent keeps up-to-date in knowledge and follows the policies and procedures of The University of Tennessee, USDA and county government relative to employment, program delivery and financial management which are appropriate to the exercise of duties and responsibilities.

Unsatisfactory

Agent demonstrates lack of policy knowledge as seen in performance or formal audit or review. Agent is found in violation of one or more policies during the year and is given oral and/or written warning.

Meets Expectations

Responsibilities are conducted within the policies and procedures of The University of Tennessee, USDA and county governments as appropriate.

Exemplary

Agent is recognized as an authority on the application of policy and procedure in the conduct of job responsibilities and is frequently sought out for advice and clarification.

Oral & Written Communication - Presents and organizes ideas effectively and in an audience-appropriate manner both orally and in writing.

Unsatisfactory

Presents educational information which may contain errors, is of poor quality, does not relate to target audience, or is often untimely. Is ineffective in a public speaking role and in delivering education programs. Is not usually viewed in a teaching role. Another agent or specialist usually teaches educational programs.

Meets Expectations

Prepares accurate, timely, quality educational materials based on local needs. Demonstrates the ability to effectively present ideas, information and programs orally and in writing, both to groups and one-on-one. Uses a variety of educational techniques; i.e. demonstrations, tours, workshops, meetings.

Exemplary

Agent's programs are considered models and are duplicated by others. Program efforts result in greater than expected outcomes. Joint efforts of agents and specialist lead to new programs that address local and state needs. Explores multiple/alternative means of program delivery which are "cutting edge."

Effective Teaching Skills - Assists clientele with issues and concerns; providing sound, research based information that aides clientele in decision making. Effective working relationship with volunteer leaders. Recruits, educates and recognizes volunteers.

Unsatisfactory

Clientele requests for service are not answered in a timely manner. Volunteers are given little or no education, which limits their effectiveness in program implementation. Leaders only do what agent instructs them to do. No recognition is given to leaders. The same programs and resources are used year after year.

Meets Expectations

Responds to requests for assistance are addressed within a reasonable amount of time. Formal leader education programs are conducted. Leaders are provided instruction and are assigned responsibilities. Informal recognition, that is appropriate to the community, is given to volunteers and leaders. Utilizes appropriate teaching methods in the delivery of programs and uses evaluation information for program improvement.

Exemplary

Uses a pro-active approach rather than only responding to clientele questions. Trained leaders assume responsibility/ownership of program. Leadership development programs are provided to clientele. The program has reached a level of interdependence with leaders assuming a teaching role in selected segments of community. Contributions of leaders and volunteers are publicized and promoted with a formal recognition. Utilizes innovative program delivery methods.

Markets UT / TSU Tennessee Extension - Conducts programs that generate positive impacts which increase the visibility of the Agricultural Extension Service. Publicizes extension activities through available mass media and maintains good rapport with media.

Unsatisfactory

Makes little or no effort to deliver information to decision makers and general public. There is little to no exposure of extension programs through the mass media.

Meets Expectations

Makes planned efforts to increase awareness of the Agricultural Extension Service in the community. Uses Extension logo and marketing materials to increase recognition of the Agricultural Extension Service. Report to the People reflects a team effort, shows impacts of the total Extension program and is distributed to a wide segment of the county. Regular mass media efforts are made and documented.

Exemplary

Specific efforts are conducted by the total staff to increase the visibility of impacts of extension programs in the community. The Report to the People has been enhanced, which may include supporting materials, graphics & pictures along with documentation of major program impacts. Recognized within the community as a resource for advancement of the total community and his/her collaboration, cooperation and/or facilitation and is sought by individuals and organizations. Effectively uses all available mass media outlets including releases or make contacts with mass media outlets as a means to highlight extension programs, advertise current extension events, and/or show impact.

County Director Rating Section

Total County Program - The county director assumes responsibility for the development of an integrated county team effort to address local needs. All programs are represented to stakeholders.

Unsatisfactory

Director not supportive of staff and/or their programs. Communication lacking among staff members. Programs not meeting accessed needs. Sporadic or infrequent office conferences.

Meets Expectations

Director maintains open channels of communications. Director guides and gives support to staff and their programs. Keeps staff informed. Director insures that programs meets needs of clientele. Holds regular office conferences.

Exemplary

Director holds weekly staff conferences. Receptive to and reacts positively to communication from staff. Director ensures various program assessment tools are utilized to make program adjustments to meet clientele needs. Director is an ambassador for all program areas. Regularly communicates accomplishments to stakeholders. County staff is regularly involved in multi-disciplinary team programming to address priority community needs.

Guidance of Personnel - The county director guides new and existing personnel in becoming established in the community, in development of effective programs and in professional growth/development.

Unsatisfactory

Not supportive of personnel's needs for training, equipment, facilities and coaching.

Meets Expectations

Provides necessary support and direction of personnel. Completes new staff evaluation forms. Encourages positive staff relationship/teamwork. Coaches staff in inservice/other professional growth activities. Helps provide for staff growth outside of normal inservice channels.

Exemplary

Assists staff in documentation and preparation of dossier for promotion. Each staff member is informed of and assists with other program areas. Encourages staff to pursue advance degrees and professional rank.

Evaluation of Personnel - Personnel evaluation is performed in a manner consistent with organizational goals, resulting in an accurate appraisal of personnel performance and sustained professional growth.

Unsatisfactory

Personnel evaluations are not done properly or on time.

Meets Expectations

Informal & formal evaluation's are completed, are an accurate appraisal of staff performance, and submitted on time. Realistic / measurable performance and/or professional improvement goals formulated for each staff member with appropriate follow-up. Performance problems are proactively addressed.

Exemplary

Director counsels with staff on a regular basis throughout year. Performance problems are addressed on an ongoing basis. The county director regularly devises ways to reward desirable performance.

Financial Management - The county director manages, develops, and utilizes financial resources to support educational programs.

Unsatisfactory

Budget management is ineffective in meeting program needs or demonstrates financial irresponsibility.

Meets Expectations

Regularly reviews Extension Accounts (monthly at a minimum). Maintains County Extension Budget (UT and TSU) at recommended level. Reviews operating budgets on a regular basis. County bank accounts meet all policies and procedures. Procurement cards managed well.

Exemplary

County Extension budget maintained at higher than recommended levels. Seeks external funding sources (grants, etc.) Maintains a technology upgrade fund. Provides supplemental funding for programs, travel, equipment, office operations and supplies.

Management of Facilities/ Equipment - Develops county office facilities which are adequate for effective delivery of programs and housing of staff.

Unsatisfactory

Facilities and equipment do not meet education program and staff needs.

Meets Expectations

Efforts were exhibited to improve facilities and/or equipment. Adequate office space and equipment are allocated and available on an equitable basis to staff members. Office space is organized and clean. Maintains an office environment which presents a good public image.

Exemplary

Effective in managing the county's facilities, furnishings, equipment and other resources. Facilities and equipment are sufficient for the delivery of innovative programs. Technology-related equipment is state of art and includes a networked office and a computer for each regular staff member. Office and equipment upgrades are part of an overall long-term plan.

Public Relations - The county director leads a county team in marketing Extension programs in the community.

Unsatisfactory

Minimal efforts are made to increase the visibility of the Extension program. Written materials prepared in the county regularly do not include the UT and/or TSU logo prominently placed. Mass media, group meetings, and other public relations avenues are used ineffectively.

Meets Expectations

Utilizes multiple efforts to increase awareness and/or visibility of the Extension program in the community. Uses marketing materials effectively. Networks with other group and agencies within community. Includes the UT / TSU logo on county-prepared materials. Office environment is customer friendly.

Exemplary

Actively involved in leadership roles within the community. Regularly reports to community leaders on Extension programs and activities. Receives recognition from community for leadership roles.

Communication/Office Management - The county director creates an atmosphere of open communication. The operation of the office promotes effective and efficient delivery of educational programs.

Unsatisfactory

Poor communication exists between office staff. Communication with District staff is lacking or otherwise inappropriate. Staff conferences are infrequent. Office functions below reasonable expectations.

Meets Expectations

Office runs efficiently. Director communicates appropriately and effectively with local, district and state staff. Stakeholders are involved in informed. Office conferences are held no less frequently than monthly. Agricultural committee meets on legislated schedule. Advisory committee(s) function as intended.

Exemplary

Outstanding communication and coordination is apparent in office efficiency and teamwork. Conflict is used/managed effectively. District Directors are informed/involved in problems and decisions at appropriate stages of the process.

Knows Policies/Meets Deadlines - The county director is familiar and regularly reviews policies, individually and with staff. Reports are accurate and submitted on time.

Unsatisfactory

Reports and correspondence are often late and/or must be returned often for corrections. Not familiar with policies and procedures and does not adequately inform staff.

Meets Expectations

Maintains policy and procedures manual. Has designated location in office and available to staff. Regularly meets deadlines with few revisions or corrections needed. Notifies District Office if items due will be late or extensions of deadlines are needed. Reviews Policy and Procedures with staff and trains new staff members.

Exemplary

Review policy and procedure changes with staff as they occur. Meets all deadlines without exception. Reports and other materials serve as examples to others in quality of content and preparation.

EEO/CR/AA/ADA Policy and Implementation - Leads entire office staff in carrying out the equal employment, civil rights, affirmative action, and disability-related policies of The University of Tennessee and USDA.

Unsatisfactory

No current CR plan on file. Frequent compliance problems with CR regulations and EEO procedures. Efforts to involve new audiences in programing consistently fail to reach parity / potentials.

Meets Expectations

Keeps CR plan current and implements procedures to insure compliance with EEO and Civil Rights policies. Make sure that all programs are held in handi-cap accessible facilities or proper notification is provided. Uses multi-avenues to reach culturally diverse audiences . Parity has been reached in program partici-pation. Provides access to educ-ational programs regardless of disability (Brail, sign, etc.). Accurate records are maintained of program participation. Data is utilized in program planning to improve diverse audience participation.

Exemplary

Involves minorities in the program planning process. Addresses key issues and needs of a diverse clientele. County programs meet the needs of all eligible persons regardless of race, color, national origin, age, sex, disability, religion or veteran status. Proactive practices such as “All Reasonable Efforts” are successful in increasing participation from all eligible participants.

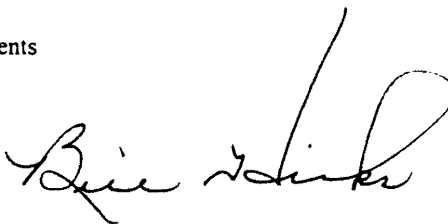
APPENDIX E

Letter from Billy G. Hicks, Dean to Extension Agents

Regarding Participation in the Personal Style Inventory Validation Study

To: County Extension Agents
Area Specialists
Extension Assistants

From: Dr. Billy G. Hicks



Date: March 9, 1999

Subject: Employment Assessment Tool

We are working with an industrial psychologist to develop a tool to help us in employment decisions. Thus far, Dr. Lucy Gibson of Resource Associates has interviewed a sample of county, district and other personnel to determine competencies needed by Extension agents. This is where we need your help.

This packet includes an expanded employment competency test, an answer sheet and a return envelop addressed to Resource Associates. I am asking that you invest in our employment process by devoting the necessary effort and time, approximately an hour, to completing this evaluation tool. You should return your completed answer sheet directly to Dr. Gibson in the envelope provided by April 20th.

In answer to any questions you may have, let me offer the following. The purpose of your participation is to analyze competency information with performance and longevity information. Statistically significant items will be used to assist us in development of a pre-employment tool. The only purpose is to give us additional information to help with hiring decisions. No UT Extension personnel will see your "score." None of this information will be identifiable by individual after the test and other data are collected; no data collected will appear in your personnel file. Resource associates will destroy all identifying information at the end of this project. In other words, you incur no risk by your full cooperation in this process.



A State Partner in the Cooperative Extension System
THE UNIVERSITY OF TENNESSEE, U.S. DEPARTMENT OF AGRICULTURE, AND COUNTY GOVERNMENTS COOPERATING
The Agricultural Extension Service offers its programs to all eligible persons regardless of race, color,
national origin, sex, age or disability and is an Equal Opportunity Employer.

After April 20, Dr. Gibson will provide us a list of those who have not returned a completed answer sheet, and we will be contacting those individuals. At the end of this process, we should have a validated pre-employment competence tool - a shorter version of the competency test we have asked you to complete. Let me stress again the importance of your best efforts when completing this assessment.

Thank you in advance for helping us improve our employment decisions. If you have questions or concerns about this project, please contact Herb Byrd.

c: Administration
District Supervisors
Dr. Clyde Chesney

APPENDIX F

Sample PSI Applicant Rating Results and Explanation

Personal Style Inventory

Smith, Jane Doe

01/07/2005 16

☐ Ag ☐ FCS ☒ Other 4-H Youth

Overall Personality Score: 80-89th percentile

Trait Measured	Score	Trait Measured	Score
Agreeableness	High	Emotional Stability	High
Attitudes toward Children	Above Average	Extroversion	Below Average
Community Development Interest	Average	Integrity and Values	High
Conscientiousness	High	Optimism	Above Average
Customer Responsiveness	Above Average	Potential for Long Tenure	Low
Drive for Achievement & Status in Community	Average	Work Drive	High

46/60

Figure F-1. Personal Style Inventory, sample applicant rating results.

Table F-5. Personal Style Inventory trait description and interpretive guidelines

Trait Measured	Description and Interpretive Guidelines
Overall Personality Score	Compares the candidate's average score to currently employed agents. The scores are presented in percentile format to reflect ranking in a group (not percentage correct).
Agreeableness	The propensity for helping other people, being cooperative, participative, tolerant and easy-going. People scoring low on agreeableness prefer to work in roles that do not demand a lot of interdependence with other people.
Attitudes Toward Children	A person's philosophy about the best approaches to dealing with children and their enjoyment of being with children. High scorers are more likely to use successful strategies for dealing with children, have confidence that they can manage children, and take delight in children's behavior. Low scorers tend to use less successful techniques, lack confidence that they can deal with children properly, and become easily annoyed with children's behavior.
Interest in Community Development	Candidate demonstrates an interest in understanding the dynamics of the local community and engaging in strategic activities to effect change within the community. Low scorers are less interested in effecting change through the political process.
Conscientiousness	A person's responsibility, dependability, and rule-following orientation. People scoring low on conscientiousness prefer jobs where they have a lot of autonomy to make decisions as they see fit.
Customer Responsiveness	Being willing to go the extra mile to ensure that people who depend on you are satisfied with the interaction. People scoring low in this dimension function better in roles where they do not have to change their normal procedures to accommodate any special circumstances or individual needs.
Emotional Stability	A person's overall level of adjustment, ego strength and emotional stability such that they can function effectively under conditions of job pressure or stress. People scoring low on this dimension prefer jobs where they do not have to deal with a lot of external stress.
Extroversion	One's preference for being involved in social interactions as a key part of a job. In previous research, introverted people seem to do better in call center environments than do extroverted people, possibly because the interactions with customers are not face-to-face and are more easily controlled and managed.

Table F-5. Continued

Trait Measured	Description and Interpretive Guidelines
Integrity and Values	Does this person have a strong moral code that they use to make clear-cut decisions about right and wrong? Low scorers are more likely to use flexible values that depend more on the immediate circumstances.
Optimism	The ability to stay cheerful, upbeat, positive in one's outlook toward life. People generally enjoy dealing with someone who has a positive attitude versus someone who tends to view things negatively or cynically.
Drive for Achievement and Status	The person's need to achieve demonstrable goals so as to attain a noteworthy position within the community. Low scorers have little need to distinguish themselves and do not have a strong desire to become a leader in the local community.
Potential for Long Tenure	A person's attitudes about being a long term employee. The higher the score, the greater the tendency to work out problems and try to move up the corporate ladder rather than simply moving on to another company when problems arise.
Work Drive	A person's willingness to work hard and for long hours, investment of time and energy into a job and career, and being motivated to extend oneself, if necessary, to finish projects, meet deadlines, and attain quotas. People scoring low on this dimension prefer jobs that do not intrude on their personal lives.

Note: Low scores on any of the above personal style factors usually indicate the need for additional reference-checking or targeted interviewing to clarify or verify the candidate's status for a trait. "Low" and "Below-Average" scores may also point toward areas for further interviewing or on-the-job monitoring and coaching. (Gibson, 1999)

APPENDIX G

Scatter plots for MAP Predictor versus Performance Criterion Variables

Correlation Tables of MAP Predictor versus UT Extension Performance Appraisal
Criterion Variables

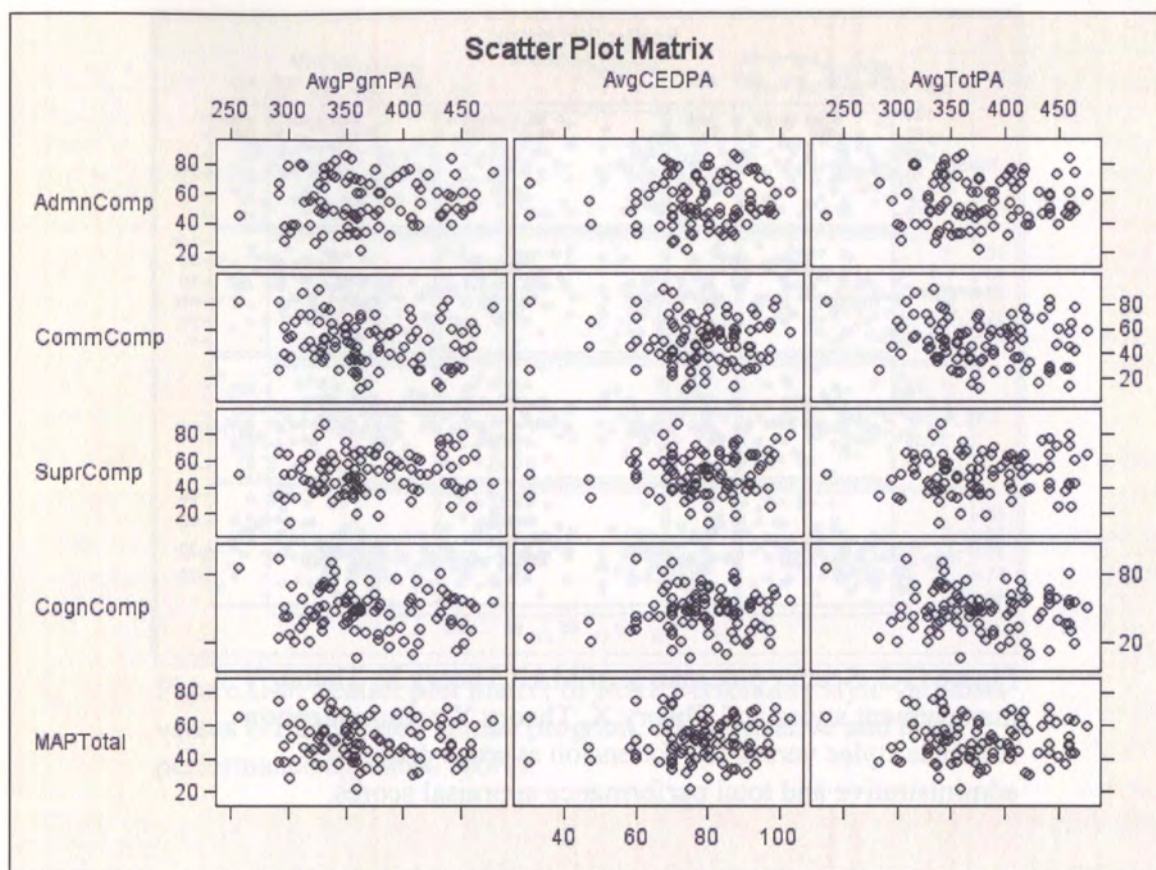


Figure G-2. Scatter plot matrix of MAP competencies for UT Extension average program, administrative and total annual performance.

Plot Variable Key

AdmnComp	Administrative Composite
CommComp	Communication Composite
SuprComp	Supervisory Composite
CognComp	Cognitive Composite
MAPTotal	Overall MAP Proficiency Score
AvgPgmPA	Average Program Performance Appraisal Score
AvgCEDPA	Average County Extension Director Performance Appraisal Score
AvgTotPA	Average Total Performance Appraisal Score

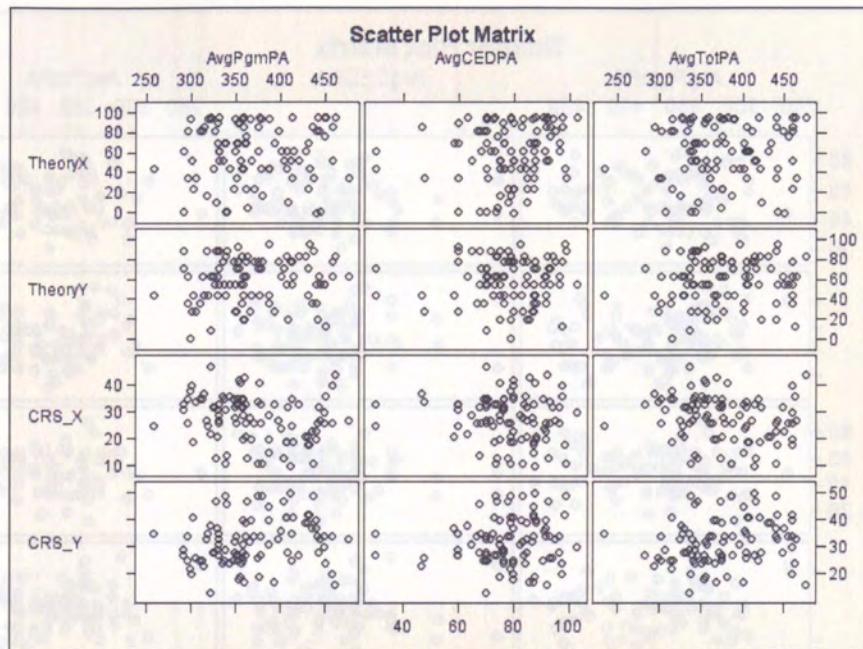


Figure G-3. Scatter plot matrix of MAP Theory X, Theory Y management styles and Theory X, Theory Y communication response styles versus UT Extension average program, administrative and total performance appraisal scores.

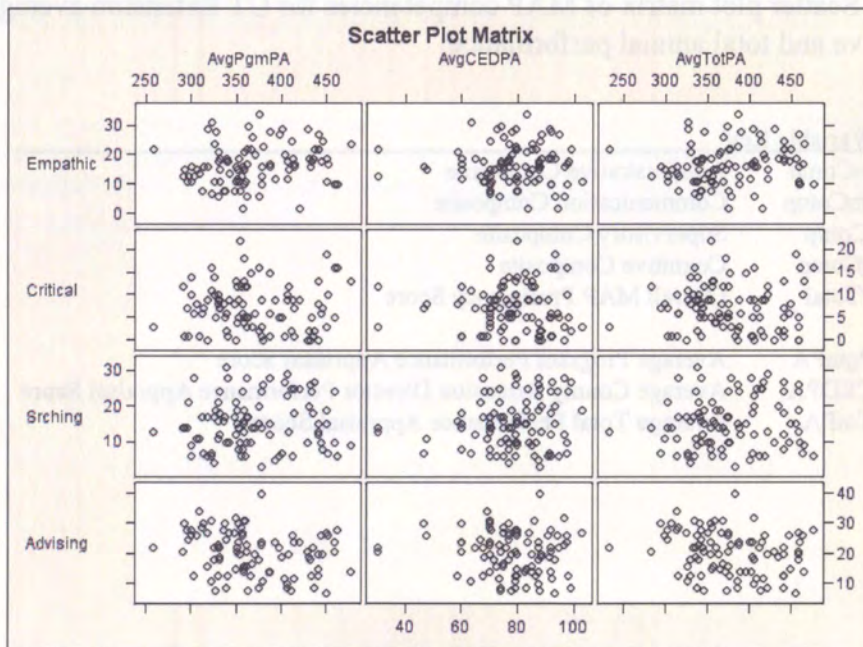


Figure G-4. Scatter plot matrix of MAP communication response style variables versus UT Extension average program, administrative and total performance appraisal scores.

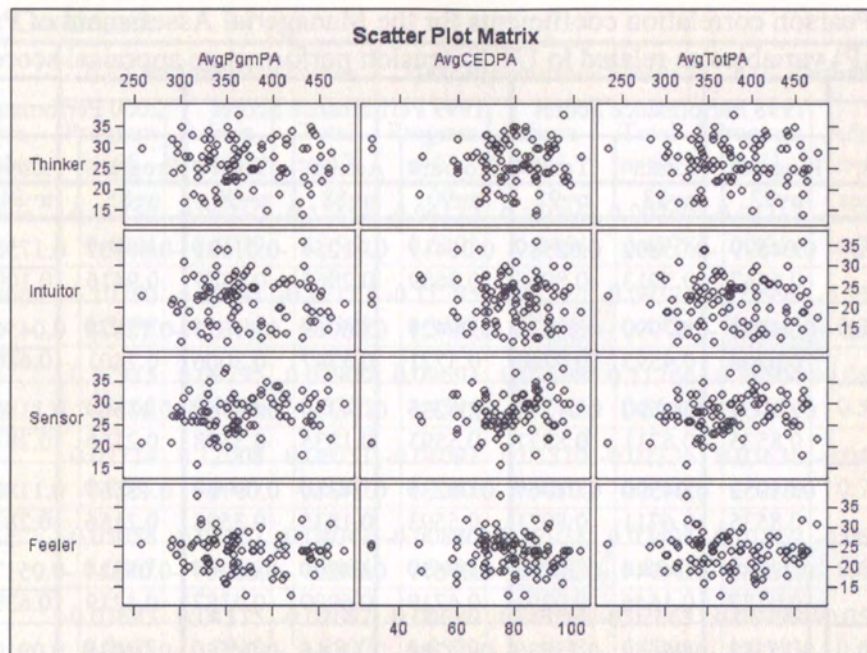


Figure G-5. Scatter plot matrix of MAP personality style variables versus UT Extension annual program, administrative and total performance appraisal scores.

Table G-6. Pearson correlation coefficients for the Managerial Assessment of Proficiency (MAP) variables as related to UT Extension performance appraisal scores by year.

MAP Competencies, Styles & Values		1998 Performance Scores			1999 Performance Scores			2000 Performance Scores		
		Program n=92	Admin n=88	Total n=92	Program n=90	Admin n=88	Total n=90	Program n=85	Admin n=84	Total n=85
Administrative Competency		0.04579 0.6647	-0.05802 0.5913	0.02589 0.8065	0.00417 0.9689	0.11254 0.2965	-0.01521 0.8869	-0.00807 0.9416	0.17575 0.1098	0.02607 0.8128
Communication Competency		-0.24081 0.0208	-0.07990 0.4593	-0.23213 0.0260	-0.09421 0.3771	0.06063 0.5747	-0.11033 0.3006	-0.12878 0.2401	0.04565 0.6801	-0.15803 0.1486
Supervisory Competency		0.01952 0.8535	0.04590 0.6711	0.01367 0.8971	0.06235 0.5593	0.14310 0.1835	0.09767 0.3598	0.13569 0.2156	0.11877 0.2819	0.15082 0.1683
Cognitive Competency		0.01952 0.8535	0.04590 0.6711	0.01367 0.8971	0.06235 0.5593	0.14310 0.1835	0.09767 0.3598	0.13569 0.2156	0.11877 0.2819	-0.08955 0.4150
Overall MAP Proficiency		-0.22286 0.0327	-0.14944 0.1646	-0.22758 0.0291	-0.07679 0.4719	0.04299 0.6909	-0.08264 0.4387	-0.08824 0.4219	-0.05179 0.6399	-0.03575 0.7453
Task		-0.15281 0.1459	-0.08654 0.4227	-0.15838 0.1316	-0.04284 0.6885	0.12066 0.2628	-0.04550 0.6702	-0.04034 0.7139	0.09103 0.4102	-0.04250 0.6993
People		-0.11935 0.2571	-0.12972 0.2284	-0.13358 0.2043	-0.04664 0.6625	0.09127 0.3977	-0.06145 0.5651	-0.06117 0.5781	0.06731 0.5429	-0.01608 0.8838
Theory X		-0.14764 0.1602	-0.02853 0.7919	-0.14513 0.1675	-0.02655 0.8038	0.11752 0.2755	-0.01754 0.8696	-0.00607 0.9560	0.09436 0.3932	0.02992 0.7857
Theory Y		0.03804 0.7188	0.09950 0.3564	0.05006 0.6356	0.00797 0.9405	0.13736 0.2019	0.00719 0.9464	0.03965 0.7186	0.07430 0.5018	0.07547 0.4924
Communication Response Styles	Empa- thetic	0.06768 0.5215	0.05920 0.5838	0.05510 0.6019	0.08183 0.4432	0.08859 0.4118	0.09146 0.3913	0.09128 0.4061	0.07545 0.4951	0.16694 0.1267
	Critical	0.14517 0.1674	0.13942 0.1951	0.14005 0.1830	0.16455 0.1212	-0.02049 0.8497	0.14608 0.1695	0.13530 0.2170	-0.09289 0.4007	0.00036 0.9974
	Searching	0.04416 0.6760	-0.00741 0.9454	0.02729 0.7962	0.07391 0.4888	-0.06921 0.5217	0.05280 0.6212	0.05093 0.6434	-0.01044 0.9249	0.02238 0.8389
	Advising	0.02576 0.8074	0.09069 0.4007	0.02695 0.7987	-0.02472 0.8171	0.07300 0.4991	-0.00239 0.9821	0.01975 0.8576	0.04336 0.6953	-0.17823 0.1027
	Theory X	-0.19742 0.0593	-0.22130 0.0383	-0.18337 0.0802	-0.18994 0.0730	-0.00926 0.9317	-0.17634 0.0964	-0.18556 0.0891	0.04883 0.6591	-0.14811 0.1761
	Theory Y	-0.14243 0.1756	-0.19647 0.0666	-0.14048 0.1817	-0.11538 0.2788	-0.04865 0.6526	-0.11633 0.2749	-0.12488 0.2548	0.03468 0.7541	0.14381 0.1892

The first value in each cell is Pearson's correlation coefficient (ρ). The second value is the probability $>|\rho|$ under H_0 : $\rho=0$. Column headings indicate the number of observations included in each comparison (n). Shaded cells are statistically significant ($p<0.05$).

Table G-6. Continued.

MAP Competencies, Styles & Values		2001 Performance Scores			2002 Performance Scores			2003 Performance Scores		
		Program n=66	Admin n=65	Total n=67	Program n=61	Admin n=61	Total n=61	Program n=61	Admin n=60	Total n=61
Administrative Competency		-0.09450 0.4504	-0.05250 0.6779	-0.11453 0.3561	0.06122 0.6393	0.15066 0.2464	0.09260 0.4778	-0.02717 0.8354	-0.04374 0.7400	-0.03327 0.7991
Communication Competency		-0.10760 0.3898	-0.09241 0.4641	-0.12113 0.3289	-0.11795 0.3653	-0.11720 0.3684	-0.09373 0.4724	-0.20996 0.1044	-0.15533 0.2360	-0.21173 0.1014
Supervisory Competency		0.02915 0.8162	0.09795 0.4376	0.05900 0.6353	0.09693 0.4574	0.07298 0.5762	0.11766 0.3665	0.18504 0.1534	0.08807 0.5034	0.18865 0.1454
Cognitive Competency		0.02714 0.8287	0.12008 0.3407	0.06051 0.6267	-0.04091 0.7543	0.01310 0.9202	-0.02136 0.8702	0.03638 0.7808	-0.04308 0.7438	0.02680 0.8376
Overall MAP Proficiency		-0.05058 0.6867	0.02257 0.8584	-0.04041 0.7454	-0.00840 0.9488	0.02938 0.8222	0.02404 0.8541	-0.01869 0.8863	-0.06043 0.6465	-0.02340 0.8579
Task		-0.03693 0.7685	0.04515 0.7210	-0.02662 0.8307	0.00690 0.9579	0.09053 0.4878	0.03663 0.7793	0.00799 0.9513	-0.05168 0.6949	-0.00148 0.9910
People		-0.05195 0.6787	-0.00801 0.9495	-0.04424 0.7222	-0.02124 0.8709	-0.03367 0.7967	0.00500 0.9695	-0.03380 0.7960	-0.05054 0.7013	-0.03300 0.8007
Theory X		0.02835 0.8212	0.06960 0.5817	0.01059 0.9322	-0.03792 0.7717	-0.04460 0.7329	-0.01663 0.8988	-0.03406 0.7944	-0.01331 0.9196	-0.03042 0.8160
Theory Y		0.14824 0.2349	0.14066 0.2637	0.15222 0.2188	0.11994 0.3572	0.09119 0.4846	0.12245 0.3472	0.14215 0.2745	0.05884 0.6552	0.13307 0.3066
Communication Response Styles	Empa- thetic	0.24056 0.0517	0.01492 0.9061	0.19077 0.1220	0.04721 0.7179	0.00299 0.9818	0.00425 0.9741	0.14920 0.2511	-0.01857 0.8880	0.13751 0.2906
	Critical	-0.12431 0.3200	0.03124 0.8049	-0.10785 0.3850	-0.05389 0.6800	-0.11102 0.3943	-0.02391 0.8549	-0.09286 0.4766	-0.03177 0.8096	-0.08781 0.5010
	Searching	0.18952 0.1275	0.16279 0.1951	0.22790 0.0636	0.17899 0.1675	0.15593 0.2301	0.18376 0.1563	0.13558 0.2975	0.15063 0.2507	0.13618 0.2953
	Advising	-0.30365 0.0132	-0.22987 0.0655	-0.31805 0.0087	-0.15484 0.2335	-0.07195 0.5816	-0.14414 0.2678	-0.22164 0.0860	-0.12402 0.3451	-0.21550 0.0953
	Theory X	-0.31568 0.0098	-0.16100 0.2001	-0.31810 0.0087	-0.15852 0.2224	-0.12240 0.3473	-0.13268 0.3081	-0.23681 0.0661	-0.12100 0.3571	-0.22882 0.0761
	Theory Y	0.32001 0.0088	0.13609 0.2797	0.31440 0.0096	0.16799 0.1956	0.11967 0.3583	0.14154 0.2766	0.21357 0.0984	0.10490 0.4251	0.20562 0.1119

The first value in each cell is Pearson's correlation coefficient (ρ). The second value is the probability $>|\rho|$ under H_0 : $\rho=0$. Column headings include the number of observations utilized in the comparisons (n). Shaded cells are statistically significant ($p<0.05$).

Table G-6. Continued.

MAP Competencies, Styles & Values		1998 Performance Scores			1999 Performance Scores			2000 Performance Scores		
		Program n=92	Admin n=88	Total n=92	Program n=90	Admin n=88	Total n=90	Program n=85	Admin n=84	Total n=61
Personal Styles	Thinker	0.03182 0.7633	-0.09241 0.3918	-0.02331 0.8255	-0.01010 0.9247	0.19160 0.0737	-0.03066 0.7742	-0.02969 0.7874	0.16085 0.1438	-0.06790 0.5369
	Intuitior	0.00379 0.9714	-0.13984 0.1938	-0.01206 0.9091	0.00498 0.9628	-0.16301 0.1292	-0.01974 0.8535	0.02663 0.8089	-0.14588 0.1855	0.01323 0.9043
	Sensor	0.12927 0.2194	0.24938 0.0191	0.21974 0.0353	0.11069 0.2990	0.20598 0.0542	0.15018 0.1577	0.17298 0.1134	0.22431 0.0402	0.19651 0.0715
	Feeler	-0.16339 0.1196	0.05085 0.6380	-0.16341 0.1196	-0.08875 0.4055	-0.22767 0.0329	-0.07280 0.4953	-0.14476 0.1862	-0.22279 0.0417	-0.10578 0.3353

Table G-6. Continued.

MAP Competencies, Styles & Values		2001 Performance Scores			2002 Performance Scores			2003 Performance Scores		
		Program n=66	Admin n=65	Total n=67	Program n=61	Admin n=61	Total n=61	Program n=61	Admin n=60	Total n=61
Personal Styles	Thinker	-0.14171 0.2564	-0.23838 0.0558	-0.21392 0.0822	-0.10408 0.4247	-0.18027 0.1645	-0.12779 0.3264	-0.21689 0.0932	-0.13828 0.2921	-0.22368 0.0831
	Intuitior	0.03687 0.7688	0.01159 0.9270	0.07042 0.5712	-0.08347 0.5225	0.08311 0.5243	-0.03761 0.7735	0.10557 0.4181	0.06299 0.6326	0.10697 0.4119
	Sensor	0.22168 0.0736	0.15766 0.2097	0.18742 0.1288	0.25215 0.0499	0.13885 0.2859	0.22289 0.0842	0.22839 0.0767	0.21297 0.1023	0.22662 0.0790
	Feeler	-0.08546 0.4951	0.12552 0.3191	-0.00814 0.9478	-0.01676 0.8980	-0.03085 0.8134	-0.01966 0.8804	-0.07885 0.5458	-0.11127 0.3973	-0.07141 0.5845

The first value in each cell is Pearson's correlation coefficient (ρ). The second value is the probability $>|\rho|$ under H_0 : $\rho=0$. Column headings include the number of observations utilized in the comparisons (n). Shaded cells are statistically significant ($p<0.05$).

APPENDIX H

Scatter plots for selected PSI Predictor versus Performance Criterion Variables

Correlation Tables of PSI Predictor versus UT Extension Performance Appraisal
Criterion Variables

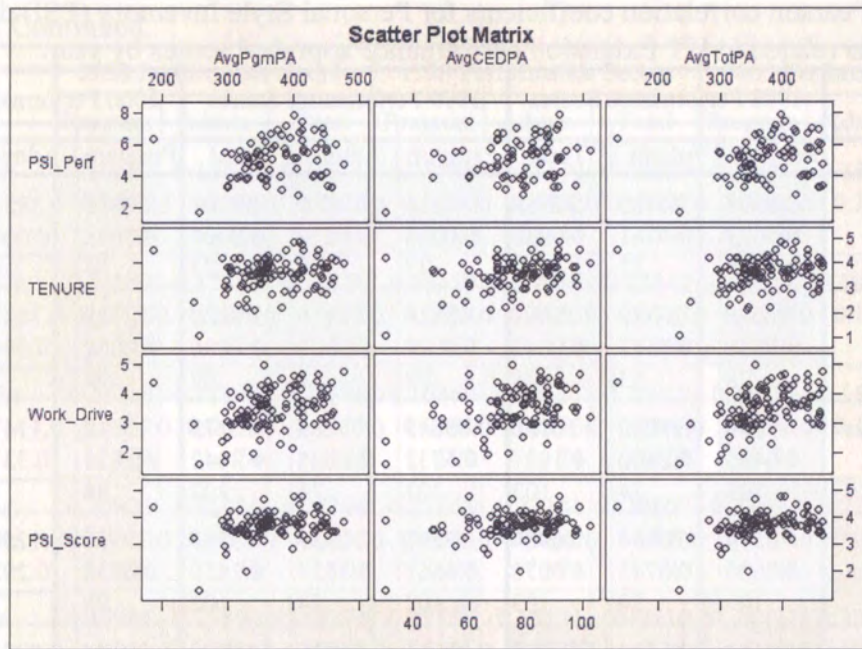


Figure H-6. Scatter plots of selected PSI criterion variables versus average UT Extension program, administrative and total performance scores.

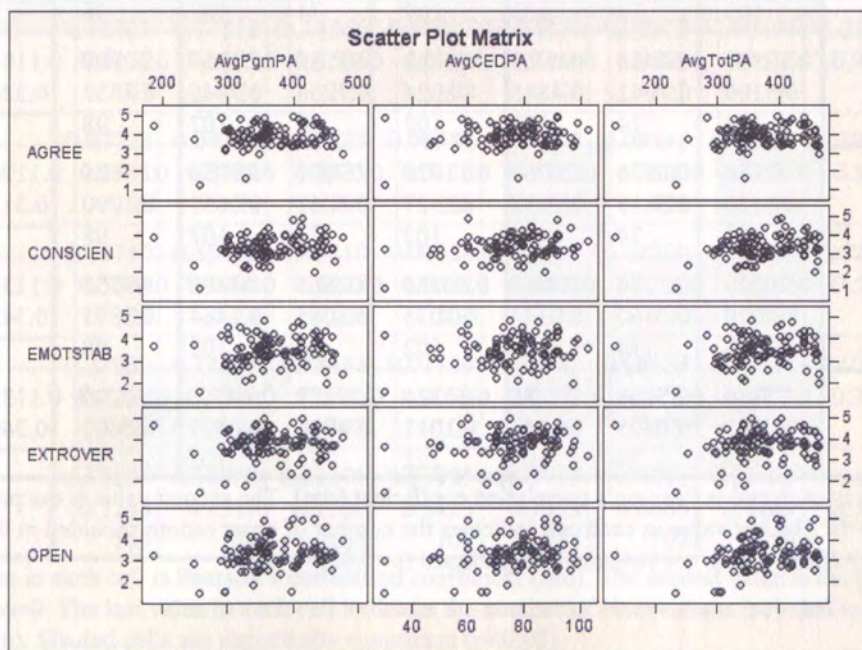


Figure H-7. PSI scatter plots of the "Big 5 Model of Personality" variables plotted against UT Extension average performance.

Table H-7. Pearson correlation coefficients for Personal Style Inventory (PSI) dimensions as related to UT Extension performance appraisal scores by year.

Personality Dimension	1998 Performance Scores			1999 Performance Scores			2000 Performance Scores		
	Program	Admin	Total	Program	Admin	Total	Program	Admin	Total
Performance in PSI w/o Stress Eval.	0.32894 0.0033 78	0.26402 0.0561 53	0.32552 0.0036 78	0.34254 0.0023 77	0.29989 0.0276 54	0.39101 0.0004 77	0.32435 0.0048 74	0.38517 0.0044 53	0.38066 0.0008 74
PSI Total Performance (all 13 vars.)	0.32448 0.0038 78	0.26343 0.0567 53	0.32091 0.0042 78	0.33514 0.0029 77	0.29516 0.0303 54	0.38432 0.0006 77	0.32148 0.0052 74	0.38271 0.0047 53	0.37940 0.0009 74
Agreeableness	0.19399 0.0496 103	0.13830 0.2400 74	0.16126 0.1037 103	0.05643 0.5732 102	0.05185 0.6608 74	0.10273 0.3042 102	0.13612 0.1814 98	0.11478 0.3370 72	0.15021 0.1399 98
Child Management Skills	0.18599 0.0600 103	0.20844 0.0747 74	0.16904 0.0878 103	0.07297 0.4661 102	0.10935 0.3537 74	0.13853 0.1650 102	0.17555 0.0838 98	0.12578 0.2924 72	0.18319 0.0710 98
Interest in Community Development	0.26088 0.0078 103	0.15694 0.1818 74	0.26494 0.0068 103	0.10841 0.2781 102	0.06529 0.5805 74	0.15996 0.1083 102	0.10185 0.3183 98	0.09910 0.4075 72	0.12729 0.2117 98
Conscientiousness	0.30863 0.0015 103	0.23676 0.0423 74	0.29122 0.0028 103	0.17723 0.0748 102	0.10015 0.3959 74	0.21542 0.0297 102	0.15842 0.1192 98	0.13555 0.2563 72	0.17736 0.0806 98
Customer Responsiveness	0.35178 0.0003 103	0.36876 0.0012 74	0.35277 0.0003 103	0.27571 0.0050 102	0.18393 0.1167 74	0.33286 0.0006 102	0.31128 0.0018 98	0.29969 0.0105 72	0.36352 0.0002 98
Emotional Stability	0.10100 0.3100 103	0.04488 0.7042 74	0.06965 0.4845 103	-0.01483 0.8824 102	0.03139 0.7906 74	0.03267 0.7445 102	0.07999 0.4337 98	0.11876 0.3204 72	0.12333 0.2263 98
Extroversion	0.21148 0.0320 103	0.20376 0.0816 74	0.20967 0.0335 103	0.11923 0.2327 102	0.09801 0.4061 74	0.18256 0.0663 102	0.13686 0.1790 98	0.11960 0.3170 72	0.16046 0.1145 98
Integrity and Values	0.26029 0.0079 103	0.23274 0.0460 74	0.24058 0.0144 103	0.10288 0.3035 102	0.02865 0.8085 74	0.14482 0.1464 102	0.09758 0.3391 98	0.11350 0.3425 72	0.12578 0.2172 98
Nurturance	0.25181 0.0103 103	0.25167 0.0305 74	0.24085 0.0143 103	0.16324 0.1011 102	0.09877 0.4024 74	0.20286 0.0409 102	0.20790 0.0400 98	0.11357 0.3422 72	0.21607 0.0326 98

The first value in each cell is Pearson's correlation coefficient (ρ). The second value is the probability $>|\rho|$ under H_0 : $\rho=0$. The last value in each cell indicates the number of observations included in the comparison (n). Shaded cells are statistically significant ($p<0.05$).

Table H-7. Continued.

Personality Dimension	1998 Performance Scores			1999 Performance Scores			2000 Performance Scores		
	Program	Admin	Total	Program	Admin	Total	Program	Admin	Total
Openness to New Experience	0.30367 0.0018 103	0.12475 0.2896 74	0.30329 0.0018 103	0.26551 0.0070 102	0.02339 0.8432 74	0.29399 0.0027 102	0.32687 0.0010 98	0.13999 0.2409 72	0.34403 0.0005 98
Optimism	0.32255 0.0009 103	0.17881 0.1274 74	0.29546 0.0024 103	0.18450 0.0634 102	0.09855 0.4035 74	0.23242 0.0187 102	0.23281 0.0211 98	0.18857 0.1127 72	0.28137 0.0050 98
Achievement & Status-striving	0.23716 0.0159 103	0.21364 0.0676 74	0.23836 0.0153 103	0.16469 0.0981 102	0.15157 0.1973 74	0.20929 0.0348 102	0.16479 0.1049 98	0.15461 0.1947 72	0.18837 0.0632 98
Potential for Long Tenure	0.27936 0.0043 103	0.31486 0.0063 74	0.28704 0.0033 103	0.25568 0.0095 102	0.22141 0.0580 74	0.30807 0.0016 102	0.27797 0.0056 98	0.25862 0.0283 72	0.28051 0.0051 98
Work Drive	0.47981 <.0001 103	0.33390 0.0036 74	0.48374 <.0001 103	0.42854 <.0001 102	0.16131 0.1697 74	0.47210 <.0001 102	0.44473 <.0001 98	0.32164 0.0059 72	0.48611 <.0001 98
Overall Personality Score	0.36741 0.0001 103	0.27775 0.0166 74	0.35430 0.0002 103	0.22957 0.0203 102	0.13705 0.2443 74	0.29477 0.0026 102	0.26230 0.0091 98	0.22068 0.0625 72	0.30169 0.0025 98
Big Five Model of Personality	0.30071 0.0020 103	0.19246 0.1004 74	0.27913 0.0043 103	0.16574 0.0960 102	0.07828 0.5074 74	0.22544 0.0227 102	0.22608 0.0252 98	0.16216 0.1735 72	0.25713 0.0106 98
Cognitive - Numeric Reasoning	0.12321 0.2150 103	0.14512 0.2173 74	0.14266 0.1506 103	-0.03913 0.6962 102	-0.04317 0.7150 74	0.02377 0.8126 102	-0.00494 0.9615 98	-0.01144 0.9240 72	0.05127 0.6161 98
Cognitive - Verbal Reasoning	0.07723 0.4381 103	0.04262 0.7184 74	0.09227 0.3539 103	0.06582 0.5110 102	0.14627 0.2137 74	0.09140 0.3609 102	0.14034 0.1681 98	0.19081 0.1084 72	0.20051 0.0477 98
Cognitive - Abstract Reasoning	0.08740 0.3800 103	0.15393 0.1904 74	0.09210 0.3548 103	0.00024 0.9981 102	0.09037 0.4438 74	0.04700 0.6390 102	0.05560 0.5866 98	0.07906 0.5092 72	0.06787 0.5066 98
Overall Cognitive (N+V+A)/3	0.11936 0.2298 103	0.14463 0.2189 74	0.13448 0.1756 103	0.01159 0.9079 102	0.08622 0.4651 74	0.06833 0.4950 102	0.08148 0.4251 98	0.10738 0.3693 72	0.13038 0.2007 98
Overall Cognitive (N+A)/2	0.12065 0.2248 103	0.16832 0.1517 74	0.13375 0.1780 103	-0.01995 0.8423 102	0.03715 0.7533 74	0.04291 0.6685 102	0.03382 0.7409 98	0.04574 0.7028 72	0.07047 0.4905 98

The first value in each cell is Pearson's correlation coefficient (ρ). The second value is the probability $>|\rho|$ under H_0 : $\rho=0$. The last value in each cell indicates the number of observations included in the comparison (n). Shaded cells are statistically significant ($p<0.05$).

Table H-7. Continued.

Personality Dimension	2001 Performance Scores			2002 Performance Scores			2003 Performance Scores		
	Program	Admin	Total	Program	Admin	Total	Program	Admin	Total
Performance in PSI w/o Stress Eval.	-0.00845 0.9480 62	0.18627 0.2205 45	0.02132 0.8672 64	0.06023 0.6419 62	0.11415 0.4022 56	0.05790 0.6549 62	-0.09102 0.4930 59	-0.06124 0.6569 55	-0.08906 0.5024 59
PSI Total Performance (all 13 vars.)	-0.00139 0.9915 62	0.18285 0.2293 45	0.02551 0.8414 64	0.07022 0.5876 62	0.12021 0.3775 56	0.06775 0.6008 62	-0.08633 0.5156 59	-0.05644 0.6823 55	-0.08444 0.5249 59
Agreeableness	-0.01717 0.8783 82	0.00106 0.9935 61	-0.03975 0.7196 84	0.13102 0.2498 79	0.15121 0.2081 71	0.12694 0.2649 79	0.16647 0.1507 76	0.10550 0.3812 71	0.16674 0.1500 76
Child Management Skills	-0.05684 0.6120 82	0.14330 0.2706 61	-0.03553 0.7483 84	0.09415 0.4092 79	0.22435 0.0600 71	0.10319 0.3655 79	0.11105 0.3396 76	0.12453 0.3008 71	0.11196 0.3356 76
Interest in Community Development	0.03412 0.7609 82	0.16035 0.2170 61	0.03539 0.7493 84	0.17263 0.1282 79	0.30603 0.0094 71	0.18462 0.1034 79	0.17762 0.1248 76	0.24658 0.0382 71	0.18811 0.1037 76
Conscientiousness	0.18749 0.0917 82	0.02422 0.8530 61	0.13386 0.2248 84	0.21080 0.0622 79	0.19853 0.0970 71	0.21083 0.0622 79	0.27524 0.0161 76	0.38092 0.0010 71	0.29134 0.0107 76
Customer Responsiveness	0.10183 0.3627 82	0.13520 0.2989 61	0.08751 0.4286 84	0.14327 0.2078 79	0.26329 0.0265 71	0.14084 0.2157 79	0.19232 0.0960 76	0.24743 0.0375 71	0.19417 0.0928 76
Emotional Stability	0.13311 0.2332 82	0.03800 0.7713 61	0.10691 0.3331 84	0.22738 0.0439 79	0.21330 0.0741 71	0.22167 0.0496 79	0.16888 0.1447 76	0.16765 0.1623 71	0.17265 0.1359 76
Extroversion	-0.02279 0.8390 82	0.18471 0.1541 61	0.01080 0.9223 84	0.10935 0.3374 79	0.28584 0.0157 71	0.12384 0.2769 79	0.13921 0.2304 76	0.13023 0.2790 71	0.14311 0.2175 76
Integrity and Values	0.05799 0.6048 82	0.05356 0.6818 61	0.02691 0.8080 84	0.08129 0.4763 79	0.11926 0.3219 71	0.08075 0.4793 79	0.16505 0.1542 76	0.19761 0.0986 71	0.17258 0.1360 76
Nurturance	0.03530 0.7529 82	0.15079 0.2461 61	0.03686 0.7393 84	0.10058 0.3778 79	0.24608 0.0386 71	0.11185 0.3264 79	0.17700 0.1261 76	0.16935 0.1580 71	0.17733 0.1254 76

The first value in each cell is Pearson's correlation coefficient (ρ). The second value is the probability $>|\rho|$ under $H_0: \rho=0$. The last value in each cell indicates the number of observations included in the comparison (n). Shaded cells are statistically significant ($p<0.05$).

Table H-7. Continued.

Personality Dimension	2001 Performance Scores			2002 Performance Scores			2003 Performance Scores		
	Program	Admin	Total	Program	Admin	Total	Program	Admin	Total
Openness to New Experience	0.05863 0.6008 82	0.28955 0.0236 61	0.11882 0.2817 84	0.13237 0.2449 79	0.17606 0.1419 71	0.13216 0.2456 79	0.24932 0.0299 76	0.16937 0.1579 71	0.24041 0.0364 76
Optimism	0.07510 0.5025 82	0.16326 0.2087 61	0.06789 0.5395 84	0.34398 0.0019 79	0.37999 0.0011 71	0.34449 0.0019 79	0.35649 0.0016 76	0.25591 0.0312 71	0.35119 0.0019 76
Achievement & Status-striving	0.12799 0.2518 82	0.24394 0.0582 61	0.14699 0.1821 84	0.11155 0.3277 79	0.35215 0.0026 71	0.12721 0.2639 79	0.16055 0.1659 76	0.11410 0.3434 71	0.15848 0.1715 76
Potential for Long Tenure	0.14945 0.1802 82	0.17063 0.1886 61	0.16388 0.1363 84	0.18195 0.1085 79	0.30170 0.0106 71	0.20307 0.0727 79	0.21240 0.0655 76	0.27608 0.0198 71	0.22428 0.0515 76
Work Drive	0.17506 0.1157 82	0.30439 0.0171 61	0.20102 0.0667 84	0.18946 0.0945 79	0.34724 0.0030 71	0.19748 0.0811 79	0.31153 0.0062 76	0.34360 0.0033 71	0.30977 0.0065 76
Overall Personality Score	0.12946 0.2464 82	0.18643 0.1503 61	0.12352 0.2630 84	0.25058 0.0259 79	0.37418 0.0013 71	0.25835 0.0215 79	0.31795 0.0051 76	0.33092 0.0048 71	0.32400 0.0043 76
Big Five Model of Personality	0.09428 0.3995 82	0.15895 0.2211 61	0.09465 0.3918 84	0.22967 0.0417 79	0.28790 0.0149 71	0.23100 0.0405 79	0.29347 0.0101 76	0.27757 0.0191 71	0.29751 0.0091 76
Cognitive - Numeric Reasoning	0.00590 0.9580 82	-0.07356 0.5732 61	0.00977 0.9297 84	0.05370 0.6384 79	-0.06176 0.6089 71	0.04000 0.7263 79	0.12957 0.2646 76	0.05003 0.6786 71	0.12575 0.2791 76
Cognitive - Verbal Reasoning	0.13707 0.2195 82	0.15288 0.2395 61	0.14389 0.1916 84	0.18322 0.1060 79	0.13244 0.2709 71	0.17412 0.1249 79	0.15032 0.1949 76	0.15269 0.2036 71	0.15250 0.1885 76
Cognitive - Abstract Reasoning	-0.06137 0.5839 82	0.07389 0.5714 61	-0.07394 0.5038 84	-0.08212 0.4718 79	0.04366 0.7177 71	-0.07530 0.5096 79	-0.02148 0.8539 76	0.01310 0.9137 71	-0.01822 0.8759 76
Overall Cognitive (N+V+A)/3	0.02360 0.8333 82	0.07610 0.5600 61	0.02031 0.8545 84	0.04732 0.6788 79	0.05296 0.6609 71	0.04265 0.7090 79	0.09407 0.4189 76	0.08804 0.4653 71	0.09535 0.4126 76
Overall Cognitive (N+A)/2	-0.03745 0.7384 82	0.01679 0.8978 61	-0.04416 0.6900 84	-0.02668 0.8155 79	-0.00368 0.9757 71	-0.02921 0.7983 79	0.05335 0.6471 76	0.03558 0.7683 71	0.05352 0.6461 76

The first value in each cell is Pearson's correlation coefficient (ρ). The second value is the probability $>|\rho|$ under H_0 : $\rho=0$. The last value in each cell indicates the number of observations included in the comparison (n). Shaded cells are statistically significant ($p<0.05$).

Appendix I

MAP Variable Correlations with Continuous Numeric Demographic Variables

MAP Variable Means by Demographic Variable Categories

PSI Variable Correlations with Continuous Numeric Demographic Variables

PSI Variable Means by Demographic Variable Categories

Table I-8. Correlation coefficients for comparisons of MAP variables with continuous numeric demographic variables.

MAP Competencies, Styles & Values		Number of Observations	Years in Title	Years as CED	Age in Years	Extension Years of Service	Number of Employees Supervised
Administrative Competency		93	-0.18604 0.0742	-0.20289 0.0511	-0.15365 0.1415	-0.27664 0.0073	0.09601 0.3599
Communication Competency		93	-0.17100 0.1012	-0.16144 0.1221	-0.28804 0.0051	-0.15630 0.1346	-0.03522 0.7375
Supervisory Competency		93	-0.12666 0.2263	-0.15771 0.1311	-0.16513 0.1137	-0.18140 0.0818	0.01819 0.8626
Cognitive Competency		93	-0.27048 0.0087	-0.27259 0.0082	-0.25523 0.0135	-0.46755 <.0001	-0.01064 0.9194
Overall MAP Proficiency		93	-0.25872 0.0123	-0.27178 0.0084	-0.30067 0.0034	-0.37109 0.0003	0.01494 0.8869
Task		93	-0.28035 0.0065	-0.29118 0.0046	-0.25226 0.0147	-0.45940 <.0001	0.04694 0.6550
People		93	-0.18146 0.0817	-0.19219 0.0649	-0.27925 0.0067	-0.20179 0.0524	-0.01313 0.9006
Theory X		93	0.16040 0.1246	0.17641 0.0907	0.03621 0.7304	0.04897 0.6411	-0.07857 0.4541
Theory Y		93	0.00906 0.9313	-0.01249 0.9054	-0.04882 0.6422	-0.02619 0.8032	-0.03435 0.7438
Communication Response Styles	Empathetic	93	0.16685 0.1099	0.18266 0.0797	0.14963 0.1523	0.20892 0.0445	0.09529 0.3636
	Critical	93	0.28765 0.0052	0.29387 0.0042	0.13217 0.2066	0.24530 0.0178	-0.17381 0.0957
	Searching	93	-0.24787 0.0166	-0.27599 0.0074	-0.25141 0.0151	-0.32188 0.0017	0.05386 0.6081
	Advising	93	-0.11825 0.2590	-0.11092 0.2898	0.02806 0.7895	-0.05094 0.6277	-0.02381 0.8208
	Theory X	93	0.07141 0.4964	0.08128 0.4386	0.10224 0.3295	0.10295 0.3261	-0.12343 0.2385
	Theory Y	93	-0.07116 0.4979	-0.08167 0.4364	-0.08751 0.4042	-0.09846 0.3478	0.11844 0.2582
Personal Styles	Thinker	93	-0.08029 0.4442	-0.09472 0.3664	-0.04138 0.6937	0.06886 0.5119	-0.18945 0.0689
	Intuitior	93	0.01521 0.8850	0.03622 0.7304	0.05265 0.6162	-0.17691 0.0898	0.18178 0.0812
	Sensor	93	0.14404 0.1684	0.14984 0.1517	-0.07494 0.4753	0.14446 0.1671	0.08357 0.4258
	Feeler	93	-0.06016 0.5668	-0.07441 0.4784	0.05827 0.5790	-0.00127 0.9903	-0.08308 0.4285

Shaded cells represent significant correlations ($p < 0.05$).

Table I-9. MAP composite score means by demographic categories.

Demographic Variable		n	Admin. Composite	Communic. Composite	Supervisory Composite	Cognitive Composite	Map Total Score
1998 Extension Title	Ext Agent II	4	63.0±11.6	68.5 _a ±15.6	64.5 _a ±14.1	56.5 _{ab} ± 5.7	63.5 _a ± 7.2
	Ext Agent II & County Dir	14	59.0±17.4	45.1 _b ±14.9	52.4 _b ±16.9	58.0 _a ±18.9	52.4 _{ab} ±13.1
	Ext Agent III	3	71.7± 9.7	52.0 _{ab} ±25.5	58.3 _{ab} ±11.2	62.7 _{ab} ± 9.3	61.3 _{ab} ± 8.1
	Ext Agent III & County Dir	72	50.0± 5.2	50.6 _{ab} ±18.5	50.7 _{ab} ±15.0	46.9 _b ±18.0	50.7 _b ±12.2
Title Type	Existing Co Dir	85	54.6 _a ±15.6	49.6±18.0	50.1±15.3	48.7±18.5	50.9 _a ±12.3
	Became Co Dir Later	8	66.7 _b ±11.0	61.4±20.4	61.9±12.3	59.1± 7.5	62.6 _b ± 7.2
EEO Age	Under 40	82	54.9±15.7	50.1±18.6	51.4±14.9	49.1±18.4	51.5±12.4
	40 or Over	11	60.0±14.7	55.1±16.9	48.1±18.9	52.9±16.3	54.2±12.5
Age Group	Thirties	11	60.0±14.7	55.1±16.7	48.1±18.9	52.9 _{ab} ±16.3	54.2 _{ab} ±12.5
	Forties	44	56.5±16.1	51.8±20.4	54.8±15.8	51.3 _a ±19.0	53.8 _a ±13.7
	Fifties	33	53.6±15.4	49.2±16.7	48.4±11.3	48.4 _{ab} ±17.7	50.1 _{ab} ± 9.8
	Sixties	5	49.6±15.7	39.0± 8.9	41.2±21.0	34.2 _b ±11.3	41.2 _b ±11.3
Gender	Female	19	54.9±15.7	50.1±18.6	51.4±14.9	49.1±18.4	51.5±12.4
	Male	74	60.0±14.7	55.1±16.9	48.1±18.9	52.9±16.3	54.2±12.5
Years of Service	0 to 4.9	3	66.0 _{ab} ±12.1	52.3 _{abcd} ±13.6	50.7 _{abc} ±13.9	66.7 _a ±25.8	59.0 _{ac} ±14.1
	5 to 9.9	7	61.4 _{ab} ±13.5	35.7 _b ±19.6	60.9 _a ± 9.1	66.1 _a ±14.8	56.1 _{ac} ± 9.7
	10 to 14.9	10	59.9 _{ab} ±18.7	60.4 _{ac} ±14.7	48.9 _{abc} ±21.0	54.3 _a ±14.9	56.0 _{ac} ±13.8
	15 to 19.9	18	59.6 _a ±17.8	59.5 _{ac} ±19.2	51.8 _{abc} ±14.4	53.7 _a ±21.5	56.4 _c ±14.0
	20 to 24.9	22	54.9 _{ab} ±15.3	52.5 _{cd} ±19.9	52.1 _{ab} ±17.2	52.3 _{ab} ±11.7	53.1 _{ac} ±12.6
	25 to 29.9	20	51.8 _{ab} ±14.4	46.3 _{bd} ±16.3	52.3 _{ab} ±12.1	40.3 _c ±15.9	47.8 _{ab} ± 9.2
	30 to 34.9	9	46.7 _b ± 8.2	43.7 _{bd} ±10.7	45.4 _b ±11.6	37.4 _c ±16.0	43.4 _b ± 5.8
	35 or more	4	50.5 _{ab} ±17.9	38.3 _{bd} ±10.1	35.3 _c ±18.8	34.8 _{bc} ±13.0	40.0 _b ±12.7
Ed. Level	Bachelor's	9	50.1±14.1	44.7±10.3	47.2±16.2	40.4±16.8	45.8± 8.7
	Master's	84	56.1±15.7	51.3±18.9	51.4±15.3	50.5±18.1	52.5±12.6
Subject Matter Base	Agriculture	74	55.5±15.5	52.1±17.7	51.7±15.5	50.9±18.1	52.7±12.4
	Family & Consumer Sci.	19	55.6±16.5	44.7±19.9	48.1±14.8	44.3±17.7	48.3±11.9

^{a, b, c} Means without a common letter subscript within the same column and demographic data family are statistically different ($p < 0.05$). Absence of subscript letters indicates no statistical difference at the five percent level. Mean scores represent averaged MAP percentile scores $\pm$ the standard deviation.

Table I-9. Continued.

Demographic Variable		n	Admin. Composite	Communic. Composite	Supervisory Composite	Cognitive Composite	Map Total Score
Audience	Adult	70	56.6±16.0	52.2± 18.2	51.5± 16.1	51.0±19.5	53.0±13.2
	Youth	5	49.2±24.3	41.4±28.3	47.6±11.9	53.8± 4.9	48.2±14.9
	Adult and Youth	18	52.9±10.7	46.9±15.3	49.8±13.2	42.8±12.5	48.3± 6.8
District	Central	24	56.1 _{ab} ±17.6	49.1±19.2	48.7±16.8	48.0±19.1	50.6±12.7
	Cumberland	26	52.2 _b ±13.5	50.5±18.5	52.5±14.7	49.4± 19.8	51.3±12.0
	Smoky Mountain	23	61.8 _a ±14.1	53.4±18.9	55.3±14.3	53.0±17.1	56.0±12.5
	Western	20	51.9 _b ±16.0	49.3±17.6	46.8±14.9	47.6±16.4	49.2±11.9

Table I-10. MAP task/people, Theory X/Y score means by demographic categories.

Demographic Variable		n	MAP Composites for		Management Styles		Comm. Response Styles	
			Tasks	People	Theory X	Theory Y	Theory X	Theory Y
1998 Extension Title	Ext Agent II	4	59.8 _{ab} ± 6.9	66.5 _a ± 7.8	69.3±43.3	58.0±2.2	26.5± 9.5	33.5± 9.5
	Ext Agent II & County Dir	14	58.5 _a ±16.2	46.1 _b ±11.6	57.9±31.8	61.3±22.4	27.1±10.1	32.9±10.2
	Ext Agent III	3	67.2 _a ± 9.5	55.2 _{ab} ± 9.1	50.0± 5.2	77.7± 6.5	31.7± 5.1	28.3± 5.1
	Ext Agent III & County Dir	72	50.4 _b ±13.2	50.7 _b ±14.3	61.4±28.0	58.5±22.5	27.9± 8.3	31.9± 8.4
Title Type	Existing Co	85	51.7 _a ±14.0	49.9 _a ±14.0	60.8±28.5	59.0±22.4	27.8± 8.5	32.0± 8.7
	Became Co Dir Later	8	62.9 _b ± 8.3	61.6 _b ± 9.7	61.0±32.4	66.4±19.9	28.7± 7.8	31.9± 7.8
EEO Age	Under 40	82	56.5±13.1	51.6±13.5	57.4±32.8	66.2±18.4	28.0± 8.6	32.0± 8.6
	40 or Over	11	52.0±14.0	50.7±14.1	61.3±28.2	58.6±22.6	27.9± 8.5	32.0± 8.6
Age Group	Thirties	11	56.5±13.1	51.6 _{ab} ±13.6	57.4±32.8	66.2±18.4	28.0± 8.6	32.0±8.6
	Forties	44	53.9±14.9	53.3 _a ±15.9	63.0±28.7	60.3±25.0	27.1± 8.3	32.6± 8.7
	Fifties	33	51.0±12.6	48.8 _{ab} ±10.6	57.4±28.4	57.0±18.81	28.1± 9.0	31.9± 9.0
	Sixties	5	41.9±11.5	40.1 _b ±13.6	71.6±21.7	54.4±26.8	33.0± 4.8	27.0± 4.8
Gender	Female	19	51.8±14.4	48.5±13.0	47.8 _a ±26.1	64.7±18.1	25.0± 8.0	35.0± 8.0
	Male	74	52.7±13.9	51.4±14.3	64.1 _b ±28.4	58.2±23.1	28.6± 8.4	31.2± 8.6
Years of Service	0 to 4.9	3	63.3 _a ±18.7	51.5 _{ab} ±12.3	76.0±17.8	61.0± 8.7	31.3± 4.7	29.0± 5.3
	5 to 9.9	7	63.8 _a ±11.2	48.3 _{ab} ±11.8	47.3±31.6	63.9±23.9	23.1± 7.0	36.9± 7.0
	10 to 14.9	10	57.1 _{ac} ±14.8	54.7 _b ±15.3	63.0±29.4	60.2±19.6	29.0± 8.8	31.0± 8.8
	15 to 19.9	18	56.6 _a ±14.6	55.7 _b ±15.7	52.9±31.1	53.2±29.4	26.9±10.6	32.4±11.35
	20 to 24.9	22	53.6 _{ad} ±11.7	52.3 _b ±16.5	67.7±22.6	63.5±19.0	27.6± 8.2	32.3± 8.2
	25 to 29.9	20	46.0 _{bd} ±11.4	49.3 _{ab} ±10.3	61.8±26.6	58.4±22.0	27.9± 7.9	32.1± 7.9
	30 to 34.9	9	42.1 _b ± 9.3	44.6 _{ab} ± 7.6	58.7±42.9	63.0±17.6	29.7± 8.5	30.3± 8.5
	35 or more	4	42.6 _{bcd} ±13.1	36.8 _{ac} ±13.1	65.5±19.5	54.0±30.9	32.5± 5.4	27.5± 5.4

^{a, b, c} Means without a common letter subscript within the same column and demographic data family are statistically different ($p < 0.05$). Absence of subscript letters indicates no statistical difference at the five percent level. Mean scores represent averaged MAP percentile scores ± the standard deviation.

Table I-10. Continued.

Demographic Variable		n	MAP Composites for		Management Styles		Comm. Response Styles	
			Tasks	People	Theory X	Theory Y	Theory X	Theory Y
Ed. Level	Bachelor's	9	45.3±11.1	45.9±10.7	72.1±31.9	51.7±18.5	25.0± 8.2	35.0± 8.2
	Master's	84	53.3±14.0	51.3±14.3	59.6±28.2	60.4±22.5	28.2± 8.5	31.7± 8.6
Subject	Agriculture	74	53.2±13.9	51.9±14.0	63.6±28.6	58.3±23.1	28.5± 8.4	31.3± 8.6
	Family & Consumer Sci.	19	49.9±13.9	46.4±13.3	50.1±26.7	64.3±18.0	25.4± 8.2	34.6± 8.2
Audience	Adult	70	53.8±14.6	51.9±14.7	59.1±30.5	60.0±23.0	28.1± 8.7	31.7± 8.8
	Youth	5	51.5±14.0	44.5±17.3	67.8±17.6	49.0±24.4	29.0±13.1	31.0±13.1
	Adult and Youth	18	47.9±10.0	48.4± 9.6	65.6±22.9	60.7±18.6	26.5± 6.2	33.4± 6.1
District	Central	24	52.0±13.9	48.9±14.9	63.7±23.4	54.1±23.6	27.0± 8.4	33.0± 8.4
	Cumberland	26	50.8±14.5	51.5±13.0	57.7±35.3	59.9±22.6	27.0± 9.2	32.9± 9.2
	Smoky	23	57.4±13.5	54.4±14.5	55.7±25.0	65.6±23.2	28.4± 8.1	31.6± 8.2
	Western	20	49.8±13.1	48.1±13.7	67.4±28.9	58.7±18.2	29.5± 8.1	30.1± 8.6

^{a, b, c} Means without a common letter subscript within the same column and demographic data family are statistically different ($p < 0.05$). Absence of subscript letters indicates no statistical difference at the five percent level. Mean scores represent averaged MAP percentile scores $\pm$ the standard deviation.

Table I-11. MAP Communication Response Style means by demographic categories.

Demographic Variable		n	Empathetic	Critical	Searching	Advising
1998 Extension Title	Ext Agent II	4	15.0 _{ab} ±10.1	6.8 _a ± 4.3	18.5 _a ± 1.9	19.8 _a ±10.0
	Ext Agent II & County Dir	14	15.4 _a ± 6.8	5.0 _b ± 4.4	17.5 _b ± 8.0	22.1 _{ab} ± 8.7
	Ext Agent III	3	6.7 _b ± 4.2	6.7 _{ab} ± 3.2	21.7 _{ab} ± 4.9	25.0 _{ab} ± 2.6
	Ext Agent III & County Dir	72	17.4 _a ± 6.3	7.8 _{ab} ± 5.1	14.5 _{ab} ± 6.8	20.1 _b ± 6.8
Title Type	Existing Co Dir	85	17.1 _a ± 6.4	7.4± 5.1	15.0± 7.1	20.4± 7.1
	Became Co Dir Later	8	11.4 _b ± 8.8	6.9± 3.6	19.9± 3.6	22.0± 7.7
EEO Age	Under 40	82	13.7± 7.7	6.2± 4.1	18.3± 7.5	21.8± 8.8
	40 or Over	11	17.0± 6.5	7.5± 5.1	14.9± 6.9	20.4± 6.9
Age Group	Thirties	11	13.7 _a ± 7.7	6.2± 4.1	18.3 _a ± 7.5	21.8± 8.8
	Forties	44	15.9 _{ab} ± 6.4	7.5± 5.6	16.6 _a ± 7.0	19.6± 6.9
	Fifties	33	18.8 _b ± 6.6	7.0± 4.5	13.2 _b ± 6.6	21.1± 7.0
	Sixties	5	15.0 _{ab} ± 5.2	10.4± 4.7	12.0 _{ab} ± 2.6	22.6± 6.7
Gender	Female	19	18.0± 7.8	5.5± 4.8	17.0± 6.8	19.5± 5.9
	Male	74	13.0± 6.4	7.8± 5.0	14.9± 7.0	20.8± 7.4
Years of Service	0 to 4.9	3	8.3 _a ± 2.5	7.3 _{ab} ± 2.5	20.7 _{ab} ± 3.5	24.0± 5.6
	5 to 9.9	7	18.7 _b ± 6.9	4.0 _a ± 4.6	18.1 _{ab} ± 6.9	19.1± 5.5
	10 to 14.9	10	12.1 _a ± 5.1	5.5 _a ± 3.9	18.9 _a ± 7.3	23.5± 9.1
	15 to 19.9	18	17.4 _b ± 6.8	6.7 _{ab} ± 5.8	15.1 _{abc} ± 7.4	20.2± 8.0
	20 to 24.9	22	15.6 _{ab} ± 6.8	8.1 _{ab} ± 5.5	16.7 _{ab} ± 7.0	19.5± 7.4
	25 to 29.9	20	18.7 _b ± 6.3	7.9 _{ab} ± 5.3	13.4 _{bc} ± 6.9	20.0± 5.9
	30 to 34.9	9	19.4 _b ± 6.9	7.8 _{ab} ± 2.4	10.9 _{cd} ± 4.8	21.9± 7.8
	35 or more	4	16.3 _{ab} ± 5.1	12.0 _b ± 3.6	11.3 _{abc} ± 2.2	20.5± 5.4
Ed. Level	Bachelor's	9	18.7± 6.6	6.2± 4.9	1.32± 8.6	18.8± 7.3
	Master's	84	16.4± 6.7	7.4± 5.0	15.2± 6.8	20.8± 7.1
Subject Matter Base	Agriculture	74	16.3± 6.4	7.7± 5.0	15.0± 7.0	20.8± 7.4
	Family & Consumer Sci.	19	18.1± 7.8	5.9± 5.0	16.5± 7.0	19.5± 5.9

^{a, b, c} Means without a common letter subscript within the same column and demographic data family are statistically different ($p < 0.05$). Absence of subscript letters indicates no statistical difference at the five percent level. Mean scores represent averaged MAP percentile scores ± the standard deviation.

Table I-11. Continued.

Demographic Variable		n	Empathetic	Critical	Searching	Advising
Audience	Adult	70	15.9± 6.2	7.4± 4.9	15.8± 7.2	20.8± 7.3
	Youth	5	17.2± 6.9	6.4± 7.2	13.8± 8.0	22.6± 8.7
	Adult and Youth	18	19.3± 8.3	7.3± 4.8	14.2± 6.2	19.2± 6.3
District	Central	24	16.3± 6.0	6.7± 5.6	16.7± 7.4	20.3± 7.8
	Cumberland	26	18.2± 7.9	7.1± 4.7	14.7± 6.6	19.9± 7.1
	Smoky Mountain	23	16.4± 6.5	8.5± 4.2	15.3± 6.7	19.8± 7.0
	Western	20	15.4± 6.2	7.0± 5.7	14.7± 7.5	22.5± 6.7

^{a, b, c} Means without a common letter subscript within the same column and demographic data family are statistically different ($p < 0.05$). Absence of subscript letters indicates no statistical difference at the five percent level. Mean scores represent averaged MAP percentile scores $\pm$ the standard deviation.

Table I-12. MAP Personal Style score means by demographic categories.

Demographic Variable		n	Thinking	Intuiting	Sensing	Feeling
1998 Extension Title	Ext Agent II	4	31.3 _a ± 3.3	16.8 _a ± 3.6	27.0± 2.4	25.0± 1.4
	Ext Agent II & County Dir	14	25.1 _b ± 5.6	24.0 _b ± 5.0	26.1± 4.4	24.7± 5.1
	Ext Agent III	3	29.3 _{ab} ± 4.5	23.3 _{ab} ± 3.2	25.3± 3.1	22.0± 7.8
	Ext Agent III & County Dir	72	26.4 _{ab} ± 5.1	22.0 _{ab} ± 5.4	28.1± 4.3	23.6± 4.1
Title Type	Existing Co Dir	85	26.2 _a ± 5.2	22.3± 5.4	27.8± 4.3	23.7± 4.3
	Became Co Dir Later	8	30.4 _b ± 3.6	19.6± 4.7	26.3± 2.6	23.7± 4.9
EEO Age	Under 40	82	27.6± 6.0	21.3± 5.5	28.9± 4.1	22.3± 6.0
	40 or Over	11	26.4± 5.1	22.2± 5.4	27.5± 4.3	23.9± 4.0
Age Group	Thirties	11	27.6± 6.0	21.3± 5.5	28.9± 4.1	22.3± 6.0
	Forties	44	26.3± 5.6	22.1± 6.0	27.3± 4.6	24.3± 4.5
	Fifties	33	26.3± 4.7	22.5± 4.8	27.7± 5.8	23.5± 3.7
	Sixties	5	26.8± 3.4	22.2± 4.6	27.8± 5.3	23.4± 2.3
Gender	Female	19	27.2± 5.2	20.1± 5.3	28.7± 5.0	24.0± 4.1
	Male	74	26.3± 5.2	22.7± 5.3	27.4± 4.0	23.7± 4.4
Years of Service	0 to 4.9	3	25.7± 5.1	23.3 _{ab} ± 5.7	24.7 _{ab} ± 3.5	26.3± 1.2
	5 to 9.9	7	25.1± 8.7	27.0 _a ± 7.9	23.7 _a ± 4.6	24.1± 6.5
	10 to 14.9	10	28.0± 4.0	22.0 _{ab} ± 5.5	27.2 _{ab} ± 3.9	22.8± 5.4
	15 to 19.9	18	25.1± 6.0	22.8 _{ab} ± 5.4	28.4 _b ± 4.8	23.7± 4.2
	20 to 24.9	22	26.6± 5.6	21.6 _b ± 5.4	28.2 _b ± 4.8	23.7± 5.0
	25 to 29.9	20	27.6± 3.2	20.1 _b ± 4.2	28.5 _b ± 2.9	23.9± 3.7
	30 to 34.9	9	26.1± 5.2	23.3 _{ab} ± 4.3	27.2 _{ab} ± 2.8	23.3± 2.8
	35 or more	4	27.0± 3.9	20.8 _{ab} ± 3.7	28.5 _{ab} ± 5.8	24.0± 2.2

a, b, c Means without a common letter subscript within the same column and demographic data family are statistically different (p<0.05). Absence of subscript letters indicates no statistical difference at the five percent level. Mean scores represent averaged MAP percentile scores ± the standard deviation.

Table I-12. Continued.

Demographic Variable		n	Thinking	Intuiting	Sensing	Feeling
Ed. Level	Bachelor's	9	28.0± 3.3	20.7± 4.9	25.9± 4.1	25.6± 3.2
	Master's	84	26.3± 5.4	22.3± 5.4	27.9± 4.2	23.6± 4.4
Subject Matter Base	Agriculture	74	26.4± 5.2	22.6± 5.3	27.4± 4.0	23.7± 4.4
	Family & Consumer Sci.	19	27.0± 5.4	20.3± 5.5	28.6± 5.0	24.1± 4.2
Audience	Adult	70	26.7± 5.4	22.1± 5.4	27.5± 4.1	23.8± 4.1
	Youth	5	24.6± 6.7	22.8± 5.4	29.8± 6.1	22.8± 6.7
	Adult and Youth	18	26.3± 4.2	22.1± 5.6	27.6± 4.4	23.9± 4.7
District	Central	24	26.7 _{ab} ± 4.8	21.8± 4.9	28.5± 4.6	23.0± 4.4
	Cumberland	26	25.0 _a ± 5.8	22.4± 6.2	27.4± 4.4	25.2± 4.5
	Smoky Mountain	23	26.4 _{ab} ± 4.1	23.6± 4.9	26.8± 3.4	23.3± 3.8
	Western	20	28.3 _b ± 5.9	20.5± 5.2	27.9± 4.5	23.3± 4.4

^{a, b, c} Means without a common letter subscript within the same column and demographic data family are statistically different ($p < 0.05$). Absence of subscript letters indicates no statistical difference at the five percent level. Mean scores represent averaged MAP percentile scores ± the standard deviation.

Table I-13. Correlation coefficients for comparisons of PSI variables with continuous numeric demographic variables.

Personality Dimension	Number of Observations	Years in Title	Years as CED	Age in Years	Extension Years of Service	Number of Employees Supervised
Performance in PSI w/o Stress Eval.	79	-0.08788 0.4412	-0.07588 0.5063	-0.03790 0.7402	-0.01770 0.8769	0.00572 0.9601
PSI Performance Total (all 13 vars.)	79	-0.09690 0.3956	-0.08665 0.4476	-0.04295 0.7071	-0.02748 0.8100	0.01801 0.8748
Agreeableness	104	0.06349 0.5220	-0.00504 0.9595	0.06452 0.5153	0.13382 0.1756	-0.13416 0.1745
Child Management Skills	104	0.06677 0.5007	-0.00452 0.9637	0.03592 0.7173	0.12045 0.2232	-0.22916 0.0193
Interest in Community Develop.	104	0.15706 0.1113	0.17434 0.0767	0.18600 0.0587	0.25829 0.0081	-0.10577 0.2852
Conscientiousness	104	0.10664 0.2813	0.06191 0.5324	0.10221 0.3019	0.06832 0.4908	-0.10759 0.2770
Customer Responsiveness	104	0.05436 0.5836	0.03690 0.7100	0.08065 0.4157	0.10523 0.2877	-0.06849 0.4896
Emotional Stability	104	0.04502 0.6500	0.01494 0.8803	0.06849 0.4897	0.10133 0.3061	0.01140 0.9086
Extroversion	104	0.15570 0.1145	0.08592 0.3858	0.08546 0.3884	0.17485 0.0759	-0.07017 0.4790
Integrity and Values	104	0.15489 0.1164	0.07572 0.4449	0.06421 0.5172	0.10701 0.2796	-0.05157 0.6031
Nurturance	104	0.15530 0.1154	0.06270 0.5272	0.15124 0.1254	0.23007 0.0188	-0.16898 0.0864
Openness to New Experience	104	0.17986 0.0677	0.14543 0.1407	0.15564 0.1147	0.09674 0.3286	-0.03424 0.7300
Optimism	104	0.12015 0.2244	0.04699 0.6357	0.15337 0.1201	0.13560 0.1699	0.02147 0.8288
Achievement & Status-striving	104	0.16006 0.1046	0.15800 0.1092	0.16582 0.0925	0.21338 0.0296	-0.04516 0.6489
Potential for Long Tenure	104	0.24698 0.0115	0.17694 0.0724	0.27954 0.0041	0.42744 <.0001	-0.08521 0.3898
Work Drive	104	0.22069 0.0244	0.26534 0.0065	0.12754 0.1970	0.13939 0.1582	0.08977 0.3648
Overall Personality Score	104	0.17989 0.0677	0.13438 0.1738	0.16724 0.0897	0.22554 0.0213	-0.06310 0.5246
Big Five Model of Personality	104	0.14857 0.1323	0.08365 0.3986	0.12775 0.1962	0.15210 0.1232	-0.08622 0.3841

Shaded cells represent significant correlations ($p < 0.05$).

Table I-13. Continued.

Personality Dimension	Number of Observations	Years in Title	Years as CED	Age in Years	Extension Years of Service	Number of Employees Supervised
Cognitive - Numeric Reasoning	104	0.02939 0.7671	0.09271 0.3493	-0.04514 0.6491	0.05048 0.6108	0.07500 0.4492
Cognitive - Verbal Reasoning	104	-0.13471 0.1727	-0.15117 0.1256	-0.09599 0.3324	-0.05030 0.6121	0.18277 0.0633
Cognitive - Abstract Reasoning	104	-0.29598 0.0023	-0.23294 0.0173	-0.31072 0.0013	-0.20313 0.0386	-0.00746 0.9401
Overall Cognitive (N+V+A)/3	104	-0.19841 0.0435	-0.14959 0.1296	-0.21695 0.0270	-0.10941 0.2689	0.09258 0.3499
Overall Cognitive (N+A)/2	104	-0.17846 0.0699	-0.10483 0.2896	-0.22627 0.0209	-0.10696 0.2798	0.03353 0.7354

Shaded cells represent significant correlations ($p < 0.05$).

Table I-14. PSI performance, tenure, work drive and total score means by demographic categories.

Demographic Variable		n	PSI Performance	PSI Perf. + Stress Tolerance	n	Potential for Long Tenure	Work Drive	PSI Total Score
1998 Extension Title	Ext Agent I	5	5.2±0.7	5.1±0.7	7	3.3 _{ab} ±0.7	3.1 _a ±0.4	3.6±0.3
	Ext Agent II	8	5.3±1.1	5.3±1.1	12	3.2 _{ab} ±0.6	3.5 _{ab} ±0.7	3.7±0.4
	Ext Agent II & County Dir	7	5.3±1.0	5.3±1.0	13	3.4 _a ±0.4	3.3 _{ab} ±0.8	3.5±0.3
	Ext Agent III	13	5.1±1.0	5.1±1.0	13	3.7 _{bc} ±0.6	3.3 _a ±0.6	3.7±0.4
	Ext Agent III & County Dir	46	5.1±1.4	5.1±1.4	59	3.8 _c ±0.6	3.7 _b ±0.7	3.8±0.6
Title Type	Existing Co Dir	53	5.1±1.4	5.1±1.4	72	3.7±0.6	3.6±0.7	3.7±0.5
	Became Co Dir Later	26	5.2±1.0	5.2±1.0	32	3.4±0.7	3.3±0.6	3.7±0.3
EEO Age	Under 40	17	5.4±1.0	5.4±1.0	22	3.3 _a ±0.6	3.3±0.7	3.6±0.3
	40 or Over	62	5.1±1.3	5.0±1.3	82	3.7 _b ±0.6	3.6±0.7	3.8±0.5
Age Group	Twenties	2	5.3±0.2	5.2±0.2	3	3.0 _{ab} ±1.0	3.0±0.2	3.4±0.1
	Thirties	15	5.4±1.0	5.4±1.0	19	3.3 _a ±0.5	3.4±0.7	3.6±0.3
	Forties	34	5.0±1.2	5.0±1.2	49	3.7 _{bc} ±0.6	3.5±0.7	3.8±0.4
	Fifties	25	5.2±1.5	5.1±1.5	29	3.6 _{bc} ±0.7	3.7±0.7	3.7±0.7
	Sixties	3	4.8±1.3	4.7±1.3	4	4.1 _c ±0.2	3.2±0.6	4.0±0.2
Race	Black	3	5.2±0.4	5.3±0.3	4	3.3±0.5	3.0±0.9	3.4±0.3
	White	76	5.1±1.3	5.1±1.3	100	3.6±0.6	3.5±0.7	3.7±0.5
Gender	Female	20	5.1±1.2	5.0±1.2	23	3.8±0.6	3.5±0.7	4.0 _a ±0.3
	Male	59	5.2±1.3	5.1±1.3	81	3.6±0.6	3.5±0.7	3.7 _b ±0.5
Years of Service	0 to 4.9	5	4.4±0.8	4.4±0.8	7	3.2 _a ±0.8	3.2±0.5	3.5 _{ab} ±0.3
	5 to 9.9	12	5.5±0.9	5.5±0.9	15	3.2 _a ±0.5	3.4±0.6	3.7 _{ab} ±0.3
	10 to 14.9	6	5.5±0.9	5.5±0.9	11	3.3 _{ac} ±0.5	3.3±0.9	3.5 _a ±0.4
	15 to 19.9	13	5.1±1.6	5.0±1.6	20	3.5 _{ad} ±0.8	3.6±0.8	3.7 _{ab} ±0.6
	20 to 24.9	15	4.7±1.0	4.7±1.0	19	3.8 _{bd} ±0.3	3.5±0.5	3.8 _{ab} ±0.3
	25 to 29.9	20	5.6±1.4	5.5±1.4	22	4.0 _b ±0.5	3.7±0.7	3.9 _b ±0.5
	30 to 34.9	6	4.6±1.2	4.6±1.1	7	3.7 _a ±0.7	3.8±0.6	3.8 _{ab} ±0.9
	35 or more	2	4.6 _{ab} ±1.8	4.5±1.7	3	4.0 _{bc} ±0.2	3.0±0.5	3.9 _{ab} ±0.1

a, b, c Means without a common letter subscript within the same column and demographic data family are statistically different (p<0.05). Absence of subscript letters indicates no statistical difference at the five percent level. Mean scores represent averaged PSI scores ± the standard deviation.

Table I-14. Continued.

Demographic Variable		n	PSI Performance	PSI Perf. + Stress Tolerance	n	Potential for Long Tenure	Work Drive	PSI Total Score
Ed. Level	Bachelor's	10	5.6±1.0	5.5±1.0	13	3.7±0.7	3.1 _a ±0.7	3.7±0.4
	Master's	69	5.1±1.3	5.1±1.3	91	3.6±0.6	3.6 _b ±0.7	3.7±0.5
Subject Matter Base	Agriculture	61	5.2±1.3	5.1±1.3	84	3.6±0.6	3.5±0.7	3.7 _a ±0.5
	Family & Consumer Sci.	18	5.1±1.2	5.0±1.2	20	3.8±0.6	3.5±0.7	4.0 _b ±0.3
Audience	Adult	56	5.2±1.3	5.1±1.3	78	3.6 _a ±0.7	3.5±0.7	3.7±0.5
	Youth	6	5.0±0.5	5.0±0.5	7	3.1 _b ±0.4	3.1±0.8	3.6±0.0
	Adult & Youth	17	5.2±1.4	5.2±1.3	19	3.8 _a ±0.5	3.6±0.6	3.9±0.4
District	Central	25	4.3 _a ±1.2	4.3 _a ±1.2	27	3.5±0.7	3.4±0.7	3.7±0.6
	Cumberland	24	5.5 _{bc} ±1.3	5.5 _{bc} ±1.3	29	3.7±0.5	3.7±0.6	3.8±0.4
	Smoky	20	5.2 _b ±0.8	5.2 _b ±0.9	24	3.7±0.7	3.6±0.6	3.8±0.5
	Western	10	6.2 _c ±0.7	6.1 _c ±0.7	24	3.6±0.6	3.3±0.8	3.6±0.5

Table I-15. PSI “Big 5” personality score means by demographic categories.

Demographic Variable		n	Agreeableness	Conscientiousness	Emotional Stability	Extroversion	Openness	“Big 5” Personality
1998 Extension Title	Ext Agent I	7	4.0±0.3	3.4±0.4	3.6±0.5	3.8±0.5	3.4±0.8	18.2±1.80.
	Ext Agent II	12	4.0±0.4	3.6±0.6	3.6±0.5	3.8±0.5	3.2±0.6	18.3±1.8
	Ext Agent II &	13	3.70±0.4	3.2±0.5	3.3±0.5	3.5±0.8	3.2±0.8	16.8±2.0
	Ext Agent III	13	4.0±0.5	3.3±0.4	3.5±0.5	3.8±0.6	3.3±0.4	18.0±1.9
	Ext Agent III & County Dir	59	4.0±0.7	3.4±0.7	3.6±0.7	3.9±0.7	3.4±0.7	18.2±2.7
Title Type	Existing Co	72	3.9±0.7	3.3±0.6	3.5±0.7	3.8±0.7	3.4±0.8	17.9±2.6
	Became Co Dir Later	32	4.0±0.5	3.5±0.5	3.6±0.5	3.8±0.5	3.3±0.6	18.1±1.8
EEO Age	Under 40	22	3.9±0.4	3.3±0.4	3.4±0.5	3.7±0.6	3.2±0.7	17.5±1.7
	40 or Over	82	4.0±0.6	3.4±0.6	3.6±0.6	3.8±0.7	3.4±0.7	18.2±2.5
Age Group	Twenties	3	3.7±0.1	3.4±0.2	3.2±0.3	3.4±0.5	3.0±0.4	16.7±0.3
	Thirties	19	3.9±0.4	3.2±0.5	3.5±0.5	3.6±0.6	3.3±0.8	17.6±1.9
	Forties	49	4.0±0.5	3.4±0.5	3.6±0.5	3.9±0.6	3.2±0.6	18.1±1.8
	Fifties	29	3.9±0.8	3.5±0.8	3.4±0.8	3.7±0.8	3.5±0.8	18.0±3.5
	Sixties	4	4.3±0.6	3.4±0.4	3.9±0.4	4.1±0.3	3.8±0.5	19.5±1.4
Race	Black	4	3.6±0.6	3.1±0.6	3.3±0.3	3.8±0.3	2.6 _a ±0.8	16.4±1.5
	White	100	3.4±0.6	3.5±0.6	3.8±0.7	3.4 _b ±0.7	18.1±2.4	
Gender	Female	23	4.2 _a ±0.4	3.7 _a ±0.6	3.7±0.6	4.1 _a ±0.4	3.6±0.6	19.2±1.7
	Male	81	3.9 _b ±0.6	3.3 _b ±0.6	3.5±0.6	3.7 _b ±0.7	3.3±0.7	17.7±2.5
Years of Service	0 to 4.9	7	3.9 _{ab} ±0.4	3.5 _{ab} ±0.3	3.4 _{ac} ±0.7	3.4 _{ac} ±0.8	3.3 _{ab} ±0.7	17.4±2.2
	5 to 9.9	15	3.9 _{ab} ±0.4	3.4 _{ab} ±0.6	3.5 _b ±0.5	4.0 _b ±0.3	3.5 _{ab} ±0.8	18.2±1.6
	10 to 14.9	11	3.9 _{ab} ±0.5	3.3 _{ab} ±0.6	3.5 _a ±0.5	3.2 _c ±0.7	3.0 _a ±0.7	16.9±2.3
	15 to 19.9	20	3.8 _a ±0.7	3.1 _a ±0.7	3.5 _{bc} ±0.7	3.8 _{ab} ±0.7	3.3 _{ab} ±0.7	17.5±2.8
	20 to 24.9	19	4.0 _{ab} ±0.5	3.4 _{ab} ±0.6	3.6 _{bc} ±0.5	3.8 _{ab} ±0.5	3.2 _{ab} ±0.4	18.0±1.6
	25 to 29.9	22	4.1 _b ±0.6	3.6 _b ±0.6	3.5 _b ±0.7	4.0 _b ±0.6	3.6 _b ±0.7	18.8±2.5
	30 to 34.9	7	3.9 _{ab} ±1.1	3.4 _{ab} ±0.6	3.7 _{bc} ±0.9	3.8 _{ab} ±1.0	3.4 _{ab} ±0.8	18.3±4.1
	35 or more	3	4.2 _{ab} ±0.7	3.4 _{ab} ±0.4	4.0 _{bc} ±0.5	4.1 _{ab} ±0.4	3.6 _{ab} ±0.6	19.2±1.6

a, b, c Means without a common letter subscript within the same column and demographic data family are statistically different ($p < 0.05$). Absence of subscript letters indicates no statistical difference at the five percent level. Mean scores represent averaged PSI scores ± the standard deviation.

Table I-15. Continued.

Demographic Variable		n	Agreeableness	Conscientiousness	Emotional Stability	Extroversion	Openness	"Big 5" Personality
Ed. Level	Bachelor's	13	4.1±0.6	3.4±0.4	3.6±0.5	3.6±0.7	3.2±0.8	17.9±2.1
	Master's	91	3.9±0.6	3.4±0.6	3.5±0.6	3.8±0.6	3.4±0.7	18.0±2.4
Subject	Agriculture	74	3.9 _a ±0.6	3.3 _a ±0.6	3.5±0.6	3.7 _a ±0.7	3.3±0.7	17.7±2.4
	Family & Consumer Sci.	19	4.2 _b ±0.4	3.7 _b ±0.6	3.7±0.6	4.1 _b ±0.4	3.6±0.6	19.3±1.8
Audience	Adult	70	3.9±0.6	3.4±0.6	3.5±0.7	3.7±0.7	3.4±0.7	17.9±2.5
	Youth	5	3.6±0.4	3.5±0.6	3.5±0.5	3.9±0.4	3.2±1.0	17.7±2.3
	Adult & Youth	18	4.1±0.4	3.4±0.6	3.6±0.5	4.0±0.5	3.4±0.6	18.5±1.8
District	Central	24	3.9±0.7	3.4±0.6	3.6±0.7	3.7±0.7	3.2 _{ab} ±0.7	17.7±2.8
	Cumberland	26	4.1±0.4	3.4±0.7	3.5±0.6	3.9±0.6	3.5 _a ±0.6	18.5±2.1
	Smoky	23	3.9±0.7	3.4±0.5	3.5±0.7	3.9±0.6	3.6 _a ±0.6	18.3±2.5
	Western	20	3.9±0.5	3.4±0.6	3.5±0.6	3.6±0.7	3.1 _b ±0.8	17.4±2.1

^{a, b, c} Means without a common letter subscript within the same column and demographic data family are statistically different ($p < 0.05$). Absence of subscript letters indicates no statistical difference at the five percent level. Mean scores represent averaged PSI scores $\pm$ the standard deviation.

Table I-16. PSI optimism, child management skill, community development interest, customer responsiveness, integrity/values and nurturance score means by demographic categories.

Demographic Variable		n	Optimism	Child Mgmt. Skills	Community Develop. Interest	Customer Responsiveness	Integrity & Values	Nuturance
1998 Extension Title	Ext Agent I	7	3.8± 0.6	3.8± 0.4	3.4± 1.0	4.1± 0.4	3.9± 0.3	3.6± 0.7
	Ext Agent II	12	3.8± 0.8	3.6± 0.8	3.7± 0.6	4.1± 0.7	4.1± 0.3	3.6± 0.6
	Ext Agent II & County Dir	13	3.5± 0.7	3.4± 0.7	3.6± 0.5	4.0± 0.6	3.8± 0.4	3.3± 0.4
	Ext Agent III	13	3.9± 0.4	3.7± 0.7	3.6± 0.5	4.0± 0.3	4.0± 0.5	3.7± 0.6
	Ext Agent III & County Dir	59	3.9± 0.7	3.6± 0.7	3.9± 0.7	4.1± 0.7	4.0± 0.7	3.7± 0.7
Title Type	Existing Co	72	3.8± 0.7	3.6± 0.7	3.8± 0.7	4.1± 0.7	4.0± 0.6	3.6± 0.6
	Became Co Dir Later	32	3.9± 0.6	3.7± 0.7	3.6± 0.7	4.1± 0.5	4.0± 0.4	3.6± 0.6
EEO Age	Under 40	82	3.6± 0.6	3.6± 0.7	3.6± 0.7	4.0± 0.5	3.9± 0.3	3.5± 0.6
	40 or Over	22	3.9± 0.7	3.6± 0.7	3.8± 0.7	4.1± 0.7	4.0± 0.6	3.6± 0.6
Age Group	Twenties	3	3.2± 0.2	3.5± 0.2	3.0 _a ± 1.4	3.7± 0.3	3.8± 0.4	3.1± 0.5
	Thirties	19	3.7± 0.7	3.6± 0.8	3.7 _{ab} ± 0.5	4.1± 0.5	3.9± 0.3	3.5± 0.5
	Forties	49	3.9± 0.5	3.6± 0.6	3.7 _{ab} ± 0.5	4.1± 0.5	4.0± 0.5	3.6± 0.5
	Fifties	29	3.8± 0.9	3.5± 0.9	3.8 _{ab} ± 0.9	4.2± 0.9	3.9± 0.8	3.6± 0.8
	Sixties	4	4.2± 0.3	4.0± 0.5	4.3 _b ± 0.1	4.1± 0.2	4.1± 0.3	3.9± 0.2
Race	Black	4	3.3± 0.8	2.9 _a ± 0.9	3.5± 0.2	3.5± 0.8	4.0± 0.6	3.2± 0.8
	White	100	3.8± 0.7	3.6 _b ± 0.7	3.8± 0.7	4.1± 0.6	4.0± 0.6	3.6± 0.6
Gender	Female	23	4.1 _a ± 0.4	3.9 _a ± 0.5	4.0± 0.5	4.3± 0.4	4.2 _a ± 0.4	3.8± 0.6
	Male	81	3.7 _b ± 0.7	3.5 _b ± 0.8	3.7± 0.7	4.0± 0.7	3.9 _b ± 0.6	3.6± 0.6
Years of Service	0 to 4.9	7	3.6 _{ab} ± 0.8	3.7 _{ab} ± 0.5	3.3 _a ± 1.0	4.1± 0.3	4.0 _{ab} ± 0.2	3.5 _{ab} ± 0.6
	5 to 9.9	15	3.8 _{ab} ± 0.7	3.6 _{ab} ± 0.7	3.7 _{ab} ± 0.5	4.0± 0.6	3.9 _{ab} ± 0.4	3.4 _a ± 0.6
	10 to 14.9	11	3.5 _a ± 0.7	3.2 _a ± 0.8	3.5 _{ab} ± 0.5	3.9± 0.7	3.9 _{ab} ± 0.4	3.4 _{ab} ± 0.5
	15 to 19.9	20	3.8 _{ab} ± 0.7	3.5 _{ab} ± 0.8	3.6 _{ab} ± 0.8	4.0± 0.8	3.7 _a ± 0.8	3.6 _{ab} ± 0.7
	20 to 24.9	19	3.9 _{ab} ± 0.3	3.6 _{ab} ± 0.4	3.8 _{ab} ± 0.4	4.1± 0.4	4.2 _b ± 0.4	3.6 _{ab} ± 0.4
	25 to 29.9	22	4.0 _b ± 0.6	3.7 _b ± 0.8	4.0 _b ± 0.6	4.3± 0.5	4.1 _b ± 0.5	3.9 _b ± 0.7
	30 to 34.9	7	3.7 _{ab} ± 1.2	3.8 _{ab} ± 0.7	3.8 _{ab} ± 1.1	3.9± 1.1	3.9 _{ab} ± 1.1	3.7 _{ab} ± 0.9
	35 or more	3	4.1 _{ab} ± 0.3	4.1 _{ab} ± 0.6	4.3 _b ± 0.1	4.0± 0.2	4.0 _{ab} ± 0.1	3.9 _{ab} ± 0.1

^{a, b, c} Means without a common letter subscript within the same column and demographic data family are statistically different (p<0.05). Absence of subscript letters indicates no statistical difference at the five percent level. Mean scores represent averaged PSI scores ± the standard deviation.

Table I-16. Continued.

Demographic Variable		n	Optimism	Child Mgmt. Skills	Community Develop. Interest	Customer Responsiv e-ness	Integrity & Values	Nuturance
Ed. Level	Bachelor's	13	3.7± 0.6	3.5± 0.6	3.7± 0.9	4.0± 0.6	4.1± 0.4	3.8± 0.6
	Master's	91	3.8± 0.7	3.6± 0.7	3.8± 0.6	4.1± 0.6	4.0± 0.6	3.6± 0.6
Subject	Agriculture	84	3.7 _a ± 0.7	3.5 _a ± 0.7	3.7 _a ± 0.7	4.0± 0.7	3.9± 0.6	3.6± 0.6
	Family & Consumer Sci.	20	4.1 _b ± 0.4	3.9 _b ± 0.4	4.0 _b ± 0.4	4.3± 0.4	4.2± 0.4	3.8± 0.6
Audience	Adult	78	3.8± 0.7	3.6± 0.7	3.7± 0.7	4.1± 0.6	4.0± 0.6	3.6 _a ± 0.6
	Youth	7	3.7± 0.9	3.3± 0.8	3.8± 0.4	3.8± 0.7	3.9± 0.3	3.1 _b ± 0.8
	Adult and Youth	19	4.0± 0.3	3.8± 0.5	3.9± 0.5	4.2± 0.4	4.1± 0.4	3.8 _a ± 0.6
District	Central	27	3.8± 0.7	3.5± 0.9	3.8± 0.7	4.0± 0.7	3.9 _a ± 0.7	3.5± 0.7
	Cumberland	29	3.9± 0.6	3.8± 0.6	3.8± 0.5	4.3± 0.3	4.1 _b ± 0.4	3.7± 0.5
	Smoky	24	3.9± 0.8	3.7± 0.6	3.8± 0.7	4.1± 0.7	4.0 _{ab} ± 0.6	3.7± 0.7
	Western	24	3.7± 0.7	3.4± 0.8	3.6± 0.8	3.9± 0.7	3.9 _a ± 0.5	3.5± 0.7

Table I-17. PSI status-striving and aptitude scores means by demographic categories.

Demographic Variable		n	Status/Ach. Striving	Numeric Aptitude	Verbal Aptitude	Abstract Aptitude	Num+Abstr Aptitude	Total Aptitude
1998 Extension Title	Ext Agent I	7	3.4± 0.5	0.73±0.4	0.58±0.2	0.62 _{ab} ±0.3	0.67±0.2	0.64±0.2
	Ext Agent II	12	3.6± 0.5	0.82±0.1	0.61±0.1	0.76 _a ±0.2	0.79±0.1	0.72±0.1
	Ext Agent II & County Dir	13	3.4± 0.6	0.86±0.1	0.59±0.1	0.49 _{ab} ±0.2	0.67±0.2	0.63±0.1
	Ext Agent III	13	3.5± 0.7	0.81±0.2	0.68±0.1	0.55 _{ab} ±0.2	0.68±0.2	0.67±0.1
	Ext Agent III & County Dir	59	3.7± 0.7	0.84±0.2	0.60±0.2	0.56 _b ±0.2	0.70±0.2	0.65±0.2
Title Type	Existing Co	72	3.7± 0.7	0.85±0.2	0.60±0.1	0.55±0.2	0.70±0.2	0.65±0.2
	Became Co Dir Later	32	3.5± 0.6	0.80±0.2	0.63±0.2	0.64±0.2	0.72±0.2	0.68±0.2
EEO Age	Under 40	22	3.3 _a ± 0.5	0.86±0.1	0.63±0.1	0.65±0.3	0.75±0.2	0.70±0.1
	40 or Over	82	3.7 _b ± 0.7	0.82±0.2	0.60±0.2	0.56±0.2	0.69±0.2	0.65±0.2
Age Group	Twenties	11	3.4± 0.1	0.80±0.2	0.50 _{ab} ±0.1	0.61 _{ab} ±0.3	0.71±0.2	0.62±0.2
	Thirties	19	3.4± 0.5	0.87±0.1	0.65 _a ±0.1	0.66 _a ±0.3	0.78±0.2	0.72±0.1
	Forties	49	3.7± 0.6	0.81±0.2	0.60 _{ab} ±0.1	0.59 _{ab} ±0.2	0.70±0.2	0.65±0.1
	Fifties	29	3.6± 0.8	0.85±0.2	0.62 _{ab} ±0.2	0.50 _b ±0.3	0.67±0.2	0.64±0.2
	Sixties	4	3.4± 0.5	0.87±0.1	0.65 _b ±0.1	0.68 _{ab} ±0.3	0.78±0.2	0.72±0.1
Race	Black	4	3.2± 0.4	0.85±0.2	0.48±0.2	0.65±0.3	0.75±0.2	0.64±0.2
	White	100	0.83±0.2	0.61±0.2	0.57±0.2	0.70±0.2	0.66±0.2	
Gender	Female	23	3.9 _a ± 0.5	0.85±0.2	0.63±0.2	0.58±0.3	0.71±0.2	0.67±0.2
	Male	81	3.5 _b ± 0.7	0.83±0.2	0.60±0.2	0.57±0.2	0.70±0.2	0.66±0.3
Years of Service	0 to 4.9	7	3.3 _{ab} ± 0.5	0.86±0.1	0.63 _{ab} ±0.2	0.68 _a ±0.3	0.77±0.2	0.71 _a ±0.2
	5 to 9.9	15	3.5 _{ab} ± 0.5	0.77±0.3	0.57 _{ab} ±0.2	0.63 _a ±0.3	0.70±0.2	0.65 _{ab} ±0.2
	10 to 14.9	11	3.1 _a ± 0.6	0.86±0.1	0.62 _{ab} ±0.1	0.61 _a ±0.2	0.73±0.1	0.68 _{ab} ±0.1
	15 to 19.9	20	3.8 _b ± 0.8	0.83±0.2	0.66 _a ±0.1	0.58 _{ab} ±0.2	0.70±0.2	0.68 _a ±0.1
	20 to 24.9	19	3.5 _{ab} ± 0.4	0.84±0.2	0.60 _{ab} ±0.2	0.53 _{ab} ±0.3	0.68±0.2	0.64 _{ab} ±0.2
	25 to 29.9	22	3.9 _b ± 0.8	0.87±0.2	0.62 _{ab} ±0.2	0.61 _a ±0.2	0.74±0.2	0.68 _a ±0.2
	30 to 34.9	7	3.6 _{ab} ± 0.6	0.79±0.1	0.52 _b ±0.1	0.37 _b ±0.3	0.58±0.2	0.54 _b ±0.1
	35 or more	3	4.0 _b ± 0.2	0.80±0.1	0.52 _{ab} ±0.3	0.44 _{ab} ±0.2	0.62±0.1	0.57 _{ab} ±0.2

^{a, b, c} Means without a common letter subscript within the same column and demographic data family are statistically different ($p < 0.05$). Absence of subscript letters indicates no statistical difference at the five percent level. Mean scores represent averaged PSI scores ± the standard deviation.

Table I-17. Continued.

Demographic Variable		n	Status/Ach. Striving	Numeric Aptitude	Verbal Aptitude	Abstract Aptitude	Num+Abstr Aptitude	Total Aptitude
Ed. Level	Bachelor's	13	3.5± 0.7	0.83±0.1	0.54±0.2	0.55±0.2	0.69±0.1	0.63±0.1
	Master's	91	3.6± 0.7	0.83±0.2	0.62±0.1	0.58±0.3	0.71±0.2	0.66±0.2
Subject	Agriculture	84	3.5 _a ± 0.7	0.82 _{ab} ±0.2	0.61 _{ab} ±0.1	0.57 _{ab} ±0.2	0.70 _{ab} ±0.2	0.66 _{ab} ±0.1
	Family & Consumer Sci.	20	3.9 _b ± 0.5	0.87 _{ab} ±0.2	0.62 _{ab} ±0.2	0.58 _{ab} ±0.3	0.72 _{ab} ±0.2	0.67 _{ab} ±0.2
Audience	Adult	78	3.6± 0.7	0.84±0.2	0.62±0.1	0.58±0.2	0.71±0.2	0.67±0.1
	Youth	7	3.5± 0.6	0.83±0.4	0.57±0.2	0.68±0.2	0.75±0.2	0.68±0.2
	Adult and Youth	19	3.8± 0.6	0.79±0.2	0.57±0.2	0.52±0.3	0.66±0.2	0.62±0.2
District	Central	27	3.5± 0.8	0.85±0.2	0.64±0.2	0.56±0.2	0.71±0.2	0.67±0.2
	Cumberland	29	3.7± 0.6	0.86±0.1	0.62±0.1	0.59±0.3	0.72±0.2	0.67±0.1
	Smoky	24	3.6± 0.5	0.78±0.2	0.59±0.1	0.59±0.3	0.68±0.2	0.64±0.2
	Western	24	3.6± 0.7	0.83±0.2	0.58±0.2	0.56±0.3	0.70±0.2	0.65±0.2

^{a, b, c} Means without a common letter subscript within the same column and demographic data family are statistically different ($p < 0.05$). Absence of subscript letters indicates no statistical difference at the five percent level. Mean scores represent averaged PSI scores ± the standard deviation.

APPENDIX J

MAP Regression analysis models and results

PSI Regression analysis models and results

Regression analysis models and results with MAP and PSI combined

Table J-18. MAP regression (GLM) analysis results utilizing MAP independent variables which were found to be significant in the simple correlation analysis*.

Year	Performance Score Type	Degrees of Freedom (model, error)	F Value	Pr > F	R ²
1998	Program	7, 84	2.04	0.0593	0.145318
	Administrative	7, 80	2.07	0.0569	0.153040
	Total	7, 84	2.26	0.0368	0.158710
1999	Program	7, 82	0.88	0.5257	0.069903
	Administrative	7, 80	1.07	0.3895	0.085720
	Total	7, 82	0.97	0.4604	0.076301
2000	Program	7, 77	1.25	0.2889	0.101688
	Administrative	7, 76	1.06	0.3982	0.088858
	Total	7, 77	1.47	0.1898	0.118021
2001	Program	7, 58	1.83	0.0991	0.180700
	Administrative	7, 57	1.93	0.0806	0.191992
	Total	7, 59	1.76	0.1123	0.172885
2002	Program	7, 53	1.48	0.1928	0.163962
	Administrative	7, 53	0.72	0.6577	0.086536
	Total	7, 53	1.23	0.3021	0.139947
2003	Program	7, 53	2.08	0.0621	0.215379
	Administrative	7, 52	0.89	0.5195	0.107217
	Total	7, 53	2.02	0.0702	0.210216
**All Years	Program	7, 447	6.07	<.0001	0.086798
	Administrative	7, 438	2.89	0.0058	0.044138
	Total	7, 448	6.63	<.0001	0.093841

* Model: Performance Appraisal Score by Type and Year = MAP Total Score, Communication Composite Score, Advising Communication Response Style Score (CRS), CRS Theory X Score, CRS Theory Y Score, Sensor Personal Style, Feeler Personal Style.

**Longitudinal analysis combining all years. Dependant variables were Program Performance Score, Administrative Performance Score, and Total Performance Score. Independent variables were as listed above.

Table J-19. MAP regression (GLM) analysis results utilizing MAP independent variables which were found to be significant in the simple correlation analysis*and significant demographic variables .

Year	Performance Score Type	Degrees of Freedom (model, error)	F Value	Pr > F	R ²
1998	Program	24, 67	1.46	0.1153	0.343144
	Administrative	24, 63	0.93	0.5651	0.261369
	Total	24, 67	1.32	0.1868	0.320980
1999	Program	24, 65	1.43	0.1293	0.345407
	Administrative	24, 63	1.38	0.1566	0.344033
	Total	24, 65	1.55	0.0820	0.364724
2000	Program	24, 60	1.60	0.0719	0.390565
	Administrative	24, 59	1.93	0.0210	0.439892
	Total	24, 60	1.82	0.0320	0.421029
2001	Program	23, 42	0.98	0.5097	0.348765
	Administrative	23, 41	1.15	0.3368	0.392841
	Total	23, 43	1.10	0.3797	0.371214
2002	Program	23, 37	1.54	0.1194	0.488486
	Administrative	23, 37	0.80	0.7130	0.331445
	Total	23, 37	1.36	0.1998	0.457443
2003	Program	23, 37	1.80	0.0545	0.527738
	Administrative	23, 36	1.04	0.4464	0.399533
	Total	23, 37	1.75	0.0631	0.520997
**All Years	Program	24, 430	3.65	<.0001	0.169113
	Administrative	24, 421	2.61	<.0001	0.129519
	Total	24, 431	4.13	<.0001	0.187136

* Model: Performance Appraisal Score by Type and Year = MAP Total Score, Communication Composite Score, Advising Communication Response Style Score (CRS), CRS Theory X Score, CRS Theory Y Score, Sensor Personal Style, Feeler Personal Style, Title, Title Type, Age Group (by decade groupings), Race, Gender, Years of Extension Service, Years in Title, Years as CED, and Age.

**Longitudinal analysis combining all years. Dependant variables were Program Performance Score, Administrative Performance Score, and Total Performance Score. Independent variables were as listed above.

Table J-20. MAP regression (GLM) analysis results with all* MAP independent variables by performance appraisal score and year.

Year	Performance Score Type	Degrees of Freedom (model, error)	F Value	Pr > F	R ²
1998	Program	15, 76	1.68	0.0818	0.244982
	Administrative	15, 72	1.31	0.2194	0.214337
	Total	15, 76	1.69	0.0710	0.250101
1999	Program	15, 74	0.79	0.6844	0.138037
	Administrative	15, 72	0.94	0.5297	0.163168
	Total	15, 74	0.87	0.5945	0.150546
2000	Program	15, 69	1.30	0.2292	0.219721
	Administrative	15, 68	0.81	0.6619	0.151748
	Total	15, 69	1.34	0.2017	0.225965
2001	Program	15, 50	1.49	0.1457	0.308777
	Administrative	15, 49	1.60	0.1073	0.329347
	Total	15, 51	1.59	0.1091	0.319008
2002	Program	15, 45	1.12	0.3710	0.271005
	Administrative	15, 45	0.89	0.5806	0.228554
	Total	15, 45	1.12	0.3638	0.272585
2003	Program	15, 45	2.04	0.0334	0.404556
	Administrative	15, 44	0.93	0.5351	0.242628
	Total	15, 45	2.06	0.0314	0.407162
**All Years	Program	15, 439	4.64	<.0001	0.134870
	Administrative	15, 430	2.34	0.0032	0.075435
	Total	15, 440	5.25	<.0001	0.151689

* Model: Performance Appraisal Score by Type and Year = MAP Total Score, Composite Scores (Administrative, Communication, Supervisory, Cognitive, Task, People), Theory X Score, Theory Y Score, Communication Response Style Scores (Empathetic, Critical, Searching, Advising, Theory X, Theory Y), and Personal Styles (Thinker, Intuitor, Sensor, Feeler).

**Longitudinal analysis combining all years. Dependant variables were Program Performance Score, Administrative Performance Score, and Total Performance Score. Independent variables were as listed above.

Table J-21. MAP regression (GLM) analysis results with all* MAP independent variables, significant demographic variables, and MAP x demographic interactions.

Year	Performance Score Type	Degrees of Freedom (model, error)	F Value	Pr > F	R-Square
1998	Program	68, 23	1.15	0.3648	0.772715
	Administrative	65, 22	1.26	0.2816	0.787676
	Total	68, 23	1.09	0.4220	0.763429
1999	Program	67, 22	0.85	0.7021	0.721291
	Administrative	65, 22	0.93	0.6029	0.733491
	Total	67, 22	0.91	0.6341	0.734020
2000	Program	64, 20	1.13	0.3975	0.782856
	Administrative	63, 20	1.37	0.2193	0.811881
	Total	64, 20	1.25	0.2927	0.800575
2001	Program	57, 8	1.53	0.2703	0.916013
	Administrative	56, 8	0.89	0.6415	0.861101
	Total	58, 8	1.30	0.3666	0.904396
2002	Program	54, 6	3.76	0.0495	0.971325
	Administrative	54, 6	3.18	0.0736	0.966188
	Total	54, 6	2.47	0.1271	0.957003
2003	Program	54, 6	2.27	0.1514	0.953354
	Administrative	53, 6	1.19	0.4578	0.912834
	Total	54, 6	2.12	0.1740	0.950157
**All Years	Program	75, 379	5.37	<.0001	0.514977
	Administrative	75, 370	7.27	<.0001	0.595742
	Total	75, 380	5.57	<.0001	0.523864

* Model: Performance Appraisal Score by Type and Year = MAP Total Score, Composite Scores (Administrative, Communication, Supervisory, Cognitive, Task, People), Theory X, Theory Y, Communication Response Styles (Empathetic, Critical, Searching, Advising, Theory X, Theory Y), and Personal Styles (Thinker, Intuit, Sensor, Feeler), Title, Title Type, Age Group (by decade groupings), Race, Gender, Years of Service, Years in Title, Years as CED, Age, Title*Task, Title*Empathic, Title Type*Map Total, Title Type*Thinker, Years of Service*Map Total, Years of Service*Communication Composite, Years of Service*Cognitive, Years of Service*Task, Years of Service*Empathetic, Race*Empathic, Race*Feeler, Gender*TheoryX.

**Longitudinal analysis combining all years. Dependant variables were Program Performance Score, Administrative Performance Score, and Total Performance Score. Independent variables were as listed above.

Table J-22. PSI regression (GLM) analysis results utilizing PSI independent variables which were found to be significant in the simple correlation analysis*.

Year	Performance Score Type	Degrees of Freedom (model, error)	F Value	Pr > F	R-Square
1998	Program	14, 88	2.88	0.0013	0.314443
	Administrative	14, 59	1.70	0.0805	0.287216
	Total	14, 88	3.03	0.0008	0.325520
1999	Program	14, 87	2.62	0.0032	0.296867
	Administrative	14, 59	0.76	0.7077	0.152519
	Total	14, 87	3.15	0.0005	0.336244
2000	Program	14, 83	3.21	0.0004	0.351521
	Administrative	14, 57	1.74	0.0735	0.298817
	Total	14, 83	4.07	<.0001	0.406978
2001	Program	14, 67	1.09	0.3854	0.185054
	Administrative	14, 46	0.97	0.4967	0.227989
	Total	14, 69	1.16	0.3242	0.190705
2002	Program	14, 64	1.44	0.1620	0.239296
	Administrative	14, 56	1.73	0.0742	0.302459
	Total	14, 64	1.46	0.1539	0.241686
2003	Program	14, 61	1.29	0.2403	0.228360
	Administrative	14, 56	1.85	0.0531	0.316438
	Total	14, 61	1.31	0.2272	0.231402
**All Years	Program	14, 525	6.77	<.0001	0.152902
	Administrative	14, 408	4.43	<.0001	0.132013
	Total	14, 527	7.56	<.0001	0.167204

* Model: Performance Appraisal Score by Type and Year = Agreeableness, Interest in Community Development, Conscientiousness, Customer Responsiveness, Emotional Stability, Extroversion, Integrity & Values, Nurturance, Openness to New Experience, Optimism, Achievement & Status Striving, Potential for Long Tenure, Work Drive, Verbal Reasoning, Big 5 Model of Personality, and Overall Personality Score.

**Longitudinal analysis combining all years. Dependant variables were Program Performance Score, Administrative Performance Score, and Total Performance Score. Independent variables were as listed above.

Table J-23. PSI regression (GLM) analysis results utilizing PSI independent variables which were found to be significant in the simple correlation analysis*and significant demographic variables .

Year	Performance Score Type	Degrees of Freedom (model, error)	F Value	Pr > F	R-Square
1998	Program	41, 61	1.57	0.0529	0.514172
	Administrative	39, 34	1.15	0.3388	0.569275
	Total	41, 61	1.61	0.0454	0.519400
1999	Program	41, 60	1.54	0.0631	0.512544
	Administrative	39, 34	0.98	0.5247	0.529723
	Total	41, 60	1.77	0.0219	0.546859
2000	Program	41, 56	2.08	0.0055	0.603863
	Administrative	40, 31	1.93	0.0306	0.713400
	Total	41, 56	2.41	0.0012	0.638260
2001	Program	39, 42	0.89	0.6438	0.452118
	Administrative	39, 21	1.10	0.4204	0.670823
	Total	39, 44	0.97	0.5334	0.462871
2002	Program	39, 39	1.12	0.3309	0.528659
	Administrative	39, 31	1.18	0.3225	0.596896
	Total	39, 39	1.09	0.3990	0.520616
2003	Program	39, 36	0.96	0.5501	0.510013
	Administrative	39, 31	1.52	0.1153	0.656927
	Total	39, 36	0.95	0.5607	0.507801
**All Years	Program	41, 498	4.02	<.0001	0.248795
	Administrative	41, 381	2.87	<.0001	0.236153
	Total	41, 500	4.36	<.0001	0.263281

* Model: Performance Appraisal Score by Type and Year = Agreeableness, Interest in Community Development, Conscientiousness, Customer Responsiveness, Emotional Stability, Extroversion, Integrity & Values, Nurturance, Openness to New Experience, Optimism, Achievement & Status Striving, Potential for Long Tenure, Work Drive, Verbal Reasoning, Big 5 Model of Personality, and Overall Personality Score, Title, EEO Age Group, Age Group (by decade groups), Race, Gender, Years of Service Categories, Educational Level, Subject Matter Base, Audience, and District.

**Longitudinal analysis combining all years. Dependant variables were Program Performance Score, Administrative Performance Score, and Total Performance Score. Independent variables were as listed above.

Table J-24. PSI regression (GLM) analysis results with all* PSI independent variables by performance appraisal score and year.

Year	Performance Score Type	Degrees of Freedom (model, error)	F Value	Pr > F	R-Square
1998	Program	17, 85	2.35	0.0053	0.320178
	Administrative	17, 56	1.46	0.1462	0.306577
	Total	17, 85	2.52	0.0028	0.335418
1999	Program	17, 84	2.26	0.0076	0.313931
	Administrative	17, 56	0.68	0.8093	0.170955
	Total	17, 84	2.60	0.0021	0.344926
2000	Program	17, 80	2.80	0.0011	0.372914
	Administrative	17, 54	1.49	0.1321	0.320020
	Total	17, 80	3.41	0.0001	0.420098
2001	Program	17, 64	1.08	0.3939	0.222576
	Administrative	17, 43	0.93	0.5511	0.267959
	Total	17, 66	1.13	0.3471	0.225314
2002	Program	17, 61	1.52	0.1187	0.297252
	Administrative	17, 53	1.59	0.1018	0.337171
	Total	17, 61	1.49	0.1306	0.292877
2003	Program	17, 58	1.26	0.2493	0.270096
	Administrative	17, 53	1.54	0.1152	0.331230
	Total	17, 58	1.26	0.2479	0.270418
**All Years	Program	17, 522	5.97	<.0001	0.162664
	Administrative	17, 405	3.77	<.0001	0.136531
	Total	17, 524	6.66	<.0001	0.177634

* Model: Performance Appraisal Score by Type and Year = Agreeableness, Child Management Skills, Interest in Community Development, Conscientiousness, Customer Responsiveness, Emotional Stability, Extroversion, Integrity & Values, Nurturance, Openness to New Experience, Optimism, Achievement & Status Striving, Potential for Long Tenure, Work Drive, Cognitive Reasoning (Abstract, Numeric, Verbal, Numeric+Abstract, Overall), Big 5 Model of Personality, and Overall Personality Score.

**Longitudinal analysis combining all years. Dependant variables were Program Performance Score, Administrative Performance Score, and Total Performance Score. Independent variables were as listed above.

Table J-25. PSI regression (GLM) analysis results with all* PSI independent variables, significant demographic variables, and PSI x demographic interactions.

Year	Performance Score Type	Degrees of Freedom (model, error)	F Value	Pr > F	R-Square
1998	Program	69, 33	1.69	0.0498	0.779318
	Administrative	63, 10	1.07	0.4950	0.870358
	Total	69, 33	1.74	0.0417	0.784023
1999	Program	68, 33	1.42	0.1364	0.744943
	Administrative	62, 11	0.77	0.7576	0.811811
	Total	68, 33	1.63	0.0635	0.770087
2000	Program	68, 29	1.45	0.1346	0.772745
	Administrative	62, 9	1.00	0.5475	0.873641
	Total	68, 29	1.81	0.0398	0.809048
2001	Program	66, 15	0.90	0.6366	0.798213
	Administrative	50, 10	1.78	0.1641	0.898819
	Total	66, 17	0.80	0.7478	0.756228
2002	Program	65, 13	1.60	0.1751	0.888965
	Administrative	63, 7	1.48	0.3081	0.930170
	Total	65, 13	1.49	0.2180	0.881420
2003	Program	63, 12	1.59	0.1905	0.892990
	Administrative	61, 9	1.15	0.4441	0.886150
	Total	63, 12	1.53	0.2120	0.889285
**All Years	Program	80, 459	6.38	<.0001	0.526566
	Administrative	78, 344	7.34	<.0001	0.624526
	Total	80, 461	6.46	<.0001	0.528566

* Model: Performance Appraisal Score by Type and Year = Agreeableness, Child Management Skills, Interest in Community Development, Conscientiousness, Customer Responsiveness, Emotional Stability, Extroversion, Integrity & Values, Nurturance, Openness to New Experience, Optimism, Achievement & Status Striving, Potential for Long Tenure, Work Drive, Cognitive Reasoning (Abstract, Numeric, Verbal, Numeric+Abstract, Overall), Big 5 Model of Personality, Overall Personality Score, Title, EEO Age Group, Age Group (by decade groups), Race, Gender, Years of Service Categories, Educational Level, Subject Matter Base, Audience, District, Age, Years in Title, Years as CED, Years of Service, Number of Employees Supervised, Race*(Overall Personality Score, Workdrive, Child Management Skills, Openness), Gender*(Overall Personality Score, Workdrive, Tenure, Agreeableness, Child Management Skills, Conscientiousness, Extroversion, Integrity & Values, Optimism, Achievement & Status Striving), Subject Matter Base*(Agreeableness, Child Management Skills, Community Development Interest, Conscientiousness, Extroversion, Optimism, Achievement & Status Striving, Overall Personality Score), Audience*(Nurturance, Tenure), Age Group*(Achievement & Status Striving, Tenure), Years of Service Categories*(Achievement & Status Striving, Tenure) and Educational Level*Work Drive.

**Longitudinal analysis combining all years. Dependant variables were Program Performance Score, Administrative Performance Score, and Total Performance Score. Independent variables were as listed above.

Table J-26. Variables utilized in full regression model including MAP, PSI, demographics and interactions on longitudinal (1998-2003) county director performance in UT Extension.

Dependant Variables	Independent Variables			
Program Performance Score	MAP	MAP Total Score	Theory X	CRS - X
		Admin. Comp.	Theory Y	CRS - Y
		Comm. Comp.	Comm Resp Styles:	Personal Styles:
Administrative Performance Score		Cognitive Comp.	Empathetic	Thinker
		Supervisory Comp.	Critical	Intuitior
		Task Composite	Searching	Sensor
Total Performance Score		People Composite	Advising	Feeler
	PSI	Overall Personality	Emotional Stability	Tenure Potential
		Big 5 Personality	Integrity & Values	Work Drive
		Child Mgmt Skill	Nurturance	Numeric Cognitive
		Community Dev.	Optimism	Verbal Cognitive
		Customer Service	Status	Abstract Cognitive
	Demographic	Perf. App. Year	Years of Service	Subject Matter
		Age as of Mar. 98	(YOS)	Base (SMB)
		EEO Age Group	YOS Categories	Audience Served
		Total Yrs a CED	Race	# of Employees
		Terminal Degree	Gender	Supervised
		Extension Title	District	Title Type
	MAP x Demographic	Task x Title	Cognitive Comp x YOS Cat.	
		Empathetic x Title	Task x YOS Cat.	
		MAP Total x Title	Empathetic x YOS Cat.	
		Thinker x Title Type	Empathetic x Race	
		MAP Total x YOS Cat.	Feeler x Race	
		Comm. Comp x YOS Cat.	Theory X x Gender	
	PSI x Demographic	PSI Total x Race	Conscientiousness x Gender	
		Big 5 Personality x Race	Extroversion x Gender	
		Work Drive x Race	Integrity & Values x Gender	
		PSI Total x Gender	Optimism x Gender	
		Big 5 Pers. x Gender	Ach./Status Striving x Gender	
		Work Drive x Gender	Nurturance x Audience	
		Tenure x Gender	Tenure Potential x Audience	
		Agreeableness x SMB	Ach./Status Str. x EEO Age Gp	
		Child Mgmt Skill x SMB	Tenure Pot. x EEO Age Gp	
		Community Dev x SMB	Extroversion x YOS Category	
		Conscientiousness x SMB	Ach./Status Striving x YOS Cat	
		Extroversion x SMB	Tenure Pot. x YOS Category	
		Optimism x SMB	Child Mgmt Skill x Race	
		Status x SMB	Openness x Race	
		PSI Total x SMB	Work Drive x Educ. Level	
		Agreeableness x Gender	Openness x District	
		Child Mgmt Skill x Gender		

Table J-27. Program performance regression model type III sum of squares, *f*-values, and significance levels for MAP, PSI and demographic variables.

Source	Type III				
	DF	Sum of Squares	Mean Square	F Value	Pr > F
MAP Total Score	1	14740.0862	14740.0862	5.67	0.0178
Administrative Composite	1	13835.7788	13835.7788	5.32	0.0217
Communication Composite	1	19026.4724	19026.4724	7.31	0.0072
Cognitive Composite	1	16286.5966	16286.5966	6.26	0.0128
Supervisory Composite	1	11390.4164	11390.4164	4.38	0.0371
TheoryX Management Style	1	9506.6509	9506.6509	3.65	0.0568
TheoryY Management Style	1	47001.0321	47001.0321	18.07	<.0001
Critical Comm. Response Style	1	7048.4619	7048.4619	2.71	0.1007
Searching Comm. Response Style	1	1729.2111	1729.2111	0.66	0.4154
Advising Comm. Resp. Style	1	30068.8077	30068.8077	11.56	0.0008
Thinker Personal Style	1	8790.1022	8790.1022	3.38	0.0669
Intuitior Personal Style	1	8411.0446	8411.0446	3.23	0.0730
Sensor Personal Style	1	12455.5007	12455.5007	4.79	0.0293
Feeler Personal Style	1	11028.1801	11028.1801	4.24	0.0403
PSI Total Personality Score	1	17104.1187	17104.1187	6.58	0.0108
Big 5 Personality Score	1	20524.7811	20524.7811	7.89	0.0053
Community Dev. Interest	1	267.8969	267.8969	0.10	0.7485
Customer Service	1	8906.2645	8906.2645	3.42	0.0651
Integrity & Values	1	14977.9526	14977.9526	5.76	0.0170
Optimism	1	6088.2838	6088.2838	2.34	0.1270
Achievement & Status Striving	1	12340.9073	12340.9073	4.74	0.0301
Potential for Long Tenure	1	896.4680	896.4680	0.34	0.5576
Work Drive	1	115294.5439	115294.5439	44.33	<.0001
Numeric Cognitive Ability	1	13543.8326	13543.8326	5.21	0.0231
Verbal Cognitive Ability	1	21293.1980	21293.1980	8.19	0.0045
Performance Appraisal Year	5	219279.8758	43855.9752	16.86	<.0001
Race	1	27029.6474	27029.6474	10.39	0.0014
Gender	1	50267.7186	50267.7186	19.33	<.0001
District	3	36920.3668	12306.7889	4.73	0.0030
Time in Title (Yrs)	1	25839.8777	25839.8777	9.93	0.0018
Time as a CED (Yrs)	1	10233.0853	10233.0853	3.93	0.0481
Extension Years of Service	1	19297.0604	19297.0604	7.42	0.0068
Employees Supervised by CED	1	5640.1302	5640.1302	2.17	0.1418

Table J-28. Administrative performance regression model type III sum of squares, *f*-values, and significance levels for MAP, PSI and demographic variables.

Source	DF	Type III			
		Sum of Squares	Mean Square	F Value	Pr > F
MAP Total Score	1	1155.09140	1155.09140	7.07	0.0082
Administrative Composite	1	1098.09321	1098.09321	6.72	0.0099
Communication Composite	1	1314.02782	1314.02782	8.05	0.0048
Cognitive Composite	1	1229.31148	1229.31148	7.53	0.0064
Supervisory Composite	1	988.56746	988.56746	6.05	0.0144
TheoryX Management Style	1	3209.95561	3209.95561	19.65	<.0001
TheoryY Management Style	1	1511.21992	1511.21992	9.25	0.0025
Critical Comm. Response Style	1	541.52358	541.52358	3.32	0.0695
Srching Comm. Response Style	1	324.99493	324.99493	1.99	0.1593
Advising Comm. Resp. Style	1	1448.46922	1448.46922	8.87	0.0031
Thinker Personal Style	1	449.50303	449.50303	2.75	0.0981
Intuitior Personal Style	1	385.64166	385.64166	2.36	0.1253
Sensor Personal Style	1	589.81481	589.81481	3.61	0.0583
Feeler Personal Style	1	550.35803	550.35803	3.37	0.0673
PSI Total Personality Score	1	498.31463	498.31463	3.05	0.0816
Big 5 Personality Score	1	1314.08117	1314.08117	8.05	0.0048
Community Dev. Interest	1	30.32921	30.32921	0.19	0.6668
Customer Service	1	1244.56814	1244.56814	7.62	0.0061
Integrity & Values	1	69.09696	69.09696	0.42	0.5159
Optimism	1	134.06991	134.06991	0.82	0.3656
Achievement & Status Striving	1	613.47126	613.47126	3.76	0.0535
Potential for Long Tenure	1	149.40274	149.40274	0.91	0.3396
Work Drive	1	4330.58824	4330.58824	26.52	<.0001
Numeric Cognitive Ability	1	219.33405	219.33405	1.34	0.2474
Verbal Cognitive Ability	1	1120.59978	1120.59978	6.86	0.0092
Performance Appraisal Year	5	29566.99074	5913.39815	36.21	<.0001
Race	1	903.44479	903.44479	5.53	0.0193
Gender	1	972.26740	972.26740	5.95	0.0152
District	3	3424.52324	1141.50775	6.99	0.0001
Time in Title (Yrs)	1	1256.22477	1256.22477	7.69	0.0059
Time as a CED (Yrs)	1	398.34941	398.34941	2.44	0.1193
Extension Years of Service	1	255.78414	255.78414	1.57	0.2117
Employees Supervised by CED	1	174.93942	174.93942	1.07	0.3015

Table J-29. Total performance regression model type III sum of squares, f^2 values, and significance levels for MAP, PSI and demographic variables.

Source	DF	Type III			
		Sum of Squares	Mean Square	F Value	Pr > F
MAP Total Score	1	19127.7618	19127.7618	7.62	0.0061
Administrative Composite	1	18180.9195	18180.9195	7.25	0.0075
Communication Composite	1	23904.2017	23904.2017	9.53	0.0022
Cognitive Composite	1	20858.5605	20858.5605	8.31	0.0042
Supervisory Composite	1	14970.9247	14970.9247	5.97	0.0151
TheoryX Management Style	1	11649.0926	11649.0926	4.64	0.0319
TheoryY Management Style	1	45464.6556	45464.6556	18.12	<.0001
Critical Comm. Response Style	1	6058.4124	6058.4124	2.41	0.1211
Srching Comm. Response Style	1	4349.9582	4349.9582	1.73	0.1888
Advising Comm. Resp. Style	1	22176.9838	22176.9838	8.84	0.0032
Thinker Personal Style	1	12209.1611	12209.1611	4.87	0.0281
Intuitior Personal Style	1	11616.2908	11616.2908	4.63	0.0321
Sensor Personal Style	1	16795.1680	16795.1680	6.69	0.0101
Feeler Personal Style	1	15343.9405	15343.9405	6.12	0.0139
PSI Total Personality Score	1	18560.2532	18560.2532	7.40	0.0069
Big 5 Personality Score	1	24649.9313	24649.9313	9.83	0.0019
Community Dev. Interest	1	346.6496	346.6496	0.14	0.7103
Customer Service	1	11054.0507	11054.0507	4.41	0.0366
Integrity & Values	1	12449.6074	12449.6074	4.96	0.0266
Optimism	1	7420.6283	7420.6283	2.96	0.0864
Achievement & Status Striving	1	13393.0400	13393.0400	5.34	0.0215
Potential for Long Tenure	1	956.6240	956.6240	0.38	0.5373
Work Drive	1	118444.9173	118444.9173	47.21	<.0001
Numeric Cognitive Ability	1	9705.9454	9705.9454	3.87	0.0500
Verbal Cognitive Ability	1	25393.2963	25393.2963	10.12	0.0016
Performance Appraisal Year	5	176936.8238	35387.3648	14.11	<.0001
Race	1	24269.1513	24269.1513	9.67	0.0020
Gender	1	47556.6305	47556.6305	18.96	<.0001
District	3	35728.5465	11909.5155	4.75	0.0029
Time in Title (Yrs)	1	24768.7897	24768.7897	9.87	0.0018
Time as a CED (Yrs)	1	8938.7472	8938.7472	3.56	0.0599
Extension Years of Service	1	21660.5781	21660.5781	8.63	0.0035
Employees Supervised by CED	1	220.1851	220.1851	0.09	0.7672

VITA

William Herbert Byrd, III is a graduate of Everett High School, Maryville, Tennessee. After attending Harding College (Searcy, AR), he received his BS in Animal Science and MS in Reproductive Physiology from The University of Tennessee.

Herb's Tennessee Extension career began as a 4-H agent in Monroe County. He then worked in McMinn County for seven years in Adult Agriculture & Resource Development while serving as County Director. In a two-year stint away from Extension, Herb was a Vice President with Lads to Leaders, Inc. where he conducted workshops teaching adults how to teach leadership skills to youth. Since returning to UT Extension's state office in 1998, Herb is responsible for recruitment, personnel, civil rights and serves as Extension's affirmative action and EEO officer. He also directs the Extension Evaluation and Staff Development department. He has served on the staff of The University of Tennessee's Leadership Institute since 1999.

Herb is co-author of *THE Beef Cattle firm™* record-keeping software. For work in the community he has received Chamber of Commerce Young Man of the Year, a McMinn County Commission Resolution of Honor and Commendation, and was honored with Herb Byrd Day at the Mid-East Tennessee Regional Fair. Herb serves as Outreach Ministry Leader in his church, is a board member and camp director with Teenage Christian Camp, and has worked with medical mission teams in several South and Central American countries with Latin American Missions.

Herb has been married to Resa for almost 25 years. They have three children, Kristin, Heather and Resa-Marie.