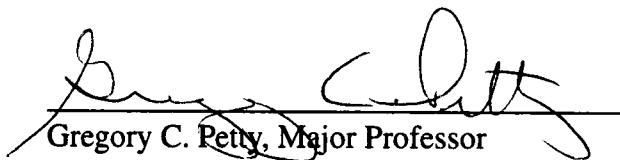


To the Graduate Council:

I am submitting herewith a dissertation written by Connie Hollingsworth entitled "Leadership Characteristics and Work Ethic of Tennessee Agricultural Extension Service Home Economists." I have examined the final 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 Human Ecology.

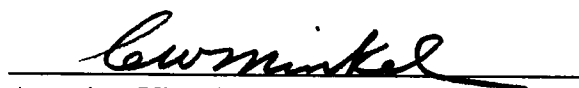

Gregory C. Petty, Major Professor

We have read this dissertation
and recommend its acceptance:






Accepted for the Council:


Associate Vice Chancellor and
Dean of The Graduate School

**LEADERSHIP CHARACTERISTICS AND WORK ETHIC OF
TENNESSEE AGRICULTURAL EXTENSION SERVICE
HOME ECONOMISTS**

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

Connie Hollingsworth

December, 1995

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Dedicated
to the living memory of

C.L.H.

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ABSTRACT

The primary purpose of this study was to examine the differences and relationships between leadership orientation and work ethic characteristics of Tennessee Agricultural Extension Service (TAES) home economists. Secondly, it investigated the impact of job classification and geographical dispersion (district) on leadership and work ethic, separately and in combination. Social action theory and adaptation theory provided the theoretical framework for this research.

A survey design was utilized to gather data from the entire population ($N=183$) of TAES home economists; 166 responses yielded an overall response rate of 91% on a three-part questionnaire transmitted through electronic mail (e-mail). Part I ascertained leadership using a framework approach and incorporating a modified version of an instrument developed by Bolman and Deal in 1991. Part II determined participants' work ethic using an instrument developed by Petty and revised in 1995. Part III gathered demographic data using a researcher-designed instrument.

Inferential statistics including multiple analysis of variance, multiple analysis of covariance, univariate analysis of variance, and univariate analysis of covariance were used to determine significant differences among participants' leadership, work ethic, job classification, and district. Multiple regression was used to determine significant relationships between work ethic and leadership. Descriptive statistics including frequency counts, standard deviations and means were employed for analyses of demographic data.

Findings disclosed (a) a population of highly experienced women in their 40s and 50s with either a B.A. or M.A. degree, (b) failure to support the theory that one's work ethic was not significantly related to their leadership orientation, (c) support for the hypothesis that the geographical distance from the state office would not significantly

impact the participants' work ethic and leadership effectiveness, and (d) with respect to work ethic, the participants showed an almost equal emphasis upon the subscales of Dependability and Interpersonal Skill, with Initiative clearly distinguished as the least important. In descending order of mean scores, the three work ethic dimensions were: Dependability (4.3785), Interpersonal Skill (4.3712), and Initiative (4.0760).

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CHAPTER 1

INTRODUCTION

Ours has been characterized as an age of paradox and a time without reason (Handy, 1989, 1994), an era dominated by “globalization, discontinuous change, complexity, declining confidence, and faith” (Bolman & Deal, 1991b, p. 526). Rushing headlong into the next millennium, American enterprise has been described as chaotic (Peters, 1987), its financial institutions as “sick with an evil virus” (Levinson, 1995, p. 49), and its citizens as angry, dismayed, and afraid—fearful of “things falling apart, the wheels coming off, the body count” (Range, 1995, p. 29).

The root cause of this predicament has been placed by many at the feet of the American worker. “Sadly,” one Japanese observer patronizingly noted, “there’s been an erosion of the Puritan work ethic . . . which taught us so much” (Hillenbrand, 1992, p. 22). Others, such as Heifetz (1994), master teacher of leadership teachers at Harvard University’s John F. Kennedy School of Government, see our current situation as the direct result of an unprecedented crisis in leadership (also see, Maccoby & Terzi, 1981).

Recent decades have witnessed their share of ethical decline and leadership failure—Nixon, Keating, Helmsley, Packwood, Milken, Boesky—all come easily to mind and suggest a connection between core values, or ethics, and the ultimate outcome of leadership endeavors. Such a connection may be inferred on a macro level, as well, from Heifetz’ (1994) observation that progress on chronic, pervasive national problems will require a new kind of leader, “not just someone who provides answers from on high but changes in our attitudes, behavior, and values” (p. 2).

Empirical evidence also supports the logic of a relationship between leadership and work ethic. Bolman and Deal (1991b), for example, demonstrated that follower

perception is a determinant of leadership effectiveness and that leader perception is determinative of orientation, with respect to the four frames of reference identified through their research—structural, human resources, political, and symbolic. They further determined that the use of multiple frames (frame number) or the predominant choice (frame choice) of one particular frame, the symbolic, positively correlated with followers' perceptions of leadership effectiveness. The concept of work ethic has also been linked to perception in demonstrations of its impact upon attributional style (Feather, 1982, 1983, 1985), task difficulty (Tang, 1989), task preference (Tang & Baumeister, 1984), and perception of manager ability (Brief & Aldag, 1977). Logically, if leadership effectiveness is a function of perception, and if work ethic is also related to perception, then it follows that a relationship might also be found to exist between leadership effectiveness and work ethic.

Responsibility for the transfer of leadership skills and work ethic values falls largely upon our schools. In higher education, for example, land-grant institutions fulfill a portion of their public service mandate by teaching these skills and values through Extension Service programs such as the nationally recognized 4-H and Family Community Leadership (FCL) organizations. The reach of programs like FCL, which is staffed entirely by Extension Service home economists, is substantial; in Tennessee alone almost 3,000 FCL volunteer leaders have provided leadership training to over 45,000 citizens of the State of Tennessee since the inception of the program (*Programs for the 90s*, 1993).

An oft-quoted maxim is that leaders lead by their example more than by their words (Sashkin & Sashkin, 1993). Assuming that leadership teachers would want to maximize their efforts, then they must be able to transmit substantive knowledge concerning theory and practice, as well as model effective leadership behaviors (Brockner, 1988). If a relationship does exist between leadership and work ethic, then

knowledge of that dynamic would be of benefit to all Extension Service home economists—teachers and managers alike.

Statement of the Problem

If we assume that leadership effectiveness is ultimately a function of the embedded values of followers (Bolman & Deal, 1991b), and if we further conceive of work ethic as a reflection of the specific core values that relate to one's occupation (Furnham, 1987), then it follows that an examination of the work ethic of those individuals who comprise a given organization should be predictive of their leadership orientation. In spite of this logic, the review of literature disclosed no studies that investigated the values that comprise the work ethic of Extension Service home economists who are involved, directly or indirectly, in leadership training programs. Likewise, a growing body of empirical evidence supports the view that those whose frame choice is consistently symbolic or whose frame number is consistently multiple are perceived as being more effective leaders (see, e.g., Bensimon, 1989; Bolman & Deal, 1991b; Hall, 1992/1993; Yerkes, Cuéllar & Cuéllar, 1991). Leaders and the teachers of leaders, especially, need to be cognizant of their own frame choices and numbers so that their leader behaviors can be maximized. Notwithstanding this evidence, no studies have been found which examine the leadership orientation of Extension Service home economists who are charged, directly or indirectly, with leadership training responsibilities.

Purpose of the Study

The purposes of this study were fourfold. The first was to identify a target population charged with responsibility for teaching leadership skills and work ethic values, specifically, full-time home economists employed by the Tennessee Agricultural

Extension Service (TAES). The second objective was to describe the chosen population in terms of leadership orientation, work ethic characteristics, and selected demographic variables. The third objective was to examine, separately and in combination, the impact on leadership orientation and work ethic characteristics of two particular variables—job classification and district—suggested by factors inherent in the TAES organizational structure. The fourth and final objective was to ascertain the predictive nature of the hypothesized relationship between leadership orientation and work ethic characteristics.

Research Questions

The following research questions were formulated to guide the study:

1. What are the demographic data of TAES home economists with respect to age, gender, district, job classification, education, and experience?
2. Does the job classification of TAES home economists affect their leadership orientation?
3. Does the district where the TAES home economist works affect his or her leadership orientation?
4. Do job classification and the district where the TAES home economist works affect their leadership orientation?
5. Does the job classification of TAES home economists affect their work ethic?
6. Does the district where the TAES home economist works affect his or her work ethic?
7. Do job classification and the district where the TAES home economist works affect their work ethic?

8. Does the job classification of TAES home economists affect their leadership orientation and work ethic?
9. Does the district in which a TAES home economist works affect his or her leadership orientation and work ethic?
10. Do TAES home economists differ in their leadership orientation and work ethic?
11. Do job classification and the district where the TAES home economist works affect their leadership orientation and work ethic?

Theoretical Framework

Theoretical framework ["Theoretical framework"] is a phrase commonly used in research to refer to a coherent classification of related definitions, assumptions, and postulates from which general propositions may be deduced and translated into testable hypotheses (Snow, 1973). Thus, any given theoretical framework may encompass more or less fixed ontological, epistemological, and methodological assumptions in addition to its basic assumptions about human nature (Morgan & Smircich, 1980). Meta-theoretically, Morgan and Smircich viewed assumptions about the nature of knowledge and reality as occurring along a continuum ranging from the purely subjective on one end to the purely objective on the other. Valid and reliable research, they effectively argued, could be structured at any point along the continuum depending upon the particular dictates of each research problem. Morgan and Smircich also advocated a fluid approach to framing social research theory and reasoned that because transition from one perspective to another is so gradual, determining "who advocates what may be limited to determining the relative emphasis an advocate gives to one or more adjacent positions" (p. 493).

With this background in mind, the overarching theoretical framework selected to guide this study was the theory of social action as originally articulated in 1951 by

Parsons and his associates. A brief outline of the basic assumptions of this theory is provided to facilitate the conceptual link between theory, hypotheses, and data. A more expansive treatment of the philosophical background for this study is included in the subsequent review of literature.

The basic ontological assumption underlying the theory of social action incorporates a view of social reality as regulated patterns of fluid discourse between humans and the symbolic relationships that have meaning for them (Parsons et al., 1951/1962). While the activities that define particular social contexts may be understood as a part of the regulated pattern of discourse, the pattern may be changed by an individual's actions or by a modification in point of view. Thus, it is not the pattern of discourse that defines reality, but the system of conscious, deliberate activity that preserves the appearance of stability (Parsons).

Social action theory sees humans as interpretive actors in social environments who orient their activities in response to environmental stimuli by using any of a number of culturally-specific cues, including language, impression management routines, and labels. In this fashion, the human actor performs in accordance with the constructed reality, thereby contributing to its validity. In this scheme, humans may be seen as "actors with the capacity to interpret, modify, and sometimes create the scripts that they play upon life's stage" (Morgan & Smircich, 1980, p. 493).

Social action theory assumes that humans are born with needs that are innately physiological and modifiable by the situations in which actions occur; such modifications eventually evolve into a system of need-dispositions (Parsons et al., 1951/1962). Cognitive and cathectic discrimination toward objects results in a motivational orientation that entails expectations of gratification or deprivation from present and future events; as a result, the theoretical basis is created for delayed gratification—one of the commonly-recognized dimensions of the Protestant work ethic (Cherrington, 1980; Rose,

1985). When two or more need-dispositions are activated, conflict results that can only be extinguished by a process of evaluation in which the gratification of one need-disposition can only be realized at the deprivation of the other. Culturally-dictated standards, known as value-orientations, are utilized in this adaptation process to attain internal balance and consistency. Learning, therefore, occurs under two circumstances: (a) when specific items of cognitive orientation (data about object properties) are acquired, and (b) when adaptation occurs and new patterns of orientation are thereby acquired (Kahle, 1984; Parsons; Williams, 1993).

Epistemologically, social action theory rejects the notion of deterministic relationships and embraces instead the view that the study of the nature of knowledge must concern itself with the ways in which humans order their social lives to provide meaning to their existence. Research, therefore, should be directed toward explanations of the ways in which social situations reveal the inner nature of their human participants (Bateson, 1972; Cone, 1968; Goffman, 1974). Within an organizational context, the research emphasis under social action theory would be on the contributions of myth, metaphor, and language to the construction of the relevant reality, and the research concern would be on the generation of ethnographic analyses that provide insight into the human-organizational dynamics of the relevant reality (see, e.g., Cox, 1994).

Applying these research methodology precepts to the concept of work ethic is problematical, primarily because of the evolutionary state of research on the concept. While many theorists and researchers have taken the view that the leadership concept may be understood in terms of myth, metaphor, and language constructs (Bellah, Madsen, Sullivan, Swidler, & Tipton, 1985; Bolman & Deal, 1984, 1991c, 1992, 1995; Deal & Kennedy, 1982; Deal & Peterson, 1994; Musashi, 1982; Senge, 1990; Sims & Lorenzi, 1992; Torbert, 1991; Vaill, 1989; Wildavsky, 1984), the same does not appear to be the case for work ethic theory and research. The reason may lie in the fact that work ethic

research has traditionally been experimental in nature (Furnham, 1990) and directed toward concerns with distribution and consequences (Furnham, 1987).

In light of this circumstance, a modified epistemological approach leaning toward the positivistic end of the continuum was adopted for this research and was based upon the fluid-continuum rationale proposed by Morgan and Smircich (1980). While social interactions per se were not conceived to be of paramount importance in this study, the collection of a broad base of objective data was seen as essential; thus, while existential-phenomenological methodologies, such as in-depth interviews, would undoubtedly have contributed valuable information, the character of the data sought in this study called for a different approach that was less intensive and more broad-based. As a result, a quantitative approach to research design was selected as most appropriate. That having been said, however, it should be noted that the multidisciplinary and value-laden natures of both of the principal concepts under investigation in this research compelled a holistic perspective be brought to bear upon the subject as a whole. Accordingly, the substantive aspects of this research have been consciously informed by a more qualitative perspective.

Within the scheme of social action theory individuals may be seen to be motivated to act when their values and beliefs are challenged (Heifetz, 1994; Kahle, 1984; Williams, 1993). Values and beliefs, in turn, are challenged when they conflict with the values and beliefs of an organization of which an individual is a part, and it is the challenge of an organization's values and beliefs that forces an election by individuals to choose between dysfunction and adaptive work. If the latter option is elected, then adaptive work will involve the learning that is required to close the gap between one's values and the reality that is being confronted. Adaptive work theory, an extension of social action theory, suggests that work such as this may ultimately necessitate a change (adaptation) in an individual's values, beliefs, or behaviors in order to achieve the collective goals and

perspectives of the organization (Heifetz; Williams). The adaptive work theory further contends that the internal conflict that results from incongruences between individual and organizational values will provide the leverage for the motivation to learn new ontologies (Williams).

It seems reasonable to suggest that completion of relevant adaptive work would be a condition precedent to effective leadership. Human beings act upon their internal and external environments in order to be effective and to satisfy their needs (Maslow, 1954; Parsons et al., 1951/1962). In the context of this research, internal environment would equate with individual work ethic values, and external environment would equate with the organizational environment. Thus:

To clarify a complex situation such as this requires multiple vantage points, each of which adds a piece to the puzzle. Just as clarifying a vision demands reality testing, reality testing is not a value-free process. Values are shaped and refined by rubbing against real problems, and people interpret their problems according to the values they hold. Different values shed light on the different opportunities and facets of a situation. *The implication is important: the inclusion of competing value perspectives may be essential to adaptive success.* (Heifetz, 1994, pp. 22-23)

Heifetz (1994) provided his own emphasis to the last sentence, and it is worth noting that his observation is in essence a restatement of the social action theory analysis of learning, discussed above. It serves, as well, as a reflection of the multi-frame definition of leadership effectiveness—the greater the use of multiple frames of reference, the more effective the leader (Bolman & Deal, 1991b). And finally, the same idea in principle finds support in the work of Quinn and his colleagues, who advocate a more

generalized approach with respect to orientation but a more specific approach with respect to conscious consideration of what must be lost in any values conflict in order for balance and growth to occur (Faerman & Quinn, 1985; Kimberly & Quinn, 1984; Quinn, 1984; Quinn, 1988; Quinn & Cameron, 1988; Quinn & McGrath, 1982). Based upon these sources, it seems reasonable to suggest that the more adaptive work an individual completes, the wider the perspective and the deeper the conceptual pluralism available upon which to draw in interpreting and responding to organizational situations.

In summary, the primary purpose of this study was to examine the relationship between leadership and work ethic. The social action and adaptation theories provided the essential framework for discussions of motivation (relative to work ethic), the emergence and maintenance of value systems (relative to both work ethic and leadership), and learning that included the notion of competing values and the opportunities inherent therein for growth (relative to leadership). Ultimately, Bolman and Deal's (1984) conceptual model provided the lens that allowed us to have a unique look at the cognitive processes supporting leadership behaviors, both effective and ineffective, and established the necessary theoretical linkage between work ethic and leadership effectiveness.

Hypotheses

The following null hypotheses were formulated to answer research questions two through eleven:

- H₀1: There will be no significant difference between job classification and leadership orientation as measured by the Leadership Orientation/Work Ethic Packet (LO/WE Packet) among TAES home economists.
- H₀2: There will be no significant difference between district and leadership orientation as measured by the LO/WE Packet among TAES home

economists.

- H₀3: There will be no significant difference between the demographic variables, job classification and district, and leadership orientation as measured by the LO/WE Packet among TAES home economists.
- H₀4: There will be no significant difference between job classification and work ethic as measured by the LO/WE Packet among TAES home economists.
- H₀5: There will be no significant difference between district and work ethic as measured by the LO/WE Packet among TAES home economists.
- H₀6: There will be no significant difference between the demographic variables, job classification and district, and work ethic as measured by the LO/WE Packet among TAES home economists.
- H₀7: There will be no significant difference between job classification, leadership orientation, and work ethic as measured by the LO/WE Packet among TAES home economists.
- H₀8: Work ethic has no significant effect on the difference in the leadership orientation subscale mean scores among the districts as measured by the LO/WE Packet among TAES home economists.
- H₀9: There will be no significant relationship between leadership orientation and work ethic as measured by the LO/WE Packet among TAES home economists.
- H₀10: There will be no significant difference between job classification, district, leadership orientation and work ethic as measured by the LO/WE Packet among TAES home economists.

Rationale

Individual home economists employed by TAES may benefit from identifying their frames of reference and learning what corrective action, if any, they may choose to

take in response. Aspiring leaders will receive important feedback to guide their future efforts toward effective leadership. Present leaders will receive equally important feedback concerning their leadership limitations. Additionally, should the hypotheses fail to be rejected, home economists who are also teachers will be provided rare insight into the cognitive processes at work in their classrooms.

Managers of the TAES will obtain important data relative to personnel hiring practices, training agendas, counseling, and resource allocation. Should the hypotheses find support in this study, managers of curriculum and training programs will be able to use information from the study to revise and update materials.

Implications of the proposed study may also reach far beyond the boundaries of the local land-grant institution. All Extension Service offices presently involved in the FCL program may be impacted by the findings. Important information concerning leadership and work ethic training would be available to those interested in pursuing additional insights into these areas.

This study has the potential to make a contribution to the attribution theory of leadership—if the hypothesized relationship is supported by the data, a significant validation and extension of the theoretical base may occur. On the other hand, if the hypothesized relationship is not supported by the data, then future research may be guided by the procedures and theory under investigation herein. Additionally, the lack of related research indicates that no one has yet attempted to establish directly a relationship between work ethic and leadership orientation. Further investigations such as this proposed study will be able to advance the base of knowledge toward clarification of these important constructs, no matter what the outcome. Finally, no quantitative studies of leadership or work ethic utilizing electronic procedures has yet been reported. By providing detailed descriptions of its procedures and parameters, this study may also contribute to a newly emerging research technology in altogether different and presently

unpredictable ways.

Assumptions

The following assumptions are relevant to this study:

1. The Extension Service is a unique blend of industrial environments and traditional educational settings. Research conclusions from industry and education should not, therefore, be applied pro forma to the work of TAES home economists.
2. The study assumed that the respondents are aware of and will report honestly and accurately, their leadership orientation and work ethic.
3. This study assumed that leadership is inherent in all persons.
4. Demographic variables such as socio-economics and ethnicity may influence leadership orientation and work ethic of individuals; however, these variables were not controlled.

Limitations

The following limitations are relevant to this study:

1. This study was limited by the willingness and ability of TAES home economists to respond in a timely fashion to this study and to respond accurately using the electronic mail system.
2. This study was limited by the proper functioning of the TAES electronic mail system to transmit and receive electronic mail messages from the researcher to the participants and vice versa.

Delimitations

The following delimitations are relevant to this study:

1. The population was 183 Extension Service home economists in the State of Tennessee who were employed full-time (40 hours per week) as of April 1, 1995.
2. All leadership-related data analyses and conclusions were based on the concept of leadership orientation as theorized by Bolman and Deal (1991b) and as measured by Bolman and Deal's Leadership Orientations Survey (LOS).
3. All work ethic data analyses and conclusions were based on the concept of work ethic as defined by Petty (1991a) and as measured by the Occupational Work Ethic Inventory-Revised (OWEI-R) (Petty, 1995).
4. The evaluation of work ethic was limited to occupational work ethic as defined by Petty (1991a) and as opposed to other rated ethics, such as Protestant work ethic, leisure ethic, consumer ethic, or other work or personal work ethic concepts.
5. The characteristics of leadership frames reported by respondents were limited to those 32 items and eight subscales included in Bolman and Deal's LOS (1984).
6. The characteristics of work ethic reported by respondents was limited to those 23 items and three subscales included in the OWEI-R (Petty, 1995).

Definitions

Based upon the review of the literature and an understanding of those terms commonly used in leadership and work ethic studies, the following definitions were developed for the purpose of this research:

Demographic Survey: The last of three instruments contained in the LO/WE Packet. The Demographic Survey measures age, gender, district, job classification, education, and experience.

Extension Service Office: An Extension Service office located in any one of the 95 counties in the State of Tennessee.

Frame Choice: The type or types of frames of reference which an individual chooses in reading and reacting to an organizational situation. Although frame choice is generally considered no fault, Bolman and Deal (1991b) have stated that leadership effectiveness is related to higher scores on the symbolic dimensions.

Frame Number: The cumulative number of frames of reference an individual uses in reading and reacting to an organizational situation. Bolman and Deal (1991b) suggest that the greater the number of frames of reference utilized, the more effective the leader.

Framework Approach: The four traditions of organizational theory which provided the conceptual structure for Bolman and Deal's framework theory. "We believed that these four distinct images existed not only in textbooks, but in the ways that leaders think and act in response to everyday issues and problems" (1991a, p. 3). The four traditions or frames include: (a) structural frames, referring to an organizational perspective that emphasizes rules, regulations, policies, and roles; (b) human resources frames, referring to an organizational perspective that focuses on human needs; (c) political frames, referring to an organizational perspective that views organizations in terms of groups struggling for control, power, and limited resources; and (d) symbolic frames, referring to an organizational perspective that sees organizations as cultural systems that are the product of the shared meanings and beliefs of its inhabitants.

Gender: The sex of a participant and for the purposes of this research includes two levels, male and female.

Highest Level of Education Completed (Education): One of three levels of educational attainment: bachelor's degree, master's degree, and doctoral degree.

Home Economist: A person employed by TAES on a full-time basis as of April 1, 1995, and whose job description falls within one of the three job classification categories.

Job Classification: One of three categories of twelve job descriptions currently utilized by TAES administrators to describe the job functions and responsibilities of its home economists. Those categories and job descriptions are: (a) Category I: Assistant Extension Agent, Associate Extension Agent, Extension Agent, Extension Leader; (b) Category II: Assistant Professor, Associate Professor, Associate Professor and Leader, Professor and Leader; and (c) Category III: Specialist, Associate District Supervisor District Supervisor.

Leadership Orientation: The frame of reference an individual uses, as a leader or as a manager, in reading and reacting to an organizational situation (Bolman & Deal, 1984), and consists of the combination of two separate elements: frame number and frame choice.

Leadership Effectiveness: An individuals' ability to (a) view organizational situations from a multi-frame (three or four different frames) point of view (Bolman & Deal, 1991b); (b) receive high scores on the symbolic dimensions (Bolman & Deal, 1991a); or (c) surround themselves with associates who are capable of providing additional framework perspectives (Bensimon, 1989).

Leadership Orientation Survey (LOS): The first of three instruments contained in the LO/WE Packet used in this research. The LOS measures frame number and frame choice, and was developed by Bolman and Deal under the title, Leadership Orientations Survey (1991b).

Leadership Orientation/Work Ethic Packet (LO/WE Packet): The combination of the three instruments utilized in this research—the LOS, the OWEI-R, and the

Demographic Survey.

Occupational Work Ethic Inventory (OWEI): The original instrument developed by Petty (1991b), designed to measure occupational work ethic. The OWEI was based upon the four elements of dependability, ambition, consideration, and cooperation.

Occupational Work Ethic Inventory-Revised (OWEI-R): The second of three instruments contained in the LO/WE Packet used in this research. The OWEI-R (Petty, 1995) is the revised version of the OWEI (Petty, 1991b). The OWEI-R measures occupational work ethic based upon the three elements of dependability, initiative, and interpersonal skills as determined from a factor analysis of industrial workers (Petty, 1995).

Tennessee Agricultural Extension Service (TAES): One of the four administrative units of The University of Tennessee Institute of Agriculture.

Work Ethic: A composite of the three work ethic elements (dependability, initiative, and interpersonal skills) measured by the OWEI-R.

Years of Full Time Work Experience (Experience): The number of years the participant has been employed by TAES as a full-time home economist at a minimum of 40 hours per week and includes the following levels: (a) 1 to 5 years; (b) 6 to 10 years; (c) 11 to 15 years; (d) 16 to 20 years; and (e) 21 years and over.

CHAPTER II

RELATED RESEARCH

Introduction

A review of literature was undertaken to gain insight into the evolutionary developments and current issues arising out of the concepts of leadership and work ethic.

Historical Overview

Few would take issue with the observation that during the last half of the 20th century every aspect of American life has grown more complex, more diverse, more specialized, and more technological. Not surprisingly, such phenomenal and frequently turbulent growth—especially within the context of social systems—has been the progenitor of equally phenomenal and frequently wrenching changes in both public and private universities.

The organization, of course, is one of the primary structures upon which our social systems are based. An organization, per se, implies a consolidated group of elements, or people, which are both managed and led toward some common goal. Thus, organizations may be seen at their most basic level as discrete collections of workers, managers, and leaders.

Any institution of higher education may be described as such an organization, albeit a somewhat specialized (some would say rarified) variant on the more commonly known business organization. Nonetheless, they too are comprised of workers, managers, and leaders who are joined together in this instance for the purpose of providing an essential public service. Institutions of higher education, like most other organizations, have experienced over the past half century what may be characterized as unbridled

growth in an atmosphere of increasing complexity and chaos. It would be naive, or at the least myopic, to believe that these developments have not exacted a heavy price. Much like the forgotten and neglected stepchild, institutions of higher education and the superstructure upon which they are premised, that is, the social system foundation, have been left to fend for themselves. The difficulty, of course, lies in the fact that neglected and mismanaged social systems—whether corporate, educational, or bureaucratic—translate ultimately into neglected and mismanaged human lives. For example, the greed and insensitivity characteristic of many well known individuals and organizations during the 1970s and 1980s is now legendary.

It was, some would say, a suitable ending to the so-called Great American Dream. What was once an evocative and lyrical metaphor synthesizing the romantic notion of America as a land of equal opportunity and material abundance had quickly devolved into an Awful American Nightmare, and a perceptive few had seen it coming. William James, for example, the noted turn-of-the century psychologist and philosopher, blatantly denounced the notion as nothing more than a cheap illusion reflecting the “moral flabbiness of the exclusive worship of the bitch-goddess SUCCESS . . . [which, along] with the squalid cash interpretation put on the word success—is our national disease” (James, 1920, p. 260). The extent to which the aberrant, avaricious behavior of a long string of titans of American industry may be attributed to forces of change can only be a matter of speculation; what is known, however, is that once sacrosanct values and norms of behavior have vanished. Gone as well is the blush of an America in pastoral, mid-century innocence, replaced instead by tarnished patina more appropriate to the camouflage of armed combat. Clearly, like Dorothy and Toto, we’re not in Kansas anymore.

Theorists utilizing the Heglian dialectic have speculated that a severe lack of meaning is endemic to all modern societies and arises out of the debasement of traditional

values, value judgments, and norms in every sector of every society (Pieper, 1992). Hegel (1892), himself, saw that the primary concern of modern society was the search for meanings within itself. Meaning, therefore, must be found elsewhere. It should come as not great surprise, therefore, that ordinary people and present day organizations, including those in higher education should now be facing similar concerns.

In times of high risk—such as those that accompany change, chaos, and confusion—individuals on both sides of the worker-manager line understandably assume defensive postures. And if, or when, an organizational disaster occurs, each side of the line is quick to point the finger of responsibility toward the other side. The questions ultimately must be asked: Has leadership failed us? If so, why? American institutions, businesses, and government fund untold millions in leadership training programs and leadership research every year for decades, yet a 50 year span of effort by scholars, policymakers, and researchers to formulate a definitive, universal model of leadership has consistently met with failure. Instead, we are told by an early-day whistleblower that leadership “has been the subject of an extraordinary amount of dogmatically stated nonsense” (Barnard, 1948, p.80). The situation has not improved with age. Rost (1991), in an iconoclastic, stinging critique of current leadership research quotes Barnard's observation and then adds: “If he could say that in 1948, when the leadership literature, if piled together, would amount to only a small hill, what would he say in 1990, when the leadership literature approaches the size of a small mountain” (p. 179)?

The working class fares little better with virtually every level of American society convinced that either pandemic ennui or chronic laziness has plagued the mass of workers. Business, government, and labor leaders, as well as working people themselves, believe that the American work ethic is in serious trouble” (Yankelovich & Immerwahr, 1984, p. 63). The status of the work ethic of the baby boomers, at their worklife peak for well over a decade, has been the subject of endless debate and conjecture since their

coming of age. Born and raised after the Great Depression in relative security this generation of Americans came to work with different expectations than their parents. They wanted more from their work than economic compensation, and demanded meaningful jobs that provided avenues of self-fulfillment. To the prior generation for whom any job was considered to be a privilege, these attitudes were treated as heresy, and the attitude holders were accused of being narcissistic, self-absorbed, and focused on self (Yankelovich, 1981).

Exacerbating the situation is the fact that no consensus has yet been reached on the straightforward question of whether or not the work ethic is declining (see, e.g., Maccoby & Terzi, 1981; Yankelovich & Immerwahr, 1984). After a comprehensive review of the work ethic literature, for example, Hatcher (1994) concluded it remained an open question.

Clearly, then, a first order task in coming to grips with research based upon the examination of a relationship between leadership and work ethic will be to clarify the status of current theory and research and to establish clear definitional parameters for each construct under study. Turning first, then, to the crisis in leadership, this review will outline the evolution of leadership theory up to the present and in passing will consider in more depth those studies that investigate variables of interest to the instant research. Following that exercise, an identical procedure will be applied to work ethic theory and studies.

Leadership Defined

For the most part, the leadership research tradition of the past century reflects a successive but nonlinear development pattern with new ideas and theories grafted into frequently unexpected fashion onto older ideas and theories. As a result, there are several ways in which leadership has traditionally been viewed, including what have been

denominated in the literature as the trait approach, the situational approach, the contingency approach, and the transactional approach. More recently, theorists and researchers have begun to take the best that each of these traditional approaches has to offer and to forge an alternative, or non-traditional, view of leadership theory, which for the purposes of this research will be termed the integrative approach. This section of the review of literature, therefore, will consider first, the definitional problems inherent in an analysis of leadership regardless of perspective. This will be followed by a discussion of each of the traditional approaches to leadership research. The final topic included in this first section of the review will describe the emerging, non-traditional, integrative perspective on leadership.

Throughout the past century and a half researchers and theorists have struggled to define leadership; yet, there remains no consensus as to its meaning, its source, its development, or its succession. This failure has not been for want of effort. Bass (1990), after compiling a review of leadership literature that spanned 50 years and synthesized over 7,500 studies, determined that formulating a unifying definition of leadership was an impossible task: "There are as many different definitions of leadership as there are persons who have attempted to define the concept" (p. 7). His ultimate conclusion, drawn perhaps with masterful understatement, was simply that "leadership appears to be a rather sophisticated concept" (Bass, p. 7).

As one of the most meticulously researched—yet least understood—phenomena (Burns, 1978), leadership studies in a conceptual context have been likened to Wagnerian operas, richly textured with a diversity of themes that appear, disappear, and then reappear again (Bass, 1981, p. xiii). It is an apt analogy in this case, graphically describing the historical stage upon which various themes on leadership have emerged, gained strength in sudden crescendos of popularity, begun quietly to fade, and then inexplicably, with almost seeming capriciousness, reappeared. What is truly Wagnerian

about the leadership construct is that for the better part of the past century most of these themes, in differing stages of development, have all been seeking voice simultaneously.

The result, of course, has been cacophonous—"a bewildering mass of findings," wrote Stogdill in 1974 (p. xiii) in the preface to the first edition of his now classic *Handbook of Leadership*. Notwithstanding, leadership theorists have been anything but reluctant to venture forth into the phenomenological morass. Out of those efforts, four primary recurring themes, or movements, have traditionally been recognized. Alternative and equally valid taxonomies abound in rough proportions to the number of leadership definitions; Heifetz (1994) and Hollander (1978) provide the basis for a taxonomy in this review and will serve adequately to describe the backdrop against which emergent leadership theory may be understood.

Traditional Approaches

Trait Approach. The first such movement was the great man, or trait approach, with origins dating back to Carlyle's 1841 classic, *On Heroes, Hero-Worship, and the Heroic in History* (Heifetz, 1994, p. 16). As the title of his book suggests, Carlyle articulated the notion that leadership ability was the result of a special or heroic assortment of personality traits, physical characteristics, or innate talents. Characteristic of early thinkers of this persuasion were theorists and commentators such as James (1880) and Thrasher (1936); their subjects were the individuals, the heroes, who shaped history—men like Washington and Lincoln—those who found a way to lead society in the way they intended no matter what the circumstance.

Two notable anomalies in this approach merit amplification. In the first, some theorists became so enamored with identifying and classifying traits of great men such as those just mentioned, that the great man and trait approaches ultimately merged into one inclusive theory of leadership that was destined to leave its own peculiar mark on history.

This peculiarity was evidenced by their efforts to establish a biological or genetic rationale for inherent leadership abilities. Wiggam (1923), for example, suggested that an adequate supply of superior leaders for the nation was dependent upon the maintenance of a high birth rate among those in the aristocratic classes.

Prior to World War II, the quest to identify a universally applicable pattern of leadership traits reached its zenith, spurred by renewed interest in intelligence testing and psychological measurements. Stogdill's (1948) post-war review of trait research up to that date, however, found little empirical support for the theory, a finding later confirmed by Fiedler and Chemers (1974). Gradually, the theoretical emphasis began a reactionary shift away from what leaders' personalities were like to what their actions were like, and for a brief period the notion of leadership as falling within the exclusive province of the superior few slowly faded into the background.

True to the Wagnerian analogy, however, time would demonstrate that the trait approach was not finished. In spite of the fact that an accumulating body of empirical studies demonstrated that no single trait could be found to be related to effective leadership, remnants of the theory continued to be entrenched in the fabric of the culture. In fact, during the 1980s the business world witnessed an unparalleled revival of the theory in the form of hero-managers (Huczynski, 1993, p. 88), along with their best-selling books on organizational management and leadership, such as Naisbitt's (1982) *Megatrends*, Peters and Waterman's (1982) *In Search of Excellence*, Iacocca's (1984) *Iacocca: An Autobiography*, and Trump's (1987), *Trump: The Art of the Deal*.

Situational Approach. A slice out of time, roughly parallel to that just described in the context of the trait approach, would reflect that. Other theorists with diametrically opposite ideas about the nature of leadership were ready to be heard. Chronologically, the first of these, the situational approach, was represented by early theorists such as Spencer (1873/1961) and Hocking (1924). Based upon the notion that the events of the time make the leader and not the reverse, situationalists scoff at what trait theorists suggest. Clearly

reactionaries, these early situationalists maintained that different times and situations brought forth those with whatever leadership skills were appropriate to the occasion. Under circumstances such as these, anyone—including so-called great men—would be powerless to change the inevitable outcome.

From one perspective, then, situationalists saw great leaders as re-actives, rather than pro-actives, in any given set of circumstances. Great leaders simply rose to the occasion when it was required. The remarkable convergence in space and time of leaders such as Jefferson, Madison, Monroe, Adams, Washington, Hamilton, and Franklin has been cited as exemplifying the situationalist view that extraordinary times call into action extraordinary leaders (Heifetz, 1994, p. 17).

Contingency Approach. As empirical evidence refuting the trait theory began to mount, the interactive effects of the situational and trait approaches became the focus of an emerging synthesis of the two views (see, e.g., Hook, 1943). Contingency theory was perhaps the most significant development to emerge out of this synthesis, which originally suggested that leadership style should be contingent upon the needs of any given situation; thus, Lewin & Lippit (1938) established that some situations called for democratic or participative leadership responses while others called for controlling or autocratic leadership responses. Later, Fiedler (1967) extended this idea to identify two broad categories of leader behavior orientations, task and relations. He concluded that the task-oriented leaders would be most effective in situations that most favor or most disfavor that particular leadership style, while a relations-orientated leaders would be most effective in the remaining situations. The political-organizational process by which Moses gradually formed the Israelites into a cohesive unit from Exodus, or nation, and led them out of Egyptian slavery is an example of the successful application of alternative leadership styles in the face of changing circumstances (Wildavsky, 1984).

Transactional Approach. The last of the traditional theories of leadership, the transactional, developed soon after the emergence of the contingency theory. Early transactional theorists saw a significance in the exchange that occurred between leader and follower, that is, in the transaction by which one person acquired power over another. The earliest exchange theories arose out of the work of researchers such as Homans (1958) and Thibaut and Kelley (1959), based upon the assumption that social interchange is the product of individual group members' contributions to the group-at-large in exchange for returns received at a cost to the group as a whole. Reciprocity was central to the transactional theorists, because they recognized that the characteristic give-and-take must also exist between leaders and followers. The far-reaching potential of such an exchange relationship was appreciated by transactional theorists such as Gibb, who noted: "The leader inevitably embodies many of the qualities of the followers. Any individual's personality at a given point in time reflects the field forces with which it is interacting" (1968, p. 210).

Interest in the transactional theory has grown considerably since the 1950s. One notable variation on the theme has been an expansion of the social interchange basis to recognize that effective leaders take control and define reality, thereby reducing followers' anxieties; in exchange, the leader garners status, power, and influence (Hollander, 1978). With the passage of time, the transactional theorists have come to view this exchange as a power differential, seeing leadership itself as the seat of a political base (Neustadt, 1990).

Non-Traditional Approaches. The trait, situational, contingency, and transactional theories of leadership derive strictly from a traditional, purportedly value-free, taxonomy of leadership with roots in rational, linear disciplines such as political science, business, and management. Other disciplinary perspectives—sociology, psychology, anthropology—have recently impacted organizational and leadership theory in non-linear,

non-rational, and non-traditional ways. For example, cultural-symbolic theorists such as Deal and Kennedy (1982) focus on organizations as social systems; as a result, they place importance upon the meanings given to and taken from those systems in the form of shared histories, myths, stories, and legends. Applying this notion and its innate anthropological basis to organizational theory has resulted in the anthropomorphic characterization currently referred to as organizational culture (Schein, 1992).

Further application of this notion to leadership within such cultures has led to the view that leaders are responsible for communicating the symbolic—by metaphor, by myth, and by actions (Bennis & Nanus, 1985). Some see the potential impact of this concept as significant, bordering on the mystical and charismatic. Senge (1990), for example, observes that shared visions have a transformative quality:

A shared vision is not an idea. It is not even an important idea such as freedom. It is, rather, a force in people's hearts, a force of impressive power. It may be inspired by an idea, but once it goes further—if it is compelling enough to acquire the support of more than one person—then it is no longer an abstraction. It is palpable. People begin to see it as if it exists. Few, if any, forces in human affairs are as powerful as shared vision. (p. 206)

Integrative Approach. Integrative theorists begin with the premise that each of the four traditional theories of leadership has a significant contribution to make toward a complete understanding of leadership (see, e.g., Heifetz, Sinder, Jones, Hodge, & Rowley, 1989, p. 540). But leadership is also seen as more than the sum of those contributions; in a synergistic modality, integrative leadership theory openly acknowledges its basis in a value system that has people at its center. Thus, Fairholm (1991) observed:

Leaders value people in and of themselves. Thus, leaders honestly care for their followers, indeed, all stakeholders in the group. They personify the values of the group, its ideology, and its culture, and they respect and trust their coworkers. They are outstanding examples of group ideals. They convey the shared values and culture of the group. Leaders change followers. They are in an exchange relationship with followers founded on commonly held values whose purpose is to alter follower behavior, knowledge bases, values, and attitudes. The task of leadership is to use these cultural values to give the group focus and obtain support. Leaders focus followers on the best the organization stands for. (pp. 7-8)

Under this view of leadership, effectiveness is determined in accordance with each individual's idea of what constitutes good leadership. Accordingly, it has been noted that in such environments the "structure of leader behavior ratings depends more on the culture of the raters than on the behavior of the leader" (Ayman & Chemers, 1983, p. 102). A clear understanding of how leadership behavior is perceived, therefore, assumes paramount importance under the integrative approach.

Change is also a critical component in the integrative theory and occurs in accordance with the theory of adaptation. For that reason, integrative theory is preconditioned upon an acknowledgment of the complex nature of embedded behavior and discovery of the self (Kegan & Lahey, 1984). Such a maturation of the personality necessitates a series of cognitive relinquishments of one system of meaning by integration into an altogether different system of meaning. Ultimately, a flexible and reflective personality emerges that is based upon a fixed, internal system of meaning. Bruner (1987) suggests that an alternative way of looking at the development of the self is to see it as the emergence of our ability "to reflect on our own acts by the operation of metacognition" (p. 86). This process, according to integrative leadership theory, is the *raison d'être* of leadership.

Cognitive awareness and the ways in which human beings create and interpret their own realities have been a subject of interest to theorists for some time (see, e.g., Bateson, 1955/1972; Cone, 1968). Goffman (1974), for example, employed the metaphor of frames, or frameworks, as a means of objectifying experience, as one way of getting a clearer focus, or perspective, on what was really occurring. "After all," he observed, "what is play for the golfer is work for the caddy" (p. 8).

Using a method Goffman (1974) called a frame analysis he demonstrated how human beings create their own realities through selective attention and involvement in any given event or situation (p. 11). In this sense, thinking may be seen as a process of representing reality that has been previously experienced as important. In order to understand these realities human beings create cognitive maps or interconnected sets of understandings of what is significant based on past experience. Thus, mapping can be seen as a selective process, or as McCaskey (1982) later noted, a "dialectic between events and ideas about those events" (p. 19). Goffman concluded that the conscious act of looking at an event across the boundaries of one's embedded perspective would facilitate a transformation in meanings of actions within frames.

The implications inherent in paradigmatic shifts in thought, represented by integrative and cultural-symbolic theorists, were not lost on those with an interest in leadership, and by extension, the organizations within which leadership is vital. Keeley (1980), for example, applied a frame analysis to organizational events and found that conceptual frames functioned heuristically. In 1983, Smircich employed frames in her analysis of organizational culture. The process by which leaders create cognitive structures in order to frame complex organizational events was examined by Fiske and Dyer (1985). And Schein (1992) effectively merged leadership and the creation and management of culture with what he termed an evolutionary perspective:

Leadership now is the ability to step outside the culture that created the leader and to start evolutionary change processes that are more adaptive. This ability to perceive the limitations of one's own culture and to develop the culture adaptively is the essence and ultimate challenge of leadership. (pp. 1-2)

Framework Approach

Since Goffman (1974) first created a vocabulary to support his frame analysis of cognitive processes, researchers with diverse disciplinary backgrounds have been interested in the possibilities inherent in an application of framework theory. The social science literature, for example, contains several references to framework expressions, all of which are based upon the assumption that individuals see and experience the world in different ways because of differing world views: Fiedler's (1982) schema or schemata, Weick and Bougon's (1986) maps, Morgan's (1986) images, and Mitroff's (1985) pictures. Similarly, the benefits of using multiple frames for organizational analysis have been explored by researchers in the field of management, such as Morgan, Perrow (1986) and Scott (1992). Quinn and his colleagues, in particular, have developed a model of "competing values," and argue that the ability to use different models, even when they are in competition, is required for effective management (Quinn, 1988; see also Quinn & McGrath, 1982).

In 1984, Bolman and Deal introduced their theory of conceptual pluralism, consolidating all the major schools of organizational thought into four frames or perspectives—their "windows on the world" (p. 4). Bolman and Deal maintained that frames not only operate to help us focus more clearly but they also serve to filter out the irrelevant or unimportant; they help us bring order into our perceptions and take appropriate action. Managers who understand their own frame, and who work toward developing others, thereby increase their managerial effectiveness.

The organizational framework developed by Bolman and Deal (1984, 1991b, 1991c) traces its roots back to one degree or another to each of the major schools of thought that guided the evolution of leadership theory. A brief discussion follows regarding their four frames, together with assumptions and propositions that pertain to each of the four frames.

The Structural Frame. Bolman and Deal (1991b) describe the structural perspective as one which emphasizes goals and efficiency. Individuals who have this perspective define clear goals, structure specific roles for individuals, and utilize policies, rules, and the chain of command. Structural leaders are described as valuing data and analysis, setting clear directions, keeping their eyes on the bottom line, holding people accountable, and trying to resolve problems with new rules or restructuring. The metaphor to keep in mind is the factory.

The Human Resources Frame. The human resource frame describes people who focus their attention on human needs. They operate under the assumption that the organizations that take care of its workers work better than those that do not. Human resource leaders value feelings and relationships. They lead through nurturing, facilitating and empowering people. The organization is one source of needs fulfillment. The metaphor assigned to this frame is the family.

The Political Frame. Those who fall within this group see organizations as arenas of conflict and competition where all the players are battling for scarce resources. Leaders who tend to use a political frame are realists, pragmatists, negotiators, and advocates. They network, build power bases, negotiate compromises, and create coalitions. They solve problems with Machiavellian skill, political acumen, and manipulation. The metaphor from this perspective is the jungle.

The Symbolic Frame. Through this frame the viewer watches a world of chaos. Old assumptions of rationality are abandoned. Organizations create and develop cultural symbols that help to shape human behavior unobtrusively. Organizations also provide a

shared sense of mission and identity to their workers. Symbolic leaders use charisma and drama to instill enthusiasm and commitment. They utilize and honor symbolic forms, such as myth, ritual, ceremony, and stories. For those with this window on the world, the world they see is high drama and a theater of the absurd. Their metaphor is the carnival.

Framework Research

Bolman and Deal (1991b) formally merged the parallel, but separate traditions of organizational and leadership theories in their two-step, frame analysis of how school administrators use organizational frames—how many, which ones, and with what result. The first step involved an inquiry into how leaders frame their experiences measured by: (a) frame number, that is, how many frames were utilized by leaders and managers, and (b) frame choice, that is, which frames were utilized by leaders and managers. This qualitative investigation utilized a sample of three separate groups: 145 higher education administrators, 48 principals and 15 superintendents, and 220 administrators (from the Republic of Singapore). Participants were asked to provide brief, written descriptions of incidents or situations they found challenging and which raised an issue of effective leadership. The results for all three samples indicated that the large majority used only one or two frames to define critical situations, approximately 25% used more than two frames, and only about 5% used all four. With respect to frame choice, institutional and national variables significantly affected the professional challenges. The Americans utilized the political frame more than Singaporeans across the board, while school administrators employ it less, than officials in higher education, regardless of national context.

The second step in the Bolman and Deal (1991b) study was undertaken to determine the participants' effectiveness as leaders or managers. How effective are their frames of reference? This measure was tested by two global ratings of perceived

effectiveness appended to the researcher-developed instrument used in the first step. The ratings were overall effectiveness as a leader and overall effectiveness as a manager, intentionally avoiding a researcher-based standard. Bolman and Deal concluded on the basis of their data that effective management and effective leadership are perceived as two different things. Managerial effectiveness was related to an emphasis on structure and rationality; while leadership effectiveness is related to symbols and culture. There are also differences across the four populations, but no significant differences between men and women.

Bolman and Deal (1991b) point out some of the real world ramifications of these findings with respect to various leadership issues. If, for example, political and symbolic orientations are indicators of leadership effectiveness, as demonstrated by their study, then traditional development program emphasis on structural and human resources issues require re-evaluation (p. 525).

Further, leadership emerges in two circumstances: (a) when individuals view their organizations and their situations through multiple frames (Birnbaum, 1988; Bolman & Deal, 1984, 1991a, 1991b), and (b) when individuals score high on the symbolic dimensions (Bolman & Deal, 1991a). Bensimon (1989, p. 121) and others have suggested that leadership effectiveness should also result from surrounding oneself with a team whose members have complementary frame orientations (Bensimon; Hall, 1992/1993).

Bensimon (1989) utilized Bolman and Deal's (1984) leadership framework model to study 32 college president's views of their frame orientations and leadership effectiveness. She determined that among this population, frame choice breakdown was as follows: the human resource frame was used most frequently (63%), the symbolic frame second (50%), the political frame third (47%), and the structural frame the least (28%) (Bensimon). By frame number, Bensimon determined that college presidents tended to use either a single or paired-frame, as opposed to multi-frame, perspective.

Bensimon noted Bolman and Deal's observation regarding the complexity of modern organizations, the inadequacy of a single-frame perspective for coping in such an environment, and the likelihood of error, the tendency to freeze-frames in unfamiliar situations resulting in "self-imprisonment" (Bensimon, p. 121, citing Bolman & Deal). Bensimon concluded: "If multi-frame leadership is better suited to a turbulent environment, then quite a few presidents are not effective" (p. 121).

According to Bensimon (1989) length of tenure was indicative of multi-frame use. She found that 50% of the new presidents (in office from one to three years) espoused a single-frame theory, whereas almost 70% of the old presidents (in office five or more years) espoused the use of two or more frames. Bensimon speculated: "Quite possibly the more experienced presidents have assimilated the potential complexities of their role and so can more easily shift among frames" (p. 120). Findings were similar by Redman (1991/1992) in her comparative study of American and Japanese administrators in institutions of higher education.

Gender as a predictor of frame choice was expressly considered by Bolman and Deal (1991b) in their survey of Singaporean and American school administrators. Only one of their three samples contained enough women to analyze gender but on the basis of those data, the researchers concluded there were essentially no differences between the effectiveness ratings of men and women (pp. 527-528). The researchers point out, however, that the samples consisted primarily of successful men and women who enjoyed comparable professional positions. The generalizability of the findings were unknown, leaving the researchers to suggest additional research was indicated.

Work Ethic Defined

An analysis of work ethic must necessarily begin with terminology considerations, especially in light of the fact that term work ethic has been defined in

many different ways (Cherrington, 1980). One of the earliest formalized systems used to explain observed relationships in the work environment was the work ethic brought to America during the Colonial Era, commonly referred to as the Protestant work ethic (Poremba, 1990). This belief system encompassed the ideas that hard work was an obligation, productivity and loyalty were expected, and honest labor would be rewarded (Cherrington, p. 20). With secularization, the term work ethic came to stand alone as a means of describing a system of attitudes, beliefs, and values indicative of a positive attitude about work.

Subsequently, work ethic has been operationally defined by Blood (1969) and Wayne and Chapman (1992). Blood, for example saw attitudes toward work as independent of religious affiliation. Wayne and Chapman took the view that work ethic was a social obligation that referred to "usefulness, importance, or general worth that people assign to some behavior or conception related to work" (p. 128). Buchholz (1978) also saw work ethic as a social phenomenon, declaring that people should work and describing those who do not as useless to society.

Others have attempted to define work ethic by factoring out the elements common to the work ethic of the Protestants. Mirels and Garrett (1971), for example, saw the Protestant work ethic as only one of several work beliefs held by certain people, and their study attempted to relate work ethic to personality characteristics. Furnham and Rose (1987) also noted work ethic systems independent of the Protestant work ethic. Three separate elements of work ethic were identified by Cherrington (1980) as (a) character elements, such as hard work, frugality, and prudence; (b) new thought elements, such as the power of positive thinking; and (c) elements of personality, such as influence.

The preliminary review of literature revealed the use of a wide assortment of phrases to refer to work ethic, such as Protestant work ethic or Protestant ethic, affective work competencies, work values, and work attitudes. An equally wide corollary of test

instruments, inventories, scales and surveys accompany that body of research. For clarity, however, this review will utilize the term work ethic in reference to all applicable research; the nomenclature specific to each study will be provided in parenthesis when necessary for clarity.

For purposes of this research, the conceptualization of work ethic will be based upon Marland's (1974) observation that work and work ethic are two separate concepts. Marland described this distinction as follows: "Work is an ever present, inescapable condition of life, whereas, work ethic carries moral or spiritual obligations apart from the worth of work itself" (p. 32).

Based upon this analysis, therefore, a definition of work ethic must begin with what work ethic is not. Two currently popular terms appearing in organizational research literature are climate and culture. Organizational climate generally refers to the morale or happiness of the workers; organizational culture, on the other hand, refers to a set of "artifacts, beliefs, values, norms, and ground rules that defines and significantly influences how the organization operates" (Beckhard & Harris, 1987, p. 7). Both of these terms refer to states of mind or being which are dependent upon the particular organization and, therefore, describe or define occupational work ethic.

Individual work ethic, by contrast, refers to a set of beliefs, values, and attitudes that defines and significantly influences how the individual operates independent of the organization. Thus, values and beliefs may comprise elements of both occupational and individual work ethic. When the individual's work ethic coincides with the occupational work ethic, the organizational climate is positive; when they do not coincide, however, conflict and dysfunction may result (Williams, 1993). For example, we may say that a person's individual work ethic encompasses the belief that work is important, but there is more to life than just work. If that person joins an organization in which the culture dictates an occupational work ethic that only hard work will be rewarded, then the climate may be a bit stormy.

Work Ethic Developments. From the historical point of view, American work ethic may be said to have had its beginnings in the Colonial Era. Weber's (1904-1905/1988) early work, *The Protestant Ethic and the Spirit of Capitalism*, undoubtedly provided the impetus for the most common alternative term for work ethic—the Protestant work ethic (Furnham, 1984). Protestant, Puritan, and Quaker settlers brought with them the gospel of work (Cherrington, 1980, p. 35), that saw labor as a source of value, honor, and dignity. These early settlers considered themselves “laborers for their Lord, straighteners of crooked places, engaged in a task with hardship, deprivation, and toil” (Rodgers, 1978, p. 4). Work ethic under these circumstances may be seen as an extension of religious life, one in which a person's assurance of salvation was intimately related to one's success in work (Weber).

Weber (1904-1905/1988) saw Benjamin Franklin's *Poor Richard's Almanac* as providing an ideological base for the emergence of an American craft work ethic in which one worked for self as well as for God. Cherrington (1980) and Maccoby and Terzi (1981) also saw Franklin's influence as secularizing, and they characterized the resulting change in work ethic as one moving from a direct form of worship to an indirect form of service through character and moral development.

Up until the advent of the Industrial Revolution in the middle of the Nineteenth Century, the work ethic as a combination of Protestant and craft values held firm with only minor modification. Zuboff (1983) reported that the influence of eastern and southern European immigrants during this period brought with them the concept that work should also be socially useful, an idea that was gradually grafted onto the Protestant and craft values.

The coming of the Industrial Revolution, however, brought about fundamental changes in the American work ethic. As factories began to replace agriculture and craft

workshops as the primary work locations, workers simultaneously began to lose control over their methods of work and quality of production (Rorabaugh, 1986). Quantity of production, as well, was no longer controlled by simple demand; factories were now capable of producing many more goods that demand required. As a result, economic prosperity—an integral component of the work ethic—became unpredictable. As the economy gradually converted to a materialistic basis, the enjoyment of leisure and other more intangible fruits of one's labor began to take on more importance than hard work.

The concept of scientific management arose in response to the growth of factories to unmanageable sizes. The work of productivity specialists focused on minute dissection of the labor process and resulted in systematization of even the simplest of jobs. Zuboff (1983) saw this development as a new and deeper cut into the level of control of one's work. Initiative, as a result, languished (Rodgers, 1978).

During the Depression Era, landmark studies conducted by Mayo (1933/1960) established the concept that workers' social needs and motivations should be taken into account as well as their economic needs (Stoner & Wankel, 1986). Two decades later, researchers following the Mayo line of research, studied the impact of extreme work simplification on work ethic and concluded that overly specialized jobs tended to erode a positive work ethic because they failed to satisfy basic needs, resulting in a loss of motivational control (McGregor, 1960; Blood, 1969).

More recently, radical shifts in the American work ethic have resulted from the cultural revolution of the 1960s and 1970s. Many young people rejected materialism and the work ethic of their parents' generation, valuing instead self-actualization and idealistic careers (Spence, 1985). Only a short decade later, the "Me Generation" spawned a reactionary new work ethic that emphasized self-gratification, profits without conscience, and hedonistic life styles. "Some kind of basic change had taken place

regarding traditional beliefs about work” concluded one researcher (Buchholz, 1978, p.8).

Yankelovich (1981) described the essence of the American work ethic following these social upheavals as work that is meaningful, that provides self-development, and that provides opportunities for creativity. Others, such as Spence (1985) believe that many of the Colonial Era work ethic values, such as working hard, making something of oneself, and becoming prosperous, continue to influence the workforce.

Cherrington’s (1980) survey of 3,053 workers supports that belief. This research investigated the attitudes and values of workers from 53 predominately manufacturing companies. A cross-section of job classifications were chosen with approximately 50% from production, 20% from supervisory, and 30% from middle management or clerical. Cherrington found that these workers were committed to pride in craftsmanship, believed in the efficient use of their time, saw a moral significance in their work, and felt their work provided value.

In an effort to determine the extent of change in American work ethic, Tang and Tzeng (1992) investigated a sample of subjects in middle Tennessee using items from the Mirels and Garrett (1971) Protestant Work Ethic Scale. They concluded that a positive relationship exists between Protestant work ethic values and political party affiliation while a negative relationship exists on the basis of age, education, and employment and marital status.

A subsequent study by Tang (1989) found a direct relationship between work ethic scores and the time required to perform a difficult task. In other words, the workers with the lowest scores required more time to complete the difficult task than did workers with high scores. Research in the 1980s took the position that a belief system arising out of an intrinsic value of work is a cultural norm against which a worker measures the value of work, a view which was subsequently adopted by Yankelovich and Immerwahr (1983).

Determinants of Work Ethic. Researchers have investigated a number of variables believed to have an impact on work ethic. These variables include, among others, socialization, worker age, gender, occupation, job title, and education.

Socialization processes, such as education and training, influence work ethic; accordingly, workers may learn the behaviors and values that are accepted or rejected, that is, that are idiomatic to that particular organization, from co-workers (Cherrington, 1980; Wanous, 1992). Apprenticeships extend training beyond the typical socialization process (Feldman, 1989). Apprenticeship studies have pointed out the importance of the teacher in the transfer of work values, supplying an inference that there is a need to identify the work ethic of the teacher as well (Gnidzejko, 1976). Similarly, certain journeyman characteristics have been found to encourage interaction and to develop positive attitudes among apprentices (Fullagar, McCoy, & Schull, 1992). Leach (1991) has identified four psychological characteristics of apprentice instructors—caring, sociable, practical, and social—that are most conducive to the teacher-student relationship. Mathieu (1988) found that when training was viewed as satisfactory, a significant influence on commitment and the significance of the work to the participants was the result.

Status as either a teacher or student has also been found to be a determinant variable in the work ethic equation (Gnidziejko, 1976; Hatcher, 1993/1994; Welborn, 1983/1984). Gnidziejko, Hatcher, and Welborn reported a difference between the perceived work ethic of teachers and students.

Occupational differences have been shown to impact work ethic as well. In an early study by Kim (1977), for example, a positive relationship was shown to exist between occupational status and an index of Protestant work ethic. This finding was later confirmed by Cohen (1985), who used a longitudinal study to examine the relationship

between job success, religion, socio-economics and work ethic. The results of this study indicated a positive relationship exists between the emphasis on intrinsic work attributes and occupational and educational attainments.

Several researchers have considered the impact on work ethic of low discretion jobs of the industrial age as contrasted with the high-discretion jobs of the technology age. These studies have concluded that the meaning of work ethic is dependent upon the job title or occupation of the worker (Yankelovitch, 1981; Yankelovitch & Immerwahr, 1983; Yankelovitch & Harmon, 1988). Hill's (1992/1993) study confirmed these findings, reporting that workers grouped by job titles and occupations reported higher work value scores if they were in one of the information age occupations.

Poremba (1990) investigated job performance as a variable determinant in a replication of an earlier study by Buchholz (1974/1975). Poremba's findings confirmed the observation by Buchholz that no predictive relationship exists between a worker's performance and work ethic.

In a related study, organizational commitment was positively related to work ethic (Randall & Cote, 1991). In this study, Randall and Cote investigated a random sample of 545 staff personnel at a large university using the Protestant Ethic Scale developed by Blood (1969). This scale measures adherence to or rejection of values that are designated as Protestant work ethic, relying upon two, four-item subscales for measurement (Furnham, 1983). Randall and Cote observed a relationship between Protestant work ethic values and organizational commitment.

Furnham (1984) investigated another related area, union alliance, in Great Britain. In this study, Furnham utilizes a Protestant work ethic instrument and questionnaire to measure worker attitudes toward unions. Furnham found that a belief in the Protestant work ethic was indicative of a negative attitude toward unions.

Age has been shown to be a significant determinant of work ethic by researchers such as Wayne (1984/1985) and Norman (1987). Hill (1992/1993), however, found only insignificant differences in work ethic based on age, while Yankelovitch (1981) has reported that workers of all ages are still willing to work, but workers' desires to receive satisfaction from their jobs has changed. An international study comparing Japanese men and American men and women in manufacturing showed that age was a determinant of work commitment, concluding that older workers in both cultures were more committed than younger workers. Agnew (1984) examined two samples of adolescent boys, 2,213 in 1966 and 1,886 in 1968, and found a correlation between boys with low work ethic scores and juvenile delinquency.

Gender is another factor to be considered in work ethic analysis. An early study by Miller (1974) of a small sample of women community college students showed a positive relationship between vocational maturity and intrinsic work values. In 1980 approximately 40% of the workforce consisted of women (Stencel, 1981), and by 1990 that number had grown to approximately 50% (Schor, 1991). Research studies on the impact of gender on work ethic show that women value intrinsic, personal benefits from their work, while men continue to value extrinsic benefits (Cherrington, 1980).

Educational differences have also been studied as a determinant of work ethic in light of the fact that more highly educated people are entering the workforce than ever before (Yankelovitch & Immerwahr, 1984). Generally speaking, however, these studies have failed to support a relationship between level of education and work ethic (Norman, 1987; Hill, 1992/1993). Ray (1982), for example, tested an instrument designed to measure for and against Protestant work ethic beliefs, and found that it was unrelated to level of education.

CHAPTER III

METHODOLOGY

This section outlines and discusses the procedural aspects of the proposed research. Topics to be included are population, study variables, data collection procedures (including specifically the parameters of the e-mail system), instrumentation, and data analysis.

Population

The total population consisted of 183 home economists, defined as those persons (a) who were employed on a full-time (40 hours per week) basis as of April 1, 1995, by the Tennessee Agricultural Extension Service (TAES), and (b) whose job titles fell within one of the following three job classification categories: Category I (Assistant Extension Agent, Associate Extension Agent, Extension Agent, and Extension Leader); Category II (Assistant Professor, Associate Professor, Associate Professor and Leader, and Professor and Leader), and Category III (Specialist, Associate District Supervisor). Job classification categories were established after a discussion with the Assistant Dean of TAES and based on the Assistant Dean's recommendation. A list of all home economists eligible to participate was supplied by the Assistant Dean of the TAES.

Variables

The dependent variables were leadership orientation expressed in terms of four frame dimensions (Structural, Human Relations, Political, and Symbolic) and work ethic expressed in terms of three dimensions (Dependability, Initiative, and Interpersonal Skill), contingent upon the applicable hypothesis. The independent variables in this study

were Job Classification and District and, again contingent upon the applicable hypothesis, Work Ethic.

Procedures

Data Collection

E-Mail System Parameters. There are 95 counties in the State of Tennessee, each of which has an Extension Service office staffed by at least one home economist and one clerk (e-mail secretary). The Extension Service office located on the campus of The University of Tennessee, Knoxville, serves as the headquarters for all Extension Service offices throughout the State. Because much of the work of Extension Service professionals occurs in the field, the central office within each county serves as the primary communication link between outlying personnel and the state headquarters in Knoxville.

In the State of Tennessee this communication link has relied for many years upon a traditional interoffice mail system (referred to by TAES as the inner-extension mail). Although the inner-extension mail has served TAES well, geographical distances from the headquarters in Knoxville to the various outlying Extension Service offices has been an administrative concern (TAES Assistant Dean, personal communication, February 23, 1995). In bringing the e-mail system on-line, TAES administrators believed that instantaneous channels of communication between headquarters and distant personnel would alleviate some of those concerns. As a result, on April 1, 1993, the inner-extension mail was augmented by the installation of a statewide e-mail system, with each Extension Service office receiving a separate e-mail address and, at a minimum, an e-mail computer dedicated for e-mail usage. According to the TAES systems administrator, the highest administrative levels of TAES have endorsed the system since its inception, and all administrators and professional staff are encouraged to utilize the e-mail system as a regular part of their professional practices (Systems Administrator, personal

communication, March 15, 1995).

The TAES e-mail system is described as "closed," meaning that it is accessible only to TAES employees. All home economists who comprise the population for this study have the capacity to receive and transmit both inner-extension mail and e-mail. Access is provided to all TAES administrators, professional level employees, and their relevant support personnel.

TAES employees may elect to receive and send their own e-mail (direct users) or not (indirect users). Each of the 95 Extension Service offices is staffed by an e-mail secretary, whose job description includes interfacing with the e-mail system on behalf of indirect users who request help. As a part of its regular business practice, TAES requires its e-mail secretaries to check daily the e-mail system for incoming messages for all relevant employees and to transmit daily all requests for outgoing messages on the e-mail system.

Incoming messages may be displayed, printed, or stored by a direct user on-line at any time at his or her discretion. For indirect users, incoming messages are typically received in one of two ways. For one, the message may be saved by the e-mail secretary to a floppy diskette, which is then delivered, along with its identifying file name, to the relevant employee via inner-extension mail. Upon receipt, the employee loads the floppy diskette into her or his own computer and reads the message. In this scenario privacy is maintained because the only saved copy of the message is given to the intended addressee-employee. Alternatively, incoming messages may be printed directly off the e-mail system by the e-mail secretary, and the printed version, or hard copy, is then distributed to the relevant employee via inner-extension mail.

Outgoing messages by indirect users are typically given to the e-mail secretary on a floppy diskette. Instructions which identify the designated file name and the name and e-mail address of the person to whom the message is to be sent are simultaneously

provided. In order to send a message, a direct user or e-mail secretary: (a) loads the floppy diskette into the memory (read-only) of the appropriate computer; (b) enters the e-mail system program; (c) types in the e-mail address to which the message is to be sent; (d) transmits the message to the receiver; and (e) removes the floppy diskette from the computer.

E-Mail Transmission Procedures. A letter (Appendix B) jointly written by the Dean and Assistant Dean of TAES was sent by inner-extension mail to the total population requesting his or her cooperation along with a cover letter from the researcher (Appendix B). This transmission instructed the participant to save the entire LO/WE Packet to a floppy diskette utilizing the following filename protocol: [last name. local office mailbox].

For respondents who were direct users of the an e-mail computer and wished to respond on-line, the floppy diskette was loaded into the computer, the questionnaire completed at the keyboard, and the response immediately transmitted back to the researcher. Indirect users completed the hard copy of the LO/WE Packet for a more traditional paper-and-pencil response. They were instructed to return the completed hard copy to the e-mail secretary for direct data entry at the e-mail computer and transmission back to the researcher. Some respondents returned the completed hard copy to the researcher by hand-delivering their LO/WE Packet or through the U.S. Postal Service mail system.

In order to facilitate these proposed procedures a temporary e-mail address was assigned by TAES to the researcher. The researcher's e-mail temporary address was included on the cover letter which accompanied the original, and all subsequent, correspondence from the researcher to the participants.

Upon receipt, the researcher downloaded and saved each e-mail response, together with its coded file name, to a floppy diskette and then printed a hard copy for ease in

recording data. Once a file was successfully saved on floppy diskette, the data was deleted from computer memory. When all follow-up activities were completed, the coded file name was removed from the hard copy. Data from LO/WE Packets received other than the preferred e-mail response were recorded and destroyed by the researcher.

Follow-up procedures, as prescribed by Dillman (1978) were also included as a part of this research. For example, if participants did not respond within one week to the initial transmission, then an e-mail reminder, from the Assistant Dean of TAES, was sent. If no response was received within two weeks, a second, complete LO/WE Packet was e-mailed to the participant, along with a cover letter signed by the Assistant Dean of TAES, substantially in the form as in Appendix B, expressing the importance of the research and requesting their immediate assistance in completing the questionnaires. If any participant had not responded within three weeks, the researcher sent by U.S. Postal Service certified return receipt requested mail a hard copy of the LO/WE Packet, together with a final cover letter (Appendix B), in conformity with the Dillman (1978) survey and questionnaire procedural requirements.

Instrumentation

Three electronically transmitted questionnaires were used as the data collection instruments. All three instruments formed a single document, the Leadership Orientation/Work Ethic Packet (LO/WE Packet) located in Appendix A. The cover page of the LO/WE Packet identified (a) the research study; (b) the researcher's address (TAES inner-extension and TAES e-mail); and (c) university affiliation, by display of the seal of The University of Tennessee, for which written permission was obtained (Appendix D). The inside back cover of the LO/WE Packet set out the previously described filename convention and transmission instructions for completed forms.

The first two questionnaires in the LO/WE Packet were the Leadership Orientations Survey (LOS), which measures leadership orientation, and the Occupational Work Ethic Inventory-Revised (OWEI-R), which measures work ethic. The third questionnaire in the LO/WE Packet is the researcher-developed, Demographic Survey. The substantive evolution and procedural parameters involved in the electronic transmission of the three research instruments have already been discussed. The following discussion, therefore, is directed at a consideration of the characteristics (content and validity) and procedures (scoring) specific to each instrument, of the alternative instruments used for this research, and the researcher's rationale for the selection of the chosen instruments.

The Leadership Orientation Survey

Instrument Characteristics. The first instrument utilizes the 32-item Part I (Behaviors) section from the Leadership Orientation Survey (LOS) which is a copyrighted, proprietary instrument developed by Lee Bolman and Terrence Deal. Written permission to use the LOS was provided to the researcher and a copy of the authorization may be found in Appendix D.

The LOS was chosen to collect data relative to research questions one, two, three, seven, eight, nine, and ten. A five-point Likert scale, (1) never, (2) occasionally, (3) sometimes, (4) often, and (5) always, was used in conjunction with a 32-item questionnaire to ask respondents to describe their leadership styles by indicating how frequently the listed behaviors are true for them in their own experience. As a result of this process, eight dimensions, or aspects, of leadership were measured—two for each of the four frames of reference: structural frame (analytic and organized), human resources frame (supportive and participative), political frame (powerful and adroit), and symbolic frame (inspirational and charismatic).

The Likert-type scale, such as that used in the LOS, has been the subject of controversy relating to the characterization of the resulting data as ordinal or interval (Gardner, 1975). Data are treated as interval level data for statistical purposes. Treatment of data as interval level data is appropriate for the LOS for two reasons. First, measurement levels of many social science instruments fall between ordinal and interval level data, that is to say, ordered metric (Nie, 1975). Second, while the relative distances between categories of these types of data are known, their absolute magnitude cannot be measured (Nie, 1975). Labovitz (1970) pointed out that small error may result from interval treatment of ordinal variables; nevertheless, this error will be offset by the use of sensitive statistics with known sampling error.

Validity analyses on the LOS suggest a high degree of internal consistency (Bolman & Deal, 1991a). Additionally, the four frames were examined as predictor variables in two separate regression analyses and found to predict 66% of the variance in perceived managerial effectiveness and 74% of the variance in perceived leadership effectiveness (p. 8). These findings were validated in a subsequent study by Bolman and Deal (1991b) of the instrument in its third iteration, reporting a Cronbach's alpha for the frame measures ranged between .91 and .93 (p. 518).

Alternative Leadership Instruments. Several other instruments were also available for measuring leadership. Even though reliable measurement is prerequisite to theory development and growth, special psychometric considerations exist when the measurement entails an element of the subject's thinking. Qualitative measures are typically indicated under such circumstances so that data gathering might capture nuances as well as complexity; in that way, a more direct measure of the construct is possible. In cases where that is not possible, quantitative methods that rely upon written instruments may be used to measure perceived patterns in subject behavior (e.g., Easterby-Smith, Thorpe & Lowe, 1992; Morgan & Smircich, 1980).

Neither the qualitative nor the quantitative method is a perfect approach to the measurement of leadership. Therefore, researchers are left with a forced election between asking participants how they think or observing the participants' performance on a task designed to be reflective of their thinking (Bolman & Deal, 1991b, p. 514). The problem in the former case is that subjects generally are unaware of the theoretical bases for their actions; the problem in the latter case is that it relies upon researcher inference of thinking processes based upon the observed actions (Argyris & Schon, 1974). Some theorists, such as Aiken (1994), have noted the superiority of the observation method in studies involving an expression of thought or attitude; just as many others counter that conclusion by pointing to the problem of rater bias, not to mention the increased time and expense required by observation studies (Oppenheim, 1992).

The review of literature revealed an evolutionary history of leadership in which consensus on the meaning and measurement of the primary construct has rarely been reached, if at all. As might be expected, numerous instruments have been designed over the years—each with its own operationalized definition of leadership—to accompany or reflect those changes in theory over the years; thus, instruments used by leadership researchers have run the gamut from the simple questionnaire to observation and variations in between.

To the extent that measurement of leadership, like the measurement of work ethic, is a function of attitude, researchers may rely upon Jacoby's (1988) assertion that surveys have been the traditional method of measuring attitudes about work. Psychometrically acceptable surveys are based on scientific methods, including factor analysis, statistical methods of sampling, and attitude constructs. As previously noted, the measurement of attitudes with the same degree of precision as the behavior upon which it is based yields data that are reliable and highly predictive (Fishbein & Ajzen, 1975).

Arguably the most notable example of a leadership test instrument devised in response to those evolutionary changes in theory was Fiedler's (1967) Least Preferred

Co-worker (LPC) questionnaire. According to Bass (1981), the LPC is the single most widely researched, and simultaneously the most widely criticized, measurement of leadership. As it evolved, its 18-point scale measured paired descriptors of the least-preferred co-worker the subject had ever worked with. Thus, a high LPC score favored the least-preferred worker, and was interpreted to indicate a relationship motivated subject; on the other hand, a low LPC score was considered a rejection of the least-preferred worker, and interpreted to indicate a task-oriented subject.

Other instruments purporting to measure leadership are couched in forms apparently designed for other purposes. A case in point would be the Human Resource Development Report (HRDR) described in Kramer and Conoley (1992, pp. 393-395). The instrument's purpose is described as: an assessment of management style, personality, strengths, and areas for growth and development, and is based upon the 16 Personality Factor Questionnaire. One of the instrument's five dimensions is, in fact, leadership, together with interaction with others, decision-making abilities, initiative, and personal adjustment. Each of these five composite scales has several subscales, all based upon "common characteristics of successful managers" (p. 393). Reliability for the HRDR is .81 for the basic scales and .87 for the composite scales—for the short run. Long-term scale reliabilities, on the other hand, of .52 are of concern.

The HRDR was considered for this study because of the inclusion of leadership as one of its five composite scales. Additionally, two of its remaining composite scales are a match for two of the three work ethic factors (interaction with others/interpersonal skills and initiative/initiative) to be tested in this study. The instrument's reliability was of concern, but assuming that issue could be satisfactorily resolved, the HRDR appeared to provide a viable instrument for identification of the specified personality traits, and in particular to identify those persons with personality traits that matched personality traits of successful managers. It did not, however, provide information on how those

personality traits might translate into the participant's organizational perspectives. In other words, it would report no information on how the participant *processes* thinking. The proposed study was based in part upon the assumption that leadership is inherent in all persons; accordingly, a test to match persons with similar traits was not within the scope of this proposal.

The Leadership Orientation Survey (LOS), on the other hand, was expressly designed by Bolman and Deal (1991b) to measure leadership orientation along a two dimensional axis that provides a glimpse of how the participants think, which is the core leadership information that the present study was designed to elicit. Bolman and Deal (1991b) report that the LOS was pilot tested and reported Cronbach's alpha ranges between .91 and .93. Factor analysis of the instrument reproduced the frames, that is, respondents saw the items for each frame as distinct from those used to measure the others. Regression analysis indicated a strong relationship between frame orientations and effectiveness. Subsequent researchers who have utilized the LOS in a variety of research circumstances concur in the content validity of this instrument (Hall, 1992/1993; Redman, 1991/1992; Strickland, 1992).

The LOS was selected from among these others for the following reasons: (a) its content is easily adaptable to an electronically communicated format; (b) its reliability has been established; (c) it is easy to understand and can be completed quickly, and (d) it is the only instrument of which the researcher is aware which discriminates between leadership behaviors in terms of frame theory, which is essential to the theoretical base upon which the proposed research is structured.

The Occupational Work Ethic Inventory-Revised (OWEI-R)

Instrument Characteristics. The second instrument in the LO/WE Packet is the Occupational Work Ethic Inventory-Revised (OWEI-R), which is also a copyrighted,

proprietary instrument. It was developed by Gregory C. Petty. Written permission to use the OWEI-R was obtained and a copy of the authorization may be found in Appendix D.

The OWEI-R was selected to collect data relative to research questions four through ten. This instrument is similar to the LOS in that it is based upon a Likert-type scale measurement of respondents' answers to a list of one- or two-word, work ethic descriptors. The OWEI-R five-point Likert scale includes (1) never, (2) occasionally, (3) sometimes, (4) often, and (5) always. This scale was used in conjunction with a 23-item questionnaire asking respondents to indicate the number that most accurately depicts their standards for each of the described occupational behaviors. Based upon the responses, three elements of work ethic were measured—dependability, initiative, and interpersonal skills (Petty, 1995).

Because the OWEI-R, like the LOS, is driven by a Likert-type scale it is still subject to the same concern regarding treatment of resulting data as interval or ordinal (Gardner, 1975). The research again concludes, however, that it was appropriate to treat the OWEI-R data as interval level for the same reasons cited earlier.

Validity analyses on this instrument suggested a high degree of internal consistency (Hatcher, 1993/1994; Hill, 1992/1993; Petty, 1991b). Early content analysis of the instrument established four primary subscales: dependability, ambition, consideration, and cooperation, and a Coefficient Alpha of .95 was reported by both Petty (1990) and Hill. A pilot study conducted by Hatcher confirmed face and content validity of the OWEI (p. 87). Hatcher performed correlational coefficient and principle factor analysis on Occupational Work Ethic Inventory (OWEI) data previously gathered by Petty (1993) and Hill to establish that the instrument was internally consistent and reliable (p. 88). Finally, the most recent research utilizing the OWEI (Petty, 1995) employed exploratory factor analytic procedures to identify the most objective, statistically-based work ethic constructs as measured by the OWEI. The three resulting

elements and the standard deviations by item are: (a) interpersonal skills [.85 friendly; .85 courteous; .90 pleasant; .92 cheerful; .93 considerate; .94 likeable; .78 cooperative, .84 helpful]; (b) initiative [.94 resourceful; .98 productive; 1.23 initiating; 1.01 enthusiastic; 1.01 perceptive; 1.09 dedicated; .90 effective; 1.08 persistent; 1.01 efficient; 1.15 ambitious; and 1.01 devoted]; and (c) dependability [.84 following directions; .93 following regulations; .81 reliable; .80 dependable; and .88 careful] (Petty, 1995). The OWEI-R, the instrument proposed for the work ethic measurement in this study, incorporates these most recent findings, and is based upon this three-element model.

Alternative Work Ethic Instruments. Reliable measurement is a prerequisite to the advancement of the theory of work ethic as it relates to education and training. Psychometrically acceptable measures of work ethic beliefs, as they relate to occupational behaviors, has been the traditional focus of work ethic research (Furnham, 1984). The review of literature has revealed that attitude is a major conceptual component of work ethic, yet measurement of attitude has sometimes been less than rigorous (Arvey & Cole, 1989). This may be attributable to the fact that attitudes tend to change over time and are not easily examined because they may only be inferred from words and actions. Notwithstanding, attitudes can be measured provided these shortcomings are taken into consideration (Phillips, 1991).

Some of the methods used to measure attitudes have included interviews, surveys or self-report questionnaires, and observation of manifest behaviors. Several researchers have indicated a preference for observation of behavior in situations involving the expression of the attitude (Aiken, 1994; Fishbein, 1967; Nunnally, 1978). As Oppenheim (1992) has pointed out, however, direct observation is expensive, time-consuming, and may involve rater bias. Surveys, on the other hand, have traditionally been used to measure worker morale and motivation (Jacoby, 1988), and are based on scientific

concepts such as scaling theory, statistical methods of sampling and factor analysis, interview methods, and attitude constructs. The work of Fishbein and Ajzen (1975) demonstrated that the measurement of attitudes and values with the same specificity as the related behavior provides data that are highly predictive of the behavior being investigated.

The widest range of instruments designed to measure attitudes about work ethic has involved the measurement of influence, both positive and negative, of the Protestant work ethic, including Blood (1969), Buchholz (1974/1975, 1976, 1978), Furnham (1984), Furnham and Rose (1987), Mirels and Garrett (1971), Ray (1982), and Wollack, Goodale, Wijting, and Smith (1971). Of these, the Protestant Work Ethic Scale of Mirels and Garrett has generated much research attention (Furnham, 1983; Poremba, 1990; Welborn, 1983/1984). Their Protestant Work Ethic Scale, for example, has been the subject of factor analysis (Furnham, 1990) and correlational analysis (Waters & Zakrajsek, 1991); it was used by Welborn to measure her construct, the American work ethic; and it was observed to possess reasonable correlation by Furnham.

Another work ethic instrument that has garnered attention has been the Work Values Inventory (WVI) first devised by Super (1957) to measure the perceived values that impact vocational choices. This instrument was based on 105 paired statement comparisons from which 15 work value constructs were ranked (Riedlinger, 1990). A subsequent research effort used the WVI to determine relationships between work values and status, interests, and achievement (Super, 1962). Wayne (1984/1985) used this instrument as a basis for the development of a related work ethic instrument. Breme and Cockriel (1975) point out that while the WVI has received significant research attention, its primary focus is on worker perceived needs, satisfaction, and life-career values, rather than on a specific occupational work ethic.

In contrast, focus on specific occupational work ethic is the nucleus of the work ethic instrument chosen for this study. The OWEI was first developed and tested by Petty (1991a). The OWEI was the outgrowth, in part, of previous research which clustered 15 categories out of 63 affective work competencies that were considered important by educators and industry (Beach, Kanzanas, Sapko, Sisson, & List, 1978). Additional research on affective work competencies by Petty (1978/1979, 1983), Petty and Stewart (1982, 1983) and Petty and Hill (1994) have also contributed to the development of the OWEI.

The OWEI was recently revised as a result of a content analysis of the instrument. That study established three subscales for the instrument consisting of: dependability, ambition, and interpersonal skills. A Coefficient Alpha was conducted to establish internal reliability and the revised instrument achieved a measured Coefficient Alpha of .95 (Petty, 1995).

The OWEI was utilized by Hatcher (1994), to investigate the work ethic of participants in a nationwide trade union apprenticeship program. Subsequently, a factor analysis of the OWEI was conducted based on workers from a cross-section of ages, work experience, and occupations in public and private sectors in three communities in the mid-south region (Petty, 1995). This latter study refined the meaning of occupational work ethic into three elements: Dependability, Initiative, and Interpersonal Skills, and it is the revised version of the OWEI (the OWEI-R) that will be used for this research.

The OWEI-R was selected to measure occupational work ethic in this research because: (a) as in the LOS, the OWEI-R content is easily adaptable to an electronically communicated format; (b) its reliability and content validity have been established; (c) it is easy to understand and can be completed quickly; and (d) it is the only instrument of which the researcher is aware which measures work ethic exclusively in terms of occupation, a primary focus of the proposed research.

Demographic Survey

The third and final instrument in the LO/WE Packet is the Demographic Survey, a researcher-developed instrument designed expressly to collect data relative to research questions one through eight and number ten. The demographic variables were selected after a discussion with the Assistant Dean of the Tennessee Agricultural Extension Service. Although this study focuses only on two of the six variables, District and Job Classification, the other variables which are included because they may be of use for future research. The Demographic Survey collected respondent data on six independent variables, and each discrete variable is further broken down into quantifiable levels. The independent variables, together with their respective levels, are: (a) years of full-time work experience as a home economist in the TAES with six levels described as: 1 to 5 years, 6 to 10 years, 11 to 15 years, 16 to 20 years, and 21 years and over; (b) gender with two levels described as male and female; (c) age with five levels described as up to 30 years of age, 31 to 39 years of age, 40 to 49 years of age, 50 to 59 years of age, and 60 years of age and over; (d) district with five levels described as District I, District II, District III, District IV, and District V; (e) highest level of education completed with three levels described as bachelor's degree, master's degree, and doctoral degree; and (f) job classification with three levels described as Category I (Assistant Extension Agent, Associate Extension Agent, Extension Agent, and Extension Leader), Category II (Assistant Professor, Associate Professor, Associate Professor and Leader, and Professor and Leader), and Category III (Specialist, Associate District Supervisor).

Field Test of the LO/WE Packet

The LO/WE Packet and the e-mail transmission procedures were field tested prior to the primary study by 12 purposefully selected TAES agricultural extension agents by the Assistant Dean of TAES. Seven of the 12 agricultural extension agents completed field test LO/WE Packets.

The agricultural extension agents were e-mailed the LO/WE Packet and a cover letter, requested to respond to the survey items, asked to comment on how the instruments or procedures may be improved, and requested to e-mail their responses back to the researcher's temporary TAES e-mailbox.

The field test survey results were used to determine if the Demographic Survey serves the purpose for which it was designed or whether revisions would be required (Singleton, Straits, & Straits, 1993). In this regard, field test participants were asked to comment on (a) item content and clarity; (b) wording; (c) instrument length; and (d) format and overall appearance. All of the seven field test respondents scored each of the above items as satisfactory.

The field test also provided an assessment of the proposed e-mail transmission procedures. Accordingly, field test applicants were asked to comment on sufficiency and clarity of e-mail receiving and transmission instructions and on the ease or difficulty of e-mail survey procedure. One respondent reported that the sufficiency and clarity of the electronic transmission procedure and the ease or difficulty of the electronic transmission procedure were unsatisfactory. The comments from this agricultural extension agent were reviewed but the researcher did not deem it appropriate to modify or change the proposed e-mail transmission procedures.

Data Analysis

As a general rule, research is undertaken in order to answer a particular question of interest to the researcher. Toward that end, this study was designed, data were collected, and analysis was undertaken. The following discussion is provided as a means to provide a simple but straightforward justification and rationale for the research design and resulting statistics used in this study. To achieve the purposes of this study the following ten research hypotheses were tested and subsequently analyzed in Chapter IV.

- H₀1:** There will be no significant difference between job classification and leadership orientation, as measured by the LO/WE Packet survey instruments, among TAES home economists.
- H₀2:** There will be no significant difference between district and leadership orientation, as measured by the LO/WE Packet survey instruments, among TAES home economists.
- H₀3:** There will be no significant difference between the demographic variables, job classification and district, and leadership orientation, as measured by the LO/WE Packet survey instruments, among TAES home economists.
- H₀4:** There will be no significant difference between job classification and work ethic, as measured by the LO/WE Packet survey instruments, among TAES home economists.
- H₀5:** There will be no significant difference between district and work ethic, as measured by the LO/WE Packet survey instruments, among TAES home economists.
- H₀6:** There will be no significant difference between the demographic variables, job classification and district, and work ethic as measured by the LO/WE Packet survey instruments, among TAES home economists.
- H₀7:** There will be no significant difference between job classification, work ethic and leadership orientation, as measured by the LO/WE Packet survey instruments, among TAES home economists.
- H₀8:** Work ethic has no significant effect on the difference in the leadership orientation subscale mean scores among the districts as measured by the LO/WE Packet among TAES home economists.

- H₀9:** There will be no significant relationship between work ethic and leadership orientation, as measured by the LO/WE Packet survey instruments, among TAES home economists.
- H₀10:** There will be no significant difference between job classification, district, work ethic and leadership orientation, as measured by the LO/WE Packet survey instruments, among TAES home economists.

For the purposes of this research the following assumptions were made: (a) all variables studied would be normally distributed in the population; (b) the total population would be studied; however, inferential statistics would be used to analyze the data; and, (c) all continuous variables would be treated as interval level data while all categorical variables would be treated as nominal level data.

Parametric versus Nonparametric

All of the inferential tests of significance fall within one of two categories. The first such type is parametric, and tests that fit within this category are generally more powerful and more highly regarded than those that fit within the other type, known as nonparametric. Spence, Cotton, Underwood, and Duncan (1976), for example, noted:

If we apply both [parametric and nonparametric procedures] to the same data, we usually find that a nonparametric test is less powerful in terms of rejecting the null hypothesis: other things being equal, a larger sample difference is needed between groups to reject the null hypothesis at a given significance level for a nonparametric than for a parametric test. (p. 232)

Gay and others are also in accord with this analysis and describe parametric tests as more "powerful" and "hearty" (1987, p. 388), and more "useful" (Lordahl, 1967, p. 312).

The particular analytical procedures relied upon included descriptive statistics, inferential statistics, or some combination of both. Descriptive statistics were used to describe or summarize the data. The primary descriptive statistical techniques included frequency counts, measures of the mean, and standard deviations. Inferential statistics were used to go beyond mere descriptions. These assumptions, together with the advantages described above by Gay (1987) and by Spence, Cotton, Underwood, and Duncan (1976), supported the selection of parametric procedures for this research.

Decision Matrix for Research Design

Tabachnick and Fidell (1983) graphically demonstrated the relationships between the many questions that must be answered in the form of a decision tree. Appendix E outlines Figure 1, Decision Matrix for Research Design, and somewhat expands on the decision tree concept. It graphically outlines the research design decisions made by the researcher that guided this study. According to the decision matrix designed for this study there were six primary research decisions made throughout the course of the research. These research decisions may be summarized as follows:

1. Research Question: Is the null hypothesis seeking to find a difference or a relationship?
2. Number of Dependent Variables: How many dependent variables will be analyzed? Will the dependent variables be treated as continuous or categorical variables (ordinal level, interval level, or ratio level data)? How many levels does the dependent variable have?

3. **Number of Independent Variables:** How many independent variables will be analyzed? Will the independent variables be treated as continuous or categorical variables (ordinal level, interval level, or ratio level data)? How many levels does the independent variable have?
4. **Covariates:** Will any covariates be introduced?
5. **Statistical Analysis Procedure:** Based on the answers to items 1-4 which statistical analysis procedure(s) will provide the best overall research design including any post hoc procedures to be used?
6. **Fail to Reject or Reject:** Based on the statistical analysis and in conjunction with the predetermined level of significance will the researcher fail to reject or reject the identified null hypotheses?

One of the very first questions to be asked by the researcher in formulating the null hypotheses is whether the null hypotheses will seek to find a difference or a relationship among the variables. All of the null hypotheses formulated for this research, with the exception of null hypothesis nine, sought to determine significant differences between the dependent variables and the independent variables. After the decision was made to examine the difference or the relationship between variables the next step was to analyze more closely the dependent variables and the independent variables in terms of the measurement scales to be used, the number of variables, and the classification of the variables.

Measurement Scales

The type of measurement scale used to prepare the data for analysis may be described in terms of four types of scales: nominal (discrete or classificatory), ordinal, interval (continuous), and ratio. Briefly, a nominal scale assigns data to categories which

are, in turn, arbitrarily assigned a number for identification purposes only (Gay, 1987). Because the numbers are arbitrarily assigned to the categories no relationship exists between them. Examples of nominal scales would include telephone number, hair color, and gender. Although nominal scales represent the weakest level of measurement, Gay asserts that their use is occasionally necessary. Huck, Cormier, and Bounds (1974), on the other hand, warn that the use of nominal scale data should be limited to nonparametric statistical tests (p. 197). Tabachnick and Fidell (1983) appear to fall between these two poles and state that discrete (nominal) variables may be used in statistical procedures (specifically, multivariate analysis) if a large number of categories are assigned and each category represents data that quantitatively changes (p. 9).

Null hypotheses two and five had multiple dependent variables with single independent variables having multiple levels. Null hypothesis eight also had multiple dependent variables with a single independent variable having multiple levels; however, three covariates were included in the analysis. Whereas, null hypothesis nine, seeking to find a relationship, had multiple dependent variables and multiple independent variables.

Multivariate Analysis of Variance (MANOVA)

The statistical procedure of choice for analyzing null hypotheses two and five was the multivariate analysis of variance (MANOVA). In concept, the MANOVA, is a logical extension of univariate analysis of variance technique, known commonly as ANOVA. Either technique may be appropriate when a comparison of mean scores is involved; where mean difference must be evaluated simultaneously (as opposed to serially) on two or more dependent criterion variables. However, the MANOVA is the statistical technique of choice (Bray & Maxwell, 1985). Typically, the MANOVA is conducted in a two-step process. The first step, known as the overall or omnibus test, evaluates the hypothesis that no differences exist in the means for the relevant groups. The second step is invoked only

if the overall test is significant in order to explain group differences. A MANOVA is employed if there are two or more criterion measures and there are either two or more independent variables (factors) or more than two levels of a single independent variable (Huck, Cormier & Bounds, 1974).

An ANOVA tests for significant differences between the groups on a single dependent variable whereas the MANOVA examines the population means of each group to see if they are equal to one another for all dependent variables (Bray and Maxwell, p. 10). An interesting advantage of using a MANOVA lies in its two-dimensional formulation. When the data are graphed it becomes apparent, that the axes represent the frequency distribution for each variable. By looking at the variables individually, the distribution might seem to overlap to such a degree that finding significant effects on the separate ANOVAs would be unlikely. Because the MANOVA is capable of evaluating the data simultaneously by means of its two-dimensional formulations this problem is obviated. Thus, it has been observed that when the data are graphed, the groups appear "more separated in the two-dimensional space than in either dimension individually" (Bray and Maxwell, 1985, p. 11).

An additional advantage provided by the use of MANOVA procedures is the consideration of the correlations between variables. Bray and Maxwell (1985) point out that an implicit assumption that correlations are either nonexistent or of no interest underlie the performance of separate ANOVAs.

Secondary considerations that supported the choice of the MANOVA include (a) its ability to control the overall alpha level at .05, the desired level of significance; (b) its capability for examining combinations or patterns of data simultaneously and to study the differences among those combinations and patterns; (c) its potential for providing more powerful test results that can be obtained from separate ANOVAs; (d) its enhancement of interpretation possibilities as a result of simultaneous analysis of criterion variables;

(e) its protection provided against Type I errors that may occur when using several ANOVAs together with two-tailed tests of significance; and (f) its sensitivity to differences that may be observed by the use of an ANOVA (Huck, Cormier, & Bounds, 1974).

Determining Statistical Significance

Bray and Maxwell (1985) outline the next step in analyzing and interpreting significant MANOVAs, which entails an investigation of the differences between groups. "As in ANOVA, this involves determining which groups are responsible for the significant omnibus test. In addition, the follow-up analyses are used to evaluate which variables are important for group separation" (Bray & Maxwell, p. 40). When a significant F -ratio has been found to exist, the next step is to determine which of the many possible comparisons may be responsible for that difference. Logically, it might appear on the surface that a separate univariate t test for each dependent variable would suffice for this purpose. Huck, Cormier, and Bounds (1974) point out the fallacy in that reasoning:

Each of the univariate t tests does not take into consideration either correlations among the dependent variables or the fact that multiple t tests are being run, and this is true whether t tests are conducted as the first step in the data analysis procedure or as the second step . . . in either case, the univariate t tests would tend to yield too many significant differences. (p. 181)

Wilks' Lambda. The SAS program used to run the statistical analysis for this research provided a Wilks' Lambda test statistic. The Wilks' Lambda is one of several post hoc tests for analyzing significant cells of a MANOVA. This test statistic along with other supporting data provided by SAS (F -value, $Pr>F$ value, and the *degrees of freedom*)

were used by the researcher to determine if a statistical significance existed whereby further analysis of variance testing was warranted. When the F ratio is nonsignificant, there is no variance of significance and the analysis of variance ends. According to Gay (1987), "the party is over" (p. 392). Such was the case for null hypotheses two and five in which no statistical significance was found; however, null hypotheses eight and nine did reveal statistical significance so further examination was warranted.

A Wilks' Lambda, the post hoc multivariate follow-up procedure, was used in this research. Wilks' Lambda may be described as the product of unexplained variances on discriminant variance (Bray & Maxwell, 1985), or a "criteria for inferring population differences on the basis of sample data" (Tabachnick & Fidell, 1983, p. 248), and it is used to identify which mean scores of independent variables with more than two levels that have been pooled are significantly different from others (Tabachnick & Fidell). The three other multivariate test statistic procedures available include Pillai-Bartlett, Roy's greatest characteristic root, and the Hotelling-Lawley trace. Wilks' Lambda is an old and widely used procedure in multivariate testing for determining equality of group means (Bray & Maxwell; Huck, Cormier, & Bounds, 1974). The decision to use Wilks' Lambda for the research in question was principally dictated by the statistical analysis software package, SAS, utilized in this research.

Wilks' Lambda may be reported as the U statistic (Tabachnick & Fidell, 1983). "Tables for evaluating Wilks' Lambda are not common. However, an F approximation has been derived that closely fits Lambda" (Tabachnick & Fidell, p. 241). After the F values have been calculated, the significance is determined after consulting the tables of F (Tabachnick & Fidell).

Multivariate Analysis of Covariance (MANCOVA)

Null hypothesis eight utilized the work ethic subscales: Dependability, Initiative,

and Interpersonal Skill as covariates. According to Isaac and Michael (1981) an "Analysis of covariance adjusts for initial differences between groups and for the correlation between means. It permits the comparison of groups on one variable when information is available on another variable correlated with it, or on several such variables" (p. 183). Simply stated, "Multivariate analysis of covariance (MANCOVA) is the multivariate extension of analysis of covariance. That is, after statistically adjusting for one or more covariates, are there significant differences among groups in the best linear combination of DV [dependent variable] means?" (Tabachnick & Fidell, 1983, pp. 223-224). Tabachnick and Fidell contend that MANCOVAs are useful in the following three ways:

1. It can be seen as a noise-reducing device where variance associated with the covariate(s) is removed from error variance. This provides a more powerful test of differences among IV [independent variables] groups.
2. MANCOVA involves statistical matching between IV groups when random assignment to these groups has not been possible. Prior differences among IV groups are diminished by equating all subjects on covariate scores.
3. To test whether, after adjusting for the effects of some of the DVs [dependent variables], there are any significant group differences in the remaining DVs. That is, do changes on the remaining DVs depend on prior DVs rather than IVs? (pp. 224-225)

The steps in using the MANCOVA and ANCOVA parallel the use of the MANOVA and ANOVA. The MANCOVA will provide the researcher information on the statistical significance at which point a determination will be made to continue with an ANCOVA if it is warranted. Utilization of the ANCOVA permits the researcher to make a

“comparison of groups on one variable when information is available on another variable correlated with it, or on several such variables” (Isaac and Michael, 1981, p. 183).

Multiple analysis of covariance (MANCOVA) was conducted using the independent variable, District with five levels, the dependent variables of the leadership orientation subscales: Structural, Human Relations, Political, and Symbolic, and the covariates of the work ethic subscales: Dependability, Initiative, and Interpersonal Skill. Significant MANCOVAs were followed by univariate ANCOVAs in order to determine the specific significant effects. The MANCOVA was chosen over multiple regression because it reduced the chances of Type I errors resulting from multiple tests, and it can examine the significance of covariate effects. Similar procedures that were used to determine the specific significant effects in the MANOVA and ANOVA procedures were used for MANCOVAs and ANCOVAs.

Multiple Regression

A multiple regression was used to test null hypothesis nine. Null hypothesis nine was formulated to seek the degree of the relationship between the leadership orientation subscales (Structural, Human Relations, Political, and Symbolic) and the work ethic subscales (Dependability, Initiative, and Interpersonal Skill). Each independent variable was compared on the basis of the mean scores. Values can fall between -1.00 and +1.00. A positive correlation means that the two variables varied directly so that when one increases, the other variable increases. On the other hand, a negative correlation occurs when one variable decreases and the other variable increases. A negative correlation is always preceded by a minus [-] sign and signifies a negative correlation. If no relationship between the variables exists then a zero value is indicated. A perfect relation, not found in reality, is represented by a value of 1.00 (negative or positive). The degree to which the relationship approaches perfection is indicated by the size of the correlation.

Schlotzhauer and Litell (1987) define the *t*-statistic as comparing the fit of full and reduced models. In other words, the full model consists of all the variables on the right-hand side of the MODEL statement, whereas, the reduced model consists of all the variables except the one being tested. Thus the *t*-statistic is a test to determine whether the three variable model fits the data better than the reduced two variable model. This procedure allows the researcher to determine if there is variation in one variable that is not due to the other variables.

The analysis of variance portion of the tables provide the source, *df*, sum of squares, mean square, *F*-Value and *Pr>F* values. The source and *degrees of freedom* columns are explained by Schlotzhauer and Litell (1987), these columns:

Identify the sources of variation in the data and the degrees of freedom for each source. For the total variation, identified as C Total, *df* should be one less than the sample size. For the variation explained by the model, identified as Model, the degrees of freedom should be 1 for a straight-line model. The degrees of freedom for Error is the difference. (pp. 269-270)

Gay (1987) noted that "multiple regression is being used as an alternative to the various analysis of variance techniques" (p. 397) and cited the following as reasons why multiple regression techniques are growing in popularity: (a) it is versatile; (b) it is precise; (c) it can be used with any scale of measurement; and (d) not only does it determine if the variables are related but a multiple regression will tell the researcher the magnitude of the relationship.

CHAPTER IV

ANALYSIS OF DATA AND RESULTS

The purpose of this study were to determine the leadership characteristics and work ethic of Tennessee Agricultural Extension Service (TAES) home economists. As described in the previous chapter, a survey was conducted of the TAES home economists in furtherance of those purposes. In this chapter the results of that survey are presented.

Response Rate

Out of the 183 questionnaires electronically mailed (e-mailed) to TAES home economists, 166 questionnaires were returned, yielding an overall response rate of 90.71%. One-hundred thirty-seven questionnaires (82.53%) were returned by e-mail. Five questionnaires (3.01%) were hand-delivered or sent through the campus mail system. Twenty-four questionnaires (14.46%) representing the remainder, were returned through the U.S. Postal Service. Twenty-six of the 45 non-respondents, or 58%, replied to the follow-up attempts.

Research Question One

What are the demographic data of TAES home economists with respect to age, gender, district, job classification, level of education, and length of full-time work experience with TAES?

In order to answer research question one, the participants were asked to provide in section three of the Leadership Orientation/Work Ethic Packet (LO/WE Packet) demographic data which included age, gender, district, job classification, level of education, and length of full-time work experience with TAES.

The demographic data describing the participants in this study are set out in Table 1. With respect to the first variable, age, of the total number of survey instruments transmitted, 166 were returned. There were five (3.01%) missing values. Out of those responding to the survey, 21 (12.65%) were 30 years of age or younger, 33 (19.88%) were between 31 and 39 years of age, 71 (42.77%) were between 40 and 49 years of age, 27 (16.27%) were between 50 and 59 years of age, and nine (5.42%) were 60 years or age or older.

With respect to the second variable, gender, of the total number of survey instruments transmitted, 166 were returned. As noted in Table 1 there was one missing value. Out of those responding to the survey, 164 (98.80%) were female and one was male.

With respect to the third variable, district, of the total number of survey instruments transmitted, 166 were returned. There were two missing values. As noted in Table 1, out of those responding to the survey, District I had 41 (24.70%) respondents, District II had 39 respondents for 23.49%, District III had 25 respondents (15.06%), District IV had 18 respondents (10.84%), and District V had 41 respondents (24.70%).

With respect to the fourth variable, job classification, of the total number of survey instruments transmitted, 166 were returned. As noted in Table 1 there were two missing values. Out of those responding to the survey, 151 (90.96%) were classified as Category I [Assistant Extension Agent, Associate Extension Agent, Extension Agent, Extension Leader], nine (5.42%) of the participants were classified as Category II [Assistant Professor, Associate Professor, Associate Professor and Leader, Professor and Leader], and four were classified as Category III [Associate District Supervisor, District Supervisor, Specialist, and Area Specialist].

With respect to the fifth variable, level of education, of the total number of survey instruments transmitted, 166 were returned. As noted in Table 1 there were three missing

Table 1 Demographic Data of Respondents

Variable and Level of Responses	Frequency	Percent
Respondent's Chronological Age		
Up to 30 Years of Age	21	12.65
31 Years of Age to 39 Years of Age	33	19.88
40 Years of Age to 49 Years of Age	71	42.77
50 Years of Age to 59 Years of Age	27	16.27
60 Years of Age and Over	9	5.42
Missing Values	5	3.01
Total	166	100.00
Respondent's Gender		
Male	1	.60
Female	164	98.80
Missing Values	1	.60
Total	166	100.00
Respondent's District		
I	41	24.70
II	39	23.49
III	25	15.06
IV	18	10.84
V	41	24.70
Missing Values	2	1.21
Total	166	100.00

Table 1 (Continued)

Variable and Level of Responses	Frequency	Percent
Respondent's Job Classification*		
Category I	151	90.96
Category II	9	5.42
Category III	4	2.41
Missing Values	2	1.21
Total	166	100.00
Respondent's Level of Education		
Bachelor's Degree	68	40.96
Master's Degree	92	55.42
Doctoral Degree	3	1.81
Missing Values	3	1.81
Total	166	100.00
Respondent's Length of Full-Time Service with TAES		
1-5 Years	32	19.28
6-10 Years	30	18.07
11-15 Years	15	9.04
16-20 Years	25	15.06
21 and Over Years	60	36.14
Missing Values	4	2.41
Total	166	100.00

Note. *Job Classification Categories included:

Category I: Assistant Extension Agent, Associate Extension Agent, Extension Agent, and Extension Leader

Category II: Assistant Professor, Associate Professor, Associate Professor and Leader, and Professor and Leader

Category III: Associate District Supervisor, District Supervisor, Specialist, and Area Specialist

values. Out of those responding to the survey, 68 (40.96%) had a bachelor's degree, 92 (55.42%) had a master's degree, and three had a doctoral degree.

With respect to the sixth variable, length of full-time work experience with TAES, of the total number of survey instruments transmitted, 166 were returned. There were four missing values. As noted in Table 1 out of those responding to the survey, 32 (19.28%) fell within the 1 to 5 year range, 30 (18.2%) fell within the 6 to 10 year range, 15 (9.1%) fell within the 11 to 15 year range, 25 (15.06%) fell within the 16 to 20 year range, and 60 (36.4%) fell within the 21 year and over range.

Null Hypothesis One

H_01 : There is no significant difference between job classification and leadership orientation as measured by the LO/WE Packet among TAES home economists.

The demographic data for Job Classification indicated a skewed distribution of the three Job Classification categories: Category I (151), Category II (9), and Category III (4). Such obvious skewness merits a "healthy skepticism toward stated probability" (Ott, 1988, p. 16), and for this reason no statistical test was performed on null hypothesis one for the three categories within the Job Classification variable and leadership orientation.

Null Hypothesis Two

H_02 : There is no significant difference between district and leadership orientation as measured by the LO/WE Packet among TAES home economists.

Analysis of hypothesis two utilized the survey results to determine whether there was a difference between the District in which the respondents' worked and their leadership orientation. As a condition precedent to an analysis of variance (ANOVA) with respect to these data, a one-way multivariate analysis of variance (MANOVA) statistical procedure was utilized to test this hypothesis. Table 2 shows the *F*-value for group

**Table 2 Multivariate Analysis of Variance for Mean Scores of Respondents
Classified by District (Leadership Orientation)**

	Wilks' Lambda	<i>df</i>	<i>F</i> -Value	Pr> <i>F</i>
District	.9444	16, 477	.5639	.9106

An *F* ratio of 1.71 is required for significance at the $p < .05$ level of 16 and 477 *degrees of freedom* (Ott, 1988, p. A-19). Because the *F* Distribution Table does not have entries for 16 and 477 *degrees of freedom*, the entries for 15 and 240 *degrees of freedom* were used, thus erring on the side of conservatism.

comparison on the independent variable, District, and the dependent variables, leadership orientation's four subscales (Structural, Human Relations, Political, and Symbolic) for 16 and 477 degrees of freedom. The F -value was .5639 with a $Pr > F$ value of .9106. The critical F -value was 1.71. The calculated F -value was smaller than the critical value indicating the sample means were not significantly different from one another beyond the .05 level; therefore, no further statistical analysis was warranted. Null hypothesis two failed to be rejected at the .05 level of significance indicating that District was not a good predictor of leadership orientation.

Null Hypothesis Three

H_0 3: There is no significant difference between the demographic variables, job classification and district, and leadership orientation as measured by the LO/WE Packet among TAES home economists.

As previously noted in the discussion relative to null hypothesis one, an obvious skewness in the survey results is inherent in the data gathered on the Job Classification variable. Due to the nature of the MANOVA statistical procedure in which all variables are considered simultaneously and in consideration of the skewed data as noted for the Job Classification variable, no results are presented for this hypothesis.

Null Hypothesis Four

H_0 4: There is no significant difference between job classification and work ethic as measured by the LO/WE Packet among TAES home economists.

As previously noted in the discussion relative to null hypotheses one and three, an obvious skewness in the survey results is inherent in the data gathered on the Job Classification variable. Due to the nature of the MANOVA statistical procedure in which all variables are considered simultaneously and in consideration of the skewed data as

noted for the Job Classification variable, no results are presented for this hypothesis.

Null Hypothesis Five

H_0 5: There is no significant difference between the district and work ethic as measured by the LO/WE Packet among TAES home economists.

As reflected in Table 3, analysis of this hypothesis utilized the survey results to determine whether there was a difference between the District in which the respondents' worked and their work ethic. As a condition precedent to an ANOVA with respect to these data, a one-way MANOVA statistical procedure was utilized to test this hypothesis. Table 3 shows the F -value for group comparison on the independent variable, District, and the dependent variables, work ethic's three subscales: Dependability, Initiative, and Interpersonal Skill with 16 and 471 degrees of freedom, an F -value of .6055 and a $Pr > F$ value of .8802. The critical value for F -value was 1.71. The calculated F -value was smaller than the critical value indicating the sample means were not significantly different from one another beyond the .05 level; therefore, no further statistical analysis was warranted. Null hypothesis five failed to be rejected indicating that District was not a good predictor of work ethic.

Null Hypothesis Six

H_0 6: There is no significant difference between the demographic variables, job classification and district, and work ethic as measured by the LO/WE Packet among TAES home economists.

As previously noted in the discussion relative to null hypotheses one, three, and four an obvious skewness in the survey results is inherent in the data gathered on the Job Classification variable. Due to the nature of the MANOVA statistical procedure in which all variables are considered simultaneously and in consideration of the skewed data as

**Table 3 Multivariate Analysis of Variance for Mean Scores of Respondents
Classified by District (Work Ethic)**

	Wilks' Lambda	<i>df</i>	<i>F</i> -Value	Pr> <i>F</i>
District	.9397	16, 471	.6055	.8802

An *F* ratio of 1.71 is required for significance at the $p < .05$ level of 16 and 471 *degrees of freedom* (Ott, 1988, p. A-19). Because the *F* Distribution Table does not have entries for 16 and 471 *degrees of freedom*, the entries for 15 and 240 *degrees of freedom* were used, thus erring on the side of conservatism.

noted for the Job Classification variable, no results are presented for this hypothesis.

Null Hypothesis Seven

H_0 7: There is no significant difference between job classification, leadership orientation, and work ethic as measured by the LO/WE Packet among TAES home economists.

As previously noted in the discussion relative to null hypotheses one, three, four, and six an obvious skewness in the survey results is inherent in the data gathered on the Job Classification variable. Due to the nature of the MANOVA statistical procedure in which all variables are considered simultaneously and in consideration of the skewed data as noted for the Job Classification variable, no results are presented for this hypothesis.

Null Hypothesis Eight

H_0 8: Work ethic had no significant effect on the difference in the leadership orientation subscale mean scores among the districts as measured by the LO/WE Packet among TAES home economists.

The MANCOVA results are reported in Table 4 in terms of Rao's F approximation of Wilks' Lambda. According to Huck, Cormier, and Bounds (1974) "this transformation of lambda into F was developed by Rao, and the process is sometimes referred to as *Rao's approximation*" (p. 186). The MANCOVA for the leadership orientation subscales: Structure, Human Relations, Political, and Symbolic produced significant results for Dependability, Wilks' Lambda = .8308, $df(4,153)$, F -Value = 7.7881, $Pr > F = .0001$, $p < .05$; Initiative, Wilks' Lambda = .5068, $df(4,153)$, F -Value = 37.2310, $Pr > F = .0001$, $p < .05$; and, Interpersonal Skill, Wilks' Lambda = .8132, $df(4,153)$, F -Value = 8.7886, $Pr > F = .0001$, $p < .05$. The critical value for F for 4 and 153 df was 2.45. Since the calculated F -values were larger than the critical value indicating that the sample means were significantly different from each another beyond the .05 level further statistical

**Table 4 Multivariate Analysis of Covariance for Mean Scores of Respondents
Classified by District and Work Ethic Subscales**

	Wilks' Lambda	<i>df</i>	<i>F</i> -Value	Pr> <i>F</i>
District	.9276	16, 468	.7282	.7657
Dependability	.8308	4, 153	7.7881*	.0001
Initiative	.5068	4, 153	37.2310*	.0001
Interpersonal Skill	.8132	4, 153	8.7886*	.0001

* $p < .05$

An *F* ratio of 1.71 is required for significance at the $p < .05$ level of 16 and 468 *degrees of freedom* (Ott, 1988, p. A-18). Because the *F* Distribution Table does not have entries for 16 and 468 *degrees of freedom*, the entries for 15 and 240 *degrees of freedom* were used, thus erring on the side of conservatism.

An *F* ratio of 2.45 is required for significance at the $p < .05$ level of 4 and 153 *degrees of freedom* (Ott, 1988, p. A-18). Because the *F* Distribution Table does not have entries for 4 and 153 *degrees of freedom*, the entries for 4 and 120 *degrees of freedom* were used, thus erring on the side of conservatism.

analysis was warranted for Dependability, Initiative, and Interpersonal Skill. District with 16 and 468 *df* proved to be nonsignificant.

Table 5 outlines the results of the ANCOVAs applied to each significant measure and yielded the following significant effects: (a) Structure: Dependability, $df(1,156) = 9.98$, $Pr>F = .0019$, $p < .05$ and Initiative, $df(1,156) = 35.55$, $Pr>F = .0001$, $p < .05$; (b) Human Relations: Initiative, $df(1,156) = 11.97$, $Pr>F = .0007$, $p < .05$ and Interpersonal Skill, $df(1,156) = 27.73$, $Pr>F = .0001$, $p < .05$; (c) Political: Dependability, $df(1,156) = 6.56$, $Pr>F = .0114$, $p < .05$ and Initiative, $df(1,156) = 123.99$, $Pr>F = .0001$, $p < .05$; (d) Symbolic: Initiative, $df(1,156) = 74.06$, $Pr>F = .0001$, $p < .05$. Null hypothesis eight was rejected beyond the .05 level of significance indicating that overall work ethic is a good predictor of leadership orientation.

Null Hypothesis Nine

H₉: There is no significant relationship between leadership orientation and work ethic as measured by the LO/WE Packet among TAES home economists.

The first step in analyzing the results of the multiple regression was to examine the results provided in Table 6. As noted, the work ethic subscale, Interpersonal Skill, with an *F*-value of 9.0345, a critical *F*-value of 2.45 and a $Pr>F$ value of .0001 with 4 and 158 *df* was significant beyond the .05 alpha level; the Initiative subscale with an *F*-value of 37.2430, a critical value of 2.45 and a $Pr>F$ value of .0001 with 4 and 158 *df* was significant beyond the .05 level of significance; and the work ethic subscale, Dependability with *F*-value of 7.8718, a critical value of 2.45 and a $Pr>F$ value of .0001 with 4 and 158 *df* also was significant beyond the .05 alpha level. Secondary analysis of the Wilks' Lambda values revealed the work ethic subscales: Interpersonal Skill, with a Wilks' Lambda value of .8139; Initiative with a Wilks' Lambda value of .5147; and Dependability with a Wilks' Lambda value of .8338. With such an overwhelming

**Table 5 Univariate Analysis of Covariance for Leadership Orientation
Subscales for Variable District and the Covariate Work Ethic
Subscales**

Source	<i>df</i>	SS	<i>F</i> -Value	Pr> <i>F</i>
Structure				
District	4,156	.2809	.43	.7901
<i>Covariates</i>				
Dependability	1,156	1.6468	9.98*	.0019
Initiative	1,156	5.8655	35.55*	.0001
Interpersonal Skill	1,156	.0128	.08	.7812
Human Relations				
District	4,156	.2633	.54	.7101
<i>Covariates</i>				
Dependability	1,156	.0369	.30	.5849
Initiative	1,156	1.4724	11.97*	.0007
Interpersonal Skill	1,156	3.4104	27.73*	.0001
Political				
District	4,156	.9905	1.36	.2505
<i>Covariates</i>				
Dependability	1,156	1.1948	6.56*	.0114
Initiative	1,156	22.5854	123.99*	.0001
Interpersonal Skill	1,156	.0252	.14	.7106
Symbolic				
District	4,156	.4422	.56	.6887
<i>Covariates</i>				
Dependability	1,156	.6300	3.22	.0748
Initiative	1,156	14.5012	74.06*	.0001
Interpersonal Skill	1,156	.4363	2.23	.1375

* $p < .05$

An *F* ratio of 2.45 is required for significance at the $p < .05$ level of 4 and 156 *degrees of freedom* and an *F* ratio of 3.92 is required for significance at the $p < .05$ level of 1 and 156 *degrees of freedom* (Ott, 1988, p. A-18). Because the *F* Distribution Table does not have entries for 4 and 156 and for 1 and 156 *degrees of freedom*, the entries for 4 and 120 *degrees of freedom* and the entries for 1 and 120 *degrees of freedom* were used respectively, thus erring on the side of conservatism.

Table 6 Multiple Regression for Mean Scores of Respondents for Leadership Orientation Subscales for Variables of Work Ethic Subscales

	Wilks' Lambda	<i>df</i>	<i>F</i> -Value	Pr> <i>F</i>
Interpersonal Skill	.8139	4, 158	9.0345*	.0001
Initiative	.5147	4, 158	37.2430*	.0001
Dependability	.8338	4, 158	7.8718*	.0001

* $p < .05$

An *F* ratio of 2.45 is required for significance at the $p < .05$ level of 4 and 158 *degrees of freedom* (Ott, 1988, p. A-18). Because the *F* Distribution Table does not have entries for 4 and 158 *degrees of freedom*, the entries for 4 and 120 *degrees of freedom* were used, thus erring on the side of conservatism.

indication that significant relationships did exist further analysis of the parameter estimates and analysis of variance tables was warranted.

Tables 7, 8, 9 and 10 outline the parameter estimates that were calculated to determine a regression equation or model, to provide the coefficients for the regression line, and to determine if the coefficients were significantly different from zero (Schlotzhauer & Litell, 1987). The column labeled 'Variable' defines where the coefficients belong in the equation for the fitted line. The next column labeled '*df*' gives the degrees of freedom for each parameter estimate and should equal 1 for each parameter. The column labeled 'Parameter Estimate' (b weight) are the values of the coefficients. The next column labeled, T for H_0 (Parameter = 0) "gives *t*-values for testing the null hypothesis that the parameter equals 0. These *t*-values are equal to the parameter estimates divided by their standard errors. They are used to test if the parameter estimates differ significantly from zero" (Schlotzhauer & Litell, p. 269). Schlotzhauer and Litell define the *t*-statistic as comparing the fit of full and reduced models. In other words, the full model consists of all the variables on the right-hand side of the model statement, whereas, the reduced model consists of all the variables except the one being tested. Thus, in Table 7, the *t*-statistic of .21 (there is no effect due to Interpersonal Skill) is a test to determine whether the three variable model fits the data better than the reduced two variable model containing only Initiative and Dependability. This procedure allows the researcher to determine if there is variation in the leadership orientation subscale, Structure due to Interpersonal Skill that is not due to Initiative and Dependability. The *p*-value of .8339 strongly indicates that there is not an effect due to Interpersonal Skill. The final column, Prob>|T| "gives the *p*-value for the *t*-value" (Schlotzhauer & Litell, p. 269). For example, the *p*-value for Initiative, .0001, gives overwhelming evidence that the slope is not zero and that increasing Initiative does produce a measurable increase in leadership orientation. Although the *p*-value for Dependability, .0005, is not as

**Table 7 Parameter Estimates and Analysis of Variance of Work Ethic
Subscales for the Leadership Orientation Subscale, Structure**

Parameter Estimates					
Variables	<i>df</i>	Parameter Estimate (b weight)	T for H_0 (Parameter = 0)	Pr> T	
Intercept	3	.4869	1.25	.2115	
Dependability	1	.2690	3.55*	.0005	
Initiative	1	.4921	6.01*	.0001	
Interpersonal Skill	1	.0189	.21	.8339	

Analysis of Variance					
Source	<i>df</i>	Sum of Squares	Mean Square	F-Value	Pr>F
Model	3	16.3160	5.4387	33.42*	.0001
Error	161	26.1988	16.2725		
C Total	164	42.5148			

R² Probability = .3838

* $p < .05$

An *F* ratio of 2.68 is required for significance at the $p < .05$ level of 3 and 161 *degrees of freedom* (Ott, 1988, p. A-18). Because the *F* Distribution Table does not have entries for 3 and 161 *degrees of freedom*, the entries for 3 and 120 *degrees of freedom* were used, thus erring on the side of conservatism.

**Table 8 Parameter Estimates and Analysis of Variance of Work Ethic
Subscales for the Leadership Orientation Subscale, Human Relations**

Parameter Estimates					
Variables	<i>df</i>	Parameter Estimate (b weight)	T for H_0 (Parameter = 0)	Pr> T	
Intercept	3	1.0236	3.06*	.0026	
Dependability	1	.0675	1.03	.3035	
Initiative	1	.2380	3.37*	.0009	
Interpersonal Skill	1	.4032	5.20*	.0001	

Analysis of Variance					
Source	<i>df</i>	Sum of Squares	Mean Square	<i>F</i> -Value	Pr> <i>F</i>
Model	3	10.3590	3.4530	28.49*	.0001
Error	161	19.5156	12.1215		
C Total	164	29.8746			

R² Probability = .3468

* $p < .05$

An *F* ratio of 2.68 is required for significance at the $p < .05$ level of 3 and 161 *degrees of freedom* (Ott, 1988, p. A-18). Because the *F* Distribution Table does not have entries for 3 and 161 *degrees of freedom*, the entries for 3 and 120 *degrees of freedom* were used, thus erring on the side of conservatism.

**Table 9 Parameter Estimates and Analysis of Variance of Work Ethic
Subscales for the Leadership Orientation Subscale, Political**

Parameter Estimates					
Variables	<i>df</i>	Parameter Estimate (b weight)	T for H ₀ (Parameter = 0)	Pr> T	
Intercept	3	1.5760	.38	.7021	
Dependability	1	-.1641	-2.05*	.0424	
Initiative	1	.9494	10.95*	.0001	
Interpersonal Skill	1	.0085	.09	.0951	
Analysis of Variance					
Source	<i>df</i>	Sum of Squares	Mean Square	F-Value	Pr>F
Model	3	27.1432	9.0477	49.53*	.0001
Error	161	29.4076	18.2656		
C Total	164	56.5508			
R ² Probability = .4800					

* $p < .05$

An F ratio of 2.68 is required for significance at the $p < .05$ level of 3 and 161 *degrees of freedom* (Ott, 1988, p. A-18). Because the F Distribution Table does not have entries for 3 and 161 *degrees of freedom*, the entries for 3 and 120 *degrees of freedom* were used, thus erring on the side of conservatism.

**Table 10 Parameter Estimates and Analysis of Variance of Work Ethic
Subscales for the Leadership Orientation Subscale, Symbolic**

Parameter Estimates					
Variables	<i>df</i>	Parameter Estimate (b weight)	T for H ₀ (Parameter = 0)	Pr> T	
Intercept	3	.3913	.93	.3555	
Dependability	1	-.1258	-1.53	.1674	
Initiative	1	.7728	8.68*	.0001	
Interpersonal Skill	1	.1355	1.39	.1289	

Analysis of Variance					
Source	<i>df</i>	Sum of Squares	Mean Square	F-Value	Pr>F
Model	3	20.8727	6.9576	36.12*	.0001
Error	161	31.0127	19.2625		
C Total	164	51.8854			

R² Probability = .4023

* $p < .05$

An *F* ratio of 2.68 is required for significance at the $p < .05$ level of 3 and 161 *degrees of freedom* (Ott, 1988, p. A-18). Because the *F* Distribution Table does not have entries for 3 and 161 *degrees of freedom*, the entries for 3 and 120 *degrees of freedom* were used, thus erring on the side of conservatism.

convincing as the p -value for Initiative it does provide significant evidence that the slope is not zero and that by increasing Dependability, leadership orientation is measurably increased.

The analysis of variance portion of Tables 7, 8, 9, and 10 provide the source, df , sum of squares, mean square, F -Value and $Pr>F$ values. The source and *degrees of freedom* columns are explained by Schlotzhauer and Litell (1987), these columns:

Identify the sources of variation in the data and the degrees of freedom for each source. For the total variation, identified as C Total, df should be one less than the sample size. For the variation explained by the model, identified as Model, the degrees of freedom should be 1 for a straight-line model. The degrees of freedom for Error is the difference. (pp. 269-270)

The sum of squares column divides the variation and places it either in the model or error portion. That is to say, that part of the total variation in the work ethic subscales is due to variation in leadership orientation and part is due to the random error or to factors other than the work ethic subscales. The next column labeled 'Mean Square' is the value that "equals the sums of squares divided by the degrees of freedom" (Schlotzhauer & Litell, p. 270). The F -Value and $Pr>F$ values "gives the test statistic and p -value associated with a test of the hypothesis that the model explains a significant portion of the variation in the data" (Schlotzhauer & Litell, p. 270). Thus, an analysis with a $Pr>F$ value of .0001 indicates that the model explained a significant portion of the variation in the data. The R-square (R^2) value is equivalent to the "fraction of the total variation due to the variables in the model. R^2 can range from 0 to 1; the closer it is to 1, the better your model is at accounting for variation in the data" (Schlotzhauer & Litell, p. 270). Thus, a resulting R^2 value of .3467 is an indication that the total variation accounts for approximately 35%

of the variation in the data; whereas, when compared to the former example, a resulting R^2 value of .6891 is an indication that the total variation accounts for approximately 69% of the variation in the data.

Table 7 outlines the results of the multiple regression analysis for the work ethic subscales: Dependability, Initiative, and Interpersonal Skill that were isolated as predictors of the leadership orientation subscale, Structure. The variables, Initiative and Dependability each revealed $Pr>|t|$ values of .0001 and .0005 respectively. The ANOVA revealed a F -value of 33.42, $Pr>F$ value of .0001, and a R^2 value of .3838. Therefore, one can conclude that overall work ethic predicts approximately 38% of the variation in the leadership orientation subscale, Structure.

Table 8 outlines the results of the multiple regression analysis for the work ethic traits: Dependability, Initiative, and Interpersonal Skill that were isolated as predictors of the leadership orientation subscale, Human Relations. The variables, Initiative and Interpersonal Skills each revealed $Pr>|t|$ values of .0009 and .0001 respectively. The ANOVA revealed a F -value of 28.49, $Pr>F$ value of .0001, and a R^2 value of .3468. Therefore, one can conclude that work ethic predicts approximately 35% of the variation in the leadership orientation subscale, Human Relations.

Table 9 outlines the results of the multiple regression analysis for the work ethic traits: Dependability, Initiative, and Interpersonal Skill that were isolated as predictors of the leadership orientation subscale, Political. The variables, Initiative and Dependability each revealed $Pr>|t|$ values of .0001 and .0424 respectively. The ANOVA revealed a F -value of 49.53, $Pr>F$ value of .0001, and a R^2 value of .4800. Therefore, one can conclude work ethic predicts approximately 48% of the variation in the leadership orientation subscale, Political.

Table 10 outlines the results of the multiple regression analysis for the work ethic traits: Dependability, Initiative, and Interpersonal Skill that were isolated as predictors of

the leadership orientation subscale, Symbolic. The variable, Initiative, revealed a $Pr>|T|$ value of .0001. The ANOVA revealed a F -value of 36.12, $Pr>F$ value of .0001, and a R^2 value of .4023. Therefore, one can conclude that work ethic predicts approximately 40% of the variation in the leadership orientation subscale, Symbolic. In the final analysis, null hypothesis number nine was rejected. The data indicated that overall work ethic is significantly related to leadership orientation.

Null Hypothesis Ten

H_{010} : There is no significant difference between job classification, district, leadership orientation and work ethic as measured by the LO/WE Packet among TAES home economists.

As previously noted in the discussion relative to null hypothesis one, three, four, six, and seven an obvious skewness in the survey results is inherent in the data gathered on the Job Classification variable. Due to the nature of the MANOVA statistical procedure in which all variables are considered simultaneously and in consideration of the skewed data as noted for the Job Classification variable, no results are presented for this hypothesis.

Means and Standard Deviations

Table 11 provides the means and standard deviations for the leadership orientation and work ethic subscales. The mean for the leadership orientation subscale, Human Relations, was 4.0515 with a standard deviation of .4268, indicating that Extension Service home economists tend to rate themselves higher in this dimension as compared to the other leadership orientation subscales. The remaining means and standard deviations for the leadership subscales include a mean of 3.7523 and standard deviation of .5092 for the Structural subscale, a mean of 3.5833 and standard deviation of .5625 on the Symbolic subscale, and a mean of 3.3462 and a standard deviation of .5872 on the

Table 11 Subscale Means and Standard Deviations for Leadership Orientation and Work Ethic

	Means	s.d.
Leadership Orientation Instrument Subscales		
Human Relations	4.0515	.4268
Structural	3.7523	.5092
Symbolic	3.5833	.5625
Political	3.3462	.5872
Work Ethic Instrument Subscales		
Dependability	4.3758	.4881
Interpersonal Skill	4.3712	.4035
Initiative	4.0760	.4609

Political subscale. The standard deviations for the work ethic subscales were .4881 for Dependability, .4609 for Initiative, and .4035 for Interpersonal Skill. The work ethic subscale means for the Extension Service home economists in descending order are: Dependability (4.3758), Interpersonal Skill (4.3712), and Initiative (4.0760).

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, RECOMMENDATIONS AND IMPLICATIONS

The purpose of this chapter is to summarize the research that was undertaken. In keeping with that goal, a summary of the null hypotheses that were formulated and the methodology that was employed to tests those hypotheses is set out by way of recapitulation. Following these are discussions of the research findings and the researcher's conclusions and recommendations that were based upon those findings.

Summary

This study grew out of a speculation that a relationship might exist between work ethic and leadership orientation. A review of the substantial bodies of research on work ethic and leadership suggested that a logical connection between these two constructs might reasonably be inferred. A review of literature also failed to uncover any study investigating this precise question.

The population chosen for this research were all of the home economists throughout the State of Tennessee who were employed by the Tennessee Agricultural Extension Service (TAES). Out of discussion with the Assistant Dean of TAES the original theory was refined to include two additional variables, district and job classification, both of which were inherent factors in the TAES organizational structure and theorized to be related—separately and combined—to either work ethic or leadership. Other variables of secondary interest were also identified as age, gender, level of education, and length of full-time work experience with TAES.

Eleven research questions were developed for this study. The first research question focused on the demographic variables of the population. Due to the fact that the data were skewed for the demographic variable, Job Classification, no statistical analysis was undertaken on the hypotheses in which Job Classification was listed, namely null hypotheses one, three, four, six, seven, and ten. Null hypothesis two focused on whether or not there were any significant differences between District based on the four leadership orientation (LO) subscales: (Structural, Human Relations, Political, and Symbolic). The fifth null hypothesis focused on whether or not there were any significant differences between District based on the three Occupational Work Ethic Inventory-Revised (OWEI-R) subscales: (Dependability, Initiative, and Interpersonal Skill). Null hypothesis eight focused on whether or not there were any significant differences between District and leadership orientation subscales: Structure, Human Relations, Political, and Symbolic with covariates of work ethic subscales, Dependability, Initiative, and Interpersonal Skill. Null hypothesis nine focused on whether or not there were any significant relationships between the three work ethic subscales based on the four leadership orientation subscales.

The data for the study were gathered from questionnaires electronically mailed (e-mailed) to the total population of 183 TAES home economists. The questionnaire consisted of three sections: (a) Bolman and Deal's Leadership Orientation Survey which measured four frames of leadership: Structural, Human Relations, Political, and Symbolic; (b) Petty's OWEI-R, a work ethic instrument, which measured three elements of work ethic: Dependability, Initiative, and Interpersonal Skill; and (c) a researcher developed Demographic Survey which collected demographic information from the respondents.

One week after the questionnaires were e-mailed, the participants were sent another e-mailed message; a reminder was transmitted to those who had not responded and a thank-you for those who had responded. Two weeks afterward, a second message

and questionnaire were e-mailed to the non-respondents. Three weeks later, all remaining non-respondents received a printed version of the questionnaire via certified mail through the U.S. Postal Service together with a self-addressed stamped envelope and a letter from the researcher. A total of 166 questionnaires were returned resulting in a 91% response rate.

Demographic data yielded frequency information on age, gender, district, job classification, level of education, and length of full-time work experience with TAES. Mean scores and standard deviations were calculated on each of the four leadership orientation subscales and three occupational work ethic subscales. Multiple analysis of variance (MANOVA), univariate analysis of variance (ANOVA), multivariate analysis of covariance (MANCOVA), and univariate analysis of covariance (ANCOVA) were used to determine if significant differences existed between the Extension Service home economists based on measures of leadership orientation, work ethic, and District. The Wilks' Lambda multiple comparison follow-up procedure was utilized in order to determine if further statistical analysis was warranted and which mean, if any, were significantly different. A multiple regression was used to test null hypothesis nine to determine if a significant relationship existed between the Extension Service home economists work ethic and leadership orientation as measured by the Leadership Orientation/Work Ethic Survey Packet. If the multiple regression indicated significant relationships existed then parameter estimates and analysis of variance tables were warranted.

Major Findings

Analysis of the data indicated that the TAES home economist exhibited homogeneity, on the one hand, with respect to their leadership orientation preferences, and diversity, on the otherhand, with respect to their work ethic characteristics. More

specifically, this study revealed:

1. This study was based upon a population consisting, for the most part, of highly experienced women in their 40s with either a B.A. or M.A. degree, who worked as Extension Service home economists for the Tennessee Agricultural Extension Service (TAES). Application of the designated statistical techniques to the data derived from the participants yielded results that failed to support the theory that one's work ethic was not related to their leadership orientation. The same data supported the hypothesis that the geographical distance from the state office would not significantly impact the participants' work ethic and leadership orientation.
2. District is not a good predictor of leadership orientation or work ethic.
3. Work ethic was a good predictor of leadership orientation.
4. With respect to work ethic, the data revealed that it is significantly related to leadership orientation. In descending order of the R^2 probability statistic, overall work ethic predicts approximately: 48% of the variation in the Political leadership orientation subscale; 40% of the variation in the Symbolic leadership orientation subscale; 38% of the variation in the Structure leadership orientation subscale; and 35% of the variation in the Human Relations leadership orientation subscale.
5. With respect to leadership orientation, the data indicated that the leadership orientation perceived to be predominately used by the participants was the human relations frame of reference. Each of the leadership orientation subscales, in descending order of mean scores, was as follows: Human Relations (4.0515), Structural (3.7523), Symbolic (3.5833), and Political

(3.3462).

6. With respect to work ethic, the participants showed an almost equal emphasis upon the subscales of Dependability and Interpersonal Skill, with Initiative clearly distinguished as the least important. In descending order of mean scores, the three dimensions of work ethic were: Dependability (4.3785), Interpersonal Skill (4.3712), and Initiative (4.0760).

Conclusions

Within the limitations of this study and with the extent to which the data and findings were valid and reliable, the following conclusions have been drawn from the findings of this study.

1. As a group, home economists in the TAES tend to favor a Human Relations orientation to leadership. Logically, one might expect to find a corollary emphasis on the Interpersonal Skill dimension of the work ethic. The fact that the data were not supportive of that reasoning leads to the conclusion that this population draws a distinction between the descriptors provided in the two instruments as indicative of the Human Relations dimension of leadership orientation and the Interpersonal Skill dimension of work ethic.
2. Because virtually the entire population of this study was female, the fact that the respondents scored higher on the Human Relations leadership orientation subscale tends to support the traditional, gender-based stereotype of women as nurturing and supportive. Bolman and Deal (1991b), whose comparison of the leadership orientations of several hundred men and women in educational fields revealed no significant gender differences. While the initial study was not intended to incorporate a gender-based comparison [element], it is

instructive to compare the leadership orientations of the women in the two studies.

Any one of a number of factors may account for these anomalous results. For one, Bolman and Deal (1991b) restricted their population to educators holding senior administrative, principalship, department chair, or higher positions up to college president. In their same study, Bolman and Deal demonstrated clearly that no distinction exists between leaders and managers. We may place more confidence in the assumption that leadership, to some extent, exists in all job classification levels. This, in turn, suggests that the vertical reach of a selected population may have a statistically significant impact on the gender question. Another obvious distinguishing factor between the two studies relates to the horizontal nature of the chosen population. The home economists, for example, while distributed across a wide geographic area, still may be understood to comprise only a single narrow spectrum of educators, that is, one with a speciality, as it were, in extension home economics.

3. Overall work ethic is a good predictor of leadership orientation predicting approximately the following variation in the leadership orientation subscales: Political, 48%; Symbolic, 40%; Structure, 38%; and Human Relations, 35%.

Recommendations

Based upon the findings and conclusions of this study set out above, a number of recommendations for future research efforts are indicated. These include, but are not limited to, the following:

1. Studies that include both qualitative and quantitative research methods would undoubtedly enrich the data and allow a more comprehensive understanding of the interplay between work ethic and leadership orientation.
2. Similarly, a more complete understanding of the leadership orientation and work ethic of Extension Service home economists could be achieved by controlling the variables in addition to those included in this study.
3. An expanded demographic analysis of the home economists involved in this study should be conducted to determine the situational and behavioral factors that may be impacting leadership effectiveness.
4. Further research is needed which would explore differences in subgroups' responses to the LO/WE Packet survey regarding level of education, age, and number of years of full-time employment with TAES.
5. A longitudinal study of this same population which uses the LO/WE Packet survey, would be of interest. It may, for example, show the tendency of Extension Service home economists to maintain the status quo or undergo a shift in their leadership orientation and work ethic over a period of years, over a series of job promotions, or over a course of leadership training and experience.
6. A comparative study of the leadership orientation and work ethic of Extension Service home economists, who are predominately female, and agricultural extension agents, who are predominately male might shed additional light on the gender issue in leadership, as well as provide validation data on the leadership orientation instrument.
7. This study could be extended by examining on a national level the Extension Service home economist structured by Job Classification to more closely resemble the Job Classification in Bolman and Deal's (1991b) study.

8. Since the mean scores for the Political and Symbolic leadership orientation subscales were lower than the mean scores for the Structural and Human Relations subscales, TAES administrative personnel should consider increasing or expanding opportunities for TAES home economists to develop skills in these areas.
9. Since the TAES home economists' mean score for the work ethic subscale, Initiative, fell below both Dependability and Interpersonal Skill it might be beneficial to investigate this further as an aspect of the TAES organizational climate and culture.
10. The majority of the participants have 16+ years of experience with TAES and a majority fall in the 40+ age range. These demographic elements could have accounted for the low work ethic subscale, Initiative. Consequently, TAES leadership may want to consider providing these individuals with additional incentives and motivation.
11. Because TAES home economists who demonstrate a higher work ethic score are predicted to be more effective leaders they should be utilized to the fullest extent possible in leadership positions.
12. Another recommendation based on the findings is that TAES has Extension Service home economists purportedly teaching and modeling leadership, but many of those home economists, by Bolman and Deal's (1991b) definition, need to achieve a more equitable balance among the leadership orientation subscales, preferably with more emphasis on developing the Symbolic and Political subscales. This observation has immediate training implications for those individuals who teach and model effective leadership skills.

13. As a result of the findings, should a similar study be undertaken, the Job Classification variable categories need to be reorganized so that a more equitable distribution of data is achieved.
14. Due to a number of problems experienced by the researcher and participants TAES needs to explore a more efficient and more effective electronic mail system including individual computer access for all Extension Service home economists, extensive in-service training in using the electronic mail system, and extensive efforts to encourage paradigm shifts in their views on using computers.

Implications

Based upon the findings and conclusions of this study previously outlined, a number of implications are indicated. These include, but are not limited to the following:

1. Extension Service home economists should be aware that leadership orientation is influenced by an individual's work ethic and if we are to see an increase in future leadership effectiveness in Tennessee and across the country 4-H program leaders and specialists need to utilize this information.
2. The Tennessee Agricultural Extension Service (TAES) needs to continue to encourage all forms and types of leadership activities for its home economists.
3. Institutions of higher education, especially the Colleges of Human Ecology, should provide and actively encourage leadership training and opportunities for all students but especially those desiring careers with the Extension Service.
4. More men need to be recruited into TAES (home economists) extension careers in order to achieve gender equity.

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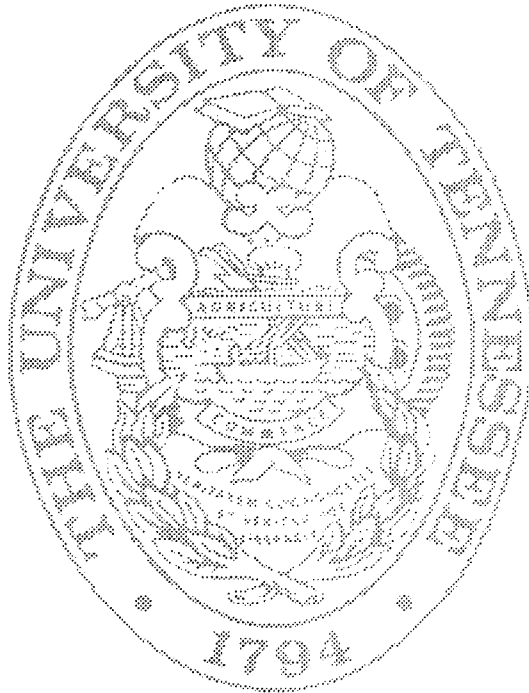
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APPENDICES

APPENDIX A

LEADERSHIP ORIENTATION/WORK ETHIC PACKET



Leadership Profile

Participant Survey

This survey will enable us to better understand the leadership capabilities of Tennessee Agricultural Extension Service home economists. Please answer all of the questions. If you wish to comment on any question or qualify your answers, please use the back page. Return this questionnaire to:

The University of Tennessee
Department of Human Resource Development
Leadership Research Project
20 Claxton Education Building
Knoxville, TN 37996-3400

Your code number at the top right hand corner will be used for follow-up purposes only. Individual data or comments will not be reported in any way as to reveal the source. All data will be confidential and grouped for reporting. If you would like a summary of the results, please print your name and address on the back of the return envelope (NOT on this survey). We will see that you get a copy. Thank you very much for your participation.

Leadership Orientations (Self)©

Participant Survey

I. Leadership Orientation

This part of the questionnaire asks you to describe your leadership and management style. You are asked to indicate *how often* each of the items below is true of you. Please use the following scale in answering each item.

<u>Never</u>	<u>Occasionally</u>	<u>Sometimes</u>	<u>Often</u>	<u>Always</u>
1	2	3	4	5

So you would answer "1" for an item that is never true of you, "2" for one that is occasionally true, "3" for one that is sometimes true of you, and so on. **Be discriminating!** Your results will be more helpful if you think about each item and distinguish the things that you really do all the time from the things that you do seldom or never.

1. ___Think very clearly and logically.
2. ___Show high levels of support and concern for others.
3. ___Have exceptional ability to mobilize people and resources to get things done.
4. ___Inspire others to do their best.
5. ___Strongly emphasize careful planning and clear time lines.
6. ___Build trust through open and collaborative relationships.
7. ___Am a very skillful and shrewd negotiator.
8. ___Am highly charismatic.
9. ___Approach problems through logical analysis and careful thinking.
10. ___Show high sensitivity and concern for others' needs and feelings.
11. ___Am unusually persuasive and influential.

12. ___Am able to be an inspiration to others.
13. ___Develop and implement clear, logical policies and procedures.
14. ___Foster high levels of participation and involvement in decisions.
15. ___Anticipate and deal adroitly with organizational conflict.
16. ___Am highly imaginative and creative.
17. ___Approach problems with facts and logic.
18. ___Am consistently helpful and responsive to others.
19. ___Am very effective in getting support from people with influence and power.
20. ___Communicate a strong and challenging sense of vision and mission.
21. ___Set specific, measurable goals and hold people accountable for results.
22. ___Listen well and am unusually receptive to other people's ideas and input.
23. ___Am politically very sensitive and skillful.
24. ___See beyond current realities to generate exciting new opportunities.
25. ___Have extraordinary attention to detail.
26. ___Give personal recognition for work well done.
27. ___Develop alliances to build a strong base of support.
28. ___Generate loyalty and enthusiasm.
29. ___Strongly believe in clear structure and a chain of command.
30. ___Am a highly participative manager.
31. ___Succeed in the face of conflict and opposition.
32. ___Serve as an influential model of organizational aspirations and values.

Occupational Work Ethic Inventory - Revised©

II. Work Ethic

This part of the questionnaire asks you enter the number that most accurately describes your standards for each work ethic descriptor. Please use the following scale in answering each item.

<u>Never</u>	<u>Occasionally</u>	<u>Sometimes</u>	<u>Often</u>	<u>Always</u>
1	2	3	4	5

So you would answer "1" for an item that is never true of you, "2" for one that is occasionally true, "3" for one that is sometimes true of you, and so on.

Descriptors

____ 1. FRIENDLY

____ 2. COURTEOUS

____ 3. PLEASANT

____ 4. CHEERFUL

____ 5. CONSIDERATE

____ 6. LIKEABLE

____ 7. COOPERATIVE

____ 8. HELPFUL

- ____ 9. RESOURCEFUL
- ____ 10. PRODUCTIVE
- ____ 11. INITIATING
- ____ 12. ENTHUSIASTIC
- ____ 13. PERCEPTIVE
- ____ 14. DEDICATED
- ____ 15. EFFECTIVE
- ____ 16. PERSISTANT
- ____ 17. EFFICIENT
- ____ 18. AMBITIOUS
- ____ 19. DEVOTED
- ____ 20. FOLLOWING DIRECTIONS
- ____ 21. RELIABLE
- ____ 22. DEPENDABLE
- ____ 23. CAREFUL

III. Demographic Information

This part of the questionnaire asks you to provide some demographic information. Answer each question by placing an (X) to the left of your answer.

1. Your number of full-time years as a home economist with the Tennessee Agricultural Extension Service is:

☐ 1-5 YEARS
☐ 6-10 YEARS
☐ 11-15 YEARS
☐ 16-20 YEARS
☐ 21 AND OVER YEARS

2. Your gender is:

☐ MALE
☐ FEMALE

3. Your age is:

☐ UP TO 30 YEARS OF AGE
☐ 31 YEARS OF AGE TO 39 YEARS OF AGE
☐ 40 YEARS OF AGE TO 49 YEARS OF AGE
☐ 50 YEARS OF AGE TO 59 YEARS OF AGE
☐ 60 YEARS OF AGE AND OVER

4. The district in which you currently work is:

____DISTRICT I

____DISTRICT II

____DISTRICT III

____DISTRICT IV

____DISTRICT V

5. Your highest level of education completed is:

____BACHELOR'S DEGREE

____MASTER'S DEGREE

____DOCTORAL DEGREE

6. Your *current* job classification is:

____ASSISTANT EXTENSION AGENT

____ASSOCIATE EXTENSION AGENT

____EXTENSION AGENT

____EXTENSION LEADER

____ASSISTANT PROFESSOR

____ASSOCIATE PROFESSOR

____ASSOCIATE PROFESSOR AND LEADER

____PROFESSOR AND LEADER

____ASSOCIATE DISTRICT SUPERVISOR

____DISTRICT SUPERVISOR

____SPECIALIST

____AREA SPECIALIST

Is there anything else you would like to tell us about the management and leadership practices of Tennessee Agricultural Extension Service home economists? If so, please use this space for that purpose. Also, any comments you wish to make, either here or in a separate letter, that you think may help us in future efforts to understand the management and leadership practices of Extension home economists will be appreciated.

This concludes the Leadership Profile. Thank you for your time and participation. Please return this survey in the enclosed self-addressed stamped envelope by Friday, May 5, 1995 to:

**The University of Tennessee
Department of Human Resource Development
Leadership Research Project
20 Claxton Education Building
Knoxville, TN 37996-3400**

APPENDIX B

LETTERS TO PARTICIPANTS

<Insert Header>

The purpose of this memorandum is to request your help with my dissertation research project in Human Ecology at The University of Tennessee in Knoxville. Attached is the Leadership Profile Survey which forms the major part of my research. This study examines the leadership practices and work ethic of Tennessee Agricultural Extension Service home economists and is based on the work of Dr. Lee Bolman, Dr. Terrence Deal, and Dr. Gregory Petty.

Your response to this survey is crucial to the success of this study. It should take only about 15 minutes to complete the survey. Your answers will remain confidential. No person or office will be referred to in the final dissertation. Responses in this study will be identified by your mail box number in order to establish the number of returns and in order to send copies of results to those participants who want them. Once this information has been obtained all identifying information will be destroyed by the researcher.

I realize how limited your time is, therefore I appreciate your help with this study. The information you provide will contribute much to our understanding of how leadership practices and work ethic of Tennessee Agricultural Extension Service home economists relate to the day-to-day operational problems of the Extension Service.

A mail box, #670, has been temporarily created for me through the Extension Service's electronic mail system so that confidentiality may be ensured. Should you have questions or comments, please feel free to contact me by calling (615) 974-4466 or through the Extension Service electronic system at Box 670.

Please return your completed survey to me on or before Monday, May 8, 1995. Again, your cooperation is very much appreciated.

INSTRUCTIONS FOR RETURNING YOUR SURVEY

Please follow these directions in returning your completed survey.

1. Save your file by naming it [your last name. your mail box #]
2. Before sending your file, save your file in WP5.1 format.
3. Send your file to Box 670 on or before Monday, May 8, 1995.

<Insert Header>

Last week a survey, the Leadership Profile Survey, was electronically mailed to you. If you have already completed and returned the survey please accept my sincere thanks. If not, please do so today. It is extremely important that yours be included in the study.

If by some chance you did not receive the Leadership Profile Survey, or it has been misplaced, please send an e-mail message to: Connie Hollingsworth at Box 670 and another Leadership Profile Survey will be mailed to you today.

Again, I appreciate your cooperation in this research project.

<Insert Header>

Several weeks ago the Leadership Profile Survey was electronically mailed to you. If you have already completed and returned the survey please accept my sincere thanks. If not, please do so today. In the event the survey was accidentally deleted or misplaced another Leadership Profile Survey is attached to this document. If you are unable to complete the attached survey and return by Monday, May 15th, please notify Connie Hollingsworth at Box 670 or you may call her directly at 615-974-4466. If you prefer to use the U.S. Postal Service surveys may be mailed to:

Connie Hollingsworth
20 Claxton Education Building
Knoxville, TN 37996-3400

Your response is needed in order for this research to provide us with meaningful results. Again, your quick response to this request is appreciated.

<Insert Header>

Dear Extension Home Economist:

Several weeks ago you received the Leadership Profile Survey. As of today I have not yet received your completed survey. This leadership study has been undertaken because of the belief that knowing and understanding more about an individual's leadership characteristics and work ethic will assist in the planning and development of more effective management and leadership practices.

I am writing to you again because of the significance each survey has to the usefulness of this study. In order for the results of this study to be truly representative of the opinions of all Tennessee Extension home economists it is essential that each person in the population return his or her survey.

I have received several surveys that were not coded. Therefore, it is possible that you have already completed and returned your survey. Should this be the case, please ignore this request and accept my sincere thanks for taking part in this study. In the event that your survey has been misplaced or deleted, a replacement is attached. A self-addressed stamped envelope is also enclosed for your convenience. Your response is needed immediately.

Should you have comments or questions regarding this request, please feel free to contact me by calling (615) 974-4466. Again, your cooperation is greatly appreciated.

Sincerely,

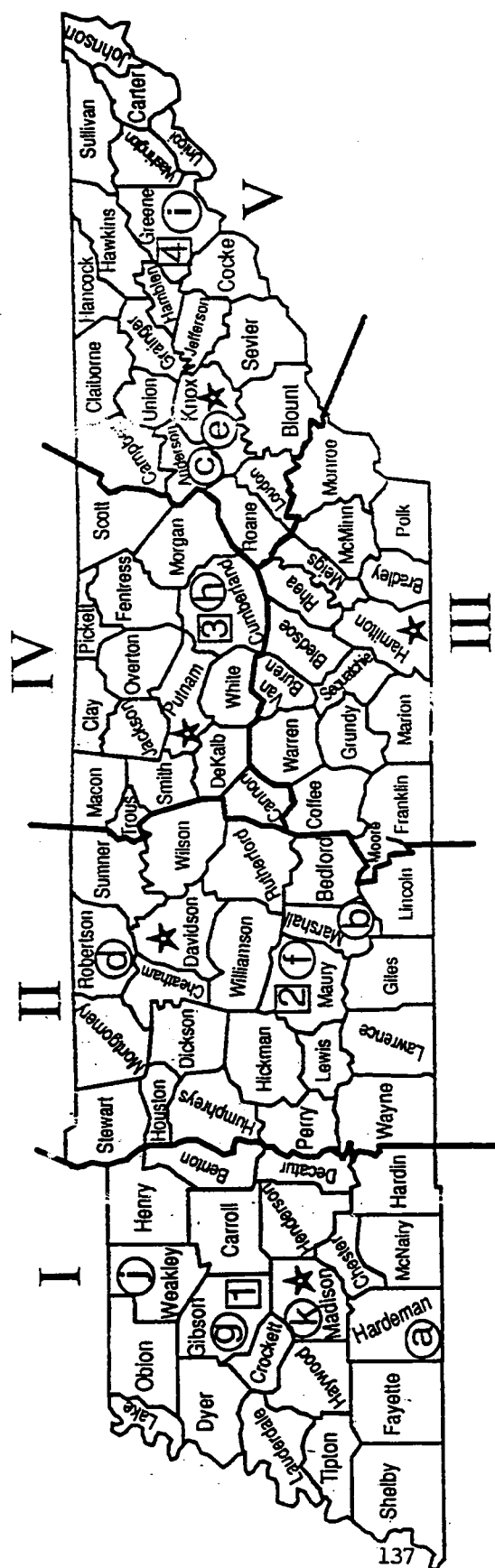
Connie Hollingsworth
Doctoral Candidate

:ch

Enclosures

APPENDIX C

MAP OF EXTENSION SERVICE DISTRICTS



★ District Offices

- I Jackson
- II Nashville
- III Chattanooga
- IV Cookeville
- V Knoxville

APPENDIX D
LETTERS OF PERMISSION



UNIVERSITY OF MISSOURI-KANSAS CITY

Henry W. Bloch
School of Business and Public Administration

February 21, 1995

Ms. Connie Hollingsworth
University of Tennessee-Knoxville
20 Claxton Education Building
Knoxville, TN 37996-3400

5110 Cherry
Kansas City, Missouri 64110-2499
Office of the Dean
(816) 235-2201
Division of Accountancy
(816) 235-2218
Division of Business Administration
(816) 235-2896
L.P. Cookingham Institute of Public Affairs
(816) 235-2894
Student Services Office
(816) 235-2215
Office of Professional Programs
(816) 235-2205
Fax (816) 235-2312

Dear Ms. Hollingsworth:

Thanks for your letter and your expression of interest in our instruments.

We would be delighted for you to use our instruments in your dissertation research. The only thing we ask is that you agree to provide us with copies of any research reports that you produce and, if we request it, with a copy of your data file.

Attached are copies of our two Leadership Orientations Instruments, and of the article that you requested. Please let me know if you have additional questions.

Best wishes.

Sincerely,

Lee G. Bolman
Marion Bloch Chair in Leadership

THE UNIVERSITY OF TENNESSEE
KNOXVILLE



Department of Human Resource Development
Knoxville, Tennessee 37996-2755
(615) 974-2574
FAX (615) 974-2048
HRD@UTKVX.UTK.EDU

March 17, 1995

Ms. Connie Hollingsworth
The University of Tennessee
20 Claxton Education Building
CAMPUS

Dear Connie:

The purpose of this letter is to supply you with the written permission that you are seeking to use the revised version of the Occupational Work Ethic Inventory© in your doctoral research. I would be delighted for you to use the instrument in your dissertation research. Please let me know if you have additional questions or concerns.

Sincerely,

A handwritten signature in cursive script, appearing to read "Gregory Petty".

Gregory Petty
Interim Department Head
Department of Human Resource Development



Office of Licensing
711 Andy Holt Tower
Knoxville, TN 37996-0174
(615) 974-5070
Fax (615) 974-1324

March 6, 1995

Ms. Connie Hollingsworth
Doctoral Student
UT College of Human Ecology
Dept of Human Resource Development
20 Claxton Education Building

Dear Ms. Hollingsworth:

As we discussed by telephone this morning, the University of Tennessee's Office of Licensing is granting you permission to use the official University of Tennessee seal on the cover page of the survey you are developing for your doctoral dissertation. This permission is granted because the survey will be used internally in conjunction with UTK's Agricultural Extension Service home economists.

I hope this is helpful. Please call me if you have further questions.

Sincerely,

A handwritten signature in cursive script, reading 'Ann Chappell Tallent'.

Ann Chappell Tallent, CPS, MLS
Administrative Services Assistant

ACT

APPENDIX E
DECISION MATRIX FOR RESEARCH DESIGN

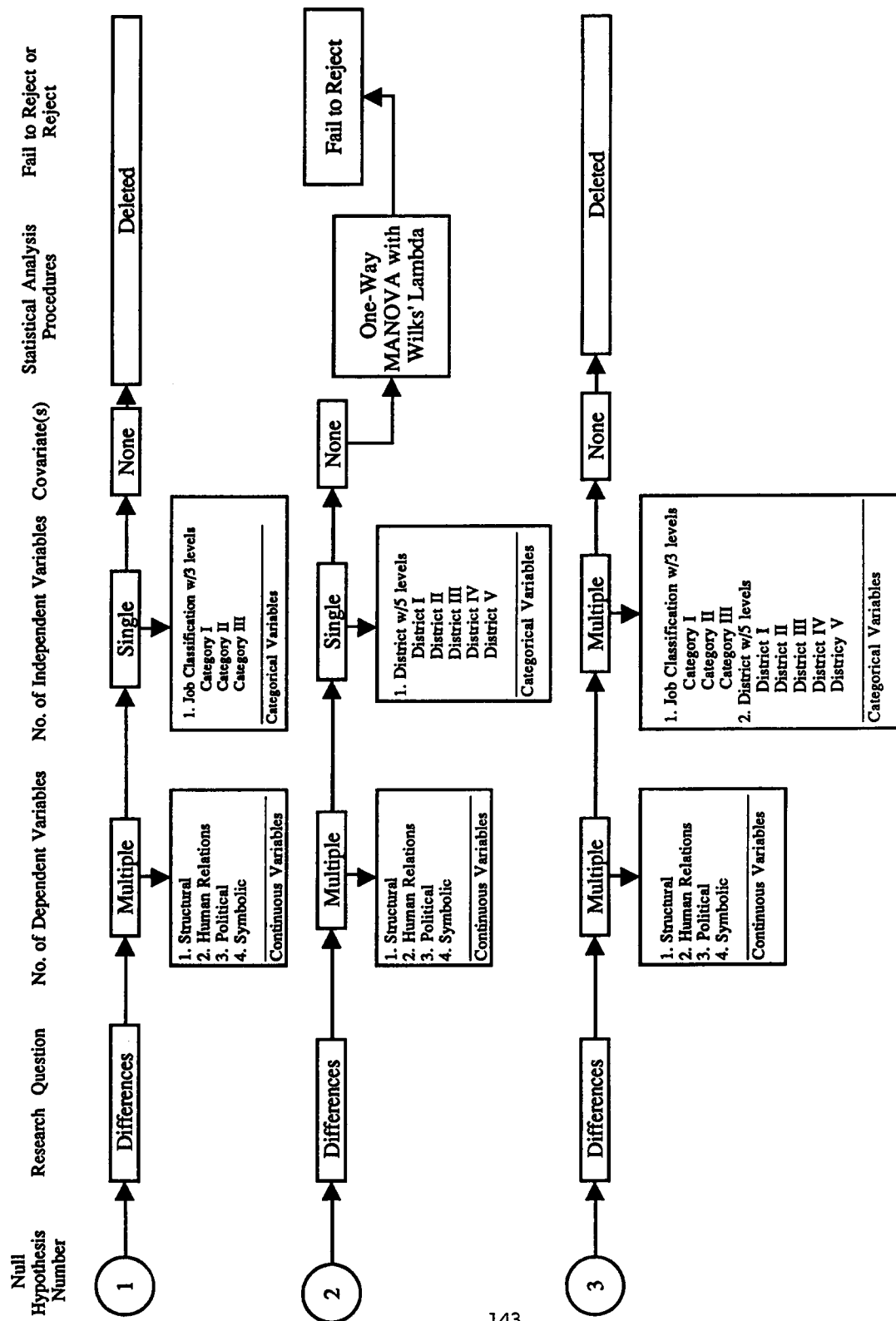


Figure 1 Decision Matrix for Research Design

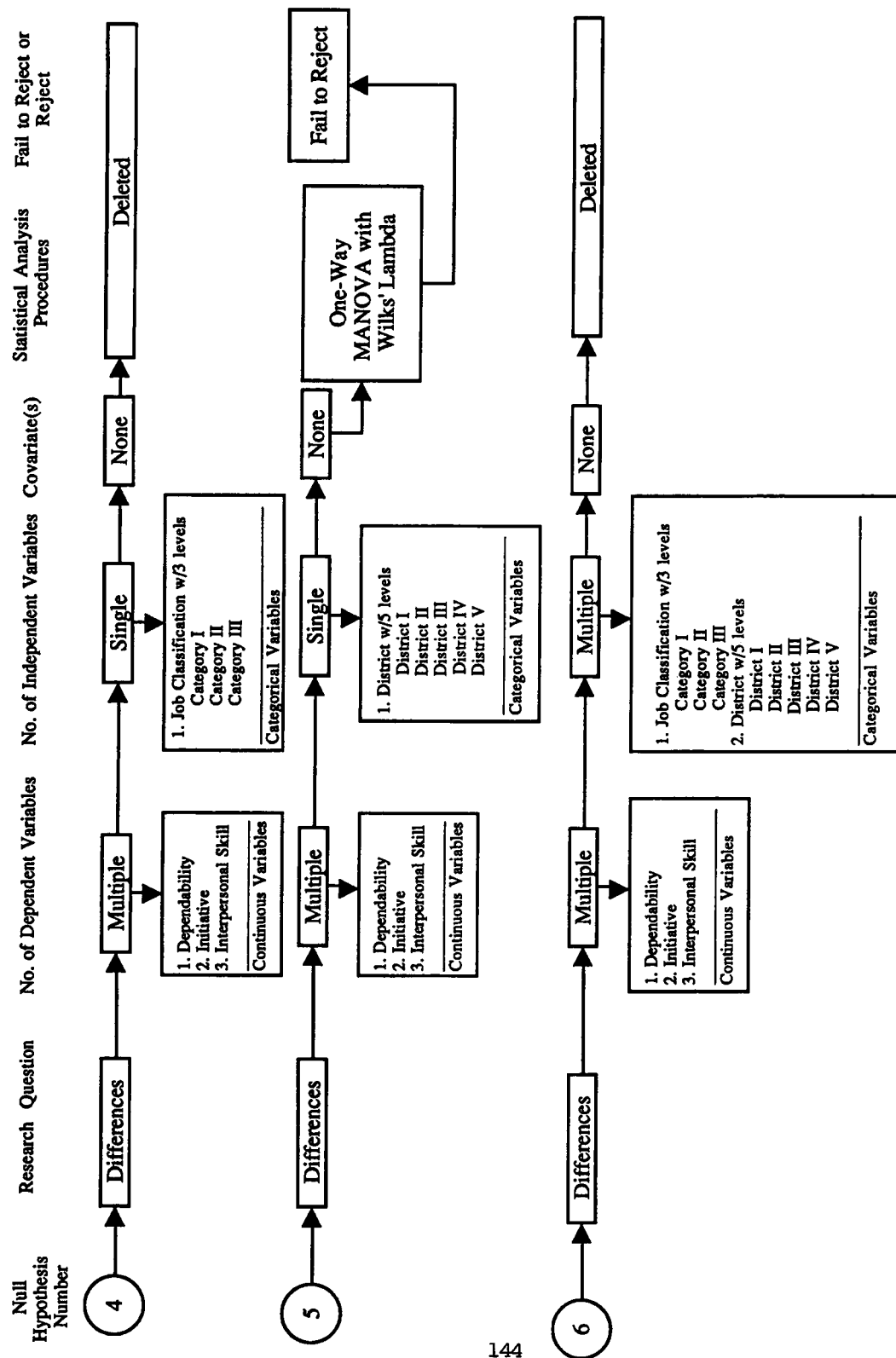


Figure 1 (Continued)

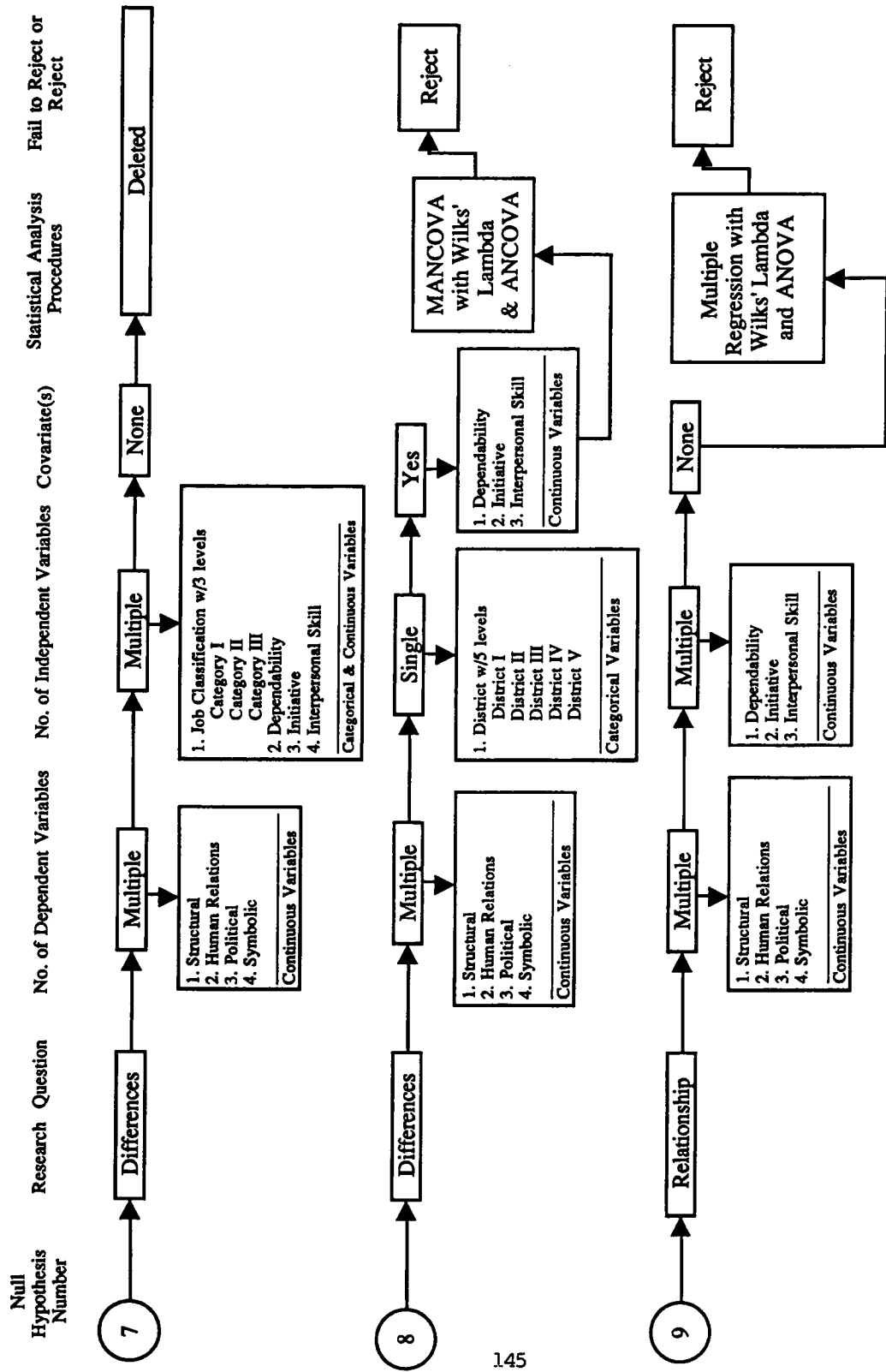
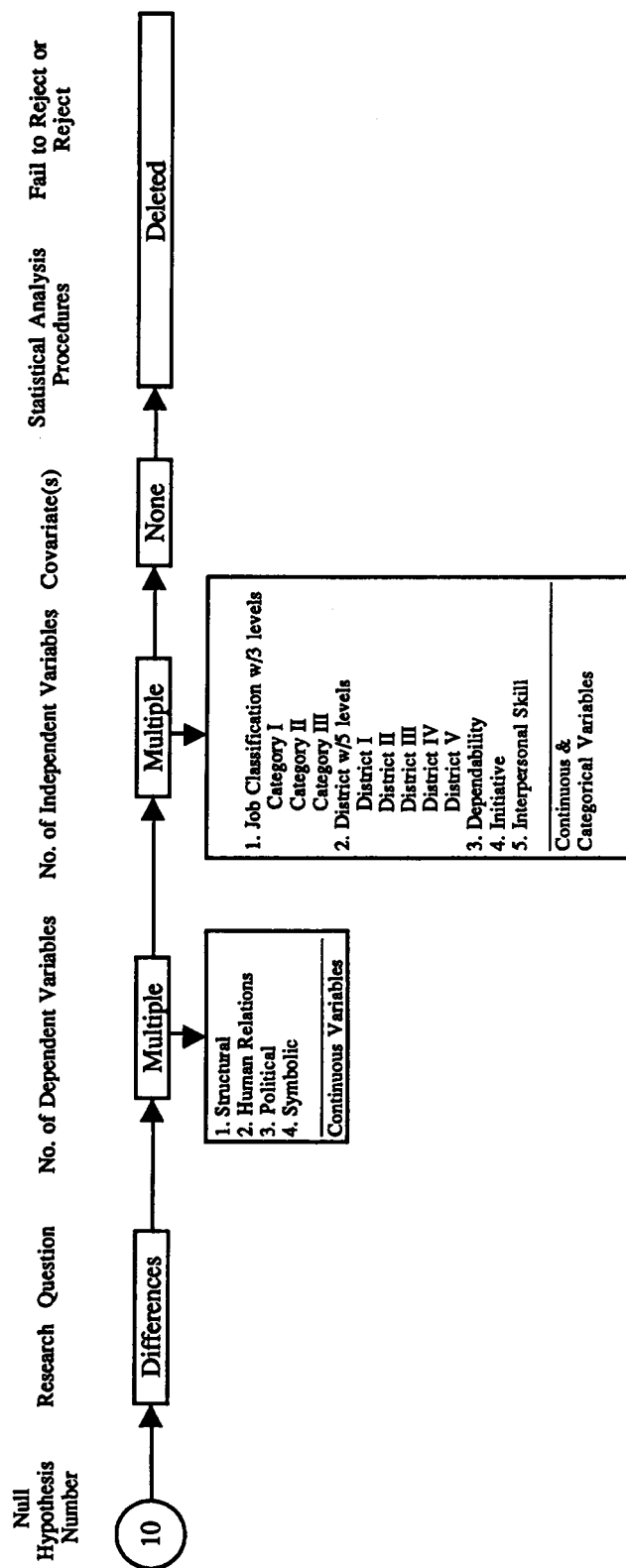


Figure 1 (Continued)



Note. All dependent variables are considered to be continuous and all continuous variables are treated as interval level data. Categorical variables are treated as nominal level data.

Figure 1 (Continued)

VITA

Connie Hollingsworth, daughter of Margaret Hollingsworth and the late Charles Hollingsworth was born in Tuscaloosa, Alabama on October 1, 1950. She graduated from the University of Montevallo in 1972 with a Bachelor of Science in Vocational Home Economics. She taught in Bibb County, Alabama while earning her Master of Science in Secondary Education at the University of Montevallo in 1974. She taught in Shelby County, Alabama schools for six years before moving to Portland, Oregon in 1981.

In 1987 she returned to her alma mater, the University of Montevallo, to work in the Division of Student Affairs, Student Support Services office. She accepted a position with The University of Tennessee in Knoxville in 1989 as the Assistant Director of the Upward Bound program. In 1991, she assumed the position of Associate Director of the Upward Bound program and the Math and Science Regional Center at UTK. Her work in UTK's Federal Programs has included grantwriting, grant administration and program management, and personnel administration and supervision. In 1994 she began a one year educational leave of absence from her position at UTK to complete the requirements for her Ph.D. She returned to her position as Associate Director of Upward Bound at UTK in August, 1995.

She has been active in related professional educational organizations and is a member of Kappa Omicron Nu.