

R E P O R T R E S U M E S

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MANAGERIAL PERCEPTION AND SUCCESS IN FARMING, FINAL CHAPTER AND APPENDICES OF A PH.D. DISSERTATION. RESEARCH SERIES IN AGRICULTURAL EDUCATION.

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FUB DATE SEF 66

EDRS PRICE MF-\$0.50 HC-\$2.84 69F.

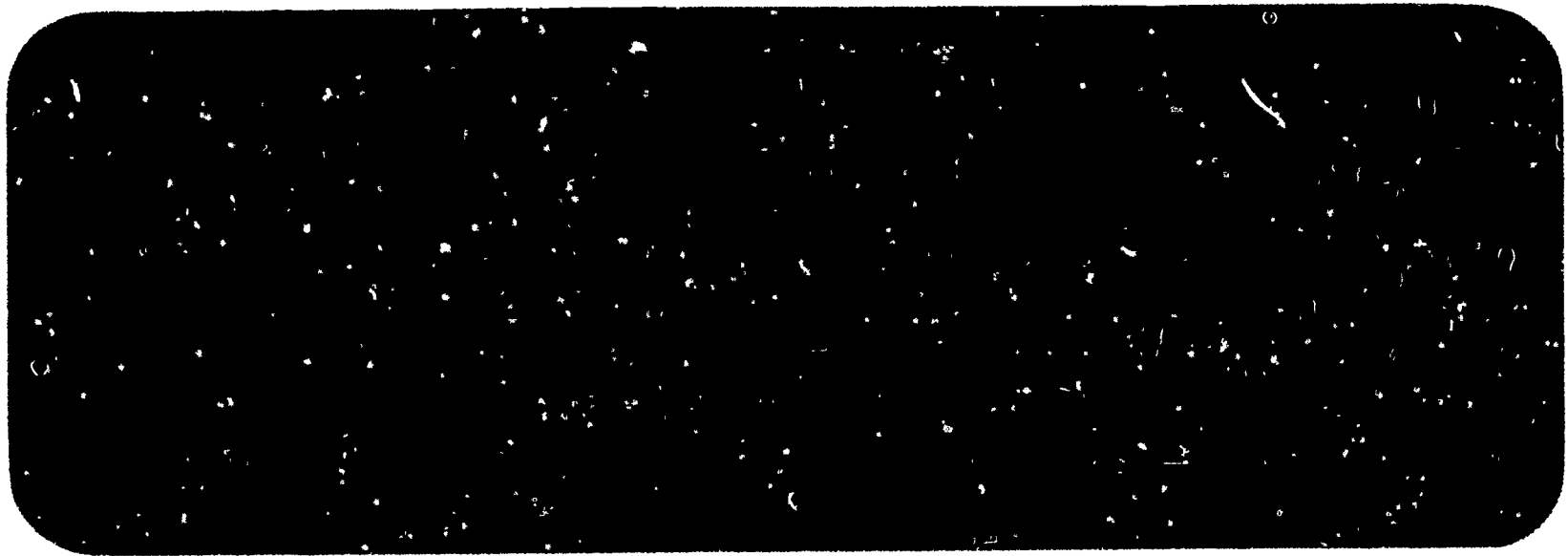
DESCRIPTORS- YOUNG FARMER EDUCATION, VOCATIONAL AGRICULTURE, *FARMERS, *FARM MANAGEMENT, CURRICULUM DEVELOPMENT, *PERCEPTION, *SELF CONCEPT, *GOAL ORIENTATION, INDIVIDUAL CHARACTERISTICS, EDUCATIONAL RESEARCH, QUESTIONNAIRES, FACTOR ANALYSIS, OHIO,

THE MAJOR PRUPOSE OF THIS STUDY WAS TO DETERMINE THE RELATIONSHIP BETWEEN YOUNG FARMERS' SELF PERCEPTION AS ENTREPRENEURS AND THEIR MONETARY AND NONMONETARY SUCCESS IN FARMING. DATA FROM 125 QUESTIONNAIRES RETURNED FROM A SAMPLE OF 250 SELECTED YOUNG FARMERS LOCATED IN 35 OHIO COUNTIES WERE TESTED BY FACTOR AND MULTIPLE REGRESSION ANALYSIS AND ANALYSIS OF VARIANCE. SOME FINDINGS WERE--(1) NINE FARM MANAGEMENT PROBLEM AREAS WERE IDENTIFIED FROM THE RATINGS GIVEN 43 MANAGERIAL TASKS, (2) PLANNING AND ORGANIZING RESOURCES, KEEPING RECORDS AND ACCOUNTS, AND WISE USE OF TIME WERE THE CONCEPTS MOST YOUNG FARMERS HAD OF MANAGEMENT, (3) YOUNG FARMERS WHO RATED THEMSELVES HIGH AS MANAGERS WERE ALMOST ONE LEVEL HIGHER ON A FARMING STATUS SCALE THAN THOSE WHO RATED THEMSELVES MEDIUM OR LOW AS MANAGERS, AND (4) YOUNG FARMERS WITH MONETARY-ORIENTED FARM GOALS HAD HIGHER FARM GOAL ATTAINMENT AND MORE FARM EXPERIENCE THAN THOSE WITH INTERMEDIATE OR NONMONETARY-ORIENTED FARM GOALS. HELPING DECIDE FARM ENTERPRISES WAS RATED AS THE STRONG PART OF THE VOCATIONAL AGRICULTURE PROGRAM, AND PLANNING FAMILY GOALS WAS THE MAJOR WEAKNESS. THE APPENDIXES LIST QUESTIONNAIRE FORMS, INTERCORRELATION TABLES, AND A BIBLIOGRAPHY. (WB)

ED021057

RESEARCH SERIES IN AGRICULTURAL EDUCATION

**A Research Report
of a
Graduate Study**



Issued by
The Department of Agricultural Education
College of Agriculture and Home Economics
The Ohio State University
Columbus, Ohio 43210

September, 1966

VT004612

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MANAGERIAL PERCEPTION AND SUCCESS IN FARMING

Final Chapter and Appendices

of a

Ph.D. Dissertation

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Issued by

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College of Agriculture and Home Economics

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FOREWORD

Included herein is the final chapter and appendices of a Ph.D. dissertation that provides some evidence of changes desired in teaching farm management to young farmers in vocational agriculture. It includes an interpretation of 125 young farmers' concepts of management, an identification of farm management problem areas encountered by young farmers, an analysis of their goal orientations and values and their perceptions of themselves as managers related to selected personal characteristics and success in farming. Some evaluation of the farm management instruction in vocational agriculture for young farmers is also reported. Implications and recommendations based upon the findings in the study were made as they apply to programs in vocational agriculture.

This is one of the most comprehensive studies that we have had concerning teaching farm management to young farmers. It is hoped that the recommendations will be implemented to promote more effective programs in vocational agriculture for young farmers.

Ralph E. Bender

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CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The purpose of this study was to contribute to the improvement of programs of instruction in farm management for young farmers in vocational agriculture by determining the relationship between the perception young farmers have of themselves as entrepreneurs and their success in farming as measured by monetary and nonmonetary criteria. Attention was also given to identifying problem areas in farm management, determining the concepts young farmers have of management, their goal orientation and values, and evaluating young farmer instruction in farm management.

Objectives of the study

1. To identify certain recognized farm management problem areas which could be used in developing a program of instruction in vocational agriculture for young farmers.
2. To determine the concepts young farmers have of management.
3. To determine the relationship of goal orientation and goal values to selected personal characteristics and factors measuring success in farming.

4. To determine the relationship between the perception young farmers have of themselves as managers and their success in farming as measured by identified factors.

5. To evaluate young farmer instruction in farm management on the basis of both an evaluation by the young farmers and its effect on their success in farming.

Method of investigation

Survey data were secured from selected young farmers located in 35 Ohio counties. Areas were selected where farm management was an important part of the curriculum in the young farmer program in vocational agriculture. Fifty teachers of agriculture selected five young farmers from their classes that represented a range of success in farming, were full time farmers between the ages of 18 and 35, and had the managerial responsibility of the farm.

Questionnaires were presented to 250 young farmers by the teachers in the various departments. Follow-ups were made to the teachers by mail and personal contact. A total of 143 questionnaires were returned of which 125 were used as the source of the selected data.

Description of sample

The average age of the young farmers in the sample was 28.5 years compared to 51.3 years for all farmers in the state. The average years in school were 12.5 and 9.3 and the per cent married were 86.4 and 72 for the young farmers in the sample and all farmers in the state, respectfully. The young men in the sample farmed an average of

324.5 acres, had an average investment of \$107,016, and an average net income of \$3,900 compared to 131.9 acres, \$75,000 invested, and an average net income of \$2,352 for all farmers in the state. There were wide variations in characteristics and assets within the sample. The ages ranged from 18 to 35 and years in school varied from 9 to 17. The size of farms ranged from 60 to 1,300 and investments varied from zero, in the case of a manager, to \$320,000. Net income ranged from zero to \$14,000.

Design of questionnaire

The purpose of the questionnaire was to secure information about and ideas of young farmers concerning farm management. It consisted of three parts, (1) characteristics of management as seen by young farmers, (2) farm management problems encountered by young farmers, and (3) background information of the young farmers, which were designed to secure the selected data.

Statistical treatment

A factor analysis was made of the set of observations from the sample to analyze their intercorrelations and to reduce the set into a number of smaller representative categories. Thus it was possible to explain data obtained with a larger number of reference variables. By observing and analyzing the pattern of intercorrelations, the operation of one or more underlying traits or other sources of common variance was inferred.

The relationship between the sets of variables was measured by an analysis of variance. This technique was used to compare two or more groups of individuals on the basis of a variable or continuum characteristics. The analysis of variance provided an efficient test of significance of the differences between the two or more groups.

A multiple regression analysis was made to provide an empirical basis for appropriately weighing each variable. A two-way analysis of variance was made of the variables to determine those factors with dominant influence in explaining the differences in the sample.

Frequency counts involving the use of mean and mode scores were used to measure the young farmers' concepts of management and their evaluation of the vocational agriculture program in farm management for young farmers.

Concept of management

A theoretical framework of management, based upon the literature in the field, was developed to provide a basis for evaluating the function of the human element within the farm firm. In this framework management was thought of as the intangible part of production performed by the manager or entrepreneur. This human element determines which enterprises and production activities will be carried on, organizes the firm to carry out these production activities, initiates the production process, makes the decisions, and bears the responsibility for the firm and its activities.

The firm may be thought of as a construct that produces a good or service to satisfy human wants and needs. Firms differ in kind,

scale of operation, and efficiency of output. The goods or services produced may be tangible, intangible or a combination of both, however the basic managerial functions are similar among different firms.

Management begins with the formulation of goals. Goals may be thought of as ends toward which action is directed. Goals evolve from an interwoven psychological, sociological, and economic complex. Personal values are involved in goal formulation which cannot be reduced to dollars and cents and the goals of a farm manager are nonmonetary as well as monetary in nature. Managers do not often hold to a single goal but to a hierarchically structured complex of goals.

The management process is defined functionally as carrying out the following activities: (1) observation, (2) analysis, (3) decision-making, (4) action-taking, and (5) acceptance of economic responsibility. Gathering and interpreting information is a part of the various functions. The various steps in the managerial function do not always take place in successive order as they are not necessarily separate phases in thinking. Also the amount of time and effort required for the various phases varies with different problems encountered.

Managers operate in a state of change and partial ignorance. Instability appears to be more characteristic than stability. Subject-matter areas which managers must study as a basis for adjustment are (1) price structure and changes, (2) production methods and responses (including weather effects), (3) the behavior and capacities of people associated with farm businesses, (4) prospective technological

developments, and (5) the economic, political, and social situations in which a farm business operates.

The nature of farming is such that the farmer has to plan production and resource use in an atmosphere of imperfect knowledge. Knowledge situations in which farm managers find themselves range from subjective uncertainty to subjective certainty.

The specific tasks of management are difficult to describe because of the range and complexity of functions performed by managers in different roles. At one end of the scale are the major policy or planning decisions which would be made by the board of directors and top officers in a corporation. At the other end of the scale are the small decisions which must be made as a part of doing the physical work. These minor decisions are essentially operational in nature and include decisions that must be made to execute a decision or policy which must be carried out over a period of time.

Major Findings

Following are the major findings derived from the data collected for this study grouped according to the major objectives.

Factor analysis of managerial tasks

Nine farm management problem areas or categories of managerial tasks encountered by young farmers in the sample were extracted from the ratings the young men gave 43 managerial tasks by the factor analysis technique. These factors explained 48.9 per cent of the

total variance of the statements relating to managerial tasks. The factors and their contribution to the total variance were as follows:

Resource acquisition	11.5
Records	8.7
Adjustments	6.3
Family planning	4.7
Production	4.5
Money management	4.2
Limiting factors and tolerances	3.3
Retirement and transfer	3.4
Marketing	2.3

Two factors, records and retirement and transfer, emerged from the factor analysis which were not listed as such in the reference materials. The factors obtained from the factor analysis were significant at the .01 level.

Young farmers' concepts of management

Planning and organizing resources, keeping records and accounts, and the wise use of time emerged as the most frequent responses when the young farmers were asked to identify what they considered to be the most important tasks of management. Only three of the young men identified physical work as being a part of management as most of them apparently felt that this was a separate input. A grouping of the responses given by the young farmers and the frequency they were given as first and second choice is summarized in Table 25.

TABLE 25
Young Farmers' Concepts of Management

Grouping of Tasks	Frequency of Rating as	
	Most Important	Second in Importance
Planning and organization for efficient use of resources	32	13
Keeping records and accounts	24	16
Wise use of time and getting things done on time	21	14
Buying and selling	12	11
Informed and adoption of innovations	9	12
Selection and balance of enterprises	8	8
Maximization of profits	8	2
Efficient production of livestock	4	6
Efficient production of crops	3	3
Personnel manager	3	3
Conservation	1	0
Physical work	0	3
No response	0	34
Total	125	125

Source: Calculations.

Goal orientation and values related
to personal and success factors

1. Young farmers with monetary long range farm goals rated 3.0 in farm goal attainment compared to 3.2 and 4.5 for those with intermediate and nonmonetary orientated farm goals respectfully (on a scale where 1 is high and 5 is low). They also had 9.9 years of farming experience compared to 11.8 and 15.2 for those with intermediate and nonmonetary ratings, respectfully. These findings were significant at the .05 level.

2. Factors relating to family goal orientation are shown in Table 26. Young farmers with intermediate monetary family goal orientation had the highest score for all the factors except years in school, in which case those with nonmonetary orientated family goals had the highest number of years. The factors relating to farm and family goal orientation were significant at the .05 level.

TABLE 26

Factors Related to Family Goal Orientation

Factors	Family Goal Orientation		
	Monetary	Intermediate	Nonmonetary
Investment in farming	\$84,303	\$133,800	\$104,783
Tillable acres	203	323	203
Age	27.9	30.7	25.8
Years in school	12.1	12.6	13.5
Years farming since 16	11.0	12.4	8.3

Factors related to goal emphasis

Factors related to the emphasis placed upon personal, farm, community and monetary goals in making decisions are shown in Table 27.

TABLE 27
Factors Related to Goal Values in Decision Making

Factors	Values Placed on Goals		
	High	Medium	Low
	<u>Personal Goals</u>		
Age	25.9	29.7	29.0
	<u>Farm Goals</u>		
Tillable acres	231	311	220
Age	26.7	28.2	30.6
Years in school	12.3	13.1	12.1
Years young farmer class	4.1	5.3	6.2
Years farming since 16	9.4	12.3	13.2
	<u>Community Goals</u>		
Net income	\$4,481	\$5,069	\$3,978
Goal attainment (family) (1:high 5:low)	1.7	1.9	3.0
Tillable acres	234	325	239
Years young farmer class	4.4	6.0	4.5
	<u>Monetary Goals</u>		
Tillable acres	226	313	247
Years in vocational agriculture	2.1	4.5	4.0

The relationship between certain personal characteristics and success factors and the values placed on goals did not necessarily follow a continuum as young farmers who placed medium emphasis on the importance of certain goals had the most tillable acres, the highest

net incomes, and the most formal education. The findings were all significant at the .05 level.

Personal and success factors related to managerial perception

Young farmers who rated themselves high as managers were almost one level higher in farming status (6.8 compared to 6.0 on a scale with 1 as laborer and 8 as owner) than those who rated themselves medium or low as managers. Those with high ratings had 13 years of school compared to 12.2 for those rating themselves medium or low and had 5.4 and 4.3 years of young farmer classes, respectively. They also had higher goal attainment (2.9 compared to 3.5 where 1 is high and 5 is low) than those with lower rating. These findings were significant at the .05 level.

Personal characteristics and factors measuring success in farming which were significantly related to managerial perception are summarized in Table 28.

Young farmers with medium ratings on resource acquisition had the most years of young farmer work and had been farming longer than those who rated themselves either high or low. Those with the highest rating on record keeping had the fewest days of vacation while those with medium ratings on family planning had the most formal education. There was a positive correlation between the remaining personal and success factors and managerial perception. These findings were significant at the .05 level.

TABLE 28

**Personal and Success Factors Related to
Managerial Perception**

Factors	Rating on Ability to Perform Managerial Tasks			Point Scale
	High	Medium	Low	
	<u>Resource Acquisition</u>			
Years young farmer class	4.2	5.5	4.7	Actual
Years farming since 16	10.7	12.3	8.8	Actual
	<u>Record Keeping</u>			
Vacation days	5.1	6.7	12.2	Actual
	<u>Making Adjustments</u>			
Goal attainment (farm)	3.0	3.4	3.1	1:high 5:low
	<u>Retirement and Transfer</u>			
Goal attainment (farm)	2.9	3.3	3.4	1:high 5:low
Goal attainment (family)	2.0	3.2	2.6	1:high 5:low
	<u>Family Planning</u>			
Years in school	12.4	13.2	12.1	Actual
	<u>Limiting Factors</u>			
Goal attainment (family)	1.3	2.3	3.5	1:high 5:low
	<u>Money Management</u>			
Goal attainment (family)	1.9	2.7	2.9	1:high 5:low

Rating of young farmer program

The young farmers in the sample gave the program in vocational agriculture in farm management an average rating of 6.5 on a scale with 1 being low and 9 being high. "Deciding farm enterprises" received the highest average rating of 6.98 while "planning family goals" received the low mean rating of 5.7. Two personal characteristics that were significantly related, at the .05 level, to the rating given the program are shown in Table 29.

TABLE 29

Personal Characteristics Related to Program Rating

Factors	Program Rating			Point Scale
	High	Medium	Low	
Goal attainment (family)	1.9	2.7	2.9	1:high 5:low
Years farming since 16	12.1	9.4	11.5	Actual

Net income and net worth related to age

The relationship between age and net income and net worth is summarized in Table 30. The young farmers were divided into three groups ranging from younger to older.

TABLE 30
Net Income and Net Worth Related to Age

Factor	Age		
	18 - 23	24 - 29	30 - 35
Net income	\$ 2,522	\$ 3,693	\$ 4,837
Net worth	22,261	25,583	42,519

Conclusions

On the basis of the findings obtained from the data collected during this study, the following conclusions were drawn by the investigator. The conclusions are grouped according to the major objectives in the study.

Identification of farm management problem areas

Young farmers encounter nine farm management problem areas or categories of managerial tasks in their relationship to the farm firm. These are categorized as follows: (1) resource acquisition, (2) records, (3) adjustments, (4) family planning, (5) production, (6) money management, (7) limiting factors and tolerances, (8) retirement and transfer, and (9) marketing. Record keeping and planning for retirement and transfer emerged as separate problem areas from those listed in the reference materials.

Concepts of management

Planning and organizing resources, keeping records and accounts, and the wise use of time were the concepts most young farmers had of management. Other functions mentioned, which were considered to be central to management, may be categorized as: buying and selling; informed and adoption of innovations; selection and balance of enterprises; maximization of profits; efficient production of livestock; efficient production of crops; personnel manager; conservation; and physical work.

Goal orientation and values related to personal and success factors

1. Young farmers with monetary orientated farm goals had higher farm goal attainment and more farming experience than those with intermediate or nonmonetary orientated farm goals.
2. Young farmers with intermediate monetary family goals had higher investments in farming, more tillable acres, were older, and had more farming experience than those with family goals orientated at the extremes. Those with nonmonetary orientated family goals had the most years of school.
3. Young farmers who placed high emphasis on the importance of personal goals in making decisions were younger than those placing medium or low emphasis.
4. Young farmers who placed medium emphasis on farm goals in making decisions had the most tillable acres and the most formal education. Those placing the highest emphasis on farm goals were

younger, had the least farming experience, and the least years of young farmer classes.

5. Young farmers placing medium emphasis on community goals in making decisions had the highest net incomes, most tillable acres, and the most young farmer training. Those placing the highest emphasis on community goals had the highest family goal attainment.

6. Young farmers placing medium emphasis on monetary goals in making decisions had the most tillable acres and young farmer training.

Perception as managers related to personal and success factors

1. Young farmers who gave themselves high over-all ratings as managers had higher farming status, more years of school, higher farm goal attainment and had attended young farmer classes over a longer period of time than those giving themselves medium and lower ratings.

2. Young farmers who gave themselves medium rating in acquiring resources had more training in young farmer work and more years of farming experience.

3. Young farmers who gave themselves the highest rating on keeping records had the fewest days of vacation during the year.

4. Young farmers who gave themselves the highest rating on making adjustments had higher farm goal attainments than those with medium or low rating.

5. Young farmers who gave themselves the highest rating in dealing with retirement and the transfer of a farm business had the highest farm and family goal attainments.

6. Young farmers who gave themselves medium ratings on planning family activities had the most formal education and those giving themselves the lowest rating had the least formal education.

7. Young farmers who gave themselves the highest ratings in dealing with tolerances and limiting factors had the highest family goal attainments.

8. Young farmers who gave themselves the highest rating on managing money had the highest family goal attainments.

9. Young farmers giving themselves the highest rating on dealing with retirement and transfer had the highest net incomes.

Rating of young farmer program

The vocational agriculture program in farm management received a good rating by responding young farmers. Helping decide farm enterprises was rated as the strong part of the program while planning family goals was the major weakness.

Age related to net income and net worth

Young farmers who were the oldest had the highest net incomes and the highest net worth.

Implications

Following are some implications of this study which were drawn by the investigator. These implications are based upon the findings of the study and apply primarily to programs in vocational agriculture for young farmers in Ohio.

The overall findings of this study imply that instruction in farm management for young farmers should be one of the vital concerns of agricultural educators. The findings indicate that the present programs in vocational agriculture play a major role in helping improve the farming operations and standards of living for young farmers in Ohio. From the findings of this study implications are drawn which point to changes in the design and emphasis of the program so that it will better meet the needs of these young farmers.

Programs of instruction in farm management for young farmers should be planned on a five or more years horizon instead of a weekly or yearly basis. This would provide enough time for a thorough analysis of the farming programs of the young men, ample time for major changes to be made, and sufficient time for evaluation of the practices and changes in the program. Time could also be given to teaching economic principles which serve as the basis for decision making. Information concerning new innovations, and technological and institutional changes could be interwoven throughout the program of instruction.

The ratings given the young farmer program also imply that the program should be divided into two classes on the basis of age. Young farmers' interests, goals, resources, farming status, degree of activities, and farming experiences vary with age. Also the problems which young farmers at different ages and degrees of establishment in farming encounter call for different levels of knowledge, skills, and resources to solve. Although these are not sacred numbers, a possible division might include those from 18 to 24 in one class and those 25 to 35 in another class. This would enable the teacher to better meet the needs of the men in each group. For example, more time might be spent planning enterprises, organizing a farm business, and getting established in farming with the younger group while the older group would be concerned with more advanced operational problems. Also, the social needs of the groups would be different and class participation would likely be greater if the young men are in class with their peers.

The ratings given the young farmer program imply that the young farmer programs should also be designed to provide social activities for the young men and their families. Time should be given at class meetings for communication and exchange of ideas. Tours of members' farms, to local and state activities, and to out-of-state events should be planned and promoted. Activities involving both the young men and their wives should be an important part of the program. Also implied here is the importance of an organization such as the Young Farmer Association in Ohio. This organization provides an

opportunity for social functions, additional educational activities, and the development of leadership among the young farmers.

The findings relative to goal orientation and goal values underline the fact that goals are basic to management. These findings have implications for administrators, teacher educators, supervisors, and teachers in agricultural education as well as young farmers. Agricultural educators should be aware of the importance goals have on decision making. Teachers of agriculture should be taught to establish procedures and guidelines for attaining these objectives. This could best be accomplished through a written program of instruction which contained the information to be taught and detailed plans for executing the course. Young farmers, in turn, should be taught to establish worthy and realistic personal, farm, family, community, and monetary goals. The young farmer's family, especially his wife, should be included in the formulation of these goals. They should be led to evaluate these goals carefully and place the proper emphasis on their importance in helping them to reach their long range objectives. Then they should be led to formulate detailed plans on how they are to attain their goals.

The findings relative to goal orientation and goal values also indicate that farmers have nonmonetary as well as monetary farm goals. Other factors enter into the decision making process such as risk, amount of leisure time, and personal preferences when considering among alternative courses of action. Also, as the manager of a farm is not usually free from family influences in making decisions, the

wants and needs of other individuals making up the managerial complex are expressed. Many of these wants and needs are expressed as social goals, which usually require finances to attain. Thus, farm goals become a means of attaining the social goals which might explain the lack of correlation between monetary orientated goals and certain success factors.

Nine farm management problem areas which young farmers encounter in their relationship to the farm firm were identified. Attention should be given to these problem areas by those concerned with instruction in farm management for young farmers. Researchers and farm management specialists should make these problems the object of further research so as to seek better ways of arriving at their solution. Program directors, supervisors, and teachers should have a good knowledge of farm management and the benefit of in-service-training to become more effective in teaching basic principles and in solving farm management problems. The identified farm management problem areas should be included in the teacher's program of instruction. The teacher should make use of specialists or resource persons in technical subjects or in areas where he has limited experience. He should work with other agencies and organizations and use the best resources at his command to promote an effective program. The teacher should have sufficient time for on-farm-instruction so he can work with the young farmer and his wife on an individual basis in solving the particular problems they encounter.

The emergence of record keeping and planning for retirement and transfer into separate problem areas suggests that young farmers are becoming more business-like in their approach to the farm firm. Researchers should seek to disclose additional problem areas which cause difficulties for young farmers engaged in an increasingly competitive and complex business.

The findings in the study gave evidence of a positive correlation between managerial perception and success in farming. The exception was the negative correlation between the rating on record keeping and days of vacation as a measure of success. This might be explained in that young farmers who keep good records are also conscientious about other aspects of the farm business which result in less leisure time for vacations. Teachers of agriculture should be aware of the various managerial tasks which young farmers encounter and should attempt to get young farmers' perception of themselves as managers. This would give the teacher an idea of strengths and weaknesses of the young men and an evaluation of their total performance. This would also enable the teacher to get an indirect evaluation of instruction in farm management and would aid in designing a program to meet the needs of those in his class. A rating of managerial abilities by the young farmers might help them formulate felt difficulties into problems and cause them to become sensitive to the need for further exploration into other possible courses of action. There is evidence of a correlation between years of formal education and young farmer classes and farming status and farm goal attainment. This should

reinforce the teacher's and young farmer's belief that the program for young farmers is valuable and should inspire them to plan more challenging programs in farm management.

It is apparent that increased emphasis should be given to instruction in farm management for young farmers in vocational agriculture. Administrators and teacher educators in agricultural education should focus more attention on organizing more effective programs and preparing better qualified teachers to implement such programs on the local level. Present teachers should have the opportunity to participate in work shops and in-service-education programs to help them become better equipped to work with young farmers. Quality programs in farm management imply that individual teachers will be working more intensively with fewer young men. School officials should be caused to see the importance of the program and encouraged to promote multiple teacher departments to give sufficient time for young farmer work.

The importance of young farmers to our economy is illustrated by the quality of the respondents in this study. It is the responsibility of vocational agriculture to provide the best possible programs in farm management for young farmers to help them be better informed and more productive citizens.

Recommendations

Following are recommendations for programs of agricultural education, for further research, and for improving a study of this kind.

These recommendations are based on the findings and conclusions drawn from this study and the impressions acquired by the writer in conducting the study.

Recommendations for programs in agricultural education

It is recommended that curriculum specialists and teachers of agriculture give consideration to the nine farm management problem areas found in this study in addition to those in other references in designing and teaching courses in farm management. Farm management specialists should give consideration to ways and means in solving problems encountered in these areas and also in identifying other felt difficulties into problem statements.

Agricultural educators, researchers and teachers of agriculture should give more consideration to goal formulation, goal emphasis and goal values and to the role they play in governing the activities of not only young farmers, but also teachers of agriculture, administrators, and fellow staff members. The establishment of worthy and realistic goals should be an important part of the program of instruction in farm management. These goals should be established by the young farmer and his wife.

A written program of instruction by the teacher containing the major objectives, the learnings to be secured, a calendar of activities, and detailed ways and means of conducting the course should be one of the major working tools of the teacher of agriculture teaching young farmers. The program of instruction in farm management should

be planned on a five or more years horizon to make the maximum contribution to the young farmers.

Teachers of vocational agriculture should have the opportunity to attend in-service-education programs to help them become more proficient in planning, implementing, and conducting programs in farm management for young farmers. Instruction in economic principles and in solving farm management problems could also be a part of these in-service-education programs.

Finally, consideration should be given to the establishment of two young farmer classes in each school based on age and degree of establishment in farming. This would enable the teacher of agriculture and the young farmers to work together more effectively in identifying and solving farm management problems and to develop greater competence as managers.

Recommendations for further study

Further study of managerial perception and success in farming should be done. Much is unexplained concerning the relationship of the managerial complex and the farm firm.

An entire study could be devoted to determining the goals of the managerial complex. The farmer and his wife should both be interviewed to determine the family goals. This composite should be used as the criteria for evaluating how the managerial ability is used for achieving these goals. Also some quantitative measurement should be designed to determine the relative values placed on monetary and non-monetary goals.

Further attempts should be made to identify the personal characteristics which would predict the level of managerial performance of an individual. A composite of such characteristics have been identified but no satisfactory method of quantifying these for different situations has been perfected.

Further research is also needed to identify success in farming. This would involve the evaluation of different levels of goals, their degree of attainment and the different potentials or expectations of the individuals involved.

Specific recommendations for improving
a study of this kind

Having teachers select young farmers from their classes who represent a range of success in farming would be a good way of identifying the sample. However, the personal interview method, although more time consuming, would be a better way of collecting the data. This would insure better understanding of the questionnaire by the respondent and would give the researcher the benefit of questions and observations of the respondent.

The questionnaire should be refined. Forced choice questions getting at concepts of management would facilitate better statistical treatment than the open-end questions. The statements measuring perception as a manager should be ungrouped and should be given a value rating to foster better grouping in a factor analysis.

It might also prove fruitful to have a teacher, an extension agent, and some other professional person who knows the young farmer well to give him a rating on both the ability to perform each of the managerial tasks and his over-all ability as a farm manager. A comparison of these ratings should give additional knowledge concerning the relationship of the manager to the firm.

Concluding Observation

This study on managerial perception and success in farming was an effort to learn more about the managerial complex and its relationship to the farm firm. It is hoped that this study will result in the improvement of programs in agricultural education, which in turn will help maximize the monetary and nonmonetary satisfactions of young farmers and society.

APPENDIX A

The Questionnaire

YOUNG FARMER SURVEY
 Department of Agricultural Education
 Ohio State University

The purpose of this questionnaire is to secure information about and ideas of young farmers concerning farm management. This information will be used to help teachers plan a more effective program in farm management for young farmers. Please help us in this project by answering the following questions. Your name is not requested on the survey.

PART I

CHARACTERISTICS OF MANAGEMENT:

1. What do you consider to be some of the most important tasks of a farm manager? (Be specific.)

2. What are three characteristics that best describe a good farm manager? (You may want to describe a good farm manager (farmer) in your community)

3. Why do these factors cause you to select him as the best?

4. Considering your descriptions of the characteristics of a good farm manager, how would you rate yourself?
 Superior____, above average____, average____, below average____, poor____
5. What are some of the long range goals (plans) you have for your farm business?

6. Check () the one statement below which best indicates your progress toward your long range goals for your farm.
 _____ a. I am far ahead of schedule.
 _____ b. I am a little ahead of schedule.
 _____ c. I am right on schedule.
 _____ d. I am a little behind schedule.
 _____ e. I am far behind schedule.
7. Have these goals been modified to a great extent since they were formed?
 Yes____ No____ If "yes" explain why and how. _____

8. What are some of your major long range family goals (plans)?

9. Check () the one statement below which best indicates your progress toward your long range family goals.

- a. I am far ahead of schedule.
- b. I am a little ahead of schedule.
- c. I am right on schedule.
- d. I am a little behind schedule.
- e. I am far behind schedule.

10. Why are you ahead or behind schedule?

11. What were some of the major things you wanted to accomplish on your farm last year?

12. Check () the one statement below which best indicates how you feel about your accomplishment of these goals.

- a. I am well satisfied with my achievements.
- b. I am satisfied with my achievements.
- c. I am somewhat satisfied with my achievements.
- d. I am somewhat dissatisfied with my achievements.
- e. I am very much dissatisfied with my achievements.

13. Why or why were you not able to achieve your goals?

14. Circle the number opposite each of the following statements which best represents the importance you place on them in making farm management decisions. (Base your rating on the scale given below.)

Rating Scale	Very Important	Not Important
	9 8 7 6 5 4 3 2 1	
a. Personal goals	9 8 7 6 5 4 3 2 1	
b. Family goals	9 8 7 6 5 4 3 2 1	
c. Farm goals	9 8 7 6 5 4 3 2 1	
d. Community goals	9 8 7 6 5 4 3 2 1	
e. Monetary goals	9 8 7 6 5 4 3 2 1	

15. What percentage of responsibility for making the decisions in your farming operation do you have? ___% Do you make the important ones?

16. Who else has responsibility for and influence in making farm management decisions?

17. List the types of decisions you make yourself and those you have help with making.

Make yourself

Have help with making

PART II

Listed below are certain farm management problems by areas. Please read each item carefully and assume that you have the responsibility of making this decision on your farm. Next, circle the number at the end of the statement that represents the rating on the scale which best describes your confidence in your ability to solve the problem.

Rating Scale: Very Much Very Little
 9 8 7 6 5 4 3 2 1

A. Deciding Farm Enterprises and Use of Land, Labor, and Capital.

- | | |
|---|-------------------|
| 1. Selecting crops and planning the cropping or land use system. | 9 8 7 6 5 4 3 2 1 |
| 2. Deciding the kind and number of livestock and planning the system. | 9 8 7 6 5 4 3 2 1 |
| 3. Deciding production levels to strive for. | 9 8 7 6 5 4 3 2 1 |
| 4. Choosing production technology and practices. | 9 8 7 6 5 4 3 2 1 |
| 5. Planning power, machinery, and equipment. | 9 8 7 6 5 4 3 2 1 |
| 6. Planning farm buildings, and other structures and improvements. | 9 8 7 6 5 4 3 2 1 |
| 7. Planning the use of the farm labor force. | 9 8 7 6 5 4 3 2 1 |
| 8. Determining the most limiting factor in production. | 9 8 7 6 5 4 3 2 1 |

B. Planning Family Goals.

- | | |
|--|-------------------|
| 1. Planning family budget and use of income. | 9 8 7 6 5 4 3 2 1 |
| 2. Planning family recreation and use of leisure time. | 9 8 7 6 5 4 3 2 1 |
| 3. Planning for the attainment of education for children. | 9 8 7 6 5 4 3 2 1 |
| 4. Deciding on the extent of participation in community activities. (church, social entertainment, etc.) | 9 8 7 6 5 4 3 2 1 |
| 5. Planning for retirement and means of income after retirement. | 9 8 7 6 5 4 3 2 1 |
| 6. Planning transfer of farm business. | 9 8 7 6 5 4 3 2 1 |
| 7. Deciding on kind and amount of life insurance needed. | 9 8 7 6 5 4 3 2 1 |

C. Coordinating Farm Plans With Laws and Regulations and Other Government Policies.

- | | |
|--|-------------------|
| 1. Deciding whether to limit production and apply for agricultural price supports or push for maximum acreage and livestock numbers. | 9 8 7 6 5 4 3 2 1 |
|--|-------------------|

2. Determining best means of adjusting to various legal restrictions such as sanitary regulations for producing milk and other products. 9 8 7 6 5 4 3 2 1
 3. Deciding methods for staying within limits and tolerances for pesticides, plant and animal quarantines, and other chemicals or production materials. 9 8 7 6 5 4 3 2 1
 4. Deciding whether to participate in permissive programs and activities such as the Soil Conservation Service. 9 8 7 6 5 4 3 2 1
 5. Determining the best way to adjust to social and other non-statuary influences, such as consumer preferences. 9 8 7 6 5 4 3 2 1
 6. Deciding when to use legal counsel or advice. 9 8 7 6 5 4 3 2 1
 7. Deciding when to use other types of consultation. 9 8 7 6 5 4 3 2 1
- D. Planning Farm Capital Investments and Their Financing.
1. Deciding capital requirements and major investment items. 9 8 7 6 5 4 3 2 1
 2. Selecting sources of capital and arranging credit for borrowed capital involved. 9 8 7 6 5 4 3 2 1
 3. Deciding needs and conditions for rental or contract arrangements and carrying them out to the best possible advantage. 9 8 7 6 5 4 3 2 1
 4. Deciding when to buy or rent land. 9 8 7 6 5 4 3 2 1
 5. Deciding kind and amount of land to buy. 9 8 7 6 5 4 3 2 1
 6. Determining what is the most limiting resource of the farm business. 9 8 7 6 5 4 3 2 1
- E. Securing Production Materials and Contract Service.
1. Deciding upon supply agencies to purchase production goods from. 9 8 7 6 5 4 3 2 1
 2. Deciding on quality and quantity of production items such as fertilizer and seed to purchase. 9 8 7 6 5 4 3 2 1
 3. Arranging time and conditions for contract labor. 9 8 7 6 5 4 3 2 1
 4. Arranging time and conditions for contract machinery and other services. 9 8 7 6 5 4 3 2 1
 5. Deciding the kind and amount of crop and livestock insurance needed. 9 8 7 6 5 4 3 2 1
 6. Deciding the kind and amount of insurance for buildings and real estate liability. 9 8 7 6 5 4 3 2 1

F. Deciding and Arranging the Marketing and Sales Program.

- 1. Choosing marketing agencies, and time, place, method and conditions of sale. 9 8 7 6 5 4 3 2 1
- 2. Deciding contract terms, and negotiating sales contracts as needed. 9 8 7 6 5 4 3 2 1
- 3. Estimating or determining product prices as a base for production plans or negotiating contract prices if possible and desirable. 9 8 7 6 5 4 3 2 1

G. Planning and Maintaining Effective Management Controls.

- 1. Deciding management goals and the kind of farm business to attain them. 9 8 7 6 5 4 3 2 1
- 2. Deciding what production records are needed and the system for keeping them. 9 8 7 6 5 4 3 2 1
- 3. Establishing a good system of keeping farm financial records and accounts. 9 8 7 6 5 4 3 2 1
- 4. Planning records that will be most effective for management, financing, and tax returns. 9 8 7 6 5 4 3 2 1
- 5. Determining whether outside technical or professional assistance is required either for keeping or analyzing farm records and accounts. 9 8 7 6 5 4 3 2 1
- 6. Deciding whether outside professional management is desirable for the farm, and contracting for such if necessary. 9 8 7 6 5 4 3 2 1

Listed below are some broad areas related to farm management. Please circle the number at the end of each item which best evaluates the young or adult farmer courses in vocational agriculture that you have had, as to contributing to your ability to solve problems in that area. (Base your evaluation on the scale given below.)

- | | Rating Scale | Excellent | Poor |
|---|--------------|-------------------|-------------------|
| | | 9 8 7 6 5 4 3 2 1 | 9 8 7 6 5 4 3 2 1 |
| 1. Deciding farm enterprises and use of land, labor, and capital. | | 9 8 7 6 5 4 3 2 1 | 9 8 7 6 5 4 3 2 1 |
| 2. Planning family goals. | | 9 8 7 6 5 4 3 2 1 | 9 8 7 6 5 4 3 2 1 |
| 3. Coordinating farm plans with laws, regulations, and other government policies. | | 9 8 7 6 5 4 3 2 1 | 9 8 7 6 5 4 3 2 1 |
| 4. Planning farm capital investments and their financing. | | 9 8 7 6 5 4 3 2 1 | 9 8 7 6 5 4 3 2 1 |
| 5. Securing production materials and contract services. | | 9 8 7 6 5 4 3 2 1 | 9 8 7 6 5 4 3 2 1 |
| 6. Deciding and arranging the marketing and sales program. | | 9 8 7 6 5 4 3 2 1 | 9 8 7 6 5 4 3 2 1 |
| 7. Planning and maintaining effective management controls. | | 9 8 7 6 5 4 3 2 1 | 9 8 7 6 5 4 3 2 1 |

PART III

BACKGROUND INFORMATION

1. Age _____ 2. Address _____ 3. County _____
4. Married: Yes _____ No _____ 5. Number of children _____
6. How many years of school have you had? 8 9 10 11 12 13 14 15 16 _____
(Circle or fill in the appropriate number)
7. How many years of school has your wife had? 8 9 10 11 12 13 14 15 16 _____
(Circle or fill in the appropriate number)
8. If you have attended or completed college, what was your major? _____
9. Number of years of vocational agriculture in high school. _____
10. Number of years of veterans training. _____ 11. Number of years of young farmer and/or adult farmer work in vocational agriculture. _____
12. Number of years you have been enrolled in a course of farm management and/or farm business analysis. _____
13. Have you been in military service? Yes _____ No _____ Number of months _____
14. Number of years you have been engaged in farming since age 16. _____
15. How did you get started in farming? (Check the one item below that best describes your situation)
- a. Began with parent or relative:
 - _____ (1) on their farm
 - _____ (2) off their farm
 - b. Began as share cropper on own. _____
 - c. Began as partner with someone other than relative. _____
 - d. Began as a manager of farm:
 - _____ (1) of a relative
 - _____ (2) of someone other than a relative.
 - e. Began as an owner operator. _____
 - f. Other ways (_____ .)
16. Where and how do you get financial help? _____
17. Are you presently farming full time? Yes _____ No _____
18. If not, do you hope to become a full time farmer? Yes _____ No _____

19. How many days were you employed off the farm for pay during last year? _____ Total income received. _____
20. List the kind of employment you were engaged in off the farm.
 a. _____
 b. _____
21. How many days was your wife employed off the farm for pay during the past year? _____ Total income received. _____
22. List the kind of employment your wife was engaged in off the farm last year.
 a. _____
 b. _____
23. Check the one item that best describes your present farming status.
 _____ a. At home with allowance.
 _____ b. Farm laborer with:
 _____ (1) specific wages at home.
 _____ (2) specific wages away from home.
 _____ c. At home with one or more enterprises.
 _____ d. Partner in farming.
 _____ (1) at home.
 _____ (2) Away from home.
 _____ e. Renter and operator of a farm.
 _____ f. Owner and operator of a farm.
 _____ g. Manager of a farm for another party.
 _____ h. Other (list) _____
24. How many hours per day do you work at farming: Winter _____,
 Spring planting _____, Summer _____, Autumn harvest _____
25. How many total hours per day do other members of your immediate family work on the farm: Winter _____, Spring planting _____
 Summer _____, Autumn harvest _____
26. Do you have a full time hired man? Yes _____ No _____ Amount paid per work month. _____
27. How many days per month do you use extra hired help (other than custom work)? Winter _____, Spring planting _____, Summer _____,
 Autumn harvest _____ Average cost per day. _____

28. How many days of vacation do you take during the year? _____
Average number of days for each vacation. _____
29. What do you enjoy doing most during your leisure time?
a. _____ b. _____
c. _____ d. _____
30. In what organizations or groups are you active?

31. How many acres do you farm? _____ Tillable acres? _____
32. What percent of your family income comes from the farm? _____%
33. What are your most important farm enterprises in terms of income?
Enterprise _____ % of Income _____ Enterprise _____ % of Income _____
Enterprise _____ % of Income _____ Enterprise _____ % of Income _____
34. What are the other sources of income? (Source & Percent)
Source _____ % of Income _____ Source _____ % of Income _____
Source _____ % of Income _____ Source _____ % of Income _____
35. What is your estimate of your actual total investment if farming? _____
36. Fill in the blanks the actual value, in terms of money, you have invested in each of the categories below:
a. land _____ d. livestock _____
b. buildings _____ e. livestock equip. _____
c. machinery _____ f. other _____
37. What is the estimated market value of other properties and securities which you have? _____
38. What is the total investment of the farm you are operating? _____
(land, buildings, equipment, livestock, chattels, etc.)
39. Please give your net worth as of December 31, 1960. _____
40. Please give your net worth as of December 31, 1963. _____
41. Please give the net farm profit you reported on your 1040-F income tax return for 1963. _____

APPENDIX B
Listing of Statements

Forty-three Managerial Tasks

1. Selecting crops and planning the cropping or land use system.
2. Deciding the kind and number of livestock and planning the system.
3. Deciding production levels to strive for.
4. Choosing production technology and practices.
5. Planning power, machinery, and equipment.
6. Planning farm buildings, and other structures and improvements.
7. Planning the use of the farm labor force.
8. Determining the most limiting factor in production.
9. Planning family budget and use of income.
10. Planning family recreation and use of leisure time.
11. Planning for the attainment of education for children.
12. Deciding on the extent of participation in community activities (church, social entertainment, etc.).
13. Planning for retirement and means of income after retirement.
14. Planning transfer of farm business.
15. Deciding on kind and amount of life insurance needed.
16. Deciding whether to limit production and apply for agricultural price supports or push for maximum acreage and livestock numbers.
17. Determining best means of adjusting to various legal restrictions such as sanitary regulations for producing milk and other products.
18. Deciding methods for staying within limits and tolerances for pesticides, plant and animal quarantines, and other chemicals or production materials.
19. Deciding whether to participate in permissive programs and activities such as the Soil Conservation Service.

20. Determining the best way to adjust to social and other non-statutory influences, such as consumer preferences.
21. Deciding when to use legal counsel or advice.
22. Deciding when to use other types of consultation.
23. Deciding capital requirements and major investment items.
24. Selecting sources of capital and arranging credit for borrowed capital involved.
25. Deciding needs and conditions for rental or contract arrangements and carrying them out to the best possible advantage.
26. Deciding when to buy or rent land.
27. Deciding kind and amount of land to buy.
28. Determining what is the most limiting resource of the farm business.
29. Deciding upon supply agencies to purchase production goods from.
30. Deciding on quality and quantity of production items such as fertilizer and seed to purchase.
31. Arranging time and conditions for contract labor.
32. Arranging time and conditions for contract machinery and other services.
33. Deciding the kind and amount of crop and livestock insurance needed.
34. Deciding the kind and amount of insurance for buildings and real estate liability.
35. Choosing marketing agencies, and time, place, method and conditions of sale.
36. Deciding contract terms, and negotiating sales contracts as needed.
37. Estimating or determining product prices as a base for production plans or negotiating contract prices if possible and desirable.

38. Deciding management goals and the kind of farm business to attain them.
39. Deciding what production records are needed and the system for keeping them.
40. Establishing a good system of keeping farm financial records and accounts.
41. Planning records that will be most effective for management, financing, and tax returns.
42. Determining whether outside technical or professional assistance is required either for keeping or analyzing farm records and accounts.
43. Deciding whether outside professional management is desirable for the farm, and contracting for such if necessary.

APPENDIX C
Table of Intercorrelations
From Factor Analysis

TABLE 31
Intercorrelation and Residuals of Forty-three Statements
for the One Hundred Twenty-five Respondents^a
 (Decimals omitted)

Statements ^b	1	2	3	4	5	6	7	8	9
1 Planning cropping system	-03	22	34	42	23	38	41	36	30
2 Kind and number of livestock	-06	00	31	20	01	41	18	29	02
3 Production levels	02	-06	-05	53	19	15	31	48	21
4 Production technology	-03	-09	05	-11	34	33	21	37	26
5 Power and machinery	-11	-03	03	-03	-02	28	20	23	25
6 Farm buildings and improvement	-05	01	-01	-06	00	-01	30	35	24
7 Farm labor force	-02	00	-04	-04	-00	-01	01	40	17
8 Limiting factor	-01	C5	-03	01	-04	04	01	02	47
9 Family budget	-01	C2	02	-00	00	-02	04	00	-02
10 Family recreation	05	-04	02	-00	01	-00	-06	-07	-08
11 Education for children	-04	-C0	-02	-00	06	02	-00	-00	-01
12 Community participation	-05	05	02	-04	02	-05	-05	01	-03
13 Retirement	-05	08	00	-05	06	02	-00	-00	02
14 Transfer	00	-05	-03	-00	-02	05	00	06	-03
15 Life insurance	03	-07	-00	-00	-07	-06	08	-03	-01
16 Government programs	-00	-05	01	04	01	-05	00	02	02
17 Legal restrictions	05	-06	01	03	-05	-03	-05	-04	-01
18 Limits and tolerances	-01	10	-05	-03	-00	04	-02	01	05
19 Permissive programs									

TABLE 31 (contd.)

	1	2	3	4	5	6	7	8	9
20 Non statutory influences	-01	04	-01	01	-01	-00	-03	-00	-03
21 Legal council	00	02	03	01	-01	03	-06	04	03
22 Consultation	17	02	02	-04	03	-03	-05	03	-04
23 Capital requirements	-03	04	02	-02	00	01	00	-05	-06
24 Credit arrangements	-01	-05	-04	03	-01	-01	01	-02	-05
25 Contract arrangements	-02	-03	04	-01	03	07	01	-02	-02
26 Buy or rent land	04	-05	-00	-02	02	-03	-03	03	-01
27 Kind and amount of land	01	-09	-02	03	-01	-05	02	02	-04
28 Limiting resource	06	01	03	02	00	-07	01	-01	-01
29 Supply agencies	00	02	-00	-01	02	03	01	-05	04
30 Production items	-02	02	-04	02	-00	05	01	-06	05
31 Contract labor	-02	-02	01	06	-03	-01	-08	-02	-02
32 Contract services	00	-01	04	07	03	-00	-06	-04	01
33 Crop and livestock insurance	00	-02	-02	01	-04	01	08	05	02
34 Real estate insurance	-01	-03	01	-00	-02	04	01	04	04
35 Marketing	-01	-01	-03	04	-03	-01	-00	02	02
36 Negotiating sales	-01	00	-03	-00	-03	00	03	-01	00
37 Price estimation	07	-01	-04	-01	-02	-03	-00	-02	04
38 Management goals	-01	-03	01	-03	02	03	02	-04	-05
39 Production records	-06	-01	-01	-03	05	03	-02	06	00
40 Financial records	03	01	01	02	01	-02	-02	01	01
41 Planning records	-03	01	02	01	01	02	00	04	-04
42 Analyzing records	01	00	01	-01	-05	-02	03	-03	01
43 Professional management	-01	-03	-01	-01	-01	-02	03	-08	-02

TABLE 31 (contd.)

Statements ^b	10	11	12	13	14	15	16	17	18
1 Planning cropping system	24	30	21	39	25	18	29	17	18
2 Kind and number of livestock	-05	21	14	19	31	13	16	38	24
3 Production levels	19	21	21	20	33	28	23	11	27
4 Production technology	07	17	07	19	31	24	26	15	33
5 Power and machinery	13	08	-03	20	30	29	31	15	16
6 Farm buildings and improvement	15	27	23	28	29	11	25	25	25
7 Farm labor force	10	20	10	23	21	19	12	14	38
8 Limiting factor	24	27	25	35	39	37	25	22	50
9 Family budget	52	49	22	31	40	30	15	21	18
10 Family recreation		36	53	20	29	30	25	13	09
11 Education for children	-06	-03	41	28	19	19	13	27	26
12 Community participation	-05	-01	-04	31	21	20	12	12	14
13 Retirement	-03	-01	01	-00	50	35	20	13	27
14 Transfer	-02	-00	02	-04		47	22	22	31
15 Life insurance	01	-04	02	-04	-06		32	40	40
16 Government programs	05	-06	-00	-02	-00	29		28	25
17 Legal restrictions	05	-08	04	-06	04	-03	-04	04	42
18 Limits and tolerances	06	-03	-02	-02	-05	-01	-02	04	
19 Permissive programs	-08	02	-02	07	01	-05	-06	-05	-06
20 Non statutory influences	-03	-05	00	07	00	02	07	06	01
21 Legal council	00	-02	00	-02	04	00	03	03	-02
22 Consultation	-07	04	03	-03	-03	-01	-07	-03	00
23 Capital requirements	02	-01	05	02	02	-01	-01	-06	04

TABLE 31 (contd.)

Statements ^b	10	11	12	13	14	15	16	17	18
24 Credit arrangements	01	-00	05	01	-08	03	01	02	07
25 Contract arrangements	-03	01	05	-02	-01	02	00	04	-00
26 Buy or rent land	-02	01	01	-01	-06	00	-01	-01	04
27 Kind and amount of land	-02	02	01	-02	-08	02	01	01	01
28 Limiting resource	-01	00	-01	01	-01	-01	-02	02	-04
29 Supply agencies	03	03	-01	-09	-03	-01	-09	04	-01
30 Production items	-02	01	-01	-04	04	-03	-07	-05	-02
31 Contract labor	-01	04	-01	03	01	00	04	-02	-01
32 Contract services	-02	05	02	01	02	-05	-02	01	01
33 Crop and livestock insurance	-01	02	01	-06	-06	-02	04	-04	-04
34 Real estate insurance	01	01	-03	00	-01	01	-09	-11	-00
35 Marketing	04	-08	-03	-00	05	04	-02	04	06
36 Negotiating sales	-00	-01	-04	04	03	01	03	01	-03
37 Price estimation	-02	00	-03	03	00	-02	05	01	01
38 Management goals	-02	03	-02	02	-01	-01	05	-07	-04
39 Production records	-03	-03	05	06	09	04	-04	01	-04
40 Financial records	01	-03	01	-01	-01	02	00	03	02
41 Planning records	04	-03	00	-00	-04	04	-00	-03	-00
42 Analyzing records	00	03	-02	-03	-08	01	03	-03	01
43 Professional management	01	07	02	-01	-01	-06	02	02	02

TABLE 31 (contd.)

Statements ^b	19	20	21	22	23	24	25	26	27
1 Planning cropping system	17	28	24	38	24	34	26	32	34
2 Kind and number of livestock	13	31	17	18	18	24	28	35	18
3 Production levels	30	22	30	42	38	36	44	43	31
4 Production technology	16	18	23	26	26	22	23	31	40
5 Power and machinery	23	36	30	32	36	10	24	24	26
6 Farm buildings and improvement	09	35	10	14	15	18	24	25	29
7 Farm labor force	31	24	44	43	23	30	31	37	34
8 Limiting factor	33	37	24	35	48	31	42	41	37
9 Family budget	33	32	21	28	56	29	29	20	37
10 Family recreation	22	42	08	25	20	13	20	20	27
11 Education for children	17	36	26	22	35	25	20	20	29
12 Community participation	07	34	14	19	-05	10	18	13	09
13 Retirement	14	25	32	39	26	30	27	23	32
14 Transfer	29	31	41	47	37	28	51	51	50
15 Life insurance	35	44	39	40	40	25	41	41	34
16 Government programs	31	35	22	29	26	21	31	29	36
17 Legal restrictions	19	38	18	16	27	14	15	15	14
18 Limits and tolerances	34	39	31	30	36	14	28	38	28
19 Permissive programs		44	28	35	33	20	34	36	31
20 Non statutory influences	02		35	42	43	27	38	46	27
21 Legal council	-04	-01		77	32	42	58	54	42
22 Consultation	03	01	-00		42	53	62	56	46
23 Capital requirements	-04	06	02	03	42	48	50	33	37

TABLE 31 (contd.)

Statements ^b	19	20	21	22	23	24	25	26	27
24 Credit arrangements	01	01	-04	-03	-02		56	55	50
25 Contract arrangements	00	-02	-02	03	00	04		63	51
26 Buy or rent land	-04	02	-03	-05	-00	01	-07		69
27 Kind and amount of land	-06	-03	-05	-07	-05	-00	-09	-03	
28 Limiting resource	01	-02	03	02	00	-02	02	-04	-04
29 Supply agencies	-03	02	-04	-03	-01	04	-03	02	02
30 Production items	05	01	-07	-04	-03	-03	-02	02	-01
31 Contract labor	-02	-02	04	-01	-00	-03	-04	-01	04
32 Contract services	-10	-07	03	06	-01	-02	01	-02	02
33 Crop and livestock insurance	04	-03	-03	-04	-06	02	-01	02	05
34 Real estate insurance	-01	-01	-03	-03	-00	-06	-05	02	04
35 Marketing	05	-02	-01	-03	-02	-02	-07	01	03
36 Negotiating sales	03	01	-07	-04	-03	-02	-01	-03	-01
37 Price estimation	07	-05	-03	-02	-08	02	-04	-01	02
38 Management goals	-03	-01	00	-03	02	-02	-03	02	06
39 Production records	-09	-00	03	-00	-03	-01	01	-00	03
40 Financial records	-02	02	01	03	-00	02	02	02	-04
41 Planning records	-02	04	-00	01	01	02	00	-00	-01
42 Analyzing records	07	-00	-03	01	03	07	-00	-02	-04
43 Professional management	02	-04	-02	-01	03	04	01	-04	02

TABLE 31 (contd.)

Statements ^b	28	29	30	31	32	33	34	35	36
1 Planning cropping system	24	25	31	33	18	24	26	33	27
2 Kind and number of livestock	24	11	14	12	11	27	42	21	28
3 Production levels	25	31	31	12	18	17	32	26	42
4 Production technology	26	17	22	03	-01	16	24	17	37
5 Power and machinery	28	31	20	21	19	27	24	19	32
6 Farm buildings and improvement	24	14	18	31	13	19	27	19	18
7 Farm labor force	30	30	40	44	43	23	30	31	37
8 Limiting factor	57	38	41	40	42	37	29	46	45
9 Family budget	38	20	34	16	22	29	22	35	37
10 Family recreation	29	15	04	21	22	16	13	24	27
11 Education for children	28	06	17	13	16	28	29	24	36
12 Community participation	20	16	05	09	15	20	18	26	21
13 Retirement	30	25	38	23	16	33	32	26	26
14 Transfer	42	30	39	27	28	35	39	29	42
15 Life insurance	33	33	36	31	32	63	48	19	35
16 Government programs	40	37	36	24	24	31	31	18	25
17 Legal restrictions	22	14	20	26	26	45	31	14	11
18 Limits and tolerances	52	38	47	38	47	34	31	28	27
19 Permissive programs	42	36	52	36	35	25	25	22	32
20 Non statutory influences	41	33	26	50	43	49	48	41	49
21 Legal council	34	38	33	28	29	35	51	46	59
22 Consultation	39	49	48	36	43	34	50	48	59
23 Capital requirements	44	33	47	30	35	35	34	37	39

TABLE 31 (contd.)

Statements ^b	28	29	30	31	32	33	34	35	36
24 Credit arrangements	23	35	35	17	18	26	37	43	49
25 Contract arrangements	55	45	40	30	44	34	45	44	65
26 Buy or rent land	44	41	35	35	35	33	53	39	60
27 Kind and amount of land	46	36	39	20	22	20	43	31	48
28 Limiting resource		45	49	37	55	26	34	37	42
29 Limiting resource	-08		59	33	43	32	32	37	42
30 Production items	-02	-02		32	42	30	40	35	32
31 Contract labor	-02	-03	-01		68	41	28	38	29
32 Contract services	02	-04	-01	-03		39	31	37	28
33 Crop and livestock insurance	-00	01	-00	-03	-02		56	35	36
34 Real estate insurance	04	-06	05	03	03	-03		46	47
35 Marketing	-02	-04	03	-00	-03	-03	-00		61
36 Negotiating sales	-04	03	06	02	-05	00	-05	00	
37 Price estimation	-07	-01	02	01	-02	01	-02	-03	01
38 Management goals	-03	-02	01	05	00	-02	02	-05	00
39 Production records	01	-06	00	02	03	-01	02	-02	01
40 Financial records	-01	03	-05	-01	01	02	-05	-00	-01
41 Planning records	-03	02	02	-03	01	-02	03	-01	-00
42 Analyzing records	00	04	01	-03	-08	-00	-02	-03	-01
43 Professional management	02	03	02	-04	02	-05	-03	-02	-02

TABLE 31 (contd.)

Statements ^b	37	38	39	40	41	42	43
1 Planning cropping system	21	21	18	24	18	30	36
2 Kind and number of livestock	30	26	16	16	15	24	27
3 Production levels	38	47	28	14	11	20	29
4 Production technology	31	31	16	18	19	26	32
5 Power and machinery	28	25	15	07	12	22	28
6 Farm buildings and improvement	13	20	15	15	21	30	26
7 Farm labor force	34	30	30	40	37	31	30
8 Limiting factor	55	57	42	36	37	42	31
9 Family budget	37	41	25	36	31	30	25
10 Family recreation	17	26	07	12	12	22	17
11 Education for children	31	48	16	26	23	25	26
12 Community participation	16	24	06	02	-02	18	12
13 Retirement	20	24	06	15	19	29	26
14 Transfer	42	38	22	25	27	39	44
15 Life insurance	40	44	13	13	17	36	34
16 Government programs	23	36	15	11	09	21	21
17 Legal restrictions	21	30	24	26	18	22	31
18 Limits and tolerances	49	56	33	45	44	51	40
19 Permissive programs	38	45	32	32	30	35	29
20 Non statutory influences	46	51	29	24	25	44	39
21 Legal council	45	37	18	17	20	25	28
22 Consultation	44	35	18	18	20	27	31
23 Capital requirements	40	57	31	33	34	31	36
24 Credit arrangements	39	23	04	01	02	11	18
25 Contract arrangements	56	43	23	23	24	37	41

TABLE 31 (contd.)

Statements ^b	37	38	39	40	41	42	43
26 Buy or rent land	55	42	19	19	20	37	36
27 Kind and amount of land	38	41	24	26	32	26	32
28 Limiting resource	53	55	33	41	39	48	37
29 Limiting resource	38	40	17	22	22	35	28
30 Production items	31	49	36	32	34	29	27
31 Contract labor	40	40	34	24	27	44	39
32 Contract services	47	49	39	35	29	39	41
33 Crop and livestock insurance	49	44	17	18	22	47	46
34 Real estate insurance	46	47	26	14	20	35	42
35 Marketing	54	44	32	29	30	40	39
36 Negotiating sales	71	53	23	16	21	36	38
37 Price estimation		64	31	28	26	50	49
38 Management goals	-01		58	51	53	56	54
39 Production records	00	01		68	67	41	46
40 Financial records	01	-05	-05		90	60	49
41 Planning records	01	-03	-01	-03		63	52
42 Analyzing records	-01	-01	-10	-02	-02		72
43 Professional management	-01	01	-05	-06	-06	01	

^aCorrelations are in the upper triangle and residuals in the lower triangle.

^bThe statements have been reduced to save space. The complete statement may be found in Appendix B.

APPENDIX D
Rotated Factor Loadings

TABLE 32

Rotated Factor Loadings^a

Statement ^b	A	B	C	D	E	F	G	H	I	(h ²) ^c
26 Buy or rent land	76	08	11	04	08	-02	-09	03	-21	66
25 Contract arrangements	75	13	09	04	17	15	-08	09	04	66
36 Negotiating sales	72	10	11	19	-00	13	-18	07	23	69
21 Legal council	66	07	22	01	11	-03	-03	11	10	53
22 Consultation	65	04	14	08	27	07	09	16	06	57
27 Kind and amount of land	62	20	-03	08	18	21	-02	18	-30	63
24 Credit arrangements	59	-15	03	-06	13	40	14	09	10	59
37 Price estimation	53	20	23	08	-04	13	-41	-04	22	62
34 Real estate insurance	47	12	53	03	19	-02	03	06	16	58
35 Marketing	44	23	05	16	11	15	-00	03	54	60
14 Transfer	43	17	19	12	03	09	-11	51	-26	61
28 Limiting resources	37	31	01	18	38	18	-48	09	-03	68
29 Supply agencies	33	09	06	02	60	00	-16	17	15	82
3 Production levels	29	06	07	11	16	11	-01	-01	01	14
7 Farm labor force	28	18	-04	00	03	02	-07	09	-04	13
15 Life insurance	27	02	65	13	15	12	-13	25	-22	68

TABLE 32 (contd.)

Statement ^b	A	B	C	D	E	F	G	H	I	(h ²) ^c
20 Nonstatutory influences	27	14	43	36	11	10	-07	-16	02	46
43 Professional management	26	58	34	03	-08	-05	02	16	08	56
23 Capital requirements	26	20	23	-10	17	71	-09	03	02	27
2 Kind and number livestock	26	10	35	06	00	-08	13	-06	07	24
38 Management goals	24	49	30	20	19	23	-34	-06	09	64
32 Contract services	22	24	18	09	24	07	-20	-03	03	23
19 Permissive programs	21	26	14	15	37	10	-06	-16	-33	44
30 Production items	21	24	12	-08	64	23	-10	24	-02	65
42 Analyzing records	19	63	23	14	-03	-08	-18	23	09	61
8 Limiting factors	19	23	02	12	17	33	-40	15	13	44
33 Crop and livestock insurance	18	10	72	05	04	08	-04	23	18	66
4 Production technology	18	14	05	00	03	06	-13	12	-07	9
16 Government programs	16	03	24	16	65	02	03	-05	-06	54
5 Power and machinery	16	03	15	-04	15	13	-03	04	01	9
13 Retirement	16	05	18	19	17	12	-01	70	07	63

TABLE 32 (contd.)

Statement ^b	A	B	C	D	E	F	G	H	I	(h ²) ^c
9 Family budget	15	24	07	38	00	70	-03	16	-03	75
1 Planning cropping system	15	16	03	18	13	14	34	28	11	50
10 Family recreation	15	05	03	80	04	22	09	02	-17	75
31 Contract labor	14	18	18	05	08	03	-02	04	01	9
11 Education for children	11	17	24	48	-11	43	-15	-00	10	55
41 Planning records	08	90	02	-01	05	10	-08	12	-03	85
18 Limits and tolerances	07	33	27	00	21	00	-58	12	-08	59
17 Legal restrictions	-05	04	66	01	12	16	-06	-06	-09	73
40 Financial records	04	90	01	03	17	13	-07	05	-03	113
6 Farm buildings and improvements	04	09	03	13	08	05	-05	18	-00	7
12 Community participation	03	-05	09	81	08	13	-10	17	20	77
39 Production records	02	74	05	00	17	08	02	-19	04	62

^a Expressed in hundreds in this table.

^b The statements have been reduced. The complete statement may be found in Appendix B.

^c h² is the communality of a statement or the proportion of the statement explained by the nine factors.

APPENDIX E

**Factors Used in Analysis of Variance and in
Multiple Regression Analysis**

TABLE 33

Dependent Variables Used in Analysis of Variance

Variable	Point Scale
Net income	Actual net income
Net worth	Actual net worth
Investment in farming	Actual investment in farming
Farming status	Eight point scale: 8 = high 1 = low
Goal attainment (farm)	Five point scale: 1 = high 5 = low
Goal attainment (family)	Five point scale: 1 = high 5 = low
Vacation days	Actual number of days
Tillable acres	Actual number of acres
Age	Actual age
Years in school	Actual years in school
Years of vocational agriculture	Actual number of years
Years in young farmer classes	Actual number of years
Years farming since age 16	Actual number of years

TABLE 34
Independent Variables Used in Analysis of Variance

Variable	Categories for Division		
Tasks of manager	monetary	intermediate	nonmonetary
Characteristics of management	monetary	intermediate	nonmonetary
Self rating as manager	above average	average	poor
Long range farm goals	monetary	intermediate	nonmonetary
Family goals	monetary	intermediate	nonmonetary
Decisions made	major	intermediate	minor
Resource acquisition	high	medium	low
Records	high	medium	low
Adjustments	high	medium	low
Family planning	high	medium	low
Production	high	medium	low
Money management	high	medium	low
Limiting factors and tolerances	high	medium	low
Retirement and transfer	high	medium	low
Marketing	high	medium	low
Personal goals (value)	high	medium	low
Family goals (value)	high	medium	low
Farm goals (value)	high	medium	low
Community goals (value)	high	medium	low
Monetary goals (value)	high	medium	low
Program rating	high	medium	low

TABLE 35

Dependent Variables Used in Multiple Regression Analysis

Variable	Point Scale		
Net income	Actual net income		
Net worth	Actual net worth		
Investment in farming	Actual investment in farming		
Farming status	Eight point scale: 1 = low 8 = high		
Goal attainment (farm - long range)	Five point scale: 1 = high 5 = low		
Goal attainment (family)	Five point scale: 1 = high 5 = low		
Goal attainment (farm - short range)	Five point scale: 1 = high 5 = low		
Community activities (participation)	12 or more high	6 to 11 medium	0 to 5 low
Vacation days	Actual number of days		

TABLE 36

Independent Variables Used in Multiple Regression Analysis

No.	Variable	Point Scale
X ₁	Resource acquisition	9 point scale: 9 = high 1 = low
X ₂	Records	9 point scale: 9 = high 1 = low
X ₃	Adjustments	9 point scale: 9 = high 1 = low
X ₄	Family planning	9 point scale: 9 = high 1 = low
X ₅	Production	9 point scale: 9 = high 1 = low
X ₆	Money management	9 point scale: 9 = high 1 = low
X ₇	Limiting factors and tolerances	9 point scale: 9 = high 1 = low
X ₈	Retirement and transfer	9 point scale: 9 = high 1 = low
X ₉	Marketing	9 point scale: 9 = high 1 = low
X ₁₀	Educational program rating	9 point scale: 9 = high 1 = low
X ₁₁	Status and investment	8 point scale: 8 = high 1 = low
X ₁₂	Resources (farm)	Actual value of resources
X ₁₃	Goal rating (value in making decisions)	9 point scale: 9 = high 1 = low
X ₁₄	Experience	Actual years of farming

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