A Study of the Work Values and Achievement Motivation of Persons Eligible for Federal Job Training Programs in a Rural Service Delivery Area

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A STUDY OF THE WORK VALUES AND ACHIEVEMENT MOTIVATION OF PERSONS ELIGIBLE FOR FEDERAL JOB TRAINING PROGRAMS IN A RURAL SERVICE DELIVERY AREA

by

John Desiderio

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the requirements for the Degree of Doctor of Education
Department of Educational Leadership

Western Michigan University
Kalamazoo, Michigan
April 1984
The focus of this study was an analysis of the work values and achievement motivation of persons eligible to participate in federal job training programs in a rural region in west central Michigan. Also under review were the possible differentiating effects of select biodemographic and educational variables (sex, age, years of formal education completed, and level of scholastic achievement) on the work values and achievement motivation of persons within this population. Finally, the study contained an examination of the relationship between achievement motivation and work values.

The subjects under study were 167 individuals (85 males and 82 females) who qualified for programs under the Jobs Training Partnership Act through the West Central Michigan Employment and Training Consortium. The data were collected using Hermans' (1970) Prestatic Motivation Test (PMT) and Super's (1968) Work Values Inventory (WVI). A two-way analysis of variance and the Pearson product-moment correlation coefficient were used to test the hypotheses under examination.

The hypotheses relevant to achievement motivation revealed differences based on sex for this construct while age, years of
formal education completed and level of scholastic achievement did not prove to be discriminating variables. For the work values investigated, age and sex did not serve to differentiate the level of importance attributed to each work value. However, subgroup differences for the values Creativity, Independence, Variety, Economic Returns, and Intellectual Stimulation were noted based on the level of education or scholastic achievement attained. Lastly, achievement motivation was found to be positively correlated with seven of the fifteen work values: Creativity, Management, Surroundings, Esthetics, Prestige, Alturism and Intellectual Stimulation.

The results of the study suggest that, as a learned concept, achievement motivation may be subject to societal influences which may have differing effects on the construct for each sex. Value crystallization may also be subject to these forces especially as a person progresses through the formal education process. The relationship between achievement motivation and work values seems to suggest that a person's value structure may be the underlying framework of that individual's level of achievement motivation.
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INTRODUCTION

Background

There seems to be an increasing consensus among leaders in business, labor, government and education that the new technologies which are emerging will require the retraining of a populace whose present skills have become outdated. Many members of this populace are the foundation of a staggering, double-digit national unemployment rate. Michigan, for example, with its strong dependence on the recession-troubled auto industry, has lead the nation in this unenviable statistic—unemployment.

In 1973, Congress enacted the Comprehensive Employment and Training Act (CETA) and other federal job training programs as a major step toward training the unemployed of that time. These programs have increasingly been thrust into the forefront of present-day attempts to retrain the unemployed for jobs in the future. For instance, in the "1981 Report to the Governor", Underwood and Whitepigeon (1982) summed up the current state of affairs in Michigan as follows:

All aspects of the employment and training system in Michigan experienced great stress and a tremendous challenge during Fiscal Year 1981. The demand for employment and training was greater because increasing unemployment and increasing inflation diminished the power of each dollar of funding for training programs. (p. 1)

Beginning in October, 1983, increased federal funding for job training was reflected in a new program focused on economic recovery. The "Jobs Training Partnership Act of 1982" (JTPA) has emerged as
this new job training initiative, replacing the CETA program which was terminated in September, 1983. The emphasis of this new legislation is to increase federal job training programs through enhanced partnership between business, labor, government, and especially education.

Under this new legislation (as in past years), federal job training programs are turning to education and business to provide the necessary training and retraining for the unemployed, economically disadvantaged and those persons with limited advancement opportunities. McCurry (1982), in a study of participants in CETA training programs in Northwest Michigan, clearly outlined the role of education and training in reducing unemployment. The research showed that:

The most important barrier to employment reported by the unemployed survey participants was that they lack education and training. Unskilled people realize that to get the kinds of jobs that they want, they must get training. (p. 47)

Healy (1982), however, points out that federal job training programs have not always been successful in the past. He comments that:

At first glance such extensive programs appear to provide a substantial boost to the career development of American workers. To date, however, the Department of Labor programs have not been dramatically successful in upgrading participants' work skills, occupational status, or job-holding power. (p. 138)

This author also contends that much of the blame for past failures can be attributed to an ineffective philosophy which emphasized molding the worker to the demands of the employer, thus ignoring the worker's talents or needs. Yet Kainen (1979) reports that ultimate
job satisfaction can be directly related to how well an organization has integrated individual characteristics and job tasks.

As JTPA eligible individuals prepare to enter training programs, they will present case workers, training and vocational counselors, and educators with a set of needs, conflicts and circumstances which must be effectively considered in attempts to service this clientele. Career counseling efforts and more comprehensive approaches to appropriate occupational matching for these persons will have to be forthcoming. Most importantly, psychological and motivational variables must receive heightened attention for their part in influencing career choice and potential job fit and satisfaction. Achievement motivation and work values are two psycho-motivational factors which are being reviewed for their impact on these aspects of vocational behavior.

Achievement motivation is defined by McClelland, Atkinson, Clark and Lowell (1953) as a learned motive which involves "standards of excellence" and the behavior involved in "competition with those standards of excellence or attempts to meet them which, if successful, produce positive affect or, if unsuccessful, negative affect" (p. 275). Morris (1982) simply defines a motive as "an arousal to action which in turn, activates and directs behavior" (p. 280). McClelland et al. (1953) more elaborately consider a motive as the "redintegration" (re-creation) of a state which derives from (but is not identical to) an original affective situation and which is evoked by certain stimuli or conditions. Based on an "affective arousal" model of motivation, then, McClelland (1953) proposed that
achievement motivation (or need for achievement or n Ach) is a learned motive which develops out of repeated affected experiences associated with situational and environmental cues.

Atkinson and Raynor (1978) approached the definition in an algebraic context which viewed resultant achievement motivation as "the summation of the tendencies to achieve success and to avoid failure" (p. 77). Each tendency is viewed as a multiplicative function of motive, expectancy and incentive value of success or failure, depending on the tendency being considered.

Super (1970) describes values as "the qualities which people desire and which they seek in the activities in which they engage, in the situations in which they live, and in the objects which they make or acquire" (p. 4). Hansen, Stevic and Warner (1977) detail values as "criteria that include ideals, goals, normative action, and standards of behavior" (p. 515). They report that values are learned and assist the individual to "conceptualize what is desirable." Thus, Super (1970) determined that work values are values which affect the motivation to work.

Recent research is pointing to these variables as viable tools in understanding the interacting forces which are likely to link an individual's orientation to success in training and on the job. In this respect, Freeman (1978) comments that the behavioral and motivational characteristics of individuals must be integrated into any form of economic analysis in order that the effects of such psychological motivation on human economic (e.g., job) behavior can be understood. Lock (1979) points out that:
The root of the problem of dissatisfaction in work can be found in the changing needs, aspirations, and values of workers....Work satisfaction depends on intrinsic factors or internal rewards—this involves achievement, accomplishment, responsibility, and challenging work among many other things. (p. 435)

Cummin (1967) found evidence that need to achieve is related to good job performance. In a study of fifty-two businessmen, this author found that successful business executives registered higher achievement motivation scores than their unsuccessful counterparts. Cummin's (1967) work advanced McClelland's (1965) earlier efforts which related achievement motivation to entrepreneurial success.

In his examination of the relationship of need achievement to occupational and school progress, de Charms (1976) has shown that improved performance can result from an increase in a person's achievement motivation. In addition, McClelland (1953) and Heckhausen (1967) report that a relationship does exist between high achievement motivation and educational accomplishment. Similarly, Atkinson and Raynor (1978), in reviewing studies on need to achieve, social class and education, concluded that "those who are most highly motivated to achievement are the more persistent in the achievement-oriented activity we call getting an education" (p. 25). The results of such research clearly point to the potential impact of n Ach on educational and occupational training.

Regarding work values, Katzell (1964), in his examination of the empirical evidence, found that job satisfaction and congruence between personal values and job conditions were positively related. Zytowski (1970) determined that "it seems reasonable to conclude that
a concept of work values is a viable one in the description of vocational behavior, perhaps more so than interests or other conceptions of satisfaction" (p. 186). Furthermore, Super (1970) states that:

Understanding the value structure of a student or client in educational and vocational counseling, or of an applicant for a position in business or industry, is thus important as an aid to clarifying goals and to determining the psychological appropriateness of a given type of training or employment. (p. 4)

Integrating the concepts of motivation and values, Mankoff (1974) found that the level of motivation can be increased through a suitable change in an individual's value system. Brown's (1976) research clearly pointed to values as the most useful determinant of motivated behavior.

Yet, Parsons and Goff (1980) point out that the relationship between values related to work and achievement motivation is new and fertile ground for investigation. They conclude that:

...the motive to approach a task is undoubtedly influenced by the underlying value structures of the individual or the task. In the past, need achievement models have failed to take into account variability on these values... little research has been done on the impact of values on achievement choices. Career counseling researchers have devoted some attention to this issue but have done little more than identify a relationship between the global values one holds and the profession one is in. (p. 360)

Furthermore, they contend that men and women possess a different core value structure which could "influence the very definitions of success and failure on a whole variety of tasks and activities" (p. 361).

In addition, achievement motivation and work values may also be
subject to the effects of many biodemographic conditions, as hinted by Parsons and Goff (1980). For instance, Lock (1979) has pointed to age and sex type as influences on values, career fit and achievement motivation. Maehr and Klieber (1980) have indicated that most studies regarding achievement motivation focus on a young age population. They report that aging and age differential studies related to achievement motivation will be fertile ground for future research.

These biodemographic and sociodemographic (i.e., sex, age, educational attainments) variables add a necessary dimension to the exploration of achievement motivation and work values. They may provide an understanding of the differentiating and, perhaps, interactive effect such variables can exert on any relationship between work values and achievement motivation.

In summary, current trends in the research indicate that coupling the appropriate technical training with this understanding of motivation and values might possess the greatest potential for developing the means toward enhancing the opportunity for the success of these persons in training and hopefully on the job. An analysis of achievement motivation and work values will provide some new insights into enhancing vocational guidance for counseling professionals in education and in the social services agencies, who will indeed be in the forefront of efforts to work with these disadvantaged individuals.
Problem Statement

The questions posed here focus on analyses of the work values and achievement motivation of persons eligible to participate in federally sponsored training programs in a rural region in west central Michigan. They also target on the possible biodemographic and educational attributes which might serve as differentiating variables among persons within this population.

Specifically, the questions to be addressed regarding this group are stated as follows:

1. Does achievement motivation differ on the basis of the biodemographic variables of age and sex?
2. Does achievement motivation differ on the basis of scholastic achievement and years of formal education completed?
3. Is the level of importance attributed to a certain work value subject to differences in age and sex?
4. Is the level of importance attributed to a certain work value subject to differences in scholastic achievement and years of formal education completed?
5. What relationships exist between particular work values and achievement motivation?

Limitations of the Study

The number of federally funded training programs and organizations providing these programs, especially under the old CETA program guidelines, is quite extensive. However, an attempt to survey representative samples of every program or organization would be extremely costly and most probably an unmanageable task, due to this diversity of programs. Therefore, the population selected for
the study was limited to those in a single JTPA service-delivery area (an area designated as geographically and economically homogeneous and under the auspices of a single administrative unit—in this case, the West Central Michigan Employment and Training Consortium) and eligible for current training programs (Appendix A).

The sample chosen for the study consisted of those individuals eligible for training during the first quarter of the 1984 fiscal year (beginning October 1, 1983). The fact that only those in one particular quarter of the fiscal year were selected for this investigation is a second limitation of the study. However, projections by the West Central Michigan Employment and Training Consortium (1983) indicate no significant differences by reporting quarter amongst the number and sex type of the individuals to be served. Furthermore, due to the uniformity of the eligibility guidelines for persons in this service delivery area, it is expected that the sample chosen will be representative of the general population receiving services from the Consortium.

Generalizations from this study may be a limitation as the service delivery area selected provides services to predominantly rural communities and the results may not be applicable to a more urban population. Other sociodemographic, biodemographic and personality-need factors, such as number in family, past levels of income, and intellectual capability may indeed warrant study as related to this group. However, this study is limited to the dimensions measured by the research instruments selected.
Significance of the Study

The Committee for Economic Development (1978), in an exhaustive review of national policy on assisting the hard-to-employ, preface their remarks by this assessment of the value of work:

Work and the work ethic have intrinsic benefits - to the individual and to society. Work provides a point of identification, a source of self-esteem, and a vital part of most people's systems of values. (p. 11)

Furthermore, the Committee deduced that the consequences of continuous unemployment can be devastating:

For some groups, prolonged or frequent unemployment can also lead to alienation from many of the values that are basic to the mainstream of American society, including belief in the work ethic and the importance of a regular day's work. (p. 30)

Yet, Jackson and Huffman (1979) have found in their study of CET A job training programs that "if the disadvantaged participates in a program where he/she gains recognition, develops self-worth and feels wanted, the result is motivation toward achievement and success" (p. 4). They continue by emphasizing that the participant in such a program must be assisted in becoming self-directed, exercising the right of choice in career decision-making and having the necessary knowledge to choose wisely. These authors comment:

The basis for career choice is founded in the individual's ability to:

1. maximize strengths and personal attributes
2. minimize weaknesses and personal deficiencies
3. utilize techniques for overcoming personal barriers and roadblocks
4. integrate the above toward attaining realistic career goals (p. 4).

Healy (1982), in his review of the effectiveness of manpower,
job training programs (e.g., ETA), clearly espoused the necessity for a consideration of a worker's individual needs and talents when career decision making and occupational matching is being conducted.

White and Schmitt (1979) concur in reporting that:

Much of manpower economics ignores psychological theory and research; however, it is not devoid of psychological assumptions. Most commonly it proceeds on the assumption that individuals make employment decisions based on systematic, rational, and economic concerns. While labor force behavior is indeed elicited by economic events, individuals exhibit very complex responses to such stimuli. Their needs, values, aspirations, and perceptual filters intervene in the process by which these external events influence labor force behavior. In order to properly understand such behavior, we must incorporate these "messy" psychological and motivational variables into our analysis. (p. 3)

In an appropriate summary, Holland's (1964) review of the work of vocational behavior theorists points out that, although research directions may vary, vocational behavior is seen by all as "a function of personality, development and social background" (p. 277). Therefore, the psycho-social nature of vocational behavior has significant implications for occupational counseling and clearly gives rise to the need for a more sophisticated understanding of an individual's psychological and motivational determinants as related to career decision making.

Reichel, Neumann and Pizam (1981), from a practical perspective comment that:

Knowing the values which motivate an individual, and having information concerning the values which are most readily realized in various occupations and work settings, the counselor, psychologist, or personnel director has an important basis for counseling or for decision making. (p. 189)
However, Zytowski (1970) forewarns that: "Despite its promises, the work values concept awaits considerably more empirical work before it can stand equally with constructs already established" (p. 186).

Osipow (1973), on the other hand, concludes that a study of the achievement motive seems especially suitable for examination in regard to career behavior. He concludes a review of the current research by citing:

General personality characteristics related to achievement motivation, fear of failure, and a willingness to accept risks seems to provide a useful personality framework on which to make predictions about the course of vocational events in an individual's life. (p. 189)

Sheppard and Belitsky (1965) similarly conclude that socio-psychological variables can impact reentry into the labor market. They report in their study of 450 blue-collar and 80 white-collar unemployed workers that high achievement motivation and achievement values were related to success in reentering work and applying more methods to locating and obtaining work.

Such sentiments confirm Atkinson and Raynor's (1978) beliefs that, from the perspective of studies on achievement motivation, significant progress in understanding an individual's need to achieve will be founded in an examination of the interactive effects of personality and situational determinants of behavior. However, Healy (1982) concludes that "surprisingly, the conceptual linkage of career values and needs has not been explored" (p. 88).

Leonardson and Nelson (1977) indicate that public employment programs provide the greatest potential for solving the unemployment
problem, especially in rural areas such as that served by the West Central Michigan Employment and Training Consortium. However, Jackson and Huffman (1979), in their study of CETA eligible individuals, forewarn that:

Successful employment of the disadvantaged rests upon the individual (a) being motivated, (b) becoming aware of strengths and weaknesses, (c) having employable skills, and (d) believing success to be a reality. (p. 5)

Therefore, as the ultimate goal of federal job training programs is to provide appropriate training and the best opportunity for placement and success in a job, it is critical that the initial period of vocational decision making includes a recognition of the complex nature of such a choice. Interest inventories as predictors of appropriate occupational selection and potential success might provid too narrow a view of this decision making stage. Recent efforts toward analyses of achievement motivation and work values as related to career choice, job training and occupational success provides a significant and practical cause for continuing research.

Plan of the Presentation

The second chapter of the dissertation reviews the literature related to the problems of this study and presents an analysis of past research. Chapter three is devoted to a description of the design of the study, the data gathering instruments used, and the methods of gathering data. Chapter four consists of the presentation of data and analysis of the findings. The fifth chapter includes a summary, discussion, conclusion and implications for further study.
REVIEW OF THE LITERATURE

This chapter presents a review of the literature in three broad categories related to the study. These categories are federally funded training programs, achievement motivation and work values. Summary remarks and comments are also provided as a conclusion to the chapter.

Federally Funded Training Programs

A Brief History

Employment and training programs sponsored by the federal government have had a rather brief history in the United States. Guile (1983) reports that virtually no federal legislation regarding employment and training existed in the United States for its first 150 years. She notes that the Civilian Conservation Corps and subsequent public works projects in the early 1930's represented the first federally supported work-relief and work-training programs (as a response to a 25 percent unemployment rate).

The unemployment issue did not arise again as a national problem until the late 1950's. Burns (1980) reported that the unemployment rate nearly doubled between 1956 and 1958 to about 6.5 percent. The sixties, then, were marked by such legislation as the Manpower Development and Training Act (1961) and the Economic Opportunity Act (1964) in an effort to alleviate this resurgent problem of unemployment (Guile, 1983).

Perhaps one of the largest and most recognized employment and
training programs emerged in the decade of the seventies - the Comprehensive Employment and Training Act of 1973 (CETA). The National Alliance of Business, NAB (1981), characterizes this legislation as "the basic federal legislation designed to provide job training and employment opportunities for the unemployed, the underemployed, and the economically disadvantaged" (p. 5). This act, NAB states, gave direct administrative authority over these federal funds to state and local governments. Subsequently, as Beals (1980) observed, the CETA legislation was reauthorized in 1978 and a major modification, the Private Sector Initiative Program (PSIP), emerged as an effort to "involve businesses in planning, designing and operating employment and training programs" (p. 3). Marth (1983) reported that although only 5% of CETA funds were targeted toward PSIP training programs, these programs had a 25% higher job placement rate than the traditional CETA programs.

Marth (1983) in reviewing the potential of the Job Training Partnership Act comments that:

Ever since President Franklin D. Roosevelt reached into the federal treasury 50 years ago to buy a pick and shovel for America's unemployed, business people have been contending that the solution to unemployment lies not in government largess but in the competitive, profit-motivated private sector. (p. 59)

He reports that the new act is being enthusiastically embraced by business leaders. As Marth (1983) cites, the act will provide the "long-awaited opportunity to prove that the private sector, not the federal government, can best assess labor market needs, train unskilled workers and provide jobs for the unemployment" (p. 59).
The National Alliance of Business (1982) cites the Job Training Partnership Act of 1982 (JTPA) as a landmark piece of legislation which echoes Burns' (1980) earlier conclusion that combating future unemployment will be incumbent on "a new spirit of partnership and cooperation" between the public and private sectors. NAB proclaims that JTPA was "a deliberate and concrete recognition of the need to harness private sector expertise, resources and support in order to tailor publicly financed training programs to the local economy" (p. 1). It is the spirit of this new legislation which Governor Pierre A. duPont IV of Delaware, in an interview with Parnell (1983), hopes will guide federal efforts toward alleviating unemployment in the 1980's.

The Clientele

From the earliest job training programs to the present, the major emphasis of such projects has been to remove the barriers to employment for economically disadvantaged individuals (Guile, 1983). Of current training programs, the Congressional Budget Office and the National Commission for Employment Policy (1982), have recently examined the biodemographics of persons participating in federally sponsored training programs. They described the clientele participating in CETA programs in 1980 as follows:

Participants in CETA training programs are members of low-income families. The median family income for adults (persons over 24 years old) entering training in 1980 was $5000. Of these participants, one-third received public assistance during the year before training. (p. 4)
In addition, their report indicated that 36.6 percent of those receiving training had completed less than 12 years of education.

Under the new JTPA legislation, Guile (1983) reports, the clientele to be served may be unemployed, have faced serious barriers to employment, have become dislocated workers, or are economically disadvantaged. Programs, she notes, developed under this act and for these persons, will attempt to prepare youth and adults for entry level positions in the labor force.

The Congressional Budget Office and the National Commission for Employment Policy (1982), in a joint study of the effectiveness of CETA training programs for adults, reported that about $1.7 billion was expected to be spent in fiscal year 1982 to specifically support job training programs. The study continues by indicating that in 1980 approximately three-quarters of a million low income persons were served by a variety of programs, such as, classroom training, on-the-job training, work experience, and job search and placement assistance. Underwood and Whitepigeon (1982), concentrating on CETA funds available to Michigan, indicated that $369,995,244 was spent in fiscal year 1981 for all CETA programs combined. The West Central Michigan Employment and Training Consortium (1982) reported expenditures of $1,791,256 for fiscal year 1982 with 1,330 persons served through CETA training funds, representing an expenditure of $1347 per participant.

The West Central Michigan Employment and Training Consortium (1984) in its Fiscal Year 1984 Title IIA Job Training Plan projected that over 500 persons are expected to be served during the period
October 1, 1983, through July 30, 1984. Table 1 provides a summary of the biodemographics of this expected clientele.

Table 1

Summary Information of the Characteristics of Expected JTPA Clients To Be Served by the West Central Michigan Employment and Training Consortium during Fiscal Year 1984

<table>
<thead>
<tr>
<th>Client Characteristics</th>
<th>Number of Persons Expected to be Served</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>203</td>
</tr>
<tr>
<td>Female</td>
<td>312</td>
</tr>
<tr>
<td>19 and under</td>
<td>191</td>
</tr>
<tr>
<td>20 - 21</td>
<td>110</td>
</tr>
<tr>
<td>22 - 44</td>
<td>165</td>
</tr>
<tr>
<td>45 - 54</td>
<td>43</td>
</tr>
<tr>
<td>55 and older</td>
<td>6</td>
</tr>
<tr>
<td>White</td>
<td>448</td>
</tr>
<tr>
<td>Black</td>
<td>19</td>
</tr>
<tr>
<td>Hispanic</td>
<td>4</td>
</tr>
<tr>
<td>American Indian/Asian</td>
<td>4</td>
</tr>
</tbody>
</table>


These clients are also expected to be participants in a variety of job training experiences such as classroom and on-the-job training at a projected, direct cost for training of over one-half million dollars. Table 2 details the projections for the nine months from October, 1983, to July, 1984.
Table 2

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number to be Served</th>
<th>Expenditures by Activity</th>
<th>Average Cost Per Participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-the-Job Training</td>
<td>181</td>
<td>$453,889</td>
<td>$2,508</td>
</tr>
<tr>
<td>Classroom Training</td>
<td>100</td>
<td>80,879</td>
<td>809</td>
</tr>
<tr>
<td>Employability Development</td>
<td>359</td>
<td>107,625</td>
<td>300</td>
</tr>
<tr>
<td>(such as pre-employment testing, counseling, interest and aptitude measurement, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work Experience</td>
<td>36</td>
<td>55,000</td>
<td>1,528</td>
</tr>
<tr>
<td>(training in basic work habits)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry Employment Experience</td>
<td>84</td>
<td>83,895</td>
<td>999</td>
</tr>
<tr>
<td>(&quot;Try-out&quot; employment experiences for youth)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-employment Skills Training for Youth</td>
<td>103</td>
<td>46,500</td>
<td>451</td>
</tr>
</tbody>
</table>


In addition, $276,194 will be used to administer and support these program activities, bringing the total expenditures to $1,103,982.

Achievement Motivation

McClelland et al. (1953) provided some of the pioneering efforts toward defining, understanding and testing an individual's need to
achieve (n Ach) or achievement motivation. In an initial discourse on the origin of a motive (ie: the achievement motive), McClelland et al. (1953) point out that:

There are three events involved in the development of a motive, any of which may have observable and distinguishable behavioral effects. In order of occurrence, they are:

A. The situation producing affect
B. Redintegration [re-creation] of (A)
C. Response learned to (B). (p. 35)

Thus, motives are learned responses which develop out of repeated affected experiences associated with situational and environmental cues.

The author and his associates defined achievement motivation as a learned motive which involves "standards of excellence" and the behavior involved either in "competition with those standards of excellence or attempts to meet them which, if successful, produce positive affect or, if unsuccessful, negative affect" (p. 275). Subsequently, an "affective arousal" model of motivation was proposed by these early researchers.

Atkinson (1958) proposed a theory of motivation which functioned to associate the achievement motive with goal expectations and incentive values. In a mathematical model, the author posited that the strength of the tendency to approach a certain goal is a function of motives, expectancies and incentives related to success and failure. They point the concept of "resultant achievement motivation" as a dynamic process of the summation of the tendencies to achieve success and to avoid failure. This analysis of achievement
motivation was advanced to call into context the present task in relation to both future goals and to past experiences (Atkinson and Raynor, 1978).

Heckhausen (1967) puts forth the theory that achievement motivation involves intervening cognitive processes. He states:

Achievement motivation presupposes the structuring of the situation within an achievement-related person-environment frame of reference....The origin of a motive, therefore, lies neither in the appearance of something laid down innately nor in the descent from ontogenetically earlier motives...Rather it appears along with the cognitive step in maturing which enables the above-mentioned structuring of the person-environment frame of reference to take place. (p. 143)

Fyans (1980), in his review of recent trends in achievement motivation theory and research, indicates that current thought is broadening the conceptualization of the phenomenon beyond the predominantly individualistic nature espoused by earlier theorists. For instance, a modern-day theorist, Hunt (1980), suggests that "the construct, achievement motivation, must be reconceptualized first as a part of a whole person and then as a part of a person interacting with another person" (p. 455). Parsons and Goff (1980) extend a similar position pointing to a "communal" or "person-in-relation" perspective which views achievement motivation as separate but interrelated with other motive systems (e.g., values).

The research regarding attempts to measure an individual's need to achieve has been extensive. McClelland et al. (1953, 1958) adapting Murray's Thematic Apperception Test (TAT) methodology, pioneered some of the early experimental research using this pro-
jective method of measurement. Through interpretations of a subject's response, a fantasized story regarding a selected picture card, the experimenters attempted to measure n Ach. Heckhausen (1967) describes the methodology as follows:

The inner motives of experience and behavior are "tapped" in the fantasy stories...If the achievement-oriented content of the projected TAT picture is unmistakable, it elicits a conception of an achievement-related person-environment relationship. (p. 9-10)

Atkinson and Raynor (1978) are just two of the many researchers who have utilized this assessment of achievement motivation.

Klinger (1966), however, pointed to several problems which have plagued projective methods of measuring an individual's need to achieve, such as, validity against performance criteria, internal consistency and test-retest reliability. He concludes:

It seems clear that whatever n Ach scores measure is quite ephemeral, capable of registering differently in different fantasy instruments, differently in fantasy as contrasted with cognitive task instruments, and differently at different times in the same experimental session with the same or similar instruments. (p. 300)

In addition, the author indicates that such measures have little validity for those of college or adult age. Carney (1966), Lefkowitz and Fraser (1980) and McClelland et al. (1953) point to several validity problems, such as, the sensitivity of the TAT method to external conditions not necessarily related to the measure of n Ach. However, of course, McClelland (1958) and others have provided evidence to the contrary regarding the validity of this approach.

Early attempts to measure the construct using questionnaires showed little correlation with achievement-oriented behavior.
(Heckhausen, 1967). However, Hermans' (1970) Prestatic Motivation Test (PMT), a 29 item, non-projective, self-report questionnaire, has emerged as a validated approach to the measure of the achievement motive. The author's studies conducted in relation to the development of the questionnaire provided support for internal consistency, substantive validity and discriminant validity. Studies conducted by Hamilton (1975) demonstrated that "the PMT indeed measures a psychological characteristic that manifests itself in achievement-seeking behavior" (p. 919).

Wotrubia and Price (1975) and Hermans (1970) do report a slight positive correlation between the PMT and McClelland's TAT. However, Wotrubia and Price (1975), as well as Hamilton (1975), indicate that the various measures of need to achieve appear to be assessing different constructs.

Subsequently, studies of achievement motivation have also attempted to examine the relationship of this concept to biodemographic and socioeconomic variables. For instance, in examining the relationship of n Ach to sex type, McClelland et al. (1953) found that "women have achievement drives which are tied up with getting along successfully with other people, whereas men have achievement drives with 'getting ahead'" (p. 331). The difference, the source cites, seems attributable to differing expectations for men and women in the American culture. This distinction between the sexes, when viewed in relation to the learned nature of the achievement motive and the effects of societal expectations on its development in an individual, is indeed interesting, for Ziraba...
(1976) found that male and female youngsters in kindergarten did not differ significantly on scores of achievement motivation. Such research seems to suggest that achievement motivation becomes defined or learned as value structures crystallize.

Kriger (1972) found that there is a relationship between a women's career choice and her perception of her mother's child-rearing attitudes. Women in the study who were categorized as homemakers considered the child-rearing practices of their mothers as rather restrictive. On the other hand, career women considered the child-rearing environment as permissive. Subsequently, the level of achievement motivation between these groups differed with homemakers registering a lower level of need to achieve than their career-oriented counterparts.

Parsons and Goff (1980) speculate that differences in need to achieve between the sexes are anchored in a fundamental discrepancy in each individual's underlying value structure. Horner (1978) postulated that, while men and women do develop an achievement motive, women are subject to or develop a motive to avoid success which has a moderating effect on achievement motivation. However, Horner (1978) points out:

Data related to achievement motivation in women have been very scarce...The few comparable studies of achievement motivation that have been conducted are neither consistent with the theory, with the findings for males, nor even internally consistent with each other. (p. 41-42)

Yet, Klein and Snyder (1969) found in their study of community college students that the "achiever group" was characterized as
female, single, with a somewhat higher level of educational attainment.

Age, as a differentiating variable relative to achievement motivation has received only a moderate amount of attention. Veroff, Atkinson, Feld and Gurin (1960) found that persons in their early adulthood demonstrated a higher achievement motive than their older, adult counterparts in a nationwide study involving individual TAT interviews. These authors found that achievement motivation scores were highest among the youngest men (21-24 years), next highest among those considered middle aged (35-44 years) and lowest in the older groups (55-64, and 65 and older). However, women age 55 to 64 reflected the highest percentage of high n Ach scores, followed by women ages 25 to 44 and, last, by women 65 and older. They further conclude that these differences (for both men and women) may be the result of some important generational difference, an aroused achievement motivation due to a man's lifecycle (ie: more eager in youth), or what achievement motivation signifies to different age groups. It is finally concluded by the authors that:

As a result of these obtained age differences in motivation scores and our speculation about their meaning, we have considered age as a critical variable for investigations of other substantive relationships to be reported in future papers. (p. 25)

Raynor (1980) has begun research into the motivational determinants of adult personality functioning and age. His theory attempts to "apply to the problem of aging the expectancy x [times] value theory of motivation that has evolved in the study of achievement-oriented activity" (p. 190).
However, Maehr and Kleiber (1980) point out that most achievement theorists, and subsequently the studies they have conducted, have focused on experimentation with young adults. They suggest that "a focus on motivation and achievement in aging is warranted" (p. 172-173). The shift in the population structure, the "graying of America", will cause such study to be inevitable, they conclude.

Clearly, the work of Parsons and Goff (1980) Horner (1978), Veroff et al. (1960), and others aforementioned, suggests that achievement motivation may be subject to sex and age differentiation. Therefore, a resultant hypothesis for testing can thus be stated: Achievement motivation will differ based on the biodemographics of age and sex.

In the area of socioeconomic conditions, one of the logical and, perhaps, most prominent pursuits for achievement motivation researchers has been an examination of the relationship between an individual's achievement motive and measures of educational attainment. Again, McClelland et al. (1953) provide some of the earliest research regarding this relationship illustrating that positive correlations exist between need to achieve and 1) SAT scores ($r = .42$, $p < .05$) and, 2) college grades ($r = .51$, $p < .01$) for 30 Wesleyan University students. In addition, these authors demonstrated that students displaying a high n Ach "perform and learn more rapidly than people with low achievement" (p. 225). Atkinson and Raynor's (1978) review of the empirical evidence also confirms the relationship of need to achieve and grades in school.

However, Lefkowitz and Fraser (1980) concluded that, while the
TAT measure of achievement motivation was not related with self-reported grade point average at the .05 alpha level in their study of 63 male college students, the PMT did show a significant, positive correlation with grades at the same level of significance in the same study. Partitioning their sample by race, the authors recorded a correlation of .26 for 31 blacks and .49 for 32 whites, with an r = .30 for the total sample acceptable at .05. Hermans (1970) also found a significant correlation (r = .34, p < .05) between the PMT and grades and reported similar findings to those of Lefkowitz and Fraser (1980) regarding the TAT when both tests were administered to 32 students in an unstructured program (class) in Hermans' study.

Veroff et al. (1960), in studying a large representative sample of Americans, found that a higher achievement motive was associated with a higher level of education. They found that "the percentage of college educated S's [subjects], whether men or women, with high n Achievement scores is substantially higher than the percentage of S's [subjects] who had only a grade school education" (p. 23). Atkinson and Raynor (1978) hypothesize that persons who are highly motivated to achieve tend less frequently to be dropouts as they may be more persistent in the achievement-oriented activity, getting an education. However, their speculations seem to suggest, even invite, the need for more research in this area. To this end, a hypothesis for investigation is formulated as follows: Achievement motivation will differ based on years of formal education completed and scholastic achievement.

Finally, McClelland (1965) found a link between achievement
motivation and occupational choice. He reported, in a study of 55 college graduates that, of those who demonstrated a high achievement motive, 83 percent choose "entrepreneurial occupations". Conversely 70 percent of those with a low need to achieve chose professions which were not entrepreneurial in nature. Veroff et al. (1960) found that "achievement motivation scores are much more frequently high among persons [men] in higher status occupations than among men in lower status occupations" (p. 23). Condon (1978) concluded that achievement motivation is an important determinant of an individual's earnings in the workplace.

Work Values

The concept of work values has its early roots in the work of Ginzberg, Ginsburg, Axelrad and Hema (1951). These authors postulated that the vocational development process of an individual evolves through three major periods:

The process of occupational decision-making can be divided into three distinct periods: the period during which the individual makes what can be described as a fantasy choice; the period during which he is making a tentative choice; and the period when he makes a realistic choice. (Ginzberg et al. 1951, p. 60)

In the "fantasy" period, (early childhood ages 4-11), the focus of play activity begins to move toward an orientation toward work. The progression to the next period (early and late adolescence) advances the now young adult to a period where work interests and values begin to take form. Finally, specific occupational choices are made as interests, values and preferences are clarified in the third,
"realistic" period (beginning near the end of the seventeenth year).

Three types of work values were identified by these researchers in their vocational development theory: 1) those related to the returns of work (e.g., pay), 2) those inherent to the work itself, and 3) those related to the concomitants of work (i.e., co-worker relationships) (Ginzberg et al. 1951, p. 217). Furthermore, they report that it is in young adolescence that these values begin to stabilize and begin to exert influence on an individual's career decision-making and choice.

Healy (1982) extends this definition of work values, commenting that "work values are short- and long-range goals sought by a person through working and the means a person accepts as appropriate for achieving those goals" (p. 84). Furthermore, he concludes that "judgments about whether work is meaningful, challenging and honest and the concomitant positive or negative feelings depend on one's awareness of what one values" (Healy, 1982, p. 85).

However, work values received the most substantive treatment by Super, Crites, Hummel, Moser, Overstreet and Warnath (1957) as part of their theory of vocational or career development, outlined in Table 3. Fundamentally, the authors proffered that vocational tasks or behaviors reflect larger life tasks and that a person, in attempting to be self-expressive and to implement his (or her) self-concept, engages in vocational behavior designed to accomplish these goals. In addition, the nature of the specific behavior an individual undertakes is a function of that person's stage of life and the stability of his (or her) self-concept. Thus vocational and career preferences
<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth (Birth-14)</td>
<td>Self-concept develops through identification with key figures in family and in school; needs and fantasy are dominant early in this stage; interest and capacity become more important in this stage with increasing social participation and reality-testing.</td>
</tr>
<tr>
<td>Exploration (Age 15-24)</td>
<td>Self-examination, role tryouts, and occupational exploration take place in school, leisure activities, and part-time work.</td>
</tr>
<tr>
<td>Establishment (Age 25-44)</td>
<td>Having found an appropriate field, effort is put forth to make a permanent place in it. There may be some trial early in this stage, with consequent shifting, but establishment may begin without trial, especially in the professions.</td>
</tr>
<tr>
<td>Maintenance (Age 45-64)</td>
<td>Having made a place in the world of work, the concern is now to hold it. Little new ground is broken, but there is continuation along established lines.</td>
</tr>
<tr>
<td>Decline (Age 65 and on)</td>
<td>As physical and mental powers decline, work activity changes and in due course ceases. New roles must be developed; first that of selective participant and then that of observer rather than participant.</td>
</tr>
</tbody>
</table>

are subject to change over time.

The introduction of the concept of work values into the theory is summarized in this substantive abstract from the initial theoretical and formative thoughts of Super et al. (1957):

Values, however, seem to represent something more basic than interests. They permeate all aspects of life, they concern life's goals, and in some instances, they seem to be closely related to needs and drives. The goals the individual sets for himself, the things in life that are important to him, begin to influence him and to affect the choices indicated by his abilities and interests. (p. 50)

Barry and Wolf (1965) echoed these same sentiments, commenting specifically that:

Essentially a value is a learned belief so thoroughly internalized that it colors the actions and thoughts of the individual and produces a strong emotional-intellectual response when anything runs counter to it. (p. 40)

According to Super et al. (1970) the following fifteen concepts, both intrinsic and extrinsic to the work task, were identified as specific work values: (p. 8-10)

1. Altruism: this work value, or goal, is present in "work which enables one to contribute to the welfare of others."

2. Esthetic: a value inherent in "work which permits one to make beautiful things and to contribute beauty to the world."

3. Creativity: a value associated with "work which permits one to invent new things, design new products, or develop new ideas."

4. Intellectual Stimulation: associated with "work which provides opportunity for independent thinking and for learning how and why things work."

5. Achievement: a value associated with "work which gives one a feeling of accomplishment in doing a job well."
6. **Independence**: associated with "work which permits one to work in his own way, as fast or as slowly as he wishes."

7. **Prestige**: associated with "work which gives one standing in the eyes of others and evokes respect."

8. **Management**: associated with "work which permits one to plan and lay out work for others to do."

9. **Economic Returns**: a value or goal associated with "work which pays well and enables one to have the things he wants."

10. **Security**: associated with "work which provides one with the certainty of having a job even in hard times."

11. **Surroundings**: a value associated with "work which is carried out under pleasant conditions."

12. **Supervisory Relations**: a value associated with "work which is carried out under a supervisor who is fair and with whom one can get along."

13. **Associates**: a value characterized by "work which brings one into contact with fellow workers whom he likes."

14. **Way of Life**: associated with the kind of work that "permits one to live the kind of life he chooses and to be the type of person he wishes to be."

15. **Variety**: associated with "work that provides an opportunity to do different types of jobs."

Super et al. (1957) postulated that "work satisfactions depend on the extent to which the individual can find adequate outlets in his job for his abilities, interests, values, and personality traits" (p. 95). Brown (1976) indicates that values may be the basis for improving relationships in the workplace (especially between supervisor and employee), motivating behavior and enhancing the personal work satisfaction of all individuals. Mankoff (1974) indicates that a person's value system "underlies the attitudinal universe" of that person or employee in the workplace. Thus, he concludes that, "when we begin to focus on values and value systems, we are growing a great
deal more specific about what motivates an individual—and we are learning how his or her attitudes are formed and shaped" (p. 24).

Katzell (1964), in his theory of vocational motivation equated work or job values to resultant levels of job satisfaction. He theorized that the degree of harmony between a person's values and existing job conditions is directly and positively related to job satisfaction. The intensity and importance of the values evoked and involved in interplay in the work situation creates and directs the potential magnitude of an effect on job satisfaction (positive or negative).

Subsequently, Katzell (1964) summarized the theoretical framework attempting to link values, job satisfaction (or degree of value fulfillment) and job behavior in seven postulates:

1. Job satisfaction is positively associated with the degree of congruence between job conditions and personal values (p. 349).

2. The more important or intense the values involved, the greater the effect on job satisfaction of their attainment and negation (p. 350).

3. Satisfaction with a given job or occupation will vary with the values of the incumbents (p. 350).

4. Differences in job satisfaction among people having similar values will be associated with differences in their jobs or occupations (p. 351).

5. The presence of certain job characteristics serves usually to evoke satisfaction, whereas their absence results only in neutral feelings; other characteristics serve usually to evoke dissatisfaction, whereas their absence likewise results only in neutral feelings; still, others
tend to evoke satisfaction when present in moderate amounts, but dissatisfaction results when they exist in amounts that are either too large or too small (p. 352).

6. The extent to which a person participates in a job organization varies directly with the amount of satisfaction evoked by such participation and inversely with the satisfaction evoked by alternative participation (p. 355).

7. The amount of productivity on the job varies directly with the extent to which productive behavior is positively associated with satisfaction and inversely with the extent to which non-productive behavior is thus associated (p. 356).

Finally, and most directly related to vocational choice, he summarizes that although a person's satisfaction with an occupation is indeed an individual trait which varies with individual value structures, these value structures are subject to change especially as a consequence of job choice.

Yankelovich (1978) points out that work values, in a broader sense, can also change from generation to generation. He suggests that the work-related values of the 1980's will be: "1) increasing importance of leisure time, 2) the symbolic significance of the paid job, and 3) the insistence that jobs become less depersonalized" (p. 33).

Super and Overstreet (1960), and Super (1968, 1970), realizing that values play a significant role in both vocational choice and job satisfaction, developed the Work Values Inventory (WVI); a self-reporting, 45 item instrument designed, according to Osipow's (1973) evaluation, "to reflect a preference variable in vocational choice.
somewhat different from and perhaps more general than the concepts of interests" (p. 151). The work values examined by the measure are: Altruism, Esthetics, Creativity, Intellectual Stimulation, Achievement, Independence, Prestige, Management, Economic Returns, Security, Surroundings, Supervisory Relations, Associates, Way of Life, and Variety.

The study of work values in American society has indeed been the subject of extensive study. Much of this study has focused on biodemographic and socioeconomic variables which might serve to highlight differing values among segments of the population. For instance, Lock (1979) reported that age is just such a moderating or differentiating condition. He comments that:

Today's youth expect a great amount of intrinsic reward from work. At the top of a list of influences on career choice are such items as job challenge, the chance for self-expression, interesting work, and freedom to make decisions. These factors are now replacing values expressed by older workers for job security, adequate pay, and opportunity for advancement. (p. 441)

Yankelovich (1974) demonstrates congruence with these aforementioned sentiments by elaborating that:

Taking age 35 as a dividing point, we find most working people over 35 expect and demand little from their jobs [other] than the economic benefits of income, job security, and secure retirement....Young white men and women, although they too are concerned with economics, are restive because they are tuned into the psychological benefits of work—and they do not feel they are being fulfilled. (p. 451)

Healy (1982) reports that work values become clearer as one moves from youth into adulthood, supporting Super's (1957) theory of career development stages of life.
Finally, in relation to career decision-making, Osipow (1973) points out that little work has been done on vocational maturity and adjustment in terms of career development as an individual ages. He states that, "adult vocational development could well become an area of considerable research activity" (p. 151).

Sex type has also been examined as a differential variable as related to an individual's work values structure. Super (1970) reported, in a study of 99 high school students, that "females appear to have higher scores for Altruism and lower scores for Economic Returns than do boys" (p. 26). However, he points out that both sexes did show considerable overlapping on the level of importance attributed to the other work values, and differences on these were not statistically significant.

Eastwood (1981) found that females valued Achievement, Altruism, Supervisory Relations, Surroundings and Way of Life more than their male counterparts in his study of the work values of high school seniors. Males valued Management more than females in this same study. Goss (1978) similarly found a distinction between the sexes in her study of 330 community college business students. Differences were reported on the scales of Economic Returns, Achievement, Intellectual Stimulation, Surroundings, Esthetics, Independence, Creativity and Management.

However, Lock (1979) suggests that work values, especially as related to the intrinsic rewards of work, provide the same satisfaction for women as men once they are attained. However, he points out that a cause of dissatisfaction for women in the workplace

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arises due to a dissonance between their "expectations toward work and the actual low social and economic statuses of their jobs" (p. 445).

Parsons and Goff (1980) take a position very dissimilar from that of Super (1970), suggesting that such a vocational development model is biased and indicating that men and women do indeed have different basic value structures. This sex difference in value structure will manifest itself in career choice and vocational tasks. They conclude:

Consequently, various life tasks satisfying different core values would have different incentive values for men and women. For example, if women see "helping others" as a more important core value than do men, occupations which allow one to help others would have a higher incentive value for women than men. (p. 363)

Horner's (1978) characterization of a "fear of success" in women would also seem to have relevance to and possible manifestation in career choice for females.

Sex type and age, as differentiating variables, may serve to indicate varying individual work value structures. A hypothesis for examination, then, is expressed as follows: The level of importance attributed to a certain work value will differ based on the bio-demographics of age and sex.

Comparative studies regarding work values, vocational maturity and educational attainment have also appeared in the literature. Super and Overstreet (1960) found that grades in school, for instance, were positively correlated with vocational maturity. Lock (1980), in summarizing U.S. census data, reports that, for women, the
more education one has, the increased likelihood that she will seek paid employment. However, he points out that, in general, while the educational requirements for jobs have risen, the pay, status and the challenge of the job has not. This situation has produced the greatest dissatisfaction for the young, well educated person whose expectations for attainment of certain values is not being realized in his (or her) occupation.

Barry and Wolf (1965) point to a relationship between values, education and social class. For example, middle-class families and subsequently their children, generally place a high value on education and educational persistence from high school to college completion. For lower class individuals, the authors admit, "the value lauding education and the importance of graduating at least high school are concepts foreign to many of these students for they seldom learn such values from their parents or other significant adults" (p. 50).

Such research lends support to the study of differences in work value importance based on individual levels of educational attainment. Thus, the hypothesis for scrutiny is presented in this manner: The level of importance attributed to a certain work value will differ based on years of formal education completed and scholastic achievement.

The relationship between values and achievement motivation has provided conflicting analysis in the literature. McClelland et al. (1953) found that need to achieve was not related to six scales of the Allport-Vernon Study of Values with the exception of the
Aesthetic scale ($r = .36$, $N = 31$, $p < .05$) of that instrument.

However, Barry and Wolf (1965) take an opposite view to a needs approach to motivation (McClelland 1953, Atkinson and Raynor 1978) commenting that:

The concept of value is important for it replaces the needs approach to motivation with a positive explanation of why men do what they do. In the needs theory, good is equated with the elimination of a lack. A man strives for love because he does not have it and needs it. Essentially he is struggling to fill a void. The introduction of the idea of value, however, changes this interpretation of man's struggle for love to a striving for something that he has learned is good or right or has value. This substitution of values for needs supplies a positive rationale for motivation where formerly there was only a negative one. (p. 40)

Parsons and Goff (1980) provide these same sentiments:

The most serious problem, in our estimation with the traditional achievement model is the omission of incentive value. The question of underlying values, either personal or those inherent in the task, was not handled in Atkinson's original need achievement model. (p. 359)

Finally, they conclude that the failure of the need model of achievement to consider a person's underlying value system has severely hampered the use of the model.

The evidence regarding any relationships between certain values and achievement motivation is conflicting and limited. Therefore, the hypothesis mandating attention is: A relationship will exist between the level of importance an individual attributes to each work value and his (or her) measure of achievement motivation.

Conclusions

The review of the literature suggests that understanding work
values and achievement motivation may prove to be assets in examining vocational choice and subsequently, vocational behavior. Some salient points seem to be:

1. Values, both individual and task (work), may be an underlying structure of achievement motivation. (Barry and Wolf, 1965; Osipow, 1973; Brown, 1976; Parsons and Goff, 1980).

2. Achievement motivation and work values can influence career choice and subsequent vocational behavior. (Katzell, 1964; Barry and Wolf, 1965; McClelland, 1965; Cummings, 1966; Mankoff, 1974; Brown, 1976; Lock, 1979; and Parsons and Goff, 1980).

3. Career decision-making and vocational behavior call into play numerous variables (i.e.: work values, achievement motivation, biodemographic conditions, socioeconomic situations, etc.) which go beyond a simple cause and effect approach to understanding both concepts. (Barry and Wolf, 1965; White and Schmitt, 1979; Hunt, 1980; Lock, 1979; and Parsons and Goff, 1980).

The points seem to suggest an emergent multicausal approach toward understanding career choice, vocational behavior and job satisfaction. It is this progression of understanding values, as related to work and achievement motivation and for their influence on career choice and vocational behavior, which might provide career counselors with the best approach to assisting their clientele (i.e., persons sponsored in federally funded training and employment programs).
RESEARCH DESIGN

Population and Sample

The subjects under study in this effort were individuals who qualified for federally funded, job training programs under the initial guidelines of the Jobs Training Partnership Act of 1982. The population studied were clients of the West Central Michigan Employment and Training Consortium, age 16 or older, and not attending high school. Furthermore, these persons were new enrollees for programs during the First Quarter of the 1984 Fiscal Year (October 1 to December 31, 1983) and, due to the uniformity of the eligibility criteria, can be considered representative of the unemployed population served by the Consortium.

Under the auspices of this Consortium, five Michigan counties are served (Lake, Mason, Mecosta, Newaygo and Osceola) representing a total general population of approximately 125,000 persons. Table 4 details this general population with figures provided by county for the aforementioned counties comprising the service delivery area of the Consortium. The consortium is directed by both a board of local elected officials (LEO) from each of the five counties within the service delivery area and a Private Industry Council (PIC) which is comprised of area businesspersons, educators and related agency representatives.

Each subject met the necessary criteria for training eligibility, although the specific training in which they would eventually be enrolled was not determined at the time of selection.
Generally speaking, the criteria for eligibility for these programs serve to identify those individuals who are economically disadvantaged, at the lowest income levels, structurally unemployed or who have encountered barriers to employment.

Table 4
Service Delivery Area: Population by County

<table>
<thead>
<tr>
<th>County</th>
<th>General Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake</td>
<td>7,711</td>
</tr>
<tr>
<td>Mason</td>
<td>26,365</td>
</tr>
<tr>
<td>Mecosta</td>
<td>36,961</td>
</tr>
<tr>
<td>Newaygo</td>
<td>34,917</td>
</tr>
<tr>
<td>Osceola</td>
<td>18,928</td>
</tr>
<tr>
<td>Total</td>
<td>124,882</td>
</tr>
</tbody>
</table>


Hypotheses

The research questions posed and the results indicated in the literature suggest the following hypotheses for investigation:

1. Achievement motivation will differ based on the biodemographics of age and sex.

2. Achievement motivation will differ based on years of formal education completed and scholastic achievement.
3. The level of importance attributed to a certain work value will differ based on the biodemographics of age and sex.

4. The level of importance attributed to a certain work value will differ based on years of formal education completed and scholastic achievement.

5. A relationship will exist between the level of importance an individual attributes to each work value and his (or her) achievement motivation.

The rationale for these hypotheses is derived from the issues and questions posited in the review of the literature. The need for a more comprehensive view of achievement motivation which provides a focus on an individual's underlying value structure has clearly been suggested by Barry and Wolf (1965), Brown (1976), and Parsons and Goff (1980). The differentiating effect of certain biodemographic and sociodemographic variables (i.e.: sex, age, and measures of educational attainment) on both achievement motivation and work values, as pointed to by Super (1970), Atkinson and Raynor (1978) and others, warrants continued and more in-depth analysis.

Finally, the potential effects of an individual's value structure and achievement motivation on future vocational behavior and satisfaction suggests a practical aspect for research regarding the clientele under study. Such sentiment is meant to suggest that future research in this area should contend with the multifaceted, interactive and complex nature of the career decision-making and vocational behavior for these persons, especially prior to selected training.
Data Collection

The data were collected during the months of October, November, and December, 1983, through in-person dissemination and completion of self-reporting instruments provided to those individuals who qualified for federally funded training programs in the service delivery under review. Each participant in the study met with one of three counselors of the consortium who have the responsibility to provide initial advising to eligible persons. These counselors served to administer the survey instruments used and were acquainted with the study and the instruments prior to implementation. Pilot testing was conducted in August, 1983.

Each person participating in the research project received information regarding the nature of the study from one of these counselors. The questionnaires were completed as soon as eligibility for training was determined and prior to any other advising or information dissemination in order to protect against any unintended bias being introduced into the study. Biodemographic and educational information was also received at this time through a self-reporting Data Sheet (Appendix B) completed by each participating individual.

Hermans' (1970) Prestatic Motivation Test (PMT – Appendix B) was used to assess a measure of achievement motivation. The 29 item, self-reporting questionnaire was constructed as a non-projective instrument which examines measures of behaviors previously related to achievement and motivation. Designed from an empirical foundation of the achievement-motivated individual, the instrument assesses nine
behavior areas: 1) achievement, 2) time perspective, 3) aspiration level, 4) task tension, 5) upward mobility, 6) persistence, 7) time perception, 8) partner choice, and 9) recognition behavior. The questions on the instrument are all multiple choice items from which a single selection is to be made from a range of four to six alternatives per item. Scores range from 0 to 29 and are determined by the unweighted summation of the number of questions to which an individual responds above the median. In addition, Hamilton (1975), in a subsequent validation study of the instrument, refined the scoring process to include a procedure for assigning a fractional rating in the event scores are equal to the median.

Hermans (1970) reports a Kuder-Richardson (K-R) formula 20 reliability of .82 for the 29 items. The author cites, for the 29 item scale, "satisfactory representativeness concerning the theoretical description of the achievement-motivated individual" resulting from an item analysis (Hermans, 1970, p. 359). Hermans (1970) also points to significant correlations between this measure of n Ach and performance criteria (i.e. achievement-oriented tasks, grade point average).

Discriminant validity was determined through comparative analysis of the n Ach measure with a simultaneously developed scale testing debilitating anxiety. Atkinson and Raynor (1978) report that anxiety (associated with fear of failure) and n Ach have "diametrically opposite effects on achievement-oriented behavior" and yet "both are expressed in any situation when it is apparent to the individual that his performance will be evaluated in reference to some standard"
Thus, they point to the need for measures of achievement motivation to differentiate between the two constructs (anxiety and n Ach). Their critical analysis of the nonprojective, n Achievement assessment section of the Edwards Personal Preference Scale (PPS) illustrates their point of view:

A number of studies have shown that n Achievement and Test Anxiety [a questionnaire measure of anxiety] are uncorrelated in young college men when both tests are administered under neutral conditions...Unfortunately, there was no evidence to attest the construct validity of this objective test [PPS]... In fact, those who scored high on the PPS variable called n Achievement, which would appear to have face validity given the conventional wisdom about motivation, behaved more like those the theory describes as motivated to avoid failure. The challenging task of developing a valid objective test of n Achievement still lies ahead. (p. 20-21)

A resultant .00 correlation between both scales in Hermans (1970) study revealed a significant discriminant validity for the tool (PMT), addressing Atkinson and Raynor's (1978) concerns.

Upon the recommendation of the Human Subjects Institutional Review Board of Western Michigan University and with the approval of the dissertation committee, the language of one item (#24) on the PMT was modified to eliminate any sexual bias which might be inferred or implied. In any event, the context of the question remained consistent and unchanged. The original item and its revision are indicated on the PMT in Appendix B.

Finally, substantive validity checks by Wotruba and Price (1975), and Hamilton (1975) display moderate correlations between the PMT and McClelland's (1953) Thematic Apperception Test (TAT). However, all authors conclude that each measure appears to be measuring
different achievement motivation constructs.

The second test instrument in the study is Super's (1968) Work Values Inventory (WVI - Appendix C). The tool, according to Super (1970), is "designed to measure the values which are extrinsic to as well as those which are intrinsic in work, the satisfactions which men and women seek in work and the satisfactions which may be concomitants or outcomes of work" (p. 4). This self-reporting instrument examines fifteen values (see Work Values in Chapter II) with scores ranging from 1 to 15 on each of three items assigned to measure each value scale.

The 15 scales of the 45 item inventory were found to be internally consistent and test-retest reliabilities range from .74 to .88. Validity studies indicated positive correlations with the Allport-Vernon-Lindzey Study of Values. A review by Teideman in Buros (1972) indicates that "the value constructs sought have been reasonably approximated in the scales, that the items in the scale have content validity, and that the inventory offers concurrent results with outside criteria" (p. 1479).

Super (1970) reports that the value categories or scales are relatively independent but do reflect some positive intercorrelations. The values of Economic Returns, Security, Surroundings and Supervisory Relations provide moderate positive correlations ranging from .53 to .66 in several pair comparisons. Similarly, Intellectual Stimulation and Creativity registered a .56 correlation for males and .45 for females.

The completed instruments (the PMT and the WVI) were collected
with the corresponding completed data sheet. The questionnaires were then forwarded to the researcher for scoring and eventual data analysis. Each counselor was instructed to speak with non-respondents in order that the reasons for non-response could be noted on the survey for future review and discussion.

Persons involved in the survey completed the questionnaires on a voluntary basis. Although the construction of each instrument should not have presented a reading barrier to those subjects in the study (e.g., the WVI is rated by its author at approximately a 7th grade reading level), counselors assisting in the study were asked to read the items to anyone unable to read the questions.

Data Analysis

The statistical analyses used in this investigation varied based on the hypothesis(es) being tested. The first four hypotheses which examine achievement motivation and the work values for several biodemographic and educational subgroups employed a two-way analysis of variance. The statistical methodology selected was employed to determine if evidence existed to support:

1. Differences in achievement motivation scores based on age, sex and the interaction of these variables (Hypothesis #1).

2. Differences in achievement motivation scores based on years of formal education completed, scholastic achievement and the interaction of these variables (Hypothesis #2).

3. Differences in the level of importance attributed to each work value based on age, sex and the interaction of these variables (Hypothesis #3).
4. Differences in the level of importance attributed to each work value based on years of formal education completed, scholastic achievement and the interaction of these variables (Hypothesis #4).

Hypothesis #5, which attempts to examine a relationship between achievement motivation scores and the levels of importance associated with each work value, utilized a Pearson product-moment correlation (r). The use of the Pearson r allowed an appropriate comparative analysis to the conclusions drawn by McClelland (1953) regarding relationships between values and achievement motivation.

The probability of committing a Type I error was set at .05 for Hypotheses #'s 1 and 2, and at .01 for Hypotheses #'s 3, 4, and 5. All analyses were conducted by use of Western Michigan University's Bank Program and Statpack (Houchard, 1981).

The research design, the data collection methods and the analyses selected take into account certain assumptions and conditions regarding the nature of the sample, the data expected to be yielded and the conclusions to be sought. These assumptions and conditions are as follows:

1. The sample chosen did not differ substantially from the general population that will be served by the Consortium due to the uniformity of eligibility guidelines for this service delivery area. The Title IIA Job Training Plan for Fiscal Year 1984 prepared by the Consortium and based on past service indicates that approximately 200 to 300 clients will be served each quarter.

2. Achievement motivation was tested under neutral conditions; in other words, in a non-achievement oriented environment. To this end, the surveys were distributed after eligibility for training was determined and participants were instructed as to the nature of the survey.
3. The homogeneity of variance necessary for the analysis of variance was demonstrated in that differences in subgroup variances were not reflected.

Summary

The research design of this study was targeted on an analysis of the achievement motivation and work values of persons eligible to participate in federally funded training programs in a rural service delivery area. The participants in the study had qualified for JTPA training programs provided by the West Central Michigan Employment and Training Consortium during the first reporting quarter of the 1984 Fiscal Year.

The individuals in the investigation completed Hermans' (1970) Prestatic Motivation Test and Super's (1968) Work Values Inventory on a voluntary basis. Two-way analysis of variance and Pearson product-moment correlation were applied to the data as the appropriate statistical analyses relevant to the hypotheses being tested.
ANALYSIS OF THE DATA

The focus of this chapter is to present the results of the data analysis. Achievement motivation scores, as well as the ratings on each of the fifteen work value scales, were examined to determine differences based on 1) age differentiation and sex, and 2) years of formal education attained and scholastic achievement. To this end, a two-way analysis of variance was computed first for achievement motivation scores, with resulting F-ratios reviewed. The alpha level of .05 was chosen as the criterion level for rejection of the null hypothesis. Similarly, each work value was subjected to the 2 X 3 factorial design with the more conservative probability of committing a Type I error of .01 selected due to the potential interrelatedness of the work value scales. In each analysis, the interaction effects of the selected groupings of the independent variables (sex and age; years of formal education and scholastic achievement) were also tested.

The relationship between achievement motivation scores and the levels of importance associated with each work value was subsequently examined utilizing the Pearson product-moment correlation (r); a probability of .01 for committing a Type I error was used here as well (Hypothesis #5). This methodology paralleled McClelland's (1953) test of the relationship between n Ach and personal values. Scattergram plots of achievement motivation scores and scores of each of the fifteen work values further substantiated the Pearson r as the appropriate treatment.
The statistical analyses aforementioned were applied to the scores of achievement motivation and each work value for a sample of persons eligible to participate in JTPA training programs provided by the West Central Michigan Employment and Training Consortium. The participants in the study had qualified for these programs during the first reporting quarter of the 1984 Fiscal Year (October 1, through December 31, 1983). A total of 179 people returned surveys for the study. This number represented all the eligible persons during the first quarter as everyone provided with a survey did respond. One person refused to complete a large portion of the survey noting that the questions were inappropriate to his situation. Eleven surveys could not be used in the analysis due to insufficient data. Thus, 167 instruments served as the basis for analysis in this study, representing a 93.3 percent utilization rate. Table 5 summarizes the biodemographics of these respondents.

The groupings for the sample outlined in Table 5 also served as the partitions for the respective levels of the independent variables (age and sex; years of formal education and scholastic achievement) paired in the two-way analysis of variance. Age differentiations followed similar subgroupings to those identified by Veroff et al. (1960) in their nationwide study. Furthermore, this grouping pattern conformed, in part, to Super's (1957) vocational life stages. Similarly, the three subgroups used to partition the data representing years of formal education and level of scholastic achievement paralleled groupings identified by Veroff et al. (1960) and Rosen (1956). These delineations also provided the basis for comparative
Table 5

Summary Information of the Characteristics of those Clients of the West Central Michigan Employment and Training Consortium Surveyed During the First Quarter of Fiscal Year 1984

<table>
<thead>
<tr>
<th>Client Characteristics</th>
<th>Number of Persons</th>
<th>Percent of Total Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>85</td>
<td>50.9</td>
</tr>
<tr>
<td>Female</td>
<td>82</td>
<td>49.1</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 - 24</td>
<td>51</td>
<td>30.5</td>
</tr>
<tr>
<td>25 - 44</td>
<td>90</td>
<td>53.9</td>
</tr>
<tr>
<td>45 and older</td>
<td>20</td>
<td>12.0</td>
</tr>
<tr>
<td>No response</td>
<td>6</td>
<td>3.6</td>
</tr>
<tr>
<td><strong>Years of Formal Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 12 years</td>
<td>32</td>
<td>19.2</td>
</tr>
<tr>
<td>12 years</td>
<td>83</td>
<td>49.7</td>
</tr>
<tr>
<td>More than 12 years</td>
<td>45</td>
<td>26.9</td>
</tr>
<tr>
<td>No response</td>
<td>7</td>
<td>4.2</td>
</tr>
<tr>
<td><strong>Scholastic Achievement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade of B or better</td>
<td>64</td>
<td>38.3</td>
</tr>
<tr>
<td>Grade less than B</td>
<td>101</td>
<td>60.5</td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
<td>1.2</td>
</tr>
</tbody>
</table>

N = 167.

Analysis in future discussions. Table 6 provides a configuration of the 2 X 3 factorial designs, the levels of the independent variables and the number of persons in each grouping.

Finally, Hermans' (1970) Prestastic Motivation Test (PMT) was
Two-Way Analysis of Variance, 2 X 3 Factorial Design

Configuration with Cell Numbers (N)

For the Independent Variables Sex and Age (N = 161)

<table>
<thead>
<tr>
<th>Sex</th>
<th>16 - 24</th>
<th>25-44</th>
<th>45 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>27</td>
<td>44</td>
<td>10</td>
</tr>
<tr>
<td>Female</td>
<td>24</td>
<td>46</td>
<td>10</td>
</tr>
</tbody>
</table>

For the Independent Variables Scholastic Achievement and Years of Formal Education Completed (N = 158)

<table>
<thead>
<tr>
<th>Scholastic Achievement</th>
<th>Years of Formal Education Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less than 12</td>
</tr>
<tr>
<td>&quot;B&quot; or above</td>
<td>9</td>
</tr>
<tr>
<td>&quot;C&quot; or below</td>
<td>23</td>
</tr>
</tbody>
</table>

Dependent Variables (both configurations): Achievement motivation scores and scores on each work value.

Achievement Motivation

Achievement motivation scores were analyzed first to discern if evidence existed to support differences in achievement motivation.
scores based on the biodemographics of age, sex and the interaction of these variables (Hypothesis #1). The operational hypotheses sought to test the following:

1. Mean achievement motivation scores differ between males and females.
2. Mean achievement motivation scores differ between persons of varying age groups.
3. Mean achievement motivation scores are subject to the interaction effect of age and sex.

The results of the statistical computations for Hypothesis #1 appear in Table 7.

Table 7

Two-Way Analysis of Variance for PMT Scores with Sex and Age as Independent Variables

<table>
<thead>
<tr>
<th>Summary ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Scores for Experimental Subgroups</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Males</td>
</tr>
<tr>
<td>Females</td>
</tr>
<tr>
<td>Group Mean (Age)</td>
</tr>
</tbody>
</table>

| Analysis |
| Source | df | MS | F | Prob |
| Sex (A) | 1 | 207.09 | 8.59 | .0039* |
| Age (B) | 2 | 8.41 | 0.35 | .7060 |
| A X B | 2 | 40.04 | 1.66 | .1932 |
| Within | 155 | 24.10 | | |

* p < .05, N = 161.
Since in Table 7, the probability of $0.0039$ for the main effect, sex, is less than the alpha of $0.05$, there is a difference between the mean PMT score for males and females independent of age. The F-ratio for the main effect, age, however, attests to no difference between the three age groupings when means were averaged across both sexes ($F = 0.35; df = 2,155; p = 0.7060$). Furthermore, the observed F value of 1.66 for the interaction effect of age and sex does not provide evidence to reject the null hypothesis at the $0.05$ level of significance.

A further review of the cell means in Table 7 indicates that males in the age group $16 - 24$ reflected a mean measure of $n$ Ach of $12.59$ while their male counterparts, age $25 - 44$ and age $45$ years and older, demonstrated mean scores of $10.89$ and $10.10$ respectively. Females, age $45$ and older, displayed a mean measure of need to achieve of $15.20$. A mean of $13.44$ was associated with the scores for females subgrouped in the middle age range ($25 - 44$) as was a mean of $13.13$ representative of the youngest aged females. These mean scores for each sex also affirm that females demonstrated higher mean $n$ Ach scores than their male counterparts in all three age categories and demonstrated a higher group mean ($\bar{X} = 13.92$) than did the men surveyed ($\bar{X} = 11.19$).

The operational hypotheses, under scrutiny in Hypothesis #2, attempted to substantiate the following:

1. Mean achievement motivation scores differ among individuals having different levels of scholastic achievement.
2. Mean achievement motivation scores differ among persons of varying years of formal education completed.

3. Mean achievement motivation scores are subject to the interaction effect of years of formal education and scholastic achievement.

Table 8 presents the data analysis relevant to Hypothesis #2, with observed means and F-ratios detailed.

Table 8

Two-Way Analysis of Variance for PMT Scores with Scholastic Achievement (S Ach) and Years of Formal Education (YFE) as Independent Variables

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>S Ach (A)</td>
<td>1</td>
<td>84.84</td>
<td>3.45</td>
<td>.0653</td>
</tr>
<tr>
<td>YFE (B)</td>
<td>2</td>
<td>30.36</td>
<td>1.23</td>
<td>.2941</td>
</tr>
<tr>
<td>A x B</td>
<td>2</td>
<td>32.89</td>
<td>1.34</td>
<td>.2657</td>
</tr>
<tr>
<td>Within</td>
<td>152</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N = 158.

Group differences as dichotomized on the basis of scholastic achievement in Table 8 were found not to be different using a probability of .05 for alpha. Also, for the three partitions of years of education completed, the means for each partition did not
display sufficiently large differences among the averaged means to support the hypothesis of subgroup differences at the established alpha level ($F = 1.23; \text{df} = 2,152; p = .2941$).

The findings depicted in Table 8 also demonstrate that among persons whose scholastic achievement reflected grades of B or better, those who had completed 12 years of formal education produced a mean score on the PMT of 14.77. Means of 14.00 (for those with more than 12 years of education) and 11.44 (for individuals with less than 12 years of schooling) were also manifested by those persons whose grades were B or above. Conversely, among persons who attained grades of less than B, those who had completed more than 12 years of education yielded a mean n Ach score of 12.46 while means of 11.32 and 11.44 were recorded by the other subgroups at this level as the years of formal education progressively decreased in identifying the subgroups.

While it would appear that mean n Ach scores continually increased as year of education increased, this trend was not reflective of a probability acceptable at the .05 alpha level which would have supported subgroup differences based on years of education completed. Similarly, although mean scores of 13.40 and 11.74 were demonstrated by those with grades of a B or above and those with less than B, respectively, a probability of .0653 did not meet the alpha level set ($p < .05$) for the study.

The effect of the levels of scholastic achievement upon achievement motivation scores was found to be the same across the levels of years of formal education completed. The observed $F$-ratio of 1.34
did not prove acceptable at the .05 level, thus failing to provide evidence of an interaction effect.

In summary, the null hypothesis which posited no differences based on the biodemographic of sex was rejected. Hypotheses related to the main effect, age, and the interaction effect were not rejected at the .05 level of significance. Observed F-ratios resulting from a two-way analysis of variance with the measures of educational attainment as the independent variables were not suggestive of differences among participants based on years of education completed, scholastic achievement or the interaction of these variables.

Work Values

The scores of the study participants on each of the 15 work values identified on the Work Values Inventory were subjected to a 2 X 3 factorial design in order to initially investigate differences based on age, sex and the interaction of these variables. Utilization of this analysis delineated the three effects posited in Hypothesis #3:

1. The mean level of importance attributed to each work value differs between males and females.

2. The mean level of importance attributed to each work value differs among persons of varying age groups.

3. The mean level of importance attributed to each work value is subject to the interaction effect of age and sex.

The results of the computations performed did not substantiate rejection of the null hypotheses at the .01 alpha level when the 15
work values were analyzed for sex and age differences. The data related to each of the effects in Hypothesis #3 will be summarized and discussed in more detail in subsequent tables which examine all 15 work values by age and sex group profiles. However, for several work values the probabilities associated with selected F-ratios approached the .01 criterion level and are worthy of a more in-depth review, especially if the reader is willing to accept slightly less rigorous levels of significance. These are presented in the following discussion in order to provide a more intensive analysis for each of these selected work values.

For the Management scale, the results of the analysis in Table 9 indicate the lack of supportive data for the main effect, age ($F = 0.05; df = 2,155; p > .01$), and any interaction effect of the two independent variables ($F = 0.72; df = 2,155; p > .01$) on Management scores. On the same Management scale, males attributed a mean level of importance to this work value of 10.16, their female counterparts registered a mean score of 9.10. The main effect, sex, did not receive support at the .01 alpha level. However, the probability applicable to the test statistic was .0272 and, thus, noteworthy.

In another case, detailed in Table 10, an examination of the cell means associated with the factorial analysis of the work value, Associates, revealed that, for males and by age group, the level of importance attributed to the value decreased with age. In addition, males reflected a group rating for this value of 10.92 while females recorded a group mean of 10.07 when mean scores were averaged across the set age subgroupings. The analysis did not yield an interaction
Two-Way Analysis of Variance for the Work Value, Management, with Sex and Age as Independent Variables

### Summary ANOVA

#### Mean Scores for Experimental Subgroups

<table>
<thead>
<tr>
<th>Sex</th>
<th>Age 16-24</th>
<th>Age 25-44</th>
<th>Age 45+</th>
<th>Group Mean (Sex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>10.04</td>
<td>9.93</td>
<td>10.50</td>
<td>10.16</td>
</tr>
<tr>
<td>Females</td>
<td>9.21</td>
<td>9.50</td>
<td>8.60</td>
<td>9.10</td>
</tr>
<tr>
<td>Group Mean (Age)</td>
<td>9.63</td>
<td>9.72</td>
<td>9.55</td>
<td></td>
</tr>
</tbody>
</table>

#### Analysis

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (A)</td>
<td>1</td>
<td>30.91</td>
<td>4.97</td>
<td>.0272</td>
</tr>
<tr>
<td>Age (B)</td>
<td>2</td>
<td>0.29</td>
<td>0.05</td>
<td>.9538</td>
</tr>
<tr>
<td>A X B</td>
<td>2</td>
<td>4.48</td>
<td>0.72</td>
<td>.4881</td>
</tr>
<tr>
<td>Within</td>
<td>155</td>
<td>6.22</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N = 161.

The analysis effect at .01 which would have provided support for the hypothesis that the interaction of sex differentiation and age would have an effect on the level of importance attributed to the value, Associates (p = .0102). However, once again, the probabilities obtained can be tolerated by a slightly less rigorous level of significance if the reader so chooses.

The last case is reflected in Table 11 for the work value scale, Independence. For males, scores ranged from a mean of 10.96 for those 24 years old and younger to a mean of 11.70 for individuals age 45 or older. Females on the other hand, displayed a range of mean
Two-Way Analysis of Variance for the Work Value, Associates, with Sex and Age as Independent Variables

Summary ANOVA

Mean Scores for Experimental Subgroups

<table>
<thead>
<tr>
<th>Age</th>
<th>16 - 24</th>
<th>25-44</th>
<th>45+</th>
<th>Group Mean (Sex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Males</td>
<td>11.96</td>
<td>10.59</td>
<td>10.20</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>10.25</td>
<td>10.87</td>
<td>9.10</td>
</tr>
<tr>
<td>Group Mean (Age)</td>
<td>11.11</td>
<td>10.73</td>
<td>9.65</td>
<td></td>
</tr>
</tbody>
</table>

Analysis

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (A)</td>
<td>1</td>
<td>19.87</td>
<td>5.50</td>
<td>.0203</td>
</tr>
<tr>
<td>Age (B)</td>
<td>2</td>
<td>15.25</td>
<td>4.22</td>
<td>.0164</td>
</tr>
<tr>
<td>A X B</td>
<td>2</td>
<td>17.05</td>
<td>4.72</td>
<td>.0102</td>
</tr>
<tr>
<td>Within</td>
<td>155</td>
<td>3.61</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N = 161.

Scores for the level of concern for independence in a work position from 10.71 for those aged 16 - 24 to 10.39 for those 25 - 44. The oldest females demonstrated a group mean score for this work value of 9.80. Males attributed importance to independence in the work place by recording a group mean of 11.38. Females displayed a group mean of 10.30 on this work value. Although this difference was not found to be acceptable at the .01 alpha level, a probability of .0144 makes a review of means by sex type worthy of comment.

Tables 12, 13 and 14 present the F-ratios, probabilities and means by age grouping and sex differentiation (main and interaction
Table 11

Two-Way Analysis of Variance for the Work Value, Independence, with Sex and Age as Independent Variables

Summary ANOVA

Mean Scores for Experimental Subgroups

<table>
<thead>
<tr>
<th>Age</th>
<th>16 - 24</th>
<th>25-44</th>
<th>45+</th>
<th>Group Mean (Sex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.96</td>
<td>11.48</td>
<td>11.70</td>
<td>11.38</td>
</tr>
<tr>
<td></td>
<td>10.71</td>
<td>10.39</td>
<td>9.80</td>
<td>10.30</td>
</tr>
<tr>
<td></td>
<td>10.84</td>
<td>10.94</td>
<td>10.75</td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.71</td>
<td>10.39</td>
<td>9.80</td>
<td>10.30</td>
</tr>
<tr>
<td></td>
<td>10.84</td>
<td>10.94</td>
<td>10.75</td>
<td></td>
</tr>
</tbody>
</table>

Analysis

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (A)</td>
<td>1</td>
<td>32.50</td>
<td>6.13</td>
<td>.0144</td>
</tr>
<tr>
<td>Age (B)</td>
<td>2</td>
<td>0.35</td>
<td>0.07</td>
<td>.9359</td>
</tr>
<tr>
<td>A X B</td>
<td>2</td>
<td>5.52</td>
<td>1.04</td>
<td>.3552</td>
</tr>
<tr>
<td>Within</td>
<td>155</td>
<td>5.30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N = 161.

effects) for all the work values in order to provide a broader perspective of the work values profile of each subgroup.

Generally speaking, Table 12 showed that females noted the highest level of importance for the work values, Security ($\bar{X} = 13.14$), Achievement ($\bar{X} = 13.11$), and Supervisory Relations ($\bar{X} = 13.10$). Males viewed Supervisory Relations ($\bar{X} = 13.35$), Security ($\bar{X} = 13.19$) and Achievement ($\bar{X} = 13.14$) as the most important work values. Esthetics ranked lowest in importance among males ($\bar{X} = 9.50$) while Management and Esthetics received the least consideration by females ($\bar{X} = 9.10, 9.20$ respectively).
Table 12
F-ratios and Probabilities for the Main Effect, Sex, for all the Work Values with Group Means Averaged Across Age Subgroups

<table>
<thead>
<tr>
<th>Work Value</th>
<th>F-ratio*</th>
<th>Male</th>
<th>Female</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creativity</td>
<td>0.60</td>
<td>11.53</td>
<td>11.17</td>
<td>.4381</td>
</tr>
<tr>
<td>Management</td>
<td>4.97</td>
<td>10.16</td>
<td>9.10</td>
<td>.0272</td>
</tr>
<tr>
<td>Achievement</td>
<td>0.01</td>
<td>13.14</td>
<td>13.11</td>
<td>.9291</td>
</tr>
<tr>
<td>Surroundings</td>
<td>0.39</td>
<td>11.62</td>
<td>11.86</td>
<td>.5347</td>
</tr>
<tr>
<td>Supervisory Relations</td>
<td>0.62</td>
<td>13.35</td>
<td>13.10</td>
<td>.4331</td>
</tr>
<tr>
<td>Way of Life</td>
<td>2.61</td>
<td>12.79</td>
<td>12.23</td>
<td>.1084</td>
</tr>
<tr>
<td>Security</td>
<td>0.02</td>
<td>13.19</td>
<td>13.14</td>
<td>.8865</td>
</tr>
<tr>
<td>Associates</td>
<td>5.50</td>
<td>10.92</td>
<td>10.07</td>
<td>.0203</td>
</tr>
<tr>
<td>Esthetics</td>
<td>0.37</td>
<td>9.50</td>
<td>9.20</td>
<td>.5421</td>
</tr>
<tr>
<td>Prestige</td>
<td>2.62</td>
<td>11.16</td>
<td>10.48</td>
<td>.1077</td>
</tr>
<tr>
<td>Independence</td>
<td>6.13</td>
<td>11.38</td>
<td>10.30</td>
<td>.0144</td>
</tr>
<tr>
<td>Variety</td>
<td>1.01</td>
<td>11.32</td>
<td>10.86</td>
<td>.3167</td>
</tr>
<tr>
<td>Economic Returns</td>
<td>0.72</td>
<td>12.52</td>
<td>12.20</td>
<td>.3970</td>
</tr>
<tr>
<td>Altruism</td>
<td>0.36</td>
<td>12.43</td>
<td>12.69</td>
<td>.5514</td>
</tr>
<tr>
<td>Intellectual Stimulation</td>
<td>0.17</td>
<td>11.88</td>
<td>11.72</td>
<td>.6847</td>
</tr>
</tbody>
</table>

* Alpha = .01; N = 161; df = 1,155.

In Table 13, persons aged sixteen to twenty-four viewed as primary Security and Achievement while those age 25 to 44 held as most important, Security and Supervisory Relations. Those representing the oldest age subgroup (45 years or older) highlight a concern for Achievement and Supervisory Relations, with a high level of importance being attributed to each ($\overline{X} = 13.15, 13.23$ respectively). Esthetics was identified as the work value of least importance ($\overline{X} = 8.79$) for those in the youngest age category. The profile of work value importance revealed for those aged 25 – 44 similarly demonstrated the lowest preference for Esthetics ($\overline{X} = 9.52$) while those 45 and...
Table 13

F-ratios and Probabilities for the Main Effect, Age, for all the Work Values with Group Means Averaged Across Both Sexes

<table>
<thead>
<tr>
<th>Work Value</th>
<th>F-ratio*</th>
<th>16-24</th>
<th>25-44</th>
<th>45+</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creativity</td>
<td>0.20</td>
<td>11.20</td>
<td>11.24</td>
<td>11.60</td>
<td>.8179</td>
</tr>
<tr>
<td>Management</td>
<td>0.05</td>
<td>9.63</td>
<td>9.72</td>
<td>9.55</td>
<td>.9538</td>
</tr>
<tr>
<td>Achievement</td>
<td>0.16</td>
<td>13.03</td>
<td>13.19</td>
<td>13.15</td>
<td>.8558</td>
</tr>
<tr>
<td>Surroundings</td>
<td>0.38</td>
<td>11.52</td>
<td>11.75</td>
<td>11.95</td>
<td>.6820</td>
</tr>
<tr>
<td>Supervisory Relations</td>
<td>2.71</td>
<td>12.77</td>
<td>13.41</td>
<td>13.23</td>
<td>.0697</td>
</tr>
<tr>
<td>Way of Life</td>
<td>1.02</td>
<td>12.59</td>
<td>12.79</td>
<td>12.15</td>
<td>.3625</td>
</tr>
<tr>
<td>Security</td>
<td>1.11</td>
<td>13.51</td>
<td>13.09</td>
<td>12.90</td>
<td>.3321</td>
</tr>
<tr>
<td>Associates</td>
<td>4.42</td>
<td>11.10</td>
<td>10.73</td>
<td>9.65</td>
<td>.0164</td>
</tr>
<tr>
<td>Esthetics</td>
<td>1.63</td>
<td>8.79</td>
<td>9.52</td>
<td>9.75</td>
<td>.1994</td>
</tr>
<tr>
<td>Prestige</td>
<td>2.94</td>
<td>11.46</td>
<td>10.96</td>
<td>10.05</td>
<td>.0561</td>
</tr>
<tr>
<td>Independence</td>
<td>0.07</td>
<td>10.84</td>
<td>10.93</td>
<td>10.75</td>
<td>.9359</td>
</tr>
<tr>
<td>Variety</td>
<td>0.50</td>
<td>11.38</td>
<td>11.15</td>
<td>10.75</td>
<td>.6099</td>
</tr>
<tr>
<td>Economic Returns</td>
<td>0.67</td>
<td>12.52</td>
<td>12.57</td>
<td>12.00</td>
<td>.5114</td>
</tr>
<tr>
<td>Altruism</td>
<td>0.07</td>
<td>12.61</td>
<td>12.65</td>
<td>12.45</td>
<td>.9331</td>
</tr>
<tr>
<td>Intellectual Stimulation</td>
<td>3.07</td>
<td>11.95</td>
<td>11.30</td>
<td>12.15</td>
<td>.0492</td>
</tr>
</tbody>
</table>

* Alpha = .01; N = 161; df = 2,155.

older noted least interest in Management. Both Esthetics and Management were ranked lowest in concern by those in all the age categories with persons in the oldest age grouping also showing a lower level of importance for the value, Associates ($\overline{X} = 9.65$).

The interaction effects noted in Table 14 for the work values, Surroundings, Way of Life and Associates, reflected probabilities which could be tolerated by a slightly less robust criterion level. However, the reader is left to attribute meaningfulness to these probabilities in light of considering these values.
Table 14

F-ratios and Probabilities for the Interaction
Effect of Sex and Age for all the Work Values

<table>
<thead>
<tr>
<th>Work Value</th>
<th>F-ratio*</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creativity</td>
<td>0.85</td>
<td>.4299</td>
</tr>
<tr>
<td>Management</td>
<td>0.72</td>
<td>.4881</td>
</tr>
<tr>
<td>Achievement</td>
<td>1.62</td>
<td>.2016</td>
</tr>
<tr>
<td>Surroundings</td>
<td>2.86</td>
<td>.0606</td>
</tr>
<tr>
<td>Supervisory Relations</td>
<td>1.20</td>
<td>.3045</td>
</tr>
<tr>
<td>Way of Life</td>
<td>2.45</td>
<td>.0900</td>
</tr>
<tr>
<td>Security</td>
<td>0.61</td>
<td>.5471</td>
</tr>
<tr>
<td>Associates</td>
<td>4.72</td>
<td>.0102</td>
</tr>
<tr>
<td>Esthetics</td>
<td>0.40</td>
<td>.6729</td>
</tr>
<tr>
<td>Prestige</td>
<td>2.27</td>
<td>.1063</td>
</tr>
<tr>
<td>Independence</td>
<td>1.04</td>
<td>.3552</td>
</tr>
<tr>
<td>Variety</td>
<td>0.05</td>
<td>.9537</td>
</tr>
<tr>
<td>Economic Returns</td>
<td>1.39</td>
<td>.2534</td>
</tr>
<tr>
<td>Altruism</td>
<td>0.70</td>
<td>.4996</td>
</tr>
<tr>
<td>Intellectual Stimulation</td>
<td>0.41</td>
<td>.6627</td>
</tr>
</tbody>
</table>

* Alpha = .01; N = 161; df = 2,155.

The data generated regarding the 15 work values were also reviewed in order to discriminate the effects of years of formal education completed and scholastic achievement on the level of importance attributed to each work value. Again, the primary statistical design, a 2 X 3 ANOVA, tested the three effects intrinsic to Hypothesis #4:

1. The mean level of importance attributed to each work value differs among individuals having different levels of scholastic achievement.

2. The mean level of importance attributed to each work value differs among persons of varying years of formal education completed.

3. The mean level of importance attributed to each work value is subject to the interaction effect of years of formal education completed and scholastic achievement.
In Table 15, persons with more than 12 years of formal education rated Creativity at a higher level of importance ($\bar{X} = 12.31$) than did others with less years of education completed ($\bar{X} = 10.17$ for those with less than 12 years, and $\bar{X} = 11.09$ for those with 12 years of education). The F-ratio of 7.26 proved to be a verification of this difference in the work value's importance ($p = .0010$). However, differences in the level of importance attributed to creativity in the work place by 1) scholastic achievement and 2) the interaction of scholastic achievement and years of formal education attained were not evident, with F-values of .41 and 2.05, respectively, not exceed-

Table 15

Two-Way Analysis of Variance for the Work Value, Creativity, with Scholastic Achievement (S Ach) and Years of Formal Education (YFE) as Independent Variables

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>S Ach (A)</td>
<td>1</td>
<td>2.30</td>
<td>0.41</td>
<td>.5246</td>
</tr>
<tr>
<td>YFE (B)</td>
<td>2</td>
<td>41.16</td>
<td>7.26</td>
<td>.0010*</td>
</tr>
<tr>
<td>A X B</td>
<td>2</td>
<td>11.59</td>
<td>2.05</td>
<td>.1329</td>
</tr>
<tr>
<td>Within</td>
<td>152</td>
<td>5.67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* $p < .01$, N = 158.
ing the critical F-value at the .01 alpha level.

In Table 16, the probability associated with anticipated differences between the subgroups identified by level of scholastic achievement was .1507 and thus, not supportive of such differences for $p < .01$. In addition, while the probability associated with a review of differences between groups based on years of formal education was .0121, it too was not acceptable at the designated alpha level.

Table 16

Two-Way Analysis of Variance for the Work Value, Achievement, with Scholastic Achievement (S Ach) and Years of Formal Education (YFE) as Independent Variables

<table>
<thead>
<tr>
<th>Mean Scores for Experimental Subgroups</th>
</tr>
</thead>
<tbody>
<tr>
<td>S Ach (Grades)</td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>&quot;B&quot; or above</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>&quot;C&quot; or below</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Group Mean (YFE)</td>
</tr>
<tr>
<td>Analysis</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

* $p < .001, N = 158$.

However, the interaction effect of scholastic achievement and years
of formal education completed on the work value, Achievement, proved to be within the tolerance level for committing a Type I error ($p = .0002$). Thus, part of the score variance realized can be attributed to this interaction effect. It suggests that the effect of academic accomplishment, grades, upon the level of importance associated with the work value, Achievement, is not the same across levels of formal education completed.

The nature of the interaction effect shown in Table 16 is more clearly visible in the differing trends noted for the subgroups. For example, scores on this value scale for those with grades of "B" or better rose steadily as the years of a person's education increased, although the mean score for those with more than 12 years of education ($\bar{X} = 13.70$) was only slightly higher than that for persons with 12 years of schooling ($\bar{X} = 13.58$). The subjects with the least amount of education at this level of scholastic achievement did, however, reflect a much lower mean score ($\bar{X} = 11.22$) than their counterparts aforementioned. Conversely, for those individuals whose scholastic achievement was less than B, the mean achievement motivation scores were highest for those with the least and most number of years of education ($\bar{X} = 13.52$ and $\bar{X} = 13.41$, respectively). Those with 12 years of schooling reflected a mean score of 12.82 on this scale. Thus, the data indicate that the effect of years of formal education is different for those with grades of B or above and those whose scholastic achievement was less than B.

On the work value, Surroundings, noted in Table 17, subjects were not substantially differentiated regarding the importance placed
on work surroundings based on scholastic achievement or years of education completed at the .01 level of significance. However, an F-ratio of 5.85 for the effect of grades on the concern for work surroundings across varying subgroups with diverse educational backgrounds did prove acceptable at .01 (p = .0036). A review of the

Table 17

Two-Way Analysis of Variance for the Work Value, Surroundings, with Scholastic Achievement (S Ach) and Years of Formal Education (YFE) as Independent Variables

<table>
<thead>
<tr>
<th>Summary ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Scores for Experimental Subgroups</td>
</tr>
<tr>
<td>S Ach (Grades)</td>
</tr>
<tr>
<td>&quot;B&quot; or above</td>
</tr>
<tr>
<td>&quot;C&quot; or below</td>
</tr>
<tr>
<td>Group Mean (YFE)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
</tr>
<tr>
<td>S Ach (A)</td>
</tr>
<tr>
<td>YFE (B)</td>
</tr>
<tr>
<td>A X B</td>
</tr>
<tr>
<td>Within</td>
</tr>
</tbody>
</table>

* p < .01, N = 158.

The cell means for those at the higher level of scholastic achievement depicts an increase in the mean score for each subgroup as education increased. The opposite trend was true for those whose scholastic achievement reflected grades of "C" or below. Therefore, the effect
of the years of formal education completed on the level of importance attributed to Surroundings is not the same for both groups.

Referencing Table 18, persons participating in the study who had attained the lowest level of formal schooling completed did, however, differ from those with more education on the importance of work which permits a person to work at his/her own pace ($F = 5.35; df = 2,152$).

Table 18

Two-Way Analysis of Variance for the Work Value, Independence, with Scholastic Achievement (S Ach) and Years of Formal Education (YFE) as Independent Variables

Summary ANOVA

Mean Scores for Experimental Subgroups

<table>
<thead>
<tr>
<th></th>
<th>Less than 12</th>
<th>12</th>
<th>Beyond 12</th>
<th>Group Mean (S Ach)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;B&quot; or above</td>
<td>9.22</td>
<td>10.19</td>
<td>11.74</td>
<td>10.38</td>
</tr>
<tr>
<td>&quot;C&quot; or below</td>
<td>10.87</td>
<td>10.94</td>
<td>11.64</td>
<td>11.15</td>
</tr>
<tr>
<td>Group Mean (YFE)</td>
<td>10.05</td>
<td>10.57</td>
<td>11.69</td>
<td></td>
</tr>
</tbody>
</table>

Analysis

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>S Ach (A)</td>
<td>1</td>
<td>17.75</td>
<td>3.50</td>
<td>.0634</td>
</tr>
<tr>
<td>YFE (B)</td>
<td>2</td>
<td>27.14</td>
<td>5.35</td>
<td>.0057*</td>
</tr>
<tr>
<td>A X B</td>
<td>2</td>
<td>6.49</td>
<td>1.28</td>
<td>.2812</td>
</tr>
<tr>
<td>Within</td>
<td>152</td>
<td>5.07</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* $p < .01, N = 158$.

$p = .0057$). A similar differentiation between subgroups was not true based on the level of scholastic achievement attained ($p = .0634$) nor was the interaction effect of the two independent variables on the.
mean scores for this work value acceptable at .01.

A review of the mean scores on the work value, Independence, as shown in Table 18, does reflect a pattern of increasing scores from subgroup to subgroup as the years of schooling increased. Beginning with a mean of 10.05 for those whose education was under 12 years, mean scores climbed to 10.57 for persons with 12 years, and then to 11.69 for individuals with the most education (greater than 12 years).

The same discriminating effect of the years of education attained was evident as the study participants ranked the importance of work which is diverse in nature, as detailed in Table 19. Measured on the scale, Variety, this importance varied between the three groups characterizing different levels of education. Mean scores of the concern associated with this work value rose from 9.99 to 11.97 as education increased, yielding a statistically significant result for this main effect (p = .0030). However, no distinction was noted for subgroup mean scores based on the level of scholastic achievement attained. Furthermore, while the interaction effect of the two independent variables on the level of importance attributed to this value reflected a probability of .0377 (which may be noteworthy), it did not exceed the selected alpha level.

The degree of preference by each subgroup for a particular work value measured perhaps reached no greater diversity of differences among the groups than that associated with the importance of the economic rewards of work. These differences indeed deserve additional attention and discussion.
Table 19

Two-Way Analysis of Variance for the Work Value, Variety, with Scholastic Achievement (S Ach) and Years of Formal Education (YFE) as Independent Variables

Summary ANOVA

Mean Scores for Experimental Subgroups

<table>
<thead>
<tr>
<th>S Ach (Grades)</th>
<th>Years of Formal Education</th>
<th>Group Mean (S Ach)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;12</td>
<td>12</td>
</tr>
<tr>
<td>&quot;B&quot; or above</td>
<td>9.11</td>
<td>10.94</td>
</tr>
<tr>
<td>&quot;C&quot; or below</td>
<td>10.87</td>
<td>11.34</td>
</tr>
<tr>
<td>Group Mean (YFE)</td>
<td>9.99</td>
<td>11.14</td>
</tr>
</tbody>
</table>

Analysis

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>S Ach (A)</td>
<td>1</td>
<td>3.73</td>
<td>0.70</td>
<td>.4052</td>
</tr>
<tr>
<td>YFE (B)</td>
<td>2</td>
<td>32.25</td>
<td>6.02</td>
<td>.0030*</td>
</tr>
<tr>
<td>A X B</td>
<td>2</td>
<td>17.94</td>
<td>3.35</td>
<td>.0377</td>
</tr>
<tr>
<td>Within</td>
<td>152</td>
<td>5.35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .01, N = 158.

In Table 20, for the scale, Economic Returns, both main effects and the interaction effect were found to produce probabilities lower than the conservative alpha level (p < .01). Persons with the lower measure of academic performance placed a higher concern on economic returns (\( \bar{X} = 12.70 \)) than their tested counterparts (\( \bar{X} = 11.66 \)) whose grades were "B" or better. Subsequently, an analysis of variance between the groups for the main effect, scholastic achievement, yielded an F-ratio of 10.31 with an associated probability of .0044, noted for this effect.

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Table 20
Two-Way Analysis of Variance for the Work Value, Economic Returns, with Scholastic Achievement (S Ach) and Years of Formal Education (YFE) as Independent Variables

Summary ANOVA

Mean Scores for Experimental Subgroups

<table>
<thead>
<tr>
<th>S Ach (Grades)</th>
<th>Years of Formal Education</th>
<th>Group Mean (S Ach)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;12</td>
<td>12</td>
</tr>
<tr>
<td>&quot;B&quot; or above</td>
<td>10.00</td>
<td>11.97</td>
</tr>
<tr>
<td>&quot;C&quot; or below</td>
<td>12.61</td>
<td>13.12</td>
</tr>
<tr>
<td>Group Mean (YFE)</td>
<td>11.31</td>
<td>12.55</td>
</tr>
</tbody>
</table>

Analysis

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>S Ach (A)</td>
<td>1</td>
<td>33.01</td>
<td>10.31</td>
<td>.0016*</td>
</tr>
<tr>
<td>YFE (B)</td>
<td>2</td>
<td>18.04</td>
<td>5.63</td>
<td>.0044*</td>
</tr>
<tr>
<td>A X B</td>
<td>2</td>
<td>23.30</td>
<td>7.27</td>
<td>.0010*</td>
</tr>
<tr>
<td>Within</td>
<td>152</td>
<td>3.20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .01, N = 158.

Similarly, group differences based on years of formal education completed produced a significant F-value of 5.63 (df = 2,152) and a resultant probability of .0016.

The interaction effect also made it clear that an orientation toward economic returns is greater for some people based on the combination of both these measures of educational attainment (p = .0010). While mean ratings on the level of importance associated with economic returns increased with education for those whose academic achievement was "B" or above, the mean rating on this same...
scale for those with the lower level of scholastic achievement was
highest for those with 12 years of education and lower for the other
two subgroups (less than 12 years and greater than 12 years of
education).

The work value in Table 21, Intellectual Stimulation, when
subjected to the 2 X 3 factorial design, substantiated differences in
the level of concern attributed to this value based on years of
formal education. Differences between subgroup ratings were not
evident based on the level of scholastic achievement attained by

Table 21

Two-Way Analysis of Variance for the Work Value,
Intellectual Stimulation, with Scholastic
Achievement (S Ach) and Years of Formal
Education (YFE) as Independent Variables

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>S Ach (A)</td>
<td>1</td>
<td>1.33</td>
<td>.5337</td>
</tr>
<tr>
<td>YFE (B)</td>
<td>2</td>
<td>22.46</td>
<td>.0018*</td>
</tr>
<tr>
<td>A X B</td>
<td>2</td>
<td>6.46</td>
<td>.1540</td>
</tr>
<tr>
<td>Within</td>
<td>152</td>
<td>3.41</td>
<td></td>
</tr>
</tbody>
</table>

* p < .01, N = 158.
persons in each group (p = .5337) nor did the interaction of both measures of educational attainment on the level of importance attributed to this work value prove acceptable at the .01 alpha level (p = .1540). However, a review of the cell group means, (ranging from 11.19 for those with less than twelve years of education to 12.76 for those with more than twelve years) did indicate that variance between the groups was substantial, producing an F-value of 6.59 and a probability of .0018.

The scales of Management, Supervisory Relations, Way of Life, Security, Associates, Esthetics, Prestige, and Altruism, did not reflect main or interaction effects significant at the .01 alpha level based on scholastic achievement and years of formal education completed. F-ratios and related probabilities of these work values are detailed in subsequent tables and may prove of interest to the reader especially if a less rigorous alpha level is tolerated.

In order to present an enhanced work values profile of each subgroup based on the two measures of educational attainment, Tables 22, 23, and 24 detail a comparative analysis of the results of the factorial design by effect. For instance, in Table 22 it is clear that those persons whose grades were "C" or below rated the level of importance on each work value higher than their counterparts except on the scale, Intellectual Stimulation. However, regardless of scholastic achievement, Supervisory Relations, Achievement and Security, ranked as the most important work values for these JTPA clients. Similarly, Management, described as the desire for work which permits one to plan work for others, and Esthetics proved of least concern.
Table 22

F-ratios and Probabilities for the Main Effect, Scholastic Achievement, for all the Work Values with Group Means Averaged Across Subgroupings of Years of Formal Education Completed

<table>
<thead>
<tr>
<th>Work Value</th>
<th>F-ratio*</th>
<th>&quot;B&quot; or Above &quot;C&quot; or Below</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creativity</td>
<td>0.41</td>
<td>11.05</td>
<td>11.32</td>
</tr>
<tr>
<td>Management</td>
<td>0.58</td>
<td>9.34</td>
<td>9.69</td>
</tr>
<tr>
<td>Achievement</td>
<td>2.09</td>
<td>12.83</td>
<td>13.25</td>
</tr>
<tr>
<td>Surroundings</td>
<td>1.44</td>
<td>11.31</td>
<td>11.74</td>
</tr>
<tr>
<td>Supervisory Relations</td>
<td>0.02</td>
<td>13.30</td>
<td>13.35</td>
</tr>
<tr>
<td>Way of Life</td>
<td>0.13</td>
<td>12.25</td>
<td>12.71</td>
</tr>
<tr>
<td>Security</td>
<td>1.04</td>
<td>12.98</td>
<td>13.33</td>
</tr>
<tr>
<td>Associates</td>
<td>0.27</td>
<td>10.44</td>
<td>10.62</td>
</tr>
<tr>
<td>Esthetics</td>
<td>6.44</td>
<td>8.52</td>
<td>9.69</td>
</tr>
<tr>
<td>Prestige</td>
<td>0.49</td>
<td>10.75</td>
<td>11.04</td>
</tr>
<tr>
<td>Independence</td>
<td>3.50</td>
<td>10.38</td>
<td>11.15</td>
</tr>
<tr>
<td>Variety</td>
<td>0.70</td>
<td>10.86</td>
<td>11.21</td>
</tr>
<tr>
<td>Economic Returns</td>
<td>10.31</td>
<td>11.56</td>
<td>12.70</td>
</tr>
<tr>
<td>Altruism</td>
<td>3.03</td>
<td>12.15</td>
<td>12.81</td>
</tr>
<tr>
<td>Intellectual Stimulation</td>
<td>0.39</td>
<td>12.03</td>
<td>11.82</td>
</tr>
</tbody>
</table>

* p < .01; N = 158; df = 1,152.

Referencing Table 23, Management and Esthetics remain work values with the least preference for those surveyed when subgroupings are differentiated by levels of educational persistence. Some profile differences do exist as one reviews the most prominent work values for each subgroup. Individuals who had attained more than twelve years of formal education indicated a higher level of importance than their counterparts on 12 of the 15 work values. Persons with the least amount of education reflected the lower level of importance for 13 of the 15 work values when compared with either of...
the other subgroups (those with 12 years, or more than 12 years of education).

Table 23
F-ratios and Probabilities for the Main Effect, Years of Formal Education Completed (YFE), for all the Work Values with Group Means Averaged Across Levels of Scholastic Achievement

<table>
<thead>
<tr>
<th>Work Value</th>
<th>F-ratio*</th>
<th>&lt;12</th>
<th>12</th>
<th>Beyond 12</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creativity</td>
<td>7.26</td>
<td>10.17</td>
<td>11.09</td>
<td>12.31</td>
<td>.0010*</td>
</tr>
<tr>
<td>Management</td>
<td>1.41</td>
<td>8.91</td>
<td>9.82</td>
<td>9.83</td>
<td>.2473</td>
</tr>
<tr>
<td>Achievement</td>
<td>4.55</td>
<td>12.37</td>
<td>13.20</td>
<td>13.55</td>
<td>.0121</td>
</tr>
<tr>
<td>Surroundings</td>
<td>3.13</td>
<td>10.81</td>
<td>11.85</td>
<td>11.92</td>
<td>.0464</td>
</tr>
<tr>
<td>Supervisory Relations</td>
<td>0.69</td>
<td>13.27</td>
<td>13.17</td>
<td>13.53</td>
<td>.5007</td>
</tr>
<tr>
<td>Way of Life</td>
<td>0.99</td>
<td>12.29</td>
<td>12.72</td>
<td>13.43</td>
<td>.3757</td>
</tr>
<tr>
<td>Security</td>
<td>1.46</td>
<td>13.27</td>
<td>13.40</td>
<td>12.72</td>
<td>.2345</td>
</tr>
<tr>
<td>Associates</td>
<td>1.48</td>
<td>10.17</td>
<td>10.90</td>
<td>10.52</td>
<td>.2311</td>
</tr>
<tr>
<td>Esthetics</td>
<td>0.95</td>
<td>8.62</td>
<td>9.41</td>
<td>9.29</td>
<td>.3908</td>
</tr>
<tr>
<td>Prestige</td>
<td>1.73</td>
<td>10.28</td>
<td>11.11</td>
<td>11.28</td>
<td>.1803</td>
</tr>
<tr>
<td>Independence</td>
<td>5.35</td>
<td>10.05</td>
<td>10.57</td>
<td>11.69</td>
<td>.0057*</td>
</tr>
<tr>
<td>Variety</td>
<td>6.02</td>
<td>9.99</td>
<td>11.14</td>
<td>11.97</td>
<td>.0030*</td>
</tr>
<tr>
<td>Economic Returns</td>
<td>5.63</td>
<td>11.30</td>
<td>12.54</td>
<td>12.68</td>
<td>.0044*</td>
</tr>
<tr>
<td>Altruism</td>
<td>3.15</td>
<td>11.73</td>
<td>12.74</td>
<td>12.98</td>
<td>.0456</td>
</tr>
<tr>
<td>Intellectual Stimulation</td>
<td>6.59</td>
<td>11.18</td>
<td>11.83</td>
<td>12.75</td>
<td>.0018*</td>
</tr>
</tbody>
</table>

* p < .01; N = 158; df = 2,152.

These subgroup comparisons reveal that persons with less than 12 years of education rated Achievement, Supervisory Relations and Security as the three most important values associated with work. Persons who had completed 12 years of education also ranked these three work values as most important. Achievement, Supervisory Relations and Way of Life received the greatest degree of preference for those with more than 12 years of education.
The work values of Achievement, Surroundings and Economic Returns demonstrated an interaction effect noted in Table 24. This signified that the effect of scholastic achievement on the level of importance attributed to each of these work values was not the same across the subgroupings of years of schooling.

Table 24
F-ratios and Probabilities for the Interaction Effect of Scholastic Achievement and Years of Formal Education Completed for all the Work Values

<table>
<thead>
<tr>
<th>Work Values</th>
<th>F-ratio*</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creativity</td>
<td>2.05</td>
<td>.1329</td>
</tr>
<tr>
<td>Management</td>
<td>0.90</td>
<td>.4098</td>
</tr>
<tr>
<td>Achievement</td>
<td>9.04</td>
<td>.0002*</td>
</tr>
<tr>
<td>Surroundings</td>
<td>5.85</td>
<td>.0036*</td>
</tr>
<tr>
<td>Supervisory Relations</td>
<td>0.43</td>
<td>.6539</td>
</tr>
<tr>
<td>Way of Life</td>
<td>0.90</td>
<td>.4105</td>
</tr>
<tr>
<td>Security</td>
<td>1.28</td>
<td>.2823</td>
</tr>
<tr>
<td>Associates</td>
<td>3.18</td>
<td>.0444</td>
</tr>
<tr>
<td>Esthetics</td>
<td>1.86</td>
<td>.1599</td>
</tr>
<tr>
<td>Prestige</td>
<td>1.55</td>
<td>.2152</td>
</tr>
<tr>
<td>Independence</td>
<td>1.28</td>
<td>.2812</td>
</tr>
<tr>
<td>Variety</td>
<td>3.35</td>
<td>.0377</td>
</tr>
<tr>
<td>Economic Returns</td>
<td>7.27</td>
<td>.0010*</td>
</tr>
<tr>
<td>Altruism</td>
<td>3.19</td>
<td>.0441</td>
</tr>
<tr>
<td>Intellectual Stimulation</td>
<td>1.89</td>
<td>.1540</td>
</tr>
</tbody>
</table>

*p < .01; N = 158; df = 2,152.

Bringing into focus the information obtained about the work values, an initial summation referencing group differences on work value importance based on age and sex, indicates that the null hypotheses associated with Hypothesis #3 were retained. Such a conclusion is indicative of lack of support for any group differences on the ratings of each work value based on these two biodemographic...
variables at the .01 level of significance. The interaction effect of age and sex on the degree of work value preference was also not significant in each case tested.

A review of the data provided from the two-way analysis of variance for the measures of scholastic achievement and the work values points to some subgroup differences based on academic performance and years of schooling. At the .01 criterion level, only the level of importance attributed to the economic rewards of work was differentiated by level of academic performance (F = 10.31; df = 1,152; p = .0016). Years of formal education completed served as a discriminating variable on five work values: Creativity, Independence, Variety, Economic Returns and Intellectual Stimulation. The differences noted for these five values and the aforementioned significant variance noted on the value, Economic Returns, represented the only main effects for which the null hypotheses could be rejected. The null hypothesis positing group differences based on the interaction of scholastic achievement and years of formal education was rejected only for the work values, Achievement, Surroundings and Economic Returns.

The final analysis of the work values concentrated on an examination of relationships between the work values and achievement motivation for these study participants (Hypothesis #5). The Pearson r correlation coefficient was used to discern the nature and existence of any relationships between the work values and n Ach. The criterion level for rejection of the null hypothesis was set at .01 to test for the relationships posited in Hypothesis #5.
The data presented in Table 25 indicates that almost half of the fifteen work values were found to be positively correlated at the .01 alpha level. Coefficients ranged from .2066 to .3690 for the seven correlation values: Creativity, Management, Surroundings, Esthetics, Prestige, Altruism and Intellectual Stimulation. Creativity and Intellectual Stimulation displayed the greatest values for the Pearson r, with coefficients of .3690 and .3250 respectively.

At the other end of the spectrum, several work values reflected little or no relationship. Most noticeably, Supervisory Relations and Economic Returns demonstrated correlation coefficients of .0163 and .0201, respectively. The work value, Way of Life, was the only

---

Table 25

Pearson Product-moment Correlation Coefficients of the Relationship Between Achievement Motivation and Each Work Value

<table>
<thead>
<tr>
<th>Work Value</th>
<th>Achievement Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creativity</td>
<td>0.3690*</td>
</tr>
<tr>
<td>Management</td>
<td>0.3038*</td>
</tr>
<tr>
<td>Achievement</td>
<td>0.1698</td>
</tr>
<tr>
<td>Surroundings</td>
<td>0.2066*</td>
</tr>
<tr>
<td>Supervisory Relations</td>
<td>0.0163</td>
</tr>
<tr>
<td>Way of Life</td>
<td>-0.0456</td>
</tr>
<tr>
<td>Security</td>
<td>0.1107</td>
</tr>
<tr>
<td>Associates</td>
<td>0.0718</td>
</tr>
<tr>
<td>Esthetics</td>
<td>0.2457*</td>
</tr>
<tr>
<td>Prestige</td>
<td>0.2555*</td>
</tr>
<tr>
<td>Independence</td>
<td>0.0686</td>
</tr>
<tr>
<td>Variety</td>
<td>0.0746</td>
</tr>
<tr>
<td>Economic Returns</td>
<td>0.0201</td>
</tr>
<tr>
<td>Altruism</td>
<td>0.2324*</td>
</tr>
<tr>
<td>Intellectual Stimulation</td>
<td>0.3250*</td>
</tr>
</tbody>
</table>

* p < .01; N = 167.
scale which hinted at a negative or inverse relationship ($r = -.0456$).

The number of values found to correlate with n Ach in this study takes exception with earlier work by McClelland et al. (1953). These authors concluded that evidence was lacking to support a relationship between n Ach and personal values, using the TAT and Allport-Vernon Study of Values to measure each construct respectively. While McClelland et al. (1953) used the nonprojective TAT in their study, the PMT used in this study was found to be correlated with the dichotomized levels of scholastic achievement, a performance criterion (biserial correlation $= .3018$, $p < .01$), thus reaffirming the appropriateness of the instrument as a measure of n Ach and enhancing the meaningfulness of these relationships (Table 25) versus the conclusions drawn by McClelland et al. (1953).

The data in Table 25 provides evidence in support of and lends credence to Parsons and Goff (1980), and Barry and Wolf's (1965) value-based rationale for motivation and need achievement.

A biserial correlation of .3018 between the PMT and the dichotomized levels of scholastic achievement provided evidence of a relationship at the .01 alpha level. This result substantiated earlier efforts by Hamilton (1975) and Hermans (1970) regarding the validity of the PMT against the performance criterion, grades, and enhanced the meaningfulness of the correlations demonstrated between the work values and n Ach (Table 25).

In summary, for Hypotheses #1 and #2, age and sex did not serve to discriminate differences among the subgroups in the levels of
importance attributed to each work value. However, the value Independence most closely approached a probability of .01 for the main effect, sex (p = .0144), and Associates evidenced a similar proximity to the criterion level for the main effect, age (p = .0164). The work value, Associates, was again the only work value to represent a probability close to the selected alpha level when the interaction effect on this value was reviewed for the biodemographics of age and sex (p = .0102). Thus the null hypothesis representing each effect was retained.

The measures of educational attainment (i.e. years of formal education completed and scholastic achievement) suggested in Hypotheses #3 and #4, had more of a discerning effect on differences among the subgroups regarding the level of importance attributed to each work value. The work value, Economic Returns, was highlighted by group differentiation for those persons with grades of "B" or above and those with grades of "C" or below (p = .0016). Five work values, Creativity, Independence, Variety, Economic Returns and Intellectual Stimulation, exhibited probabilities smaller than the criterion level when subgroups were compared based on the years of formal education completed. Furthermore, the work values, Achievement, Surroundings and Economic Returns, produced F-scores and probabilities which caused rejection of the null hypothesis for the interaction effect for each.

In the final statistical analysis, the Pearson product-moment correlation was used to determine if relationships existed between the work values and the measure of achievement motivation. For seven
work values, Creativity, Management, Surroundings, Esthetics, Prestige, Altruism and Intellectual Stimulation, the results obtained from the computations performed were supportive of relationships amongst these values and $n \text{Ach}$ at the selected .01 alpha level. Thus, the research hypothesis posited in Hypothesis #5 for these seven values was accepted.

Conclusions

This chapter focused on analyses of the data and the results relative to the achievement motivation and work values of the participants in the study. Specifically, differences in achievement motivation and the level of importance attributed to each work value were investigated, through means of an analysis of variance, based on age, sex, years of formal education completed and scholastic achievement. Finally, correlational statistics were reviewed in an effort to detect relationships between the work values measured and $n \text{Ach}$.

For achievement motivation, sex served as the only biodemographic trait or differentiating variable regarding $n \text{Ach}$, with females demonstrating a higher need to achieve than did males. Years of formal education completed and scholastic achievement proved to be the variables which produced statistically significant differences between the subgroups on the work value measures. The level of importance placed on the work value, Economic Returns, was discriminated subject to scholastic achievement while the values, Creativity, Independence, Variety, Economic Returns, and Intellectual...
Stimulation, posed subgroup differences based on years of schooling attained. An interaction effect was also noted for Achievement, Surroundings and Economic Returns based on these two measures of educational attainment.

The relationship between n Ach and the work values under review were examined using the Pearson Product-moment correlation coefficient with the probability for committing a Type I error set at .01. Seven values were found to be positively correlated to the measure of n Ach: Creativity, Management, Surroundings, Esthetics, Prestige, Altruism and Intellectual Stimulation.
SUMMARY AND DISCUSSION

The purpose of this study was to analyze the work values and achievement motivation profiles of persons eligible to participate in federally funded training programs in a rural region in west central Michigan. The study was designed to probe for differences in these profiles based on biodemographic and educational variables: age, sex, scholastic achievement and years of formal education. It was intended that this investigation would serve to assess the relationship between an individual's values and his/her need to achieve, thereby providing vocational counselors in federal job programs with a broadened understanding of these potential determinants of vocational choice and occupational match.

The research and literature relative to achievement motivation indicated that n Ach may indeed be subject to sociodemographic, biodemographic and personality-need factors (Horner, 1978; Klein and Snyder, 1969; Veroff et al., 1960). Still others postulated that differences in need achievement were anchored in a fundamental disparity in each individual's underlying value structure, thus focusing on a value-based rather than need-based concept of achievement motivation (Parsons and Goff, 1980; Barry and Wolf, 1965).

Many modern theorists hypothesize that as we begin to understand a person's values, especially as related to occupation choice and behavior, we enhance our knowledge of what motivates that individual in the workplace (White and Schmitt, 1979; Katzell, 1964). Their research also shows that knowing an individual's values can be a
valuable tool for vocational counselors in providing career decision making assistance (Reichel, Neumann and Pizam, 1981). Furthermore, beyond the initial stage of occupation selection, the success of a person's efforts to locate, obtain and maintain work can be directly related to the achievement motivation and achievement values of that individual (Sheppard and Belitsky, 1965). As the goals of federally funded job training programs are to provide appropriate occupational training and to maximize the potential for employment success, a more sophisticated and empirically based understanding of the psychological and motivational profiles of the economically disadvantaged persons served by such legislation is warranted (White and Schmitt, 1979). These goals were fundamental to the undertaking of this investigation.

Findings

The data obtained for 167 persons eligible to participate in job training programs under the Job Training Partnership Act and directed by the West Central Michigan Employment and Training Consortium served as the basis for statistical analysis in the study. The achievement motivation and work values of these individuals were examined for differences based on sex, age, years of formal education completed and scholastic achievement. In addition, the relationship between the work values and achievement motivation was of paramount concern in this investigation.

Need to achieve, as measured by Hermans' (1970) Prestatic Motivation Test (PMT), was indeed found to vary based on sex, sup-
porting conclusions by Parsons and Goff (1980). Females outscored their male counterparts on the PMT paralleling the same comparative results found by Klein and Snyder (1969). Furthermore, the increasing scores for females as age increased reaffirmed the results of Veroff et al. (1960) in their national study. The nature and characteristics of the female clients served, with many seeking and eligible for training as Aid to Dependent Children (ADC) recipients and as heads of the households holding responsibilities for the family structure, may indeed be instrumental in fostering this need or necessity to achieve.

The decreasing measure of n Ach for males as age increased paralleled the trend evidenced in the extensive study by Veroff et al. (1960). These authors have speculated that such results may be attributable to achievement motivation being more deeply aroused for males in youth or in their early life cycle. Furthermore, in a more global perspective for both sexes, they have indicated that generational differences, especially those which define exactly what signifies n Ach to each age group, might be at the core of these diversities.

The trend for women (n Ach increasing with age) might be indicative of the "fear of success" phenomenon, posited by Horner (1978), surfacing as a prevalent attribute in younger, less mature females. If such were the case, this condition might have a moderating effect on the measure of n Ach for younger females. Subsequently, this effect would be subject to reduction with maturity brought on by age and as success became less fearful.
It would seem that such explanations may be plausible tenets for the differences observed in this study; however, for females, it would appear that the family background of these clients warrants attention for its potential impact on n Ach. For instance, were women in the study more commonly raised in a permissive home environment, a situation which Kriger (1972) reported as associated with a higher level of n Ach?

Ziraba's (1976) findings which detailed no significant differences between male and female kindergartners on measures of n Ach seems to offer support for the notion of need to achieve as a learned concept and one which changes over time. Given the data and results prevalent in this study, and Ziraba's (1976) earlier research the dissimilarities noted may indeed also be supportive of his conclusions regarding the differentiating effect of societal expectations on n Ach for each sex.

Thus, the hypothesis purporting group distinctions regarding n Ach based on sex was accepted. The same hypothesis relative to the delineation of scores on the PMT based on age was rejected in the study. Similarly, no evidence was forthcoming to indicate an interaction effect.

The differentiation of achievement motivation scores on the basis of scholastic achievement or years of formal education completed did not prove to be supported. The lack of differences among the subgroups in the study based on these measures of educational attainment, therefore, cannot be viewed as providing supportive evidence to conclusions drawn about subgroup distinctions by
Lefkowitz and Fraser (1980), Atkinson and Raynor (1978), and Veroff et al. (1960). Thus, no evidence was obtained in this study which would have supported the research hypotheses which indicated differences among subgroups based on scholastic achievement, years of formal education completed or the interaction of these two variables.

The general tendency of the n Ach scores to increase, however, as grade level and years of education rose clearly points to the need for additional study, especially given the parallel tendencies noted in the literature. Furthermore, the lack of distinguishable differences between the groups might indeed be reflective of the homogeneity of the group studied.

Age and sex did not prove to be discriminating variables regarding the level of importance attributed to each work value. The considerable similarity between males and females on the preference attributed each work value confirmed earlier studies by Super et al. (1970). The ratings on the value scales did not support the differences by sex noted by Eastwood (1981) and Goss (1978). However, the scales Management, Associates and Independence demonstrated F-scores and probabilities approaching the criterion level and are indeed worthy of additional scrutiny.

The explanation for the similar work value profiles for men and women might be anchored in Lock's (1979) observation that work values, especially as related to the intrinsic rewards of work, when attained, provide an equal amount of satisfaction for males and females. It may very well be that to the unemployed, the view of and expectations for employment from such a vantage point, is subject to
an equalizing force (unemployment) which supercedes differences based on sex (or even age) which might not be so tempered for the employed.

In any event, the hypothesis purporting varying levels of importance attributed to the work values based on age and sex is not upheld in light of the results obtained. Similarly, there is a lack of appreciable evidence to indicate the interaction of these two biodemographic variables on the degree of preference associated with each work value.

The results of this study relative to work value importance and measures of educational attainment did identify some interesting findings. Scholastic achievement served to differentiate persons of varying levels of academic accomplishment, on one work value scale - Economic Returns. For this value, those whose grades were "C" or below expressed a greater interest than their counterparts with reference to the economic rewards of work. The work values, Creativity, Independence, Variety, Intellectual Stimulation and Economic Returns, were indeed consistently more important to individuals with the greatest years of schooling attained. The emphasis on the economic rewards of work by this group is clearly consistent with Lock's (1979) reference to the value of pay, status, etc. to the well educated person and is a tenable explanation in this study. Those with the highest number of years of formal education completed also outscored their counterparts on twelve of the fifteen work value scales, although not all were statistically significant.

In addition, the interaction of both measures of educational attainment on the level of importance attributed to the values,
Achievement, Surroundings and Economic Returns, did reflect statistically valid probabilities to support the effect. More noticeably, however, the work value, Economic Returns, was the only value scale which demonstrated all three effects, indicative, perhaps, of the ethic which professed a congruence of success and persistence in school with eventual monetary success in the work force.

The implications of the study relative to value crystallization clearly point to the impact of education on level of importance attributed to certain values. Eight of the fifteen work values (Achievement, Surroundings, Economic Returns, Creativity, Independence, Variety, Altruism and Intellectual Stimulation) pointed to group differences based on at least one measure of educational attainment. Furthermore, the scales of Esthetics and Associates reflected probabilities small enough to warrant attention relative to the effect of educational attainment on the concern for each of these values.

In summary, then, the hypothesis citing group difference in work value concern based on the levels of scholastic achievement was only supported in one case. Years of formal education completed, as well as the interaction of this variable and scholastic achievement, did provide significant evidence of differences in work value importance for eight of the fifteen values.

Finally, in Hypothesis #5, some new ground may have been broken regarding the foundation of a value-based achievement motivation model as postulated by Parsons and Goff (1980), and Barry and Wolf (1965). The correlational study of need to achieve and the assessed
importance of each work value revealed that almost half of the work values demonstrated a positive correlation with n Ach. These results for the seven values, Creativity, Management, Surroundings, Esthetics, Prestige, Altruism and Intellectual Stimulation, and n Ach suggest support for a value-related model of n Ach.

These same results of the correlational analysis subsequently offer contrary conclusions to those drawn by McClelland et al. (1953). Instead, they reaffirm Mankoff's (1974) perspective that "when we begin to focus on values and value systems, we are growing a great deal more specific about what motivates an individual..." (p. 24). The data also extend Healy (1982) and Osipow's (1973) arguments that need to achieve and work values are related constructs which will eventually serve as the personality framework from which vocational choice is made.

Thus, concluding this logical progression of discussion regarding these participants, given the past research cited and the results of this study, the constructs of n Ach and work values may be interpreted in view of the data as follows:

1. In an individual's early life stages, achievement motivation is indeed evidenced but differences among individuals (eg. by sex) are not readily projected. Ziraba's (1977) findings regarding the lack of discrepancy of need to achieve between male and female kindergarten students lend credence to such a claim and may affirm McClelland's earliest definition of n Ach as a learned concept.

2. As a learned concept, n Ach may become subjected to societal influences and expectations which may reveal subsequent differences of n Ach for individuals based on the impact of these forces. The varying measures for n Ach for males and
females in this study might be illustrative of the resultant effect of differing societal influences on this construct based on sex.

3. Values and value crystallization are also subject to cultural and societal influences as described in the progressive life and career stages outlined by Super et al. (1957). Education may indeed be one such impetus to the modifications and crystallization of values, especially as related to work (as suggested by the results of this study).

4. The relationship between n Ach and the work values in this study is suggestive of an underlying value-based framework of achievement motivation, a theoretical concept posited by Parsons and Goff (1980) and supported by this research.

5. Parsons and Goff's (1980) contention that sexual differences of n Ach are attributable to a discrepancy between male and female structures does not receive support in this investigation. However, it needs to be noted that this study focused solely on work values of the test instrument and must not be thought of as universal of a person's entire value profile.

Implications for Counseling

Healy (1982), and White and Schmitt (1979), have advocated the need for federally-funded job training programs to seriously consider individual needs and values in career decision making and in occupational matching. Reichel, Neumann and Pizam (1981) have commented that:

Knowing the values which motivate an individual, and having information concerning the values which are most readily realized in various occupations and work settings, the counselor, psychologist, or personnel director has an important basis for counseling or for decision making. (p. 189)

Furthermore, Lock (1979), Zytowski (1970) and Katzell (1964) have concluded that subsequent vocational behavior depends on intrinsic
personality factors, such as n Ach and values, and that ultimate job satisfaction is predicated on the congruence of personal values and the conditions inherent to a given occupation.

As the purpose of federally-funded job training programs is to enhance the placement and maintenance in jobs of the now unemployed and economical disadvantaged, understanding the underlying psychosocial composition of each person is essential to assisting them in plotting their vocational course. Leonardson and Nelson (1977) have pointed to these public employment programs as possessing the greatest potential for solving the unemployment problem. However, the linkage between the practicalities of job placement and understanding the value and psychological structure of a client is a vital mandate. Super (1970) speaks of the implications of this linkage for career counselors as the necessary basis for "determining the psychological appropriateness of a given type of training or employment" (p. 4). The results of this study clearly affirm the sentiments and concerns of Parsons and Goff (1980) and Super (1970) on this matter.

Brown's (1976) conclusions that values are the most useful determinant of motivated behavior, coupled with Mankoff's (1974) revelations that the level of motivation can be increased through a suitable change in a person's value system, offers fertile ground to improvements in career counseling programs. Parsons and Goff's (1980) rationale for a value-based n Ach model has lead them to hint criticism of the counseling profession for the lack of substantive data regarding the impact of values on achievement and career choices, citing:
Career counseling researchers have devoted some attention to this issue but have done little more than identify a relationship between global values one holds and the profession one is in. (p. 360)

For the career counselor, understanding the relationship between \( n_{Ach} \) and work values may refocus career decision making and training exercises toward targeting on assisting the individual to clarify or modify his/her values. As Sheppard and Belitsky (1965) had learned, an increase in need to achieve (perhaps through an appropriate clarification of values) can improve the success of obtaining and maintaining work. Furthermore, Condon (1978) has also produced evidence which associated a high need to achieve with increased earnings in the workplace.

The Committee for Economic Development (1978) pointed out in its efforts with the hard-to-employ that "prolonged and frequent unemployment can also lead to alienation from many of the values that are basic to the mainstream of American society..." (p. 30). Jackson and Huffman (1979) clearly state, for career counselors that the essentials of a successful employment program are motivation and self awareness. Thus, it becomes a critical responsibility for the counseling professional to recognize the interactive nature of achievement motivation and values in targeting on career decision making.

As many federally-funded job training programs utilize educational training programs (at high schools and colleges) and given the influence exhibited by education on the work values assessed in this study, it is indeed realistic to view educational institutions as....
agencies which can have a direct impact on value clarification. A strong cooperative relationship between the agencies responsible for public employment programs and those educational institutions which provide job training can have a positive and influential impact on enhancing a client's self-worth, motivation and realistic approach to career and personal goals.

Thus, the career counseling programs operated by both agencies, if properly coordinated, might be reflective of a "job fit" continuum which progresses from value modification and clarification, to increased motivation and realistic goal setting, to employment and job retention. For the career counselor, an awareness of the relationship between values and motivation for their impending and potential impact on subsequent vocational behavior, best equips the counselor to enhance this psycho-social progression for the client and thus, carry to fruition the goals of these federally-funded training programs.

Recommendations for Future Research

In the present economic climate, with unemployment still registering alarmingly high figures, vocational counselors must call upon every resource to assist the unemployed in their already arduous task of seeking employment. Moreover, the immediate placement of these individuals in jobs does not necessarily release them from the vicious cycle of unemployment. It is the ability to maintain steady employment which can provide the best mechanism for unshackling the chains of chronic unemployment and economic deprivation. Therefore,
the "psychological appropriateness" of occupational matching becomes a crucial antecedent to job fit and the potential for permanent employ.

Mazman (1974) comments that counseling practitioners must be in "constant search for data that may better enable them to serve the persons with whom they come in contact" (p. 103). It is from such a perspective that the following recommendations for future research are presented, predicated on and hopeful to have extended the effort undertaken in this study:

1. This study differentiated group variance between males and females relative to achievement motivation for persons eligible to participate in federally-funded job training programs. A study is suggested to serve as an exploratory and comparative investigation into whether such a discrepancy exists for employed men and women.

2. In as much as seven of the work values were found to be related to n Ach, a study with an extended value list for correlational analysis is suggested in order to enhance a better understanding of additional values associated with n Ach.

3. The measures of educational attainment in this study did not prove to be a discriminating variable on n Ach but did differentiate work value importance among participants in this study. An investigation is suggested which would examine other societal influences (i.e. cultural background, socioeconomic class, etc.) for effects on n Ach, work values and relationship between these constructs.

4. Research of a longitudinal nature is suggested to examine the n Ach and work value profiles of these individuals after completion of formal job training (either on the job or in the classroom) is completed.
5. A study is suggested to determine if factors associated with unemployment (i.e. the length of unemployment, whether the individual unemployed is head of a single parent household) have an effect on n Ach and the level of work value importance.

6. The scope and number of agencies and programs involved in assisting the unemployed to find work is quite extensive. A study is proposed whereby the same focus of this effort could be replicated to determine the generalizability of the results of this investigation.

This study served to investigate the psycho-social background of persons eligible to participate in federally-funded job training programs. It was an attempt to extend an understanding of the psychological need and value factors of these individuals in an effort to bring into focus the necessity for appropriate psychological matching in occupation selection. Moreover, it targeted on two psycho-social constructs (n Ach and work values) which held promise for the enhancement of such an understanding and, once analyzed, might be useful tools to the vocational counselor in providing career decision making assistance to this clientele. Further research would serve well the effort put forth in this work if it broadened the knowledge about the psycho-social nature of work, in such a manner as to allow counselors to effectively mobilize the proper means to assist the unemployed and economically disadvantaged in American society.
APPENDICES
To Whom It May Concern:

The West Central Michigan Employment and Training Consortium has agreed to work with Mr. John Desiderio, through a cooperative arrangement, on a study of achievement motivation, and work values as related to the enhancement of training and occupational success.

The Consortium will provide motivational assessment to potential Employment and Training candidates as directed by Mr. Desiderio, sharing all results with him. It is our intent to guarantee complete confidentiality and anonymity to the individuals served.

Sincerely,

Paul J. Griffith
Director
APPENDIX B

DATA SHEET

Directions: Please answer the following questions about yourself:

1. Sex (check one):
   □ Male
   □ Female

2. Age (to the nearest year):
   ________

3. Highest grade level of education or schooling completed; use half grades if appropriate. For example, "8" represents having completed the 8th grade, "14" represents having completed two years of college, and so on. (Those having completed a G.E.D. should state the last formal school grade completed prior to taking the G.E.D. test.)
   ________

4. Your grade average while in school (check one):
   □ A □ B
   □ C □ D
   □ F

PRESTATIC MOTIVATION TEST

Directions: Please CIRCLE THE LETTER of the item in each question which best describes your response to that question.

1. Working is something:
   a. I would rather not do.
   b. I don't like doing very much.
   c. I would rather do now and then.
   d. I like doing.
   e. I like doing very much.

2. At school they thought I was:
   a. very diligent.
   b. diligent.
   c. not always so diligent.
   d. rather easy-going.
   e. very easy-going.

3. Other people think I:
   a. work very hard.
   b. work hard.
   c. work pretty hard.
   d. don't work very hard.
   e. don't work hard.

4. To prepare yourself a long time for an important task:
   a. really is senseless.
   b. often is rather rash.
   c. can often be useful.
   d. testifies to a sense of reality.
   e. is necessary to succeed.
5. When I am working, the demands I make upon myself are:
   a. very high.
   b. high.
   c. pretty high.
   d. not so high.
   e. low.
   f. very low.

6. When the teacher gave lessons at school:
   a. I usually set my heart on doing my best and making a favorable impression.
   b. I usually paid great attention to the things being said.
   c. my thoughts often strayed to other things.
   d. I was more interested in things that had nothing to do with school.

7. I usually do:
   a. much more than I resolved to do.
   b. a bit more than I resolved to do.
   c. a little less than I resolved to do.
   d. much less than I resolved to do.

8. If I have not attained my goal and have not done a task well then:
   a. I continue to do my best to attain the goal.
   b. I exert myself once again to attain the goal.
   c. I find it difficult to not lose heart.
   d. I'm inclined to give up.
   e. I usually give up.

9. At high school I thought perseverance was:
   a. very unimportant.
   b. rather unimportant.
   c. important.
   d. very important.

10. To begin with homework was:
    a. a very great effort.
    b. a great effort.
    c. a rather great effort.
    d. not much effort.
    e. very little effort.

11. When I was still in high school the standards I set myself with regard to my studies were:
    a. very high.
    b. average.
    c. low.
    d. very low.

12. If I was called from my homework to watch television or listen to the radio, then afterward:
    a. I always went straight back to work.
    b. I would only take a short pause and then go back to work.
    c. I would always wait a little before starting again.
    d. I would find it very difficult to begin again.
13. Work that requires great responsibility:
   a. I would like to do very much.
   b. I would only do if I was paid well.
   c. I don't think I would be capable of doing.
   d. is completely unattractive to me.

14. I would find a life in which one wouldn't have to work at all:
   a. ideal.
   b. very pleasant.
   c. pleasant.
   d. unpleasant.
   e. very unpleasant.

15. When I was in high school I thought that to attain a high position in society was:
   a. unimportant.
   b. of little importance.
   c. not so important.
   d. rather important.
   e. very important.

16. When doing something difficult:
   a. I give it up very quickly.
   b. I give it up quickly.
   c. I give it up rather quickly.
   d. I don't give up too soon.
   e. I usually see it through.

17. In general I am:
   a. very strongly future-oriented.
   b. strongly future-oriented.
   c. not so strongly future-oriented.
   d. not at all future-oriented.

18. At school I found classmates who studied very hard:
   a. very nice.
   b. nice.
   c. just as nice as others who didn't work as hard.
   d. not nice.
   e. not nice at all.

19. At school I admired persons who had reached a very high position in life:
   a. very much.
   b. much.
   c. little.
   d. not at all.

20. For life's extra pleasures:
   a. I usually have no time.
   b. I often have no time.
   c. I sometimes have too little time.
   d. I usually have enough time.
   e. I always have time.
21. I usually am:
   a. very busy.
   b. busy.
   c. not so busy.
   d. not busy at all.

22. I can work at something without getting tired for:
   a. a very long time.
   b. a long time.
   c. not too long a time.
   d. only a short time.
   e. only a very short time.

23. Good relations with my teachers at high school:
   a. were appreciated very much.
   b. were appreciated.
   c. were thought not to be so important.
   d. were thought exaggerated in value.
   e. were thought completely unimportant.

   Original Item

24. Boys succeed their father as manager of the business because:
   a. they want to enlarge and extend the business.
   b. they are lucky their father is manager.
   c. they can put their new views into practice.
   d. this is the easiest way to earn a lot of money.

   Revised Item

24. Children succeed their parent as manager of the business because:
   a. they want to enlarge and extend the business.
   b. they are lucky their parent is manager.
   c. they can put their new views into practice.
   d. this is the easiest way to earn a lot of money.

25. When I was in high school I was:
   a. extremely ambitious.
   b. very ambitious.
   c. not so ambitious.
   d. a little ambitious.
   e. hardly ambitious at all.

26. Organizing something:
   a. I like doing very much.
   b. I like doing.
   c. I don't like doing very much.
   d. I don't like doing at all.

27. When I begin something I:
   a. never carry it to a successful conclusion.
   b. seldom carry it to a successful conclusion.
   c. sometimes carry it to a successful conclusion.
   d. usually carry it to a successful conclusion.
   e. always carry it to a successful conclusion.
28. I:
   a. very often am bored.
   b. often am bored.
   c. sometimes am bored.
   d. hardly ever am bored.
   e. never am bored.

29. Shopping is something:
   a. I like very much.
   b. I like.
   c. I don't like.
   d. I hate.
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These consist of pages:

Appendix C, pages 108-109

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