ACHIEVEMENT MOTIVATION AMONG
OHIO FARMERS

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Be successful! I judge men only by the results of their actions. -- Napoleon

The great pleasure in life is doing what people say you can not do! -- Walter Bagehot
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Chapter I

BACKGROUND OF THE PROBLEM

Social scientists overwhelmingly agree that one must understand social values before understanding behavior. The present thesis will deal with one of these social values, that of achievement motivation.

McClelland said that some individuals "...are characterized in greater degree than others by the 'achievement motive!'" (18, p. 11). He further stated "...that sources of change in the economic system lay outside the system itself" (i.e., in social values) and that "achievement motivation is in part responsible for economic growth." Achievement motivation is that value, instilled in the individual through the socialization process, in which the individual feels a need or a desire to reach certain goals only for the satisfaction of reaching the goal and not for the rewards of the goals or ends involved.* The "rewards" or "ends" involved are oftentimes symbols for success, intelligence, or power, but oftentimes the "rewards (e.g., money, etc.) are given "away with a very light heart" (28, p. 420).

*Need for achievement, McClelland said, (30, p. 76), is the desire to do well, not so much for the sake of social recognition or prestige, but to attain an inner feeling of personal accomplishment.
McClelland (18) felt that achievement motivation, also called need for achievement (n Ach), is the most important social value that promotes successful entrepreneurship and national economic growth or decline. Williams (28, p. 419) summed up the necessity of research on achievement motivation:

Adequate research evidence is not yet available to allow an accurate appraisal of the extent to which achievement has moved to the center of the values of our culture. Such evidence is greatly needed, for the question thus raised is fundamental to any real diagnosis of the current value-system.

However, until recent years, measurement of n Ach was possible only by elaborate laboratory methods. The most common of these measures was the Thematic Apperception Test (TAT) which required considerable time, skill, and money for analysis. McClelland (18) measured n Ach by a content analysis of second to fourth grade readers. Neither of these two methods apply well to field interviewing situations with farmers.

Recently, an attempt has been made to measure the n Achievement value of U.S. farmers. Morrison (21) devised a method for measuring n Ach by using eight sentence-completion items. These sentence-completions were scored according to a modified TAT n Ach scoring rationale based upon McClelland (18). Morrison correlated n Ach with 29 indicators of excellence in farming. He found n Ach to
be positively related with several measures of innovativeness.* However, the correlations were relatively low. To validate his scale, Morrison administered both the TAT and the sentence-completion scale to a sub-sample of 50 Wisconsin farmers. Similar results were obtained by both methods of measurement.

The Problem

Few attempts have been made to sophisticate research in sociology by repetitive research studies. The measure of achievement motivation devised by Morrison is of empirical value. It deserves further empirical research to validate his findings and to test their theoretical significance. Economic and social changes are being introduced to U.S. farmers by the U.S. government, commercial, and other change agencies. But little is yet known about how n Ach is related to adoption of new farm ideas or to excellence in farming.

Purposes of the Study

The main purposes of the present study are to complete an analysis of the n Ach sentence-completion scale by: (a) scale analysis for validity, reliability, internal consis-

*Innovativeness is the degree to which an individual is relatively earlier in actually adopting new ideas than the other members of his social system. This definition is based upon Rogers (24, p. 19).
tency, unidimensionality, and inter-judge reliability; and (b) an attempt at replication of Morrison's study with a sample of Ohio farmers by correlating achievement motivation with measures of excellence in farming.

Most studies of achievement have "...been done on college and young age samples, and the theory of achievement motivation in no way implies such a limitation" (3, pp. 6-7). Research is needed on the social values of adult farmers.

The TAT measure of achievement is quasi-impossible with a large farm sample (because it cannot be used in field situations and a large amount of time is involved in scoring the results). Sophistication of the present sentence-completion scale and accompanying scoring manual could prove valuable in future research on social values.

Empirically, the results of the present study may contribute to the body of empirically-tested propositions which aid the understanding of man's social relationships. This is the primary aim of sociology.

A primary objective of the present study is to determine the relationship between achievement (the dependent variable) and such indicators of excellence in farming as productive man work units, labor efficiency, innovativeness, contact with change agents, etc. (the independent variables).
The ultimate goal of the author is to lay the groundwork for a similar scale that can be used cross-culturally in field situations in a developing society. McClelland (18, pp. 60-61) outlined some difficulties in using laboratory methods to measure _Ach_. To date, field interviewing techniques for measuring _Ach_ have not been tried on a large scale in a developing society.

With reference to the importance of studies of the present nature, Morrison (21, p. 145) stated:

Thus, whether the perspective is broad or narrow, it is apparent that although research on motivation is still at a very crude and exploratory stage, both the theoretical and practical implications of the research findings are such as to give every promise of its continued support and progress. This is true regardless of whether individuals or aggregates are the focus of interest for the researcher, or whether altruistic or other aims are the source of support for the research.

Methodology

A list of 70 farmers in Fayette County, Ohio was obtained from the County Chairman of the newly-formed National Farmers' Organization in November, 1962.* Of the 70 farmers, 35 were members of the NFO and 35 were non-members.

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*The NFO is organized in the corn-belt of the U.S. to bargain collectively for higher farm prices. The present sample of respondents was used in a larger research study of farmers' values. The NFO was a focal point of the larger study.
who had attended NFO informational meetings. Of the original sample of 70 farmers, 30 NFO members and 30 non-members were interviewed.
Chapter II

REVIEW OF LITERATURE

Introduction

The present chapter is organized under three main headings: (1) a review and listing of findings of past research from n Achievement studies, (2) a review of past research of studies of excellence in farming, and (3) a summary and critique of past, relevant research on studies concerning n Achievement and excellence in farming.

Achievement Motivation

Morrison

Morrison's (21) research, in 1962, on n Achievement is actually relevant to both of the previously stated main headings, as Morrison correlated n Ach with 29 indicators of excellence in farming. Morrison's research is more pertinent to the present thesis than any of the others subsequently mentioned in the present chapter.

Most n Ach studies have historically dealt with students and young people, and the n Ach measurements have required detailed laboratory methods. Morrison used laboratory methods (i.e., the TAT) only to verify his field interviewing techniques (i.e., the sentence-
Morrison used both methods in the field interviewing situations with a subsample of 37 Wisconsin farmers to validate the sentence-completion scale. Morrion's entire sample included 335 Wisconsin farmers, while most other studies have sampled only students and other young people.

Morrison found a positive association between the TAT method and the sentence-completion method of measuring achievement. Although his correlation was positive, Morrison stated that it was not "great enough to warrant the unequivocal assertion that the present correlation indicates the TAT and sentence-completion tests measure the 'same thing'" (21 p. 113). Morrison felt that the size of his subsample was not great enough to put the TAT and sentence-completion measures on "equal grounds" (21, p. 114).

McClelland

McClelland and others (20) analyzed five minute stories of over 200 male college students written in response to four slides depicting achievement-related situations. The stories were then analyzed by two judges for four conditions: (1) a relaxed condition, where the "experimental" tests were administered during a regular class session, (2) a neutral condition, where the students were
ask to do their best on the "experimental" tests, (3) a failure condition, where the students were told the tests measured intelligence and leadership, and (4) a success-failure condition, where the students succeeded at first and then failed.

A single \( n \) Achievement score was computed for each respondent. The mean \( n \) Ach scores increased significantly in accordance with the increase in need from relaxed, to neutral, to the failure condition. This finding supports the theory that increased motivation increases the \( n \) Achievement scores.

McClelland's (17) research on \( n \) Achievement with children, compared children with high and low \( n \) Ach as to their degree of risk-taking. McClelland justified this type of research by a previous study by Lindzey (16) who argued "that subjects with high \( n \) Achievement do in fact tend...to like those occupations which involves some risk or which are part of the entrepreneurial role."

The 26 five-year-old children in the sample were administered the "doodle" type of measure for \( n \) Achievement. The risk-taking tasks were measured by:

(1) Ring toss, where the subject was given a rope ring and asked to try and throw it over a peg on the floor. The subject was allowed to stand wherever he chose. Obviously, the closer he stood, the better his chances of success.

(2) The tilting maze board, where a ball was placed at
the start of a maze with the object of seeing how far one can roll the ball before it drops through one of the holes punched at various intervals. The farther the child's aspiration, the more difficult the task.

(3) Word memory.

(4) Dot connection tests, which were used to measure risk taking.

Positive results supported McClelland's hypothesis that the children with the higher need for achievement tend to assume greater amounts of risk-taking.

**Summary of n Achievement Studies**

Morrison (22) summarized most of the empirical research on achievement motivation. He labeled the findings of researchers in his "Tabular and Written Summaries" as being "positive" (✓), "negative" (✗), or "none" (0) for the different variables relationship to n Achievement. Many different methods of measuring n Ach were used in the various research studies summarized by Morrison. His summary of research, together with McClelland's (18), leave little for the present writer to add. The studies described previously in the present chapter were used to explicitly stress the obvious fact that past n Ach research, with the exception of Morrison's (21), has not been completed with farmers. Therefore, because these studies have not been with farmers nor
used in field interviewing situation, their relevance to the present study is not high.

Some of the variables correlated in past Ach studies have been such items as intellectual ability, socialization processes, independence and achievement training, socioeconomic status, achievement performance, academic performance, academic performance beyond aptitude level, risk, aspiration, and other psychological, social-psychological, and sociological measures. Few studies other than Morrison's (21) have dealt with farmers.

Excellence in Farming

Larson

Larson (15), in 1963, attempted to determine operational skills and characteristics of 31 Ohio swine producers located in Madison, Fayette, Clinton, Highland, and Green Counties associated with high, average, and low levels of managerial ability. Farmers included in Larson's study were owner-operators who had at least 75 percent of their income from swine sales. He noted that, "Some farmers manage to get all their work done on time and to get it done well." "Others," he said, "...are always behind and constantly have to slight some job because of time pressures" (15, p. 9). "The entrepreneurial ability," Larson added, "is an important part of the production process" (15, p. 11).
Larson used net income per sow as an indicator of managerial achievement. This index was then correlated with several operational skills and details (15, p. 43). Those managers with the higher overhead costs per sow were found to have the most efficient operations, and thus, they also had the highest net income. High levels of technical knowledge (i.e., education) proved, in Larson's study, to be important in managerial achievement. Larson failed however, to measure utilization of "technical knowledge." He measured efficiency by husbandry techniques, and the use of labor, capital, and other facilities. Larson did not measure any values correlated with farm management ability.

Huffman

Huffman (13), in 1963, studied what constituted a "good manager" in agriculture among Central Ohio Farmers. He stated: "This concern (of management) extends into the fields of psychology, philosophy, sociology, the physical sciences, and economics." He felt that all these fields are involved in the "satisfaction of human wants." Huffman related the "economic motivation" factor to 24 variables indicating managerial ability. He defined economic motivation as a desire for dollar income. In other words, Huffman believed that the "profit motive" was paramount in decision-making and not social values such as achievement
motivation. Although the present thesis mainly is concerned with non-economic factors, Huffman's results are related to those of the present study.

Huffman found direct relationships between "economic motivation" and net income, education, and farm management ratings (as rated by personal interviewers). He found inverse relationships between "economic motivation" and age. These correlations were significant at the five percent level. Relationships between "economic motivation" and managerial ability variables using zero-order correlations were rather meager. At the time of writing of the present thesis, Huffman had not yet employed factor analysis, multiple correlation, or non-linear methods of analysis, which he planned to employ. These methods were being initiated, but the results were not available, at the time of writing the present thesis.

Bemiller

Bemiller (2), in 1960, attempted to develop a valid, reliable, and easily administered scale to measure the rationality element of farm management ability. "Rationality in farm management," according to Bemiller, "consists of effective planning and deliberation aimed at maximizing net farm income" (2, p. 70). Bemiller correlated rationality scores with social and economic factors such as age, size
of farm, tenure status, formal participation, and educational level.

Bemiller felt that in order for a farm manager to plan his operations rationally, "he must have knowledge of existing market conditions and agriculture technology, evaluate situations adequately, and analyze these situations to best achieve desired ends."

He studied three separate samples of Ohio farmers at three different points in time. The total number of respondents was 185 farmers. One of the three samples was selected to obtain respondents who were either successful or unsuccessful managers. One sample was a statewide random sample. The third sample was selected randomly from Champaign County, Ohio.

Bemiller (2) found that rationality correlated significantly (at the five percent level) with the size of the farm in acres, the number of production man work units per man day of labor, gross farm income per man day of labor expended, the amount of education, contact with the Extension Service, rental status, and with social status. Rationality was not correlated significantly with production man work units or innovativeness.

Bemiller reviewed the contributions of economists and sociologists to the field of farm management functions and decision-making. The thoroughness of Bemiller leaves little
for the author to add in reviewing this area.

**Summary of Studies on Excellence in Farming**

Most studies on "excellence in farming" failed to employ sociological factors or at least some non-economic motives. Huffman (13) indicated the use of factors other than economic, but his method failed to exemplify such use. Bemiller (25) used sociological and economic methods in his analysis, but he stated that his scale needed further development.

Both agricultural economists and rural sociologists are studying excellence in farming, farm management ability, and rural social values. However, because of the lack of knowledge on the part of agricultural economists in scale construction, the lack of knowledge on the part of rural sociologists in economic factors and in the analysis of farm management, and the general lack of cooperation between the two disciplines to better their knowledge on common interests, few studies were found to review that studied the relationships of social values to decision-making, farm management, or to excellence in farming.
Chapter III

THEORY AND HYPOTHESES

The present chapter will present the major hypotheses of the present study. First, a theoretical framework will be presented from which the hypotheses will be built.

Theoretical Framework.

McClelland (18, p. 11) felt that "the economic theorists themselves seem to have always felt that sources of change in the economic system lay outside the system itself." Regarding the relationship between economic development and entrepreneurship, Weber (26, p. 35) noted that "...the occupational statistics of any country of mixed religious composition brings to light a remarkable frequency...that business leaders and owners of capital, as well as the higher grades of skilled labour...are overwhelmingly Protestant." His thesis may be explained by the fact that Protestantism allowed more deviation in the value system from the de jure norms to allow more room for entrepreneurs (which are, in fact, deviants from the strict de jure order). Weber felt that man "...gets nothing out his wealth for himself, except the irrational sense of having done the job well" (26, p. 44). Thus, Weber pointed out that the causes of economic growth
are not basically economic reasons. McClelland (18, p. 11) said, "The modern economist has become even more insistent in his belief that the ultimate forces underlying economic development lie, strictly speaking, outside the economic sphere."

Thus, Weber felt that entrepreneurs went about their jobs with a spirit of perfection, while McClelland describes this "spirit" as a high need for achievement. Apparently, then, the "spirit of perfection" and the "need for achievement" are, in reality, the same social value.

McClelland (18, p. 36) hypothesized that "achievement motivation is in part responsible for economic growth." Man, according to Darwin, is engaged in a struggle for survival with nature, and man has survived the struggle because of his desire or wish to survive" (i.e., motivation) (5, p. 74). Is it not true that man's desires and needs are fulfilled by varying degrees of motivation, and that man has survived other species because of his human motivation?

To integrate the two related, previously-mentioned theories of Darwin and McClelland, McClelland (18, p. 38) indicated that entrepreneurship is a result of the need for achievement, the need for achievement is a product of independence and mastery training in youth, and independence and mastery training are a part of the values associated with Protestantism or modern industrialism.
McClelland (18, p. 259) stated that a high n Achievement suits men for entrepreneurial roles. He further believed that:

"...if n Achievement really adapts a man to perform the entrepreneurial role well, we should expect that those with lower n Achievement would, on the average, perform less well and would tend to be weeded out of managerial positions, having the n Achievement level in such positions higher than in other occupations."

It can, therefore, be assumed that persons with higher levels of n Achievement are especially likely to be found among middle-class families. The family is where the values which are held for life are instilled in individuals at a very early age. The theory is based on the assumption that "middle-class families work for longer range goals and think in terms of longer time spans" (18, p. 378).

McClelland's (17) research on children, mentioned in the previous chapter, supports this theory.

McClelland (18 pp. 267-268) reported that levels of n Achievement generally decline with age. However, this does not mean that older, successful business entrepreneurs can not and do not have higher levels of n Achievement than do the less successful businessmen.

McClelland (18, p. 268) also found that "men with higher n Achievement are likely to be more successful in small companies." The units of measurements were salary versus age. When comparing n Ach, age, and business success in
large business firms, McClelland (18, pp. 268-269) found several complexities. In the larger firms "those in the middle salary bracket...have the highest achievement." They were significantly higher than those in the lowest salary bracket and somewhat higher than those in the higher bracket. "The men earning $20-25,000 a year are always higher in achievement" (18, p. 268). The best possible explanation for this finding was that "achievement has a decisive effect in raising people out of the lowest salary brackets into a middle bracket" (18, p. 269). One should not conclude that these entrepreneurs strive for success in monetary rewards, as the need to achieve could never be satisfied by money. However, estimates of how well one has achieved can be made by monetary measures.

McClelland (18, p. 268) raised interesting questions as to why men with the highest salaries in large firms had lower achievement scores than did the men having salaries of the middle range. He did not attempt to answer the questions. He asserted that, on the average, business executives have higher levels of achievement. Success has been measured in several large U.S. companies.

McClelland (18, p. 413) found that various types of education have some effect upon achievement. Most of the studies of effects of education on achievement summarized by McClelland were in underdeveloped countries with persons
possessing high levels of \( n \) Achievement. He cited examples of leaders from predominately Catholic countries that attended Protestant schools as adolescents.

McClelland (18, p. 415) found no significant differences in \( n \) Ach between four-to-five-year-old Mexican children who had been to nursery school and those who had not had the nursery school experience.

McClelland (18, pp. 416-417) inferred that social interaction (i.e., identification with others and social influence from others) serves as an informal means of education to raise or lower \( n \) Ach levels rather than formal education. "Positive influence" from persons with higher levels of \( n \) Ach who serve as a "peer group" to those being influenced, is one type of this social interaction.

Few studies with U.S. respondents have compared levels of \( n \) Ach with varying amounts of formal education. Findings having significant results on comparisons of \( n \) Ach to education could not be found by the author in a reviewing of literature.

According to definition, entrepreneurial business men can not be traditional, but rather, they must be innovators. McClelland said (18, p. 266):

"...people with high \( n \) Achievement appear to work harder...when there is a chance that personal efforts will make a difference in the outcome. Specifically, they do not work harder under all probabilities of winning, but only when there is some challenge in
the situation, some chance of losing. Furthermore, they do not work harder at routine tasks, but only at tasks which appear to require some degree of mental manipulation, originality, or new angle of approach for successful solution.

Once an entrepreneur has succeeded in a challenging situation, he is desirous of entering a new type of "challenging situation." In other words, the more one achieves, the more he wants to achieve. Achieving certain challenges apparently gives a great deal of satisfaction to the entrepreneur.

Shils (25, p. 8) felt that certain types of persons were primarily concerned with efficiency. He stated that "...the bureaucratic variant of ambition--namely, efficiency--is not conducive to economic progress. Ambition...involves a boundless aspiration; its goal is not fixed in quantity at a particular point....The more that can be achieved, the better....Each triumph leads to another goal a little further off."

Ambition, then, must be a goal of the entrepreneur with high achievement, because it will give him satisfaction. This does not differ greatly from the definition of achievement motivation described in Chapter I of the present thesis. Achievement motivation is that value, instilled in the individual through the socialization process, in which the individual feels a need or a desire to reach certain goals only for the satisfaction of reaching the goal and not
for the rewards of the goal or ends involved. Apparently, the aspirants with high levels of achievement must constantly be seeking new challenges or "he loses interest in it because he can no longer get achievement satisfaction from it. If there is no challenge, he does not work so hard" (18, p. 228).

It seems apparent that those with high levels of achievement desire to work for themselves and not for others. However, research by French (9, pp. 400-408) found that group goals were just as conducive to high levels of achievement as were goals requiring individual responsibility. DeCharms (6) reported similar results to those of French (9). In both studies there were no differences in the efficiency of persons with high levels of achievement; they worked equally well for the group goals as they did for the individual goals. It must be pointed out that the individual working toward group goals "must retain some individual freedom and responsibility for generating and choosing among courses of action if he is to get any achievement satisfaction, but it is not true that be must therefore work for himself rather than some group enterprise" (18, p. 239).
HYPOTHESES

General Hypothesis I: The degree of achievement motivation varies directly with the degree of economic excellence in farming.*

Achievement motivation is that value, instilled in the individual through the socialization process, in which the individual feels a need or a desire to reach certain goals only for the satisfaction of reaching the goal and not for the rewards of the goal or ends involved. Morrison (21) found relationships between achievement motivation and several indicators of excellence in farming, however, the correlations were rather low. Shils (25, p. 8) related that particular types of persons were interested in efficiency and a high degree of achievement. The need for achievement adapts businessmen well to perform the entrepreneurial role. Students with high levels of achievement excel in their work (i.e., studies). However, few studies have been concerned with farmers in relating excellence in farming to the need for achievement.

*In the present thesis achievement motivation is mainly regarded as a dependent variable. The concept, however, is generally thought of as an independent variable. It is regarded as such in General Hypothesis VI, where it is used to predict innovativeness.
Empirical Hypothesis Ia: Achievement motivation scores vary directly with farm size as measured by production man work units.

A production man work unit (PMWU) is that amount of work that is normally done by a man in a ten-hour day (4, p. 184). Businessmen with high levels of achievement motivation work and think in terms of long range goals. With the increased efficiency of modern, industrialized farms, the larger-sized farms with larger volumes of business are those who are able to meet existing competition to stay in business. It is usually necessary, therefore, to increase the size of the farm business.

Empirical Hypothesis Ib: Achievement motivation scores vary directly with farm size as measured by man days of labor on the farm.

Man days of labor is the amount of ten-hour days of work done on the farm in a year. The amount of man days of labor on the farm is a measure of size. As the size increases the levels of achievement are expected to be higher.

Empirical Hypothesis Ic: Achievement motivation scores vary directly with farm size as measured by the number of acres in the farm.

The number of acres in the farm is a direct measurement of size. However, the numbers of acres says nothing about
efficiency and excellence except that the farmer had to be previously efficient to increase the size of his business.

Empirical Hypothesis Id: Achievement motivation scores vary directly with farm size as measured by the number of acres owned.

The numbers of acres owned not only infers size and the quantity of the business enterprise, but it also connotes a desire of the owner for a symbol by which his success can be measured.

Empirical Hypothesis Ie: Achievement motivation scores vary directly with farm labor efficiency as measured by production man work units per man day of labor.

Production man work units per man day of labor is a general measure of labor efficiency excluding production rates (8, p. 274). It is the amount of output per man in one day. In contrast to PMWU's, which measures the quantity of work completed, PMWU's per man day of labor measures the quality of work completed on the farm in terms of efficiency.

Empirical Hypothesis If: Achievement motivation scores vary directly with farm intensity as measured by production man work units per acre.

Production man work units per acre is a measurement of the relative intensity of the farming operations. Intensification is the degree to which farm production is high on a fixed amount of land. Efficient farmer-entrepreneurs are
able to expand the size of their farm business by substitutions or additions to the existing crop and livestock enterprises while holding the acreage constant. Those farmers with higher levels of Achievement should be able to increase the size of their business to meet competition by increased intensification.

**Empirical Hypothesis Ia:** Achievement motivation scores vary directly with farm management ability as measured by rating scores.

Farm management ability is that process of maximizing net income by rational decision-making (2, p. 2). Respondents were scored from one to ten by an observer who knew the respondents. In the present study, the "observer" was the Fayette County Agricultural Extension Agent. The rater scored the respondents from one to ten with the better managers receiving the higher scores. The rater used "maximization of net income" as the criterion. Only 48 farmers were rated by the scorer, as he did not know the other 22 farmers well enough to score them justly.

**Empirical Hypothesis Ib:** Achievement motivation scores vary directly with gross farm income.

It was stated in the definition of achievement motivation that a person does not excel for the ends, in the present case money, but that he strives to reach certain goals in order to feel a sense of accomplishment. Money (i.e., gross
farm income) is, however, a measure of accomplishment.

Empirical Hypothesis II: Achievement motivation scores vary inversely with the number of days of off-farm work.

Off-farm work is the number of ten-hour days spent working for pay off of the farm. A large amount of off-farm work infers that the farmer is not sufficiently efficient or large in his farm business, and, therefore, he looks elsewhere for employment to secure money to meet his basic needs.

General Hypothesis II: The degree of achievement motivation varies inversely with age.

Empirical Hypothesis IIa: Achievement motivation scores vary inversely with the age of the respondents.

As age increases, the desires to attain certain ends decreases. Probably the relationship is non-linear as the highest levels of \( n \) Achievement would be expected in the middle-aged bracket, since the more one achieves, the more he wants to achieve. However, for older persons the needs are less demanding, and, therefore, the amount of achievement motivation declines.

Empirical Hypothesis IIb: Achievement motivation scores vary inversely with the number of years the farmer has operated his farm.

Since age and the number of years the farmer has operated his farm parallel each other, the \( n \) Ach would also de-
cline with the number of years the farmer has operated his farm.

General Hypothesis III: The degree of achievement motivation varies directly with the amount of education.

Empirical Hypothesis III: Achievement motivation scores vary directly with years of education.

The definition of achievement motivation states that achievement is a "value instilled in the individual through the process of socialization." The educational system contributes much to one's socialization into society. It is, therefore, important to know how much varying levels of education contributes to the raising of the levels of achievement.

General Hypothesis IV: The degree of achievement motivation varies directly with innovativeness.

Empirical Hypothesis IV: Achievement motivation scores vary directly with innovativeness.

Innovativeness is the degree to which an individual is relatively earlier in adopting new ideas than the other members of his social system (24, p. 19). Persons with higher levels of achievement are not traditionally-oriented, as they concern themselves with tasks which require some degree or originality or new approaches to situations.

General Hypothesis V: The degree of achievement motivation can be predicted by its relationship to the number of
Empirical Hypothesis V: Achievement motivation scores can be predicted by their relationship to the number of farm information sources, total production man work units, production man work units per man day of labor, age, innovativeness, and farm management ability, when these variables are taken collectively.

General Hypothesis VI: Innovativeness can be predicted by its relationship to the number of farm information sources, total production man work units, production man work units per man day of labor, age, achievement motivation, and farm management rating, when these variables are taken collectively.

Empirical Hypothesis VI: Innovativeness can be predicted by its relationship to the number of farm information sources, total production man work units, production man work units per man day of labor, age, achievement motivation, and farm management ratings, when these variables are taken collectively.

Achievement motivation is used as an independent variable rather than a dependent variable in the present case,
following the suggestion of Dr. Denton Morrison.* Achievement motivation has not been used to predict innovativeness with a multiple correlation approach. The purpose of using Achievement as an independent variable is to find out the possibilities of using the concept in predicting innovativeness.

*The suggestion of Morrison was by personal communication.
Chapter IV

METHODOLOGY

Selection of the Area of Study

Since the present thesis is part of a larger research study of farmer's values,* the author had little choice in the selection of the study locale. Fayette County, Ohio, was chosen for the present study on the basis that (1) it is relatively rural in orientation, (2) it is a highly commercialized farming area, and (3) the area was easily accessible to interviewers from The Ohio State University.

Fayette County is characterized by a mainly agricultural economy. Fifty percent of the population is rural-farm. The average size of farm was over 236 acres in 1959, which was the second highest in the state of Ohio; the state average was 132 acres (1).

Sampling Procedures

The sample for the present thesis was thirty members and thirty non-members of the newly-formed National Farmers' Organization (NFO) in Fayette County, Ohio. The same sample

*Ohio Agricultural Experiment Station Project Hatch 264, Assessment of the Dominant Values of Ohio Farmers and Their Relationships to Decision-Making.
of respondents was used in the larger research study of farmers' values.

The names and addresses of the first 35 farmers who joined the county NFO were supplied by the county NFO organization. An announcement of the study was given to the NFO members at a county meeting in November, 1962. Concurrently, the county organization supplied the names and addresses of 35 non-NFO farmers who had attended county organizational meetings during August, September, and October, 1962. The 35 non-member farmers were selected randomly from the several lists of persons who had attended the organizational meetings. Letters explaining the importance, purpose, and nature of the study and the interviewing dates were sent to both samples, the NFO members and non-member farmers in Fayette County (see Appendices A and B).

Field Interviewing

The schedule was pretested by a Research Assistant in Rural Sociology early in November, 1962. Pretesting was completed with three farmers in Fayette County who were acquaintances of the pretester. The final schedule (Appendix E) contained 69 items and required from 50 minutes to one hour and one-half to complete.

Data were collected during a period from November 22,
1962, to January 19, 1963. Twenty-five members and twenty-eight non-members were interviewed during the two-day period of November 22-23, 1962. The remaining seven interviews were completed during the months of December and January.

Five members and five non-member farmers were originally selected to be interviewed, but are not included in the present study. Two members refused to answer parts of the interview schedule and were excluded. Three other members could not be located for interviewing after three to five visits to their farms. One non-member was excluded since he joined the NFO a week before the interviewing period, and thus was not among the first 35 to join the NFO. Four other non-members could not be located after three to five farm visits. Therefore, thirty members and thirty non-member farmers (who had attended organizational meetings), 95.7 percent of those selected for interviewing, were included in the final sample of those interviewed for the larger study.

In the present thesis six additional schedules were not used since two or more items on the need for achievement sentence-completion scale were not completed. Morrison stated that "...all sets of items with over two responses not adequate for scoring are eliminated from further consideration" (21, pp. 210-211).

Interviews were conducted by one undergraduate student,
five graduate students, and one professor in Rural Sociology at The Ohio State University. Four of the interviewers had had previous interviewing experience, while the remaining three interviewers, being farm-reared, had considerable previous farmer interaction experience.

The writer was only a participant in the field work, that of interviewing and data-gathering, and was not a participant in the formulation of the larger project concerning farmers' values.

Scale Analyses

One scale was utilized in the interview schedule to measure the dependent variable in the present study, need for achievement (n Ach). Need for achievement is that value, instilled in the individual through the socialization process, in which the individual involved feels a need or a desire to reach certain goals only for the satisfaction of reaching the goal and not for the rewards of the goals or ends involved. The need for achievement scale was the only scale used in the present thesis. The sentence-completion type items in the n Achievement scale were scored according to a rationale devised by Morrison who used a similar scale with Wisconsin farmers in 1962 (21, see Appendix C). The need for achievement sentence-completion scale was subjected to the analyses which are described later.
Internal Consistency

Internal consistency is the degree to which items in a scale are interrelated, thus determining the degree to which the items within the scale homogeneously measure the same dimension. A common method to assess internal consistency is to determine the correlations between each scale item and the total scores (27, p. 339).

The determination of internal consistency assumes that a scale is an appropriate indicator of the phenomenon it is supposed to measure. Therefore, those items which correlate highly with the total scores probably correlate highly with each other. This is true only if the scale measures a single dimension. Extremely high or low correlations are not desired as a too-high correlation would indicate a lack of the need for the scale, while a too-low correlation would contribute little to the measurement of the dimension.

The method used in the present thesis to measure internal consistency is to determine the coefficient of correlation between the item scores and the total scores. Five scorers scored the n Ach scale for each of the 54 respondents, and their item scores were averaged and used in testing internal consistency. Table 1 shows the coefficients of correlation of each scale item with the sum of the items.

Table 1 indicates that most scale items possess a rather high degree of internal consistency except for items
"E" and "F." Therefore, items "E" and "F" were discarded because they did not contribute to the measurement of n Ach. The item-to-total-score correlation coefficients of internal consistency for the five item scale are listed in Table 1. The item-to-item correlations for the five item scale are presented in Table 2.

All later analyses referred to in the present chapter will be concerned only with the five item n Ach scale and not the original seven item scale.

**Reliability**

A scale is said to be **reliable** when it will consistently produce the same results when applied to the same individuals at different times. Reliability may be measured by the test-retest and multiple-form techniques. However, these methods are often costly, time-consuming, or impossible. One acceptable measure of reliability commonly used is the split-half method, which divides the scale items into two subscales. The "odd" and "even" subscales are correlated, and the resulting coefficient of correlation is taken as a measure of reliability. However, since the subscales have only one-half as many items as the original scale, a lower coefficient of reliability results. A correction is therefore necessary to correct the resulting coefficient of correlation. This correction is made by the use of the modi-
Table 1. Internal Consistency of Items in the Need for Achievement Scale (Item-to-Total Score Correlations)

<table>
<thead>
<tr>
<th>Scale Items</th>
<th>Coefficient of Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7 Item Scale</td>
</tr>
<tr>
<td>A. A farmer today should....</td>
<td>.581</td>
</tr>
<tr>
<td>B. A good farmer....</td>
<td>.616</td>
</tr>
<tr>
<td>C. A 400 acre farm....</td>
<td>.442</td>
</tr>
<tr>
<td>D. The ideal man....</td>
<td>.475</td>
</tr>
<tr>
<td>E. I felt most dissatisfied with....</td>
<td>.121</td>
</tr>
<tr>
<td>F. Most of all I want....</td>
<td>.081</td>
</tr>
<tr>
<td>G. I used to daydream about....</td>
<td>.461</td>
</tr>
</tbody>
</table>

Table 2. Product-Moment Correlation Coefficients, Means, and Standard Deviations of the Item Averages for the Sentence-Completion Items of the n Ach Five Item Scale

<table>
<thead>
<tr>
<th>Items</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>---</td>
<td>.263</td>
<td>.031</td>
<td>-.006</td>
<td>.072</td>
</tr>
<tr>
<td>B</td>
<td>---</td>
<td>.139</td>
<td>.081</td>
<td>.170</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>---</td>
<td>.205</td>
<td>.005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>---</td>
<td></td>
<td>.006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean: 0.6 0.8 1.0 0.4 0.5
Standard Deviation: 0.7 0.7 0.5 0.6 0.6
fied Spearman-Brown correction formula (27, p. 340). The n Achievement scale in the present study was subjected to the split-half method of measuring reliability.

When subjected to the Spearman-Brown correction formula, the split-half method yielded a coefficient of reliability of \( r_{457} \).

**Unidimensionality**

Unidimensionality means that a series of items comprising a scale measures a single dimension. Internal consistency was defined earlier as the degree to which a scale measures a single phenomenon. Unidimensionality can be determined by ranking respondents in such a manner that they can be placed on a continuum. Then, specific responses can be reproduced by knowing their ranks. **Reproducibility** is the ability to duplicate the responses to each item by knowing the total score of a respondent.

Several techniques for testing unidimensionality have been developed. The Guttman method is the most commonly used technique (14). If a scale meets Guttman's criterion, each respondent's response to any scale item can be predicted with 90 percent or more accuracy, and is accepted as scalable, knowing the respondent's total score. Less than 90 percent reproducibility is evidence that the scale does not measure a single dimension.
When applied to the present \( n \) Achievement scale, the Guttman test of unidimensionality yielded a coefficient of unidimensionality of 87 percent.

Validity

Both the measures of internal consistency and unidimensionality assume that a scale is valid. A scale is said to be valid if it measures what it is designed to measure. Although it is the most critical aspect of scale analysis, validity is the most difficult to determine.

Four approaches have been outlined by Goode and Hatt (10, pp. 237-239) for validation of scales. The first, logical validation or "face validity," is a type of "common sense" analysis. As an example, the need for achievement scale is valid if it contains items concerned with the definition of the \( n \) Achievement value concept. However, validity tests should not rely completely upon the scorer's intuitive judgement as the preciseness of scientific measurement is absent.

The second method, jury opinion, is similar to the first approach except that the "judgement" of validity is secured from a group of knowledgeable persons in the field to which the phenomena is applicable. Similar \( n \) Achievement scales have been used by Morrison (21) and Hines (12) for validation. The resulting seven items used in the
present \( n \) Achievement scale were adopted from the eight items used by Morrison (21, see Appendix C). The seven-item scale used by Hines (12) was also adopted from Morrison. However, Hines used his seven-item \( n \) Ach scale with a sample of college age students. Both Hines and Morrison have reported the \( n \) Ach scale to be valid. One of the main purposes of the present thesis was to validate the \( n \) Achievement scale by comparing the correlations of \( n \) Ach to factors of excellence in farming in the present thesis with similar correlations of Morrison's (21).

Using known groups is a third method for measuring scale validity. In this method, the scale is administered to two discrete categories of individuals who are known to be high and low on the dimension. However, this is rather difficult for the \( n \) Achievement scale used in the present thesis since (1) until recent years, measurement of the dimension was possible only by elaborate laboratory methods not conducive to use with farmers, and (2) \( n \) Ach studies in the past have concentrated on college and young age samples and not on adult farmers.

A fourth method for measuring scale validity is to use an independent criterion. For example, the \( n \) Ach scale (by definition) may be determined by its relationship with other factors such as innovativeness. When innovativeness was correlated to the same respondents' \( n \) Achievement scores,
a coefficient of correlation of \( r_{25} \) resulted.

Morrison (21) validated the sentence-completion \( n \) Ach scale by comparing (1) the results of correlations of the sentence-completion scale of \( n \) Ach with 29 indicators of excellence in farming, with (2) the correlation of a TAT measure of \( n \) Achievement with the same 29 indicators of excellence in farming (21, p. 115). Morrison used 37 respondents as a subsample for the TAT and sentence-completion comparison. The majority of these comparisons were positive but not highly significant.

**Objectivity**

Objectivity is "the lack of deviations on the part of one scientist's reading of the instrument from readings made by other scientists" (30). Morrison (21) measured objectivity over a period of time. However, in the present thesis, objectivity is measured by inter-judge reliability. **Inter-judge reliability** is the comparison of agreement in the scoring of different judges at a given period in time. Table 3 presents the product-moment correlation coefficients, means, and standard deviations for inter-judge reliability of the total scores of the \( n \) Achievement scale.

**Summary of Scale Analyses**

The \( n \) Achievement scale used in the present thesis was subjected to analyses in internal consistency, reliability,
unidimensionality, validity, and objectivity.

The item-to-total-score correlation coefficients indicating internal consistency for the five item scale (listed in Table 1) were all significant at the one percent level.

When subjected to the split-half method of measuring reliability, a coefficient of reliability of $\alpha_{.457}$ was obtained, which is significant at the one percent level.

The Guttman test of unidimensionality yielded a coefficient of unidimensionality of 87 percent.

The Ach Achievement scale was determined to be valid by the jury opinion method by the preceding studies completed by Morrison (21) and Hines (12). The Ach scale was also determined valid by logical validation, since the scale contained items concerned with the definition of the Ach value concept.

Table 3 presents the correlation coefficients of inter-judge reliability used to measure objectivity in the present thesis. All correlations were significant at the one percent level.

Method of Analysis

In the present thesis achievement motivation is mainly regarded as a dependent variable. The concept, however, is usually thought of as an independent variable. It is regarded as such in General Hypothesis VI, where it is used to pre-
dict innovativeness (see Chapter III). Admittedly, \( n \) Ach comes first in the individual through the process of socialization, and in this sense in should be regarded as an independent variable causing other consequences later in life. However, since achievement motivation is the main topic of the present thesis, it is regarded as a dependent variable for purposes of clarification and consistency. In any case, whether the variable is dependent, independent, or interdependent is purely arbitrary. The design of the present study facilitated using \( n \) Achievement as a dependent variable.

Table 3. Product-Moment Correlation Coefficients, Means, and Standard Deviations for Inter-Judge Reliability of Total Scores for the Sentence-Completion Scale

<table>
<thead>
<tr>
<th>Scorer</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>---</td>
<td>( \cdot746 )</td>
<td>( \cdot628 )</td>
<td>( \cdot840 )</td>
<td>( \cdot804 )</td>
</tr>
<tr>
<td>2</td>
<td>---</td>
<td>---</td>
<td>( \cdot535 )</td>
<td>( \cdot645 )</td>
<td>( \cdot492 )</td>
</tr>
<tr>
<td>3</td>
<td>---</td>
<td>---</td>
<td>( \cdot650 )</td>
<td>( \cdot642 )</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>( \cdot746 )</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Means</td>
<td>3.5</td>
<td>4.2</td>
<td>3.2</td>
<td>3.5</td>
<td>3.2</td>
</tr>
<tr>
<td>Std Dev</td>
<td>1.9</td>
<td>2.1</td>
<td>1.9</td>
<td>1.9</td>
<td>2.0</td>
</tr>
</tbody>
</table>
Chapter V

FINDINGS

The present chapter will present the tests of the general and empirical hypothesis stated in Chapter III. Each of the independent variables were tested for their relationship to the dependent variable (achievement motivation). Also, a test for the proportion of the total variation explained by the independent variables acting together will be used (i.e., multiple correlation).

General Hypothesis I

General Hypothesis I: The degree of achievement motivation varies directly with the degree of economic excellence in farming.

Empirical Hypothesis Ia: Achievement motivation scores vary directly with farm size as measured by production man work units. Correlation* between production man work units and achievement motivation is $r = 0.245$, which is less than the .273 required for significance at the 5 percent level. Empirical Hypothesis Ia is not supported.

*See Appendix D, "Matrix of Intercorrelations of the Dependent and Independent Variables."
Empirical Hypothesis Ib: Achievement motivation scores vary directly with farm size as measured by man days of labor on the farm. Correlation between the man days of labor and achievement motivation is \( \rho = 0.118 \), which is less than the .273 required for significance at the 5 percent level. Empirical Hypothesis Ib is not supported.

Empirical Hypothesis Ic: Achievement motivation scores vary directly with farm size as measured by the number of acres in the farm. Correlation between the total number of acres in the farm and achievement motivation is \( \rho = 0.157 \), which is less than the .273 required for significance at the 5 percent level. Empirical Hypothesis Ic is not supported.

Empirical Hypothesis Id: Achievement motivation scores vary directly with farm size as measured by the number of acres owned. Correlation between the number of acres owned and achievement motivation is \( \rho = 0.181 \), which is less than the .273 required for significance at the 5 percent level. Empirical Hypothesis Id is not supported.

Empirical Hypothesis Ie: Achievement motivation scores vary directly with farm labor efficiency as measured by production man work units per man day of labor. Correlation between production man work units per man day of labor and achievement motivation is \( \rho = 0.298 \), which is more than the .273 required for significance at the 5 percent level. Empirical Hypothesis Ie is supported.
Empirical Hypothesis Ia: Achievement motivation scores vary directly with farm intensity as measured by production man work units per acre. Correlation between production man work units per acre and achievement motivation is $r = 0.180$, which is less than the $0.273$ required for significance at the 5 percent level. Empirical Hypothesis Ia is not supported.

Empirical Hypothesis Ib: Achievement motivation scores vary directly with farm management ability as measured by rating scores. Correlation between farm management ability rating scores and achievement motivation is $r = 0.252$, which is less than the $0.273$ required for significance at the 5 percent level. Empirical Hypothesis Ib is not supported.

Empirical Hypothesis Ic: Achievement motivation scores vary directly with gross farm income. Correlation between gross farm income and achievement motivation is $r = 0.185$, which is less than the $0.273$ required for significance at the 5 percent level. Empirical Hypothesis Ic is not supported.

Empirical Hypothesis Id: Achievement motivation scores vary inversely with the number of days of off-farm work. Correlation between the number of days of off-farm work and achievement motivation is $r = -0.085$, which is less than the $0.273$ required for significance at the 5 percent level. Empirical Hypothesis Id is not supported.
Conclusions for General Hypothesis I

Only one empirical hypothesis flowing from General Hypothesis I was significant at the 5 percent level (Empirical Hypothesis Ie). Therefore, General Hypothesis I is not supported, since eight of the nine empirical hypotheses were not supported.

General Hypothesis II

General Hypothesis II: The degree of achievement motivation varies inversely with age.

Empirical Hypothesis IIa. Achievement motivation scores vary inversely with the age of the respondents. Correlation between age and achievement motivation is -.225, which is less than the .273 required for significance at the 5 percent level. Empirical Hypothesis IIa is not supported.

Empirical Hypothesis IIb: Achievement motivation scores vary inversely with the number of years the farmer has operated his farm. Correlation between the number of years the farmer has operated his farm and achievement motivation is -.113, which is less than the .273 required for significance at the 5 percent level. Empirical Hypothesis IIb is not supported.

Conclusions for General Hypothesis II

Both Empirical Hypothesis IIa and Empirical Hypothesis
IIb were not significant at the 5 percent level. Therefore, General Hypothesis II is not supported.

General Hypothesis III

General Hypothesis III: The degree of achievement motivation varies directly with the amount of education.

Empirical Hypothesis III: Achievement motivation scores vary directly with the years of education. Correlation between years of education and achievement motivation is $r_{.149}$, which is less than the .273 required for significance at the 5 percent level. Empirical Hypothesis III is not supported.

Conclusions for General Hypothesis III

Empirical Hypothesis III was not significant at the 5 percent level. Therefore, General Hypothesis III is not supported.

General Hypothesis IV

General Hypothesis IV: The degree of achievement motivation varies directly with innovativeness.

Empirical Hypothesis IV: Achievement motivation scores vary directly with innovativeness. Correlation between achievement motivation and innovativeness is $r_{.254}$, which is less than the .273 required for significance at the 5 percent level. Empirical Hypothesis IV is not supported.
Conclusions for General Hypothesis IV

Empirical Hypothesis IV was not significant at the 5 percent level. Therefore, General Hypothesis IV is not supported.

General Hypothesis V

General Hypothesis V: The degree of achievement motivation can be predicted by its relationship to the number of farm information sources, total production man work units, production man work units per man day of labor, age, innovativeness, and farm management ability, when these variables are considered collectively.

Empirical Hypothesis V: Achievement motivation scores can be predicted by their relationship to the number of farm information sources, total production man work units, production man work units per man day of labor, age, innovativeness, and farm management ratings, when these variables are considered collectively. Multiple correlation between achievement motivation and the independent variables listed in Empirical Hypothesis V is .427, which means that 18.29 percent of the variation in achievement motivation is explained by the six independent variables. The most highly-correlated independent variable, production man work units per man day of labor, explains 8.93 percent of the dependent variable. The remaining five variables increased the per-
percentage explained by 9.36 percentage points to 18.29 percent. In testing the significance of the coefficient of multiple correlation, $F$ is 1.75, which is less than the 2.34 required for significance at the five percent level.

Conclusions for General Hypothesis V

Empirical Hypothesis V was not significant at the 5 percent level. Therefore, General Hypothesis V is not supported.

General Hypothesis VI

General Hypothesis VI: Innovativeness can be predicted by its relationship to the number of farm information sources, total production man work units, production man work units per man day of labor, age, achievement motivation, and farm management ability, when these variables are taken collectively.

Empirical Hypothesis VI: Innovativeness can be predicted by its relationship to the number of farm information sources, total production man work units, production man work units per man day of labor, age, achievement motivation, and farm management ratings, when these variables are taken collectively. Multiple correlation between innovativeness and the independent variables listed in Empirical Hypothesis VI is .636, which means that 40.54 percent of the variation in innovativeness is explained by these six independent var-
variables. The most highly correlated independent variable, production man work units per man day of labor, explains 19.28 percent of the dependent variable. The remaining five variables increased the percentage explained by 21.26 percentage points to 18.29 percent. In testing the significance of the coefficient of multiple correlation, F is 5.34, which is more than the 4.73 required for significance at the one-tenth percent level.

Conclusions for General Hypothesis VI

Empirical Hypothesis VI was significant at the one-tenth percent level. Therefore, General Hypothesis VI is supported.
Chapter VI

SUMMARY AND CONCLUSIONS

Summary

The purpose of the present study was to determine the relationships of the dependent variable, achievement motivation, to several indicators of excellence in farming (i.e., the total number of production man work units, the total number of man days of labor on the farm, the size of the farm, the number of acres owned, the production man work units per man day of labor, the production man work units per acre, the years of education, and the degree of innovativeness).

The sample chosen for the present study was 48 farmers in Fayette County, Ohio. The sample was part of a larger study on farmers' values. A sentence-completion type scale was used to measure achievement motivation, the dependent variable. Zero-order and multiple correlations were utilized to test the six major hypotheses.

Objectives

The main purposes of the present thesis was to complete an analysis of the Achievement sentence-completion scale.
by: (a) scale analysis for validity, reliability, internal consistency, unidimensionality, and inter-judge reliability, and (b) to complete a replication of Morrisons's (21) study with a sample of Ohio farmers by correlating achievement motivation with measures of excellence in farming, age, and education.

Findings

Six general hypotheses were tested. The major findings are listed as follows:

1. The general hypothesis that achievement motivation is positively related to the degree of economic excellence in farming was not supported.

2. The general hypothesis that achievement motivation is inversely related to age was not supported.

3. The general hypothesis that achievement motivation is positively related to the amount of education was not supported.

4. The general hypothesis that achievement motivation is positively related with innovativeness was not supported.

5. The general hypothesis that achievement motivation can be predicted by its combined relationships to six independent variables was not supported.

6. The general hypothesis that innovativeness can be predicted by its combined relationships to six independent
variables, when achievement motivation is one of those independent variables, was supported. The present general hypothesis was the only situation where achievement motivation was used as an independent variable instead of a dependent variable.

Conclusions

Implications for Action

Though the zero-order correlations were somewhat meager, they were in the relationships anticipated. The respondents were few (54), and the number of items in the Achievement sentence-completion scale was insufficient. Imperative conditions for a replicated study would include a larger range of stimuli (i.e., sentence-completion items) and a larger range of stimuli (i.e., sentence-completion items) and a larger sample having a wider range of classes of respondents. Stimuli of a discriminating nature may then be found (after starting with many stimuli-items). Any new type of scale would require considerable reorganization.

The project entailed more than the originally called for independent variables (i.e., excellence in farming). Age and innovativeness were also used as independent variables.
Needed Future Research in the United States

1. Farmers still represent a relatively unexplored area concerning research on achievement motivation. Before research on achievement is implemented on rural people in underdeveloped countries more must be known about the personalities of U.S. farmers concerning the value of \( n \) Ach. Measures that have excellent possibilities in being implemented into conceptual variable analysis with achievement motivation are as follows:

   a. Units of agricultural production (e.g., bushels of corn raised per acre, number of pounds gained per pound of feed fed livestock, cost per pound gain in livestock, etc.). The most highly correlated variable in the present study was production man work units per man day of labor, which indicates that achievement motivation is significantly correlated with measures of farm efficiency. However, since only one good measure of efficiency was implemented in the present study, future research is needed to examine the significance of other correlates of farm efficiency to achievement motivation.

   b. Aspirations for childrens' future education. As was stated in the definition of achievement motivation, the desire to do well is paramount to an achievement motivated person. A good, sound education is one of the most important tools in assisting one to do well in his or her
occupation. Therefore, it is felt by the author that farmers who recognize the need for high levels of education in our highly industrial, competitive society, also recognize that their siblings need a high level of education to compete for the more desirable occupations. Therefore, if the farmer-father is achievement motivated sufficiently to recognize this need, he will instill in his offspring their need for an education.

c. **Age.** Apparently, the correlation age and achievement motivation is curvi-linear and not linear, if present at all. McClelland (18) fringed on this point when he examined the executives of bureaucracies and the entrepreneurs of private enterprises with relation to their ages (see Chapter II).

d. **Level of living indices.** Certainly, achievement motivated persons have more material goods than persons possessing lower levels of achievement, even though their ends are not theoretically for hedonic supremacy but rather the desire to attain maximum satisfaction by being able to reach the desired goal. Therefore, materialistic goods may serve as an indicator of achievement motivation.

e. **Innovativeness.** It would be most interesting to note the adopter category that the majority of the persons fit who possess a high or low level of achievement motivation (i.e., are the respondents innovators, early
adopters, early majority, late majority, or laggards?)*

f. Religion. One of the most interesting facets of studying n Achievement is its relationship to the different sects and demoniations of religions. Certainly some religions are noted for their progressive (achievement oriented) values and others for their non-progressive (fatalistic) attitudes.

g. Childhood training. If n Achievement is instilled in the individual during the socialization process, the acts surrounding the process would be noteworthy. Are there common characteristics that surround those with high levels in contrast to those who have low levels of n Ach? The major problem here in dealing with the variable is that it necessitates recall.

2. The present study was concerned with a selected sample of farmers in Fayette County, Ohio. Fayette County is noted for its relatively progressive agriculture in the state of Ohio. The problem is that a narrow range of talents were represented. A large, statewide, cross-section, random sample would be much preferred in a study of the present type. The range of talent was so narrow that significant correlations were unlikely. Research conducted

*The source of the terms is Rogers (24, p. 162).
in areas of less development in the U.S. could prove valuable in preparing for a similar study in an underdeveloped country.

3. The \( n \) Achievement sentence-completion scale utilized only five items. Therefore, the scale obviously needs refinement and more items. Some suggested items for additions include:

   a. To grow 150 bushels of corn per acre one _____________.
   b. If I became partially disabled I would _____________.
   c. I lack _____________________________.
   d. What my farm lacks is _________________________.
   e. General type farms having less than 100 acres _____________.
   f. To get ahead in farming today one _____________.
   g. Farmers in underdeveloped countries _____________.

4. It should not be concluded that methods of measuring \( n \) Achievement among farmers should be limited to sentence-completion stimuli. Certainly, the sentence-completion scale is promising, but the exploration of other methods needs future consideration. Some suggested methods would include: (a) flash card stimuli, (b) verbal stories from respondents on certain subjects, and (c) modified TAT's. One method of utilization of these tests would be to use all of them in a subsample correlated to the sentence-completion scale.

5. As has been previously mentioned (see Chapters I
and II), the past research on achievement motivation has dealt mainly with young age samples and students. The definition of achievement motivation in no way puts such a limitation on the concept. Such groups as farmers, salesmen, public relations personnel, teachers, researchers, lawyers, *ad infinitum* are possible subjects for research on achievement motivation.

**Implications for Research in Developing Countries**

As was mentioned in Chapter I, one of the main purposes in carrying out the present research project was "to lay the ground work for a similar scale that can be used cross-culturally in field situations in a developing society." Research of the aforementioned type is planned for peasant farmers in Colombia, S.A., by the author and Dr Everett M. Rogers, Associate Professor of Rural Sociology, The Ohio State University, for the 1963-64 academic year.

Paramount in implementing a scale to new conditions is to re-analyze the scale to assert that the scale meets the standards imposed by scale analysis for validity, reliability, internal consistency, and unidimensionality. Using the TAT with a large subsample would be one method to ascertain that the sentence-completion scale actually measures *n* Achievement in a different culture. The TAT has previously been used by Hagen (11) in Colombia, but the
sentence-completion scale for achievement has not been used.

Certainly, some of the most important factors that should be considered when measuring for achievement in a developing society are the relationships between achievement motivation and such factors as religion, innovativeness, and the others listed under Future Research in the United States in the present chapter.

The most appropriate concluding remark that could be made about the use of achievement motivation in a developing society was made by Morrison (21, p. 141).

Achievement motivation is...a characteristic of personality, and the tenets of a democratic society, particularly at a time when the society is involved in a crucial struggle for supremacy with a conflicting system would seem to give warrant enough for the expenditure of research effort aimed at the discovery, development and utilization of persons motivated to achieve.
BIBLIOGRAPHY


APPENDIX A

LETTER TO NON-NFO MEMBER
November 16, 1962

Dear Sir:

Sociologists at The Ohio State University are interested in how a farmer's values or preferences effect his decisions in using farm practices or joining farm organizations. You have been selected from a sample of farmers in Fayette County to be interviewed on November 23 or 24, 1962.

Our chat with you will last about one hour. Your answers to our questions will be held in strict confidence, since your name will not be used in any way. We think that you'll enjoy talking with us about your farm situation and other farm ideas.

Thank you in advance for your cooperation.

Cordially yours,

James R. Hundley
James R. Hundley
Rural Sociologist

JH:bas
APPENDIX B

LETTER TO NFO MEMBER
November 16, 1962

Dear N.F.O. Member:

Sociologists at The Ohio State University and the Fayette County National Farmers Organization are cooperating in a sociological research study on the growth of the N.F.O. in Fayette County. Graduate students and professors in Rural Sociology would like to visit with you on either Friday or Saturday, November 23 or 24, 1962.

The interview will last about one hour. Your answers to our questions will be held in strict confidence since your name will not be used in any way. Our primary goal is to secure information about how you feel about the N.F.O. and what it can do for you. Your county N.F.O. officers have agreed to our talking with you and the results of the survey will be presented at the county meeting in January.

Thank you for your cooperation.

Sincerely yours,

James R. Hundley

James R. Hundley
Rural Sociologist

JN;bas
APPENDIX C

EIGHT-ITEM SENTENCE-COMPLETION SCALE
DEvised BY MORRISON
APPENDIX C

Eight-Item Sentence-Completion Scale
Devised by Morrison (3, p. 51)

1. A farmer today should___________.
2. A good farmer___________________.
3. If I had the worst farm in this area___________.
4. A 400 acre farm___________________.
5. The ideal man_____________________.
6. I felt most dissatisfied when_______________.
7. Most of all I want_____________________.
8. I used to daydream about_______________.

__________________________
APPENDIX D

MATRIX OF INTERCORRELATIONS OF
THE DEPENDENT AND INDEPENDENT VARIABLES
### APPENDIX D

**MATRIX OF INTERCORRELATIONS OF THE DEPENDENT AND INDEPENDENT VARIABLES**

<table>
<thead>
<tr>
<th>Variables*</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
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<tbody>
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<td>.798</td>
<td>.77%</td>
<td>.675</td>
<td>.678</td>
<td>.518</td>
<td>.396</td>
<td>.647</td>
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<td>.147</td>
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<td>.555</td>
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<tr>
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<td><strong>.273</strong></td>
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<td>-.164</td>
<td>-.318</td>
<td>-.145</td>
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<td>significant for the 10 percent level</td>
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<td>-.224</td>
<td>.093</td>
<td>-.113</td>
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</table>

*The variables include:

1. Production man work units
2. Man days of labor on the farm
3. Number of acres in the farm
4. Number of acres owned
5. Production man work units per man day of labor
6. Production man work units per acre
7. Farm management rating score
8. Gross farm income
9. Number of days of off-farm work
10. Age
11. Number of years the farmer has operated his farm
12. Years of education
13. Innovativeness
14. Achievement motivation score

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APPENDIX E

INTERVIEW SCHEDULE
Schedule No. 

FARM OPERATOR
Value Study

Ohio Agricultural Experiment Station
Ohio State University

1962 (Date)

Respondent's Name

(First) (Last)

Respondent's Address

Interviewer

Check one: 

/ / 1st call
/ / 2nd call
/ / 3rd call

Hello: I'm from Ohio State University and we are talking with farm people about their attitudes and opinions and how they affect decisions on the farm. Your farm is included in our sample for this study and we'd like to ask you a few questions about farming decisions. First,---

1. How many total acres do you farm? _______ acres
   (Including cropland, pasture, woods, wasteland, etc.)

2. Of this, how many acres are owned by you? _______ acres
   a. / / Rent only
   b. / / Rent and own
   c. / / Own only

3. How many years have you operated this farm? _______ years

4. How many years have you lived in this county or location? _______ years

5. How many days did you work off the farm for pay this past year? _______ days
   _______ None

6. What are the main sources from which you obtain information about New Practices in farming (such as new machines, crop varieties, sprays, etc.?)
   (OPEN-ENDED)
   a. ___ Farm magazines
   b. ___ Neighbors or friends
   c. ___ Family or relatives
   d. ___ County agent or Ext. meetings
   e. ___ Voc. Agr. teacher or nite school
   f. ___ Extension or Exp. Sta. Bul.
   g. ___ Radio farm shows
   h. ___ TV farm shows
   i. ___ Newspapers
   j. ___ Other

6-1. Which one of these sources is the most important? (CIRCLE IT)

7. How many acres do you have in corn this year? _______ acres. (...8).....

8. In oats? _______ acres. .................................................. (...5)....

9. In wheat? _______ acres. .................................................. (...6)....

10. In soybeans? _______ acres. .............................................. (...8)....

11. In rye or other small grains? _______ acres. ............................. (...6)....

12. In permanent or rotation pasture? _______ acres. ..................... (...7)....

13. In hay or grass sileage? _______ acres. .................................. (...4)....

(Continued on next page)
Continued from previous page.

14. How many dairy cows do you have? (10)
15. Beef cows? (1.5)
16. Dairy or beef calves or heifers? (1.5)
17. Feeder cattle? (3)
18. Brood sows farrowed? (3)
19. Ewes in flock? (5)
20. Laying hens? (11)
21. Any other livestock or farm enterprises such as broilers, truck farming, timber, tobacco, beets, etc.?

<table>
<thead>
<tr>
<th>Enterprise</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PMWW</td>
</tr>
<tr>
<td></td>
<td>Size of operation</td>
</tr>
</tbody>
</table>

22. Did anyone help you with the farm work in 1962? No Yes
   (IF YES) a. Family (wife or son) days last year
   b. Hired labor or custom work days last year
   Total Man day labor on farm
   PMWW/man day labor

We think there may be a connection between farm income and adoption of new farm practices.

23. We're only interested in your estimate to the nearest thousand.
   About what was the total value of all products sold from this farm in the past year? (SHOW CATAGORIES)

   99 - D.K.  08 - $8,000 - $9,000
   00 - Under $500  09 - $9,000 - $10,000
   00 - $500 - $1,000  10 - $10,000 - $11,000
   01 - $1,000 - $2,000  11 - $11,000 - $12,000
   02 - $2,000 - $3,000  13 - $12,000 - $15,000
   03 - $3,000 - $4,000  16 - $15,000 - $18,000
   04 - $4,000 - $5,000  19 - $18,000 - $21,000
   05 - $5,000 - $6,000  22 - $21,000 - $24,000
   06 - $6,000 - $7,000  28 - $24,000 - over
   07 - $7,000 - $8,000

24. What was the total income from other sources
   (SAME CODE) 00 - None  T. INCOME
   Farm income/man day labor = .........

25. During the past 6 months have you told anyone about some new farming practices?
   2 - Yes  1 - D.K.  0 - No

26. Compared with your circle of friends, are you more or are you less likely to be asked for advice about new farming practices?
   -2 - More  1 - About the same  1 - D.K.  0 - Less
27. Do you have the feeling that you are generally regarded by your neighbors and friends as a pretty good source of advice about new farm practices?
   2 - ____ Yes  0 - ____ No  1 - ____ D.K.  1 - ____ Partly

28. Suppose you had some question in regard to a new farming practice, who among your neighbors living within a mile or so, would you be most likely to go?
   (a) _____________________________  (b) _____________________________

29. During the past year, have you had contact with a county Extension agent?
   ____ Yes - 2  ____ No - 1

30. Which of the following types of formal training in agriculture have you received? (For each type checked) how many years....
   ____ Vocational Agriculture in high school (yrs.) ____________
   ____ Vocational Agricultural training in young
      or adult farmer classes (yrs.) ____________
   ____ 4-H training (yrs.) ____________
   ____ Veterans Training (yrs.) ____________
   ____ Agriculture College Short Course (yrs.) ____________
   ____ Agriculture College (yrs.) ____________

   (If no training, check here _____)

31. How many years of school have you attended?
   Last grade in high school ______.
   Last year in college ______.

32. Do you have a political preference?
   ____ No - 2
   ____ Yes
      Democratic _____ - 3
      Republican _____ - 1

33. About what was your age at your last birthday? _____
    (Estimate age if not given by respondent)
34. Here is a list of general business, crop, and machinery practices. Which of the following practices have you ever used?

<table>
<thead>
<tr>
<th>Ever Used</th>
<th>First Used</th>
<th>Last Used</th>
<th>Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nitrogen side-dressing for corn</td>
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<td></td>
<td></td>
<td></td>
<td>Atrazine for spraying corn</td>
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<td></td>
<td>2, 4-D weed spray</td>
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<td></td>
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<td></td>
<td>Wheel track planting for corn (Plow-plant; minimum tillage)</td>
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<td></td>
<td>Spray for spittle bug control</td>
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<td></td>
<td></td>
<td>Soil tests for fertilizer</td>
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<td></td>
<td>Commercial fertilizer to top dress hay or pasture</td>
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<td></td>
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<td>Decon or Warfarin for rat control</td>
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<td></td>
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<td>A single farm account book</td>
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<td>A Soil Conservation Service Farm plan</td>
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<td></td>
<td>A self unloading wagon</td>
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<td></td>
<td>Auger feeding for some livestock or for grain handling</td>
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<td>Measure change from applying fertilizer or from using a new seed variety</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rotational pasture during the Summer</td>
</tr>
</tbody>
</table>
35. Now, I would like to ask you about the organizations you belong to. Which of the following organizations and groups are you a member of or have participated in?

___ A. Livestock breed association

___ B. Artificial breeder's association

___ C. Farm supply cooperative

___ D. Farm marketing cooperative

___ E. Service clubs, such as Lions, etc.

___ F. Church

___ G. Lodge or fraternal order

___ H. Veteran's organization

___ I. Sports clubs

___ J. Rural Parents Association

___ K. Miami-Tracer

___ L. Other clubs

___ M. Farm Bureau Federation

___ N. Farmer's Union

___ O. Grange

___ P. National Farmer's Organization

36. How did you first hear about the NFO? (Check)  

[ ] Sign or poster  [ ] Newspaper  
[ ] Magazine  [ ] Radio  
[ ] Meeting  [ ] Non-NFO farmer  
[ ] NFO member  [ ] NFO organizer  
[ ] Other
37. How did you learn about the first NFO organizational meeting that you attended?

<table>
<thead>
<tr>
<th>Method</th>
<th>Which-Where</th>
<th>Day-Month-Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sign or poster</td>
<td></td>
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<tr>
<td>Newspaper</td>
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<td>Radio</td>
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<td>Meeting</td>
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<tr>
<td>Non-NFO farmer</td>
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<td>NFO member</td>
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<td>NFO organizer</td>
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<tr>
<td>Other</td>
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</tbody>
</table>

38. Why did you go to the first meeting? (Probe)

39. Did you travel to the first meeting alone?  
   (If no) Who did you go with?  
   Yes  ____  No  ____

40. How many NFO meetings have you attended?  
   (organization & county meetings)

<table>
<thead>
<tr>
<th>Place Held</th>
<th>Day-Month-Year</th>
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<tbody>
<tr>
<td>a.</td>
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<td>e.</td>
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<td>f.</td>
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<tr>
<td>g. Others</td>
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</table>
FOR NFO MEMBERS ONLY
A. When did you join the NFO? ____________________________
B. Who signed you up? ____________________________
C. Where did this take place? ____________________________
D. How many meetings had you attended before joining? ____________________________

MEMBERS Before you joined, what about the NFO did you like best?
NON-MEMBERS What about the NFO do you like best?

MEMBERS ONLY Now, what about the NFO do you like best?

MEMBERS Only Before you joined, what did you like least about the NFO?
NON-MEMBERS What do you like least about the NFO?

MEMBERS ONLY Now, what do you like least about the NFO?
44. What were your impressions of the first meeting? (Probe)

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

45. How many times has (did) an official NFO organizer talked with you personally about joining the NFO? _________________

<table>
<thead>
<tr>
<th>Place</th>
<th>Day-Month-Year</th>
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</tbody>
</table>

Other times __________________________________________

What was his name? ______________________________________

46. Which NFO members have asked you to join the NFO?

<table>
<thead>
<tr>
<th>Name of Member</th>
<th>Place</th>
<th>Day-Month-Year</th>
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</tbody>
</table>

Other _________________________________________________
47. Which non-member farmers have talked favorably to you about the NFO?

<table>
<thead>
<tr>
<th>Farmer's Name</th>
<th>Place</th>
<th>Day-Month-Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
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<tr>
<td>b.</td>
<td></td>
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<tr>
<td>c.</td>
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<tr>
<td>d.</td>
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<td>e.</td>
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<tr>
<td>f.</td>
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</table>

Others ____________________________

48. Which farmers have influenced you not to join the NFO?

<table>
<thead>
<tr>
<th>Farmer's Name</th>
<th>Place</th>
<th>Day-Month-Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
<td></td>
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<tr>
<td>b.</td>
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<td>c.</td>
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<td>d.</td>
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<tr>
<td>e.</td>
<td></td>
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<tr>
<td>f.</td>
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</tbody>
</table>

Others ____________________________

49. Suppose you had some question in regard to the NFO, who among your friends and neighbors would you be most likely to go?

______________________________

What other information sources might you use? ____________________________

______________________________
50. What is the attitude of each of the following groups toward the NFO?  

<table>
<thead>
<tr>
<th>Group</th>
<th>Slightly Favor</th>
<th>Favor</th>
<th>Neutral</th>
<th>Slightly Disfavor</th>
<th>Disfavor</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Your friends and neighbors</td>
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<tr>
<td>b. Your family and relatives</td>
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<tr>
<td>c. Your church</td>
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<tr>
<td>d. Farm Bureau members</td>
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<td></td>
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<tr>
<td>e. Your County Agent</td>
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<td></td>
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<tr>
<td>f. Other group?</td>
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</tbody>
</table>

51. How many of your friends are NFO members?  

- a large number  
- several  
- one or two  
- none  

52. How many influential leaders of this community are members of the NFO?  

- a large number  
- a few but not many  
- several of them  
- very few or none  

53. Have you ever told anyone about some aspect of the NFO?  

- Yes  
- Don't know  
- No  

Were the comments favorable?  

- Unfavorable?  
- or both?  

54. Compared with your circle of friends, are you more or are you less likely to be asked for advice about the NFO?  

- More  
- Same  
- Less  

55. MEMBERS ONLY  

A. How many farmers have you talked with about joining the NFO?  

<table>
<thead>
<tr>
<th>Name</th>
<th>Is he a member?</th>
<th>Did you sign him?</th>
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<tbody>
<tr>
<td>1.</td>
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<td>7.</td>
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<td>8.</td>
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</tbody>
</table>
B. Which farmers do you think you can sign up in the next month?


56. Now we would like to ask you a few factual questions about the NFO.

a. Where is the NFO's national headquarters? (Town) ____________________________

(State) ____________________________

b. Is an NFO member bound by his contract to hold livestock from the market? _____Yes _____No

c. Under the NFO's proposed plan for agriculture, what price per hundredweight would an NFO member receive for his cattle and hogs after a contract had been signed with packers and processors?

$ ________ cattle $ ________ hogs

d. Who is the Fayette County NFO chairman? ____________________________

57. Did you hold any livestock from the market during the NFO holding action in September? _____No _____Yes (If yes) How much did you hold?


58. Did you delay selling any livestock because of the holding action?

_____No _____Yes

59. What were the successes or failures of the holding action in September?

_____Success _____Both _____Failure


60. Would you hold your livestock if it looked like the NFO was about ready to sign contracts for higher prices? _____Yes _____Maybe _____No

61. Should farmers hold their products off the market? _____Yes _____Don't know

_____No

62. What suggestions for improvement would you have for the NFO and its plan for agriculture?


Administer Questionnaire
INTERVIEWER RATINGS

63. Rapport during the interview:

_____ very good rapport, talked very freely
_____ not so free on some questions
_____ unable to communicate freely
_____ poor rapport, almost lost interview

64. Neatness of farm and barnyards:

_____ very neat
_____ average
_____ not neat

65. Social Class of Respondent:  _____ Very high

_____ High
_____ Medium
_____ Low
_____ Very low

66. Would you rate this farm operator as one who:

_____ Will pass out of farming in a very few years due to financial reasons
_____ May be forced into part-time farming soon
_____ Will continue to be a prosperous full-time farmer

67. Respondent's attitude toward the NFO:  _____ Very favorable

_____ Favorable
_____ Neutral
_____ Unfavorable
_____ Very unfavorable

68. Give a grief sketch of the interviewing situation or some comments on an aspect of the respondent not covered in the schedule.

__________________________________________________________________________
__________________________________________________________________________
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__________________________________________________________________________
Finish the interview with the following:

69. In this last section you are asked to complete the following sentences. There is no right or wrong answer. Try to do this section quickly, putting down the first answers that come to mind.

A. A farmer today should

B. A good farmer

C. A 400 acre farm

D. The Ideal man

E. I felt most dissatisfied with

F. Most of all I want

G. I used to daydream about