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Educational needs of managers of agricultural cooperatives

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Educational needs of managers of agricultural cooperatives

by

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

In the United States there are more than 7,700 marketing, farm supply and related service agricultural cooperatives. Even though this number of cooperatives is on the decrease due to acquisition, merger and consolidation, the dollar volume of business is increasing. Today, these agricultural cooperatives represent more than a 22 billion dollar industry with the largest cooperative having annual sales of about 660 million dollars (26).

These member-owned and member-controlled forms of business represent one basic form of business operations in our American economy. Three other basic forms of business operations including individual proprietorship, partnership and corporation are also utilized in our American business economy. Each form of business can operate to its advantage, depending upon the purpose of the business operation.

Cooperatives operate for the primary purpose of serving their members, the people who qualify for membership in the organization. Being owned and controlled by the members, cooperatives operate their business functions primarily through an elected board of directors and a hired manager. In smaller cooperatives, the board of directors and the manager make up the "management team". In larger cooperatives, first and second line managerial staff are sometimes added to the "management team" so as to gain their expertice in technical areas.

Cooperatives operate somewhat differently as to the duties and responsibilities of both the employed manager and the elected board of

directors. However, the primary function of the board of directors is to develop board policies and hire the manager to carry out these policies through the day-to-day operations of the business.

With more than 7,700 agricultural cooperatives in the United States, we have more than 7,700 top management positions. Also, cooperatives have additional personnel employed in first and second line managerial posts. Cooperatives vary in the number of board members they elect, but with an average of 10 board members per cooperative, more than 77,000 people could be charged with the duties and responsibilities of directorship for agricultural cooperatives. Thus, in any one year, it is possible that more than 90,000 people are making management decisions that directly affect agricultural cooperatives in the United States.

Today, most forms of business operations are getting larger in scale and size, and the cooperative form of business is no exception. These larger forms of business add both to the efficiency and effectiveness of the business operation. However, increased size adds to the complexity of the business operation and the leadership capabilities of the "management team" must be constantly strengthened and expanded to meet the challenge in our economic revolution.

Many of the leadership personnel of our present agricultural cooperatives recognize the need for strengthened leadership. And, because the cooperative form of business operates to serve the voice of its members, it is imperative that the decision makers be truly knowledgeable before executing the duties and responsibilities which were charged to them by the members they serve.

To strengthen the needed leadership for agricultural cooperatives, educational programs are essential. Effective educational programs need to be tailored to the individual needs of managers and boards of directors so as to enhance their management capabilities in line with their duties and responsibilities. This study has been undertaken to determine the educational needs of managers of agricultural cooperatives as an aid in developing effective educational programs for this audience.

The researcher realizes that educational programs are also continually needed in the technical and product areas, such as fertilizer, chemical, feed, seed, sales and service training. Such programs need to be available to the employees of a cooperative, as well as available to the management staff. However, this study was designed to focus upon the educational needs that enhance management capabilities as opposed to technical and product educational needs.

Background Information

The advent of agricultural cooperatives in the American private enterprise system dates back to the early 1800's. Cooperative dairying originated in Connecticut in 1810 and cooperative marketing of hogs was first noted in Illinois in 1856. The first cooperative elevator was built by grain growers in Wisconsin in 1857 and the first farm supply cooperative was formed in 1863 in New York (2).

The early beginning of agricultural cooperatives was kindled by discontented farmers who suffered from unfavorable economic conditions. In a joint effort, they banded together to form small, unincorporated organizations and associations to better their economic position by pooling

their resources. An improved economic position could be gained by pooling their resources to purchase supplies in larger volumes and by pooling their products to be marketed through a common outlet.

Farm organizations became greatly involved in influencing and guiding the cooperative effort. In some cases, the membership actually forced the organizations into cooperative business and thousands of farmer cooperatives came into existence through their sponsorship.

Even though many of the early efforts of farmer cooperatives failed, farmers learned by experience that they often can accomplish more by working together than by working alone.

As farmer cooperatives continued to develop into the 1900's, a loyal membership of organizers supported the activities of their cooperative to enhance their economic position. However, at the same time, other forms of business were expanding and competition for the American dollar from agriculture was increasing. By 1952, agricultural cooperatives numbered 12,166 with an annual business volume of slightly over 12 billion dollars (27). Keen competition required that these agricultural cooperatives be managed efficiently and effectively or they would fall to the competition.

According to Parker (20, p. 377) cooperative development in America has seen recurring waves of cooperation. She states:

> Surge after surge of new growth has swelled, reached its crest, broken and faded. But each has left a substantial number of survivors, battling their way not only against economic odds but also against the temporary disrepute that has attached itself to the word "cooperative" as a result of the failures and losses involved in each recession of the movement.

> In probably no country in the world did the trial and error stage last so long as here. Some associations still come and go on that basis, but there is no longer much excuse for it, what with the aids, experience, and advice now available.

To aid in the continuing development of agricultural cooperatives in America, educational programs for their leadership personnel have been planned and conducted by many organizations and agencies. Federal agencies, such as the United States Department of Agriculture, Farmer Cooperative Service and the Extension Service, U.S.D.A., have been especially involved in the areas of statistical data, research development and consultation work.

National cooperative organizations, such as the American Institute of Cooperation and the Cooperative League of the U.S.A., have been involved in conducting educational programs for both agricultural and nonagricultural cooperatives and in aiding foreign cooperative developments. Other national organizations, such as the National Council of Farmer Cooperatives, National Milk Producers Federation and the National Federation of Grain Cooperatives, have been basically involved in legislative programs for agricultural cooperatives.

At the state level, many states have either state cooperative councils or state cooperative committees in operation. The function of these councils and committees vary from state to state, but basically they serve an educational function through coordinating educational programs. Also, operating at the state level is the Cooperative Extension Service of the land grant colleges and universities. This resource supplies knowledge, or perhaps more importantly, has access to knowledge in a wide variety of

subjects which is used in conducting educational programs.

The Farm Credit Banks, especially the Banks for Cooperatives, are also involved in coordinating educational programs and in supplying knowledge on capital needs, financial planning systems and methods of financial analysis.

Most regional cooperatives, such as Farmland Industries, Inc., Kansas City, Missouri and Agway, Inc., Syracuse, New York, also have on-going educational programs, not only for their leadership personnel, but educational programs for their technical people which are product oriented. In some states, the State Department of Agriculture is involved in educational programs as well as other educational institutions which are not land grant institutions.

With this wide variety of organizations and agencies involved at varying degrees in educational programs for agricultural cooperatives, Kolmer (15) does not believe our past activities, in most cases, have been as valuable as they might have been if there had been more coordination of major educational thrusts.

According to Kolmer:

> The present business environment and the fundamental changes in industry structure will not permit us the luxury of unilateral or bilateral educational program decision making in the future. The rapidly changing technology, turmoil in pricing of farm supplies, specialization in rendering products and services and continuing consolidation of cooperative enterprises at the local and regional level forces us to formulate educational strategies that provide opportunity for each of the organizations serving cooperatives to bring their educational concerns, ideas and needs to the discussion table.

Kolmer believes that all organizations and agencies that are involved in educational programs for agricultural cooperatives have expertise they can bring to a coordinated program planning process concerned with

"education for action". He states:

> ... If we each insist that we will each develop an educational program in isolation and hope that the plans and activities of other organizations involved will happily complement our own efforts, I believe we are doomed to failure.

The educational programs that are planned and conducted either solely or jointly by these many organizations and agencies are primarily aimed at five audiences. These audiences include 1) managers, 2) boards of directors, 3) employees, 4) members and 5) the general public. For effective education, these programs must be tailored to the educational needs of each audience.

Thus, the first step involves determining the educational needs of the audiences. This study has been designed to determine the educational needs of a select audience; specifically managers of agricultural cooperatives.

Determination of Educational Needs

Two basic types of educational learning experiences for adults are 1) structured educational programs, and 2) random educational experiences. The structured development of educational programs for managers of agricultural cooperatives would serve as an adult education function of the systematically organized learning experience type. According to Bergevin (5), systematically organized learning experiences include both individual and group learning experiences in a school, independent study or participation training setting. Such is not the case in random experiential learning which is characterized by a lack of planning. Random experiential learning occurs through everyday experiences without the help

of professional educators. Because no goals, objectives and purposes have been established, education is accidental in nature.

Program planning and development is essential to the establishment of effective educational programs for systematically organized learning experiences; and, almost all adult educators agree that effective educational programs for an adult education curriculum must be based on the felt educational needs of the people.

The principles of program planning allude to the fact that program planning should be accomplished with the people concerned and based on their recognized problems and felt educational needs. As noted in the publication, Extension Program Development Manual (10), educational programs should be jointly planned by the educators and the clientele so as to develop enthusiasm for the program. And, the planning process should start where the people are, taking into account their characteristics. The planning process does not necessarily stop with the identification of felt needs. The process should identify the present needs and use them as guides for the development of further interests and needs.

London (17) identifies five steps in program development. The steps include 1) determine needs of the constituents, 2) enlist constituents' participation in planning process, 3) formulate clear objectives, 4) design a program plan and 5) plan and carry out a system of evaluation. Again it is recognized that the constituents play an important role in the program development process.

McCall and Schenz (18), in discussing curriculum development for planning a balanced adult education program, note the following ideas for

curriculum development:

1. It is a dynamic, continuous process.
2. It involves those directly affected.
3. It provides for group participation.
4. It requires long-term effort.
5. It is a complex of details.

In considering the principles of adult learning, most educators agree that learning for adults must be purposeful. Such purpose can greatly enrich an adult education program when it is planned around the felt educational needs of the clientele. And, adults will learn more when they feel a need to learn.

Leagans (16), in presenting a model for educational needs, describes the educational need as the "gap" which exists between the actual situation and the desired situation. Educational program development should be designed to move the clientele from their present or actual situation to their desired situation by filling the gap which separates the two situations. This gap represents the perceived and felt educational needs of the clientele.

Adults are more than just "older youth". As such, adults enter a learning experience with different characteristics than do youth. Knox (14) lists the following four characteristics of adults as learners:

1. Adults enter a learning activity with more immediate intentions to apply learning to life problems than youth. Therefore, adults require practical results from learning.
2. Adults enter a learning activity with a different quality of experience and different developmental tasks than youth.
3. Adults enter a learning activity with more experience than youth. Therefore, they have more to contribute to learning activity and have a broader basis of experience to relate new learning.
4. Adults enter a learning activity with an image of themselves as self-directing, responsible grown-ups, not as immature, dependent learners. Therefore, they resist situations where they are treated with disrespect.

Again, the first characteristic of adults as learners which Knox has mentioned points out the need for initiating adult program planning by starting with the perceived and felt educational needs serving as a basis for the program planning process. For learning situations to be applied to the life problems of adults necessitates starting the program planning process around the recognized problems and felt educational needs of the clientele.

In A Treasury of Techniques for Teaching Adults by the National Association for Public School Adult Education (25, Pp. 10-11), it is stated:

> ... Experiences of the past and research findings of the present indicate that adult education classes are more successful if they come close to the concerns that students feel are important.
>
> When we say that we learn through experience or that experience is the best teacher, we mean that if content is to be meaningful it must be related to deep and significant interests, needs and goals of the learner ...

Program planning models, processes and steps have been developed by various authors in the field of adult and continuing education. The five step process as aforementioned by London starts with the determination of the constituents' educational needs and moves through to the program evaluation process.

Douglah (8), in presenting a program planning model, lists the following steps or phases to be followed:

> Phase 1. Formulating a broad organizational philosophy, objectives, policies and procedures for program planning. This phase suggests that the agency or organization providing the leadership for planning ought to first develop its own philosophy, objectives, policies and procedures for program planning.
>
> Phase 2. Identifying and clarifying a need for planning. This phase emphasizes the importance of creating a need for planning among the people to be served.

Phase 3. Organizing and maintaining a planning group. This phase involves the mechanical details of organizing and maintaining the program planning group.

Phase 4. Reaching decisions on problems and concerns and identifying possible means for their solution. This phase includes all those efforts and activities through which the needs and interests of the clientele are identified.

Phase 5. Preparing a written program document. This final phase of preparing the written document includes developing a program plan which 1) describes the social and economic situation, 2) identifies the major problems and concerns of the people and 3) outlines general plans for resolving the major problems and concerns of the people.

Even though the London and Douglah models are somewhat different by starting and stopping at different points in the program planning process, it will be noted that each consider an identification process for the problems, needs and interests of the clientele.

To successfully integrate the problems, needs and interests of the clientele with the resources available, a working relationship must be established between the clientele and the educators in the program planning process. By involving both the clientele and the educators in the program planning process, Brower (6) notes in Figure 1 that "Education for Reality" is possible.

However, the Brower model presents the conflict in educational philosophies which can emerge from the adult educator's attempt to involve the people in the total educative process and brings into sharp focus the relationship between the variables responsible for the conflict. Brower refers to this conflict between involving versus not involving the student and/or teacher in the total educative process as the philosophic dilemma of adult educators. Brower, in describing involvement, states:

> ... "Involve" means the significant and appropriate inclusion of the student and/or the teacher at each stage of the educational process, i.e. identifying needs, setting goals, identifying subject matter, and designing and executing educational experiences.

The four basic types or educational approaches which emerge from Brower's model are obviously polar or extreme types and in actual practice program planning processes may tend to take place somewhere between two or more of the types. With each type having both advantages and disadvantages for adult program planning, Brower states:

> Regardless of orientation, as adult educators are challenged to provide meaningful educational experiences for adults, they will be forced more and more toward an "education for reality" orientation...

		STUDENT OR PEOPLE	
AUTHORITATIVE PERSON		Involve	Not involve
Specialist, Professor or Teacher	Involve	Education for Reality	Academic
	Not involve	"Grass Roots"	Propaganda

Figure 1. Model defining alternative approaches to planning and conducting programs for adults by Stephen L. Brower

Purpose

The purpose of this study was to determine the educational needs of managers of agricultural cooperatives in the Omaha, St. Louis and St. Paul Farm Credit Bank Districts. The eleven state area, as shown in Figure 2, was selected to conform with the states served by these three midwestern Farm Credit Banks. As such, the population was confined to midwestern agricultural cooperatives serving a diversified agriculture. Basically, this region is served by federated cooperatives with overlapping territories as opposed to semi-federated and centralized cooperatives with somewhat definite territorial boundaries serving the Eastern and Western United States and the specialized marketing cooperatives serving the Western and Southeastern United States.

In this eleven state midwestern region, educational needs were expressed as "strong", "moderate" or "none" to a predetermined list of 95 subject matter items by the managers. Educational needs were expressed as those needed for a person employed as a manager of an agricultural cooperative. Some of these educational needs have undoubtedly been already met through past educational programs and personal experience, but the relative importance of each subject matter item will serve as a useful tool to educators as they continue to design future educational programs for people in these positions, depending upon the manager's age, experience, formal education and size of cooperative managed.

This study is designed to answer the question, "What is the relative importance of these subject matter items to a manager of an agricultural cooperative?" Educators should be alerted to check the subject matter

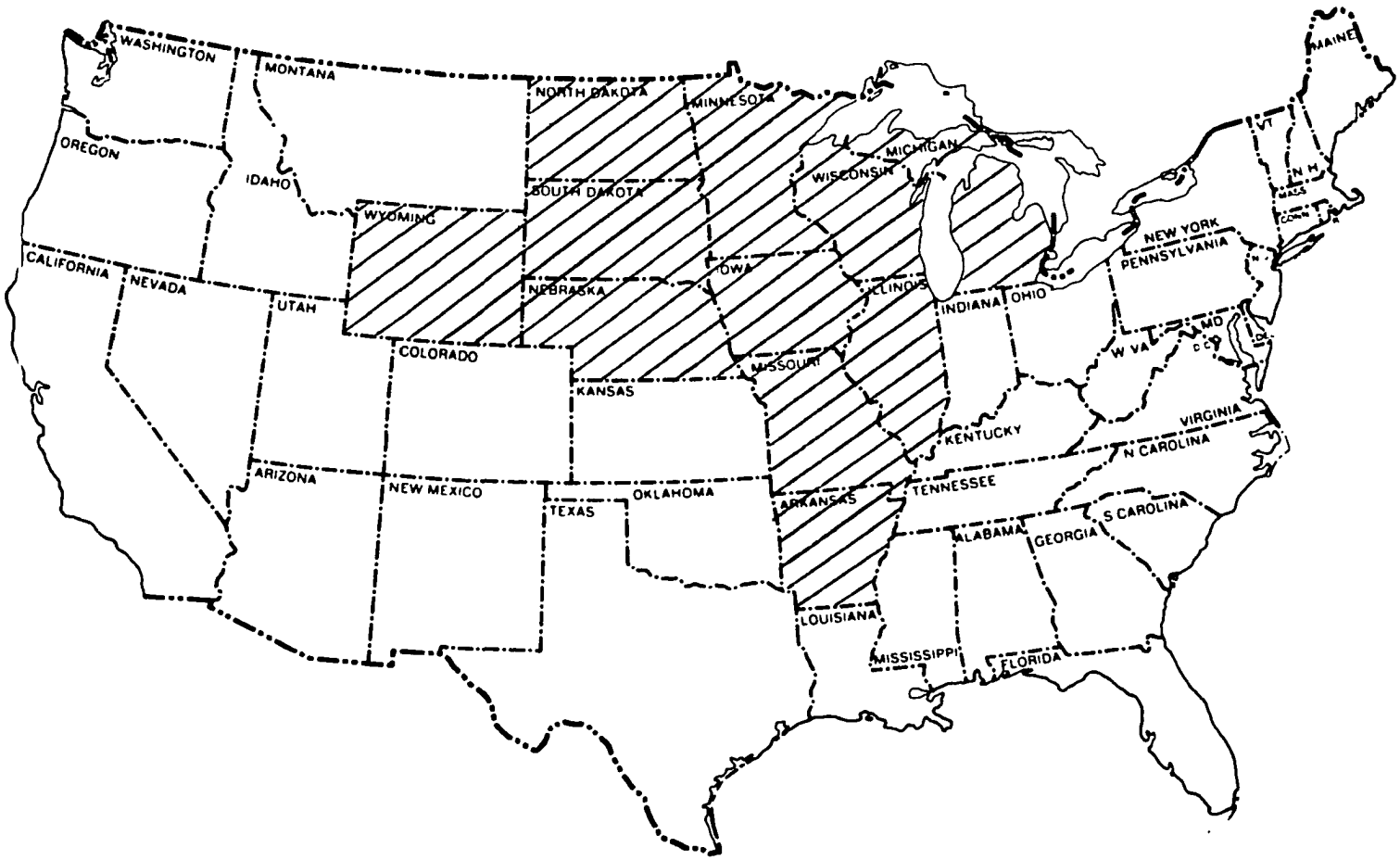

Figure 2. Geographic area for the study

content of future educational programs in accordance to those items which rank high in importance. However, it must be realized that it is highly probable that some items which are ranked high in importance are educational needs which have already been fulfilled. Future studies will need to be made to determine the level of fulfillment of these educational needs. This study will only serve as a guide to curriculum development of educational programs for managers of agricultural cooperatives in the surveyed eleven state region.

Objectives

Theoretically, one should be able to hypothesize that all managers would place the same relative value on each subject matter item for a person employed in the position as a manager of an agricultural cooperative. The rationale for such a statement is grounded in the fact that all respondents are managers of agricultural cooperatives. However, it is unlikely that this would be true because both internal and external factors will affect how managers rate the relative importance of the subject matter items.

Thus, the major objectives of this study are to examine how four factors affect the importance of educational needs of managers of agricultural cooperatives. These four factors are:

1. Age.
2. Years of experience as a manager of a cooperative.
3. Level of formal education.
4. Size of operation managed as expressed by gross dollar sales.

The first overall objective is designed to evaluate the relative importance of the 95 subject matter items by the present age of the respondent. In general, one would expect the younger managers to see a greater need in the subject matter items because they generally lack experience when compared to the older managers. Also, younger managers are more mobile than older managers and are seeking advancements, a factor that is greatly influenced by knowledge and experience.

The second overall objective is designed to evaluate the relative importance of the subject matter items by the years of experience as a manager. In general, one would expect to find a correlation between years of experience and age, but such might not be the case. In general, one would expect the less experienced managers to see a greater need in the subject matter items than would the more experienced managers. Personal experience of older managers could easily lessen the relative importance of an otherwise routine matter.

The third overall objective is designed to evaluate the relative importance of the subject matter items by the level of formal education possessed by the respondents. In general, one would expect to find the respondents who possessed more formal education to see a greater need in the subject matter items because they would undoubtedly place a higher value on the relative worth of education.

The fourth overall objective is designed to evaluate the relative importance of the subject matter items by the size of cooperative operation managed. In general, one would expect to find the managers of larger operations seeing a greater need in the subject matter items than would

those managers who operate smaller businesses. This could be expected because the larger operations would undoubtedly employ more people, thus freeing the manager to spend more of his time in management functions and allowing him to spend less time in service functions.

Hypotheses

To evaluate the educational needs of managers of agricultural cooperatives, the following major hypotheses were formulated for testing. In Chapter IV, which reports the findings of the study, each major hypothesis has been subdivided into four minor hypotheses and written in the null form for statistical testing.

1. The need for understanding business organization functions of cooperative organization by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

2. The need for understanding legal aspects of cooperative organization by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

3. The need for understanding policy development functions of cooperative operations by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

4. The need for understanding business management functions of cooperative operations by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

5. The need for understanding sales management functions of cooperative operations by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

6. The need for understanding communication functions of cooperative operations by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

7. The need for understanding internal financial control functions of financial management by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

8. The need for understanding capital structure management functions of financial management by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

9. The need for understanding economic trends and outlook of cooperative environment by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

10. The need for understanding legislative climate of cooperative environment by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

11. The need for understanding public relations functions of human behavior by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

12. The need for understanding member relations functions of human behavior by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

13. The need for understanding employee relations functions of human behavior by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

14. The need for understanding leadership training functions of human behavior by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

CHAPTER II

REVIEW OF LITERATURE

The leadership of agricultural cooperatives is being challenged to be truly knowledgeable and realistic in evaluating economic alternatives confronting farmers. Cooperative leadership should strive to become effective in educating farmers on available alternatives and possible implications in following given courses of action and for failure to take any course of action.

Abrahamsen (1) asks:

> ... To what extent has leadership demonstrated the ability to cooperate with other cooperatives, farm leaders, and other segments of the economy to the degree it asks farmers to cooperate among themselves?
>
> The time is past when agricultural leadership can afford the luxury of a divided and divergent approach to basic problems confronting cooperatives, or for that matter, agriculture as an industry...

Abrahamsen continues by suggesting that today it is just as unrealistic to use economic tools of the 1940's to operate cooperatives as it is to attempt to farm with the machinery and the technical and biological knowledge that was present in the 1940's.

In his challenge to cooperative leadership, Abrahamsen says:

> There is, therefore, a growing need for agricultural statesmanship -- statesmanship that, for example, has such breadth of vision that it is capable not only of looking at costs of our present educational system, but also of appreciating and understanding costs of our failure to build an educational system second to none.
>
> This statesmanship also needs to be of such caliber that not only will it look at the costs of fighting poverty, slum clearance, and reducing pollution, but also will understand the consequences

> and the nature of the costs involved if we fail to deal realistically with these problems.
>
> A look at cooperative performance suggests that farmers have a pace-setting nucleus of purchasing and marketing agribusiness firms. The challenge to cooperative members and cooperative leadership is to provide the guidance and vision that will encourage more cooperatives to move in this direction.

In an address at the 1969 American Institute of Cooperation, Angevine (3) says that he is inclined to feel that co-op boards of directors are operating far below their potential. Angevine states:

> ... Generally, I'm afraid they don't understand their responsibilities. They usually know how to hire and fire the manager, but they sometimes know precious little about how to direct his work. Often they don't know what information they need to judge the manager's day-to-day conduct of the business. Unfortunately, they often believe it's his responsibility to lead the co-op into new ventures, to expand its services and to take the next step toward the supermarket. They're passive -- at least until something goes horribly wrong -- and then they chop off the manager's head.

Angevine believes the co-op directors desperately need training if our co-ops, through these directors, are to measure up to their members' needs. He believes that such training is high on our list of jobs that need to be done.

Research findings by Duckett (9) suggest that the managers of independent local farm supply cooperatives have assumed many of the duties that the directors have traditionally accomplished. These additional duties in policy formulation, long-range planning and member relations consume portions of the manager's time and effort that could probably be more effectively utilized in accomplishing those aspects of managing more directly concerned with operating efficiency. Duckett's findings suggest that independent local farm supply cooperatives should extend additional

training to the directors to help them define their duties and responsibilities and to appreciate their importance in the cooperative form of business.

The 18 independent farm supply cooperatives in Virginia that Duckett studied did not attempt to educate the general membership or the directors. However, the managers and directors did recognize the benefit of providing the directors and members with additional education and training, but the economic position of the cooperatives did not warrant such education and training. Duckett concluded by suggesting that it might be feasible for the cooperatives to pool their resources in order that the directors be given the needed education and training.

The Assistant General Manager of Southern States Cooperative, Inc. Richmond, Virginia, also recognizes the need for strengthening farmer cooperatives through an effective educational program. Givens (11) says there is a tendency to decry the passing of the pioneer without recognizing that there are in farmer cooperatives some outstanding businessmen in both management and directorate who are meeting the complexities of the present day business world with the same degree of efficiency and dispatch as the pioneers met the challenges of their day. Givens states:

> When you think of the hundreds of thousands of farmers who have served on boards of directors of their local cooperatives and the thousands across the country who have served on the boards of directors of regional associations, there comes a realization that while farmer cooperatives have rendered a great service by protecting farmers' economic welfare and enhancing their bargaining power, they have also at the same time been developing business know-how and leadership among farmers.

Givens has heard many farmers say that the greatest single asset they have in their cooperative is personnel which manages and carries on the

day-to-day operation of their association. But herein lies a challenge, a challenge which must be met. Givens believes our challenge is to train future leadership for farmer-owned business associations; leadership which is agriculturally oriented, but at the same time sophisticated enough and astute enough to provide the business know-how required under present and future economic circumstances.

Agricultural cooperatives, like any other form of business in our American economy, are constantly facing two types of threats to their survival and growth. Schneider (22) classifies these as external and internal threats, stating that "... In both cases, education can play an important role in meeting these threats."

External threats are created by a lack of understanding by the general publics of the cooperative's function and the role they play in the business system. Effective education, legislation and public relations can help in providing enlightened understanding so as to lessen this threat.

Internal threats are just as serious as external threats. These threats, which cause "decay from within", are more likely to destroy the effectiveness of a cooperative than external forces. According to Schneider:

> ... Generally speaking, external threats tend to unite organizations in a common cause -- internal forces tend to divide and fragment our efforts.
>
> ... You can't pass a law to improve the understanding of members, the effectiveness of employees, the capabilities of management and the wisdom of directors. Only education can prevent and eliminate the "decay from within".

The leadership in an agricultural cooperative is vested in the "management team" which is composed of the manager and the board of directors. The manager, operating to carry out the policies as established

by the board of directors, is a key link in the success of the business operation. This person must be able to transform the raw materials of the business operation into an effective and efficient enterprise which satisfies the policies as established by the board of directors.

According to Eugene Jennings, "Management's largest problem in the 1970's is how to get, develop and keep executive manpower...", as quoted by McMillen (19). For a local agricultural cooperative, this executive manpower is the manager, a person who operates as a businessman to skillfully manage the resources of the business into a successful operation.

The managers of agricultural cooperatives in the 1980's will not be of the type that have been around for years and "knew the business". L. A. Appley, past Board Chairman and Chief Executive Officer of the American Management Association, in commenting on what will account for the difference between the managers who succeed and those who will fail, states the following as quoted by McMillen (19):

> ... Those who are students of management before they enter it, and continue to be students of it when they are in it, will have a far better chance of success than those who do not.
>
> ... In the 1980's, it is going to be very hard to find the top executive in business who is not a trained manager. That's the trend right now.
>
> ... The man who flies by the seat of his pants is not going to be around in the 1980's.

As the management functions of large and diverse businesses gets more complex and as more attention is devoted to human inputs, Appley sees managers of the 1980's as varying widely as to the kind of men they are, "But, the successful ones, over a continuing period of time, will have at least one common denominator; they will be good team captains and will

operate as part of a team."

Strong management for agricultural cooperatives is also called for by the present leaders in the cooperative field. Thor (24), Administrator for the U.S.D.A. Farmer Cooperative Service, states:

> Cooperatives must have outstanding management. This means salaries for key employees comparable to those in other businesses. And it means boards of directors selected on the basis of what they can contribute to cooperatives.

In discussing the challenge of finding better ways to do the educational job for cooperatives, Thor is concerned about past "splinter" programs which have been called educational when in a true sense many of these have been technical training programs. He believes that too often we have just been teaching bookkeepers how to improve record keeping, teaching directors how to read financial statements and teaching management how to keep directors and members happy. Thor believes it is time to give all employees broader concepts of the cooperatives, agriculture and the business world in which they live.

Today, agricultural cooperatives are facing new challenges and opportunities. These challenges and opportunities are present because today's commercial farmers must use a wide variety of coordinating devices in order to mesh their operations into their commodity system. Goldberg (12), who has been working on a research project at the Harvard Business School involving new uses of cooperative-corporate joint ventures, states:

> Commercialization of agribusiness has developed managers with greater awareness of the interrelated nature of all the functions performed in an agribusiness system...

As agricultural cooperatives continue to increase their involvement in interdependent and interrelated agribusiness functions in moving food and

fiber from the point of production to the point of consumption, cooperative managers will be continually challenged to broaden and expand their business management knowledge.

McMillen (19), Assistant General Manager of Sunkist Growers, Inc., Los Angeles, also believes that the business environment of the 1970's will place a special strain on the management of cooperatives and their policy making bodies. According to McMillen, the cooperative's posture in facing the world of customers by which they survive or fail is no different than that of any other business entity. Competition from other business entities forces agricultural cooperatives to be cost and results oriented. McMillen states:

> ... Farmers, caught in the tightest cost-price squeeze in the history of American agriculture, except for the great depression of the 30's, have little time for the evangelistic cooperative philosophy.

In facing the challenges of today's business world, agricultural cooperatives must realize their position as a capitalistic form of business designed to enhance farm income. They must be dualistic in nature by being able to compete with other business entities as well as serving the economic advantage of the farmer. They can no longer demand member loyalty, but rather, must earn member loyalty by differentiating and communicating the uniqueness of the cooperative economic activity.

The tasks to be performed by a successful manager can be conceptualized in different ways, but basically they involve five functions. These functions are 1) general planning and decision making, 2) organizing and staffing, 3) coordination and communication, 4) controlling and 5) directing and leading.

Beal, Duncan and Warren (4), have studied 100 managers of local cooperatives in Iowa to determine factors related to management success as measured by economic indicators. Their findings reveal that a high degree of performance on the management function of organizing and staffing was the best predictor of economic success, with the next best predictor being a high degree of performance on the management function of coordination and communication.

In a recent survey conducted by the Department of Economics at Colorado State University (7), managers of local cooperatives were asked to rank the five most important areas for which they felt they had a definite training need. The 56 managers responding to the survey in 1970 ranked personnel management as the most important training need, followed by marketing, general management, and public relations. The areas which ranked lowest were product line, cash flow, data processing and ratio analysis.

In 1969, the Adult Education Committee of the Kentucky Cooperative Council (13) surveyed 100 key cooperative leaders to determine the unmet education and training needs in Kentucky cooperatives. The executives contacted represented rural electric, credit and agricultural marketing and supply cooperatives. The survey revealed that the first priority unmet educational need for managers was business management training for cooperative managers and staff. The second and third priority unmet educational needs were member relations training and public relations training respectively.

The review of literature revealed that little research has been done relative to the educational needs of managers of agricultural cooperatives.

Only two studies were located and cited which pertained directly to this study. These studies basically emphasized a need for educational programs in business management, public relations, personnel management and member relations. However, the majority of the other references cited emphasized the importance of the management role in successful and viable cooperative operations and the accomplishments that can be made by effective and efficient educational programming to strengthen the management function.

CHAPTER III

METHOD OF PROCEDURE

Delimitations of Investigation

This study was designed as a part of a nationwide project awarded to Iowa State University by the Extension Service, U.S.D.A. The major purposes of the nationwide project were to 1) identify the educational needs of managers and directors of agricultural cooperatives, 2) identify which organizations are presently involved in conducting educational programs for cooperatives, 3) identify program and participant characteristics, such as subject matter content, methods employed, program length, geographical scope of programs, frequency programs are offered and participant profile data, 4) analyze the effectiveness of current methods and systems of meeting the educational needs of cooperative leadership and 5) develop recommendations for alternative educational strategy which will provide educational programs for cooperative leadership most effectively. The author served as the major investigator for the nationwide project which was funded by the Extension Service, U.S.D.A.

In this study, these data have been limited to local managers of agricultural cooperatives in the following districts and states:

1. St. Paul Farm Credit District. States include, Michigan, Minnesota, North Dakota and Wisconsin.
2. Omaha Farm Credit District. States include Iowa, Nebraska, South Dakota and Wyoming.
3. St. Louis Farm Credit District. States include Arkansas, Illinois and Missouri.

The Sample Studied

The sample surveyed to obtain information relative to the stated objectives of this study consisted of 238 managers of local agricultural cooperatives in the St. Paul, Omaha and St. Louis Farm Credit Districts. This sample was randomly drawn by the Farmer Cooperative Service, U.S.D.A. as a part of the national sample of local agricultural cooperatives for the nationwide study of the educational needs of both managers and directors.

Of the 238 questionnaires mailed on December 14, 1970, only 66 were returned. A second questionnaire was mailed on March 15, 1971 to those who did not respond to the first mailing. A total of 89 managers responded to this questionnaire, giving a total return of 155 (65.1%). Of the returned questionnaires, 12 were extremely limited in information and were eliminated from the study. Thus, a total of 143 local managers of agricultural cooperatives were included in the study. The representation of local managers in the sample by state is reported in Table 1.

Development of Instrument

The instrument used in this study to gather the needed data from local managers of agricultural cooperatives was a mail questionnaire. The first questionnaire sent to the local managers, as shown in Appendix B, was designed for use in the nationwide study of the educational needs of managers and directors conducted by Iowa State University. Because the response to this questionnaire was low, a second questionnaire, as shown in Appendix E, was designed and sent to those who failed to respond to the first questionnaire. The second questionnaire, called a "mini" questionnaire,

Table 1. Local managers by state in the sample studied

District and state	Sample size	Total returns	Useable questionnaires
St. Paul Farm Credit District			
Michigan	11	9	8
Minnesota	54	32	28
North Dakota	31	17	15
Wisconsin	26	18	17
Omaha Farm Credit District			
Iowa	30	25	25
Nebraska	26	15	13
South Dakota	16	8	8
Wyoming	3	2	2
St. Louis Farm Credit District			
Arkansas	6	4	3
Illinois	29	20	20
Missouri	6	5	4
Total	238	155	143

only asked for data that was required for this study. However, the questions asked in the "mini" questionnaire were identical to the questions asked in the original questionnaire.

The data used in this study was obtained from two parts of the questionnaire. Part I included face data with which to provide variables for testing. These variables included the number of years of co-op senior management responsibility, age, formal education and the gross dollar sales volume of the cooperative in 1970. It was hypothesized by the researcher that these four variables would be influential on how a manager saw his educational needs. The rationale for selecting these variables was limited to demographic data from the nationwide project which could be

used for stratifying an audience if the tested hypotheses were tenable. A discussion of each independent variable is given in Chapter I under the objectives of the study.

Part II of the questionnaire was developed to determine the educational needs of local managers of agricultural cooperatives. This section, containing 95 specific subject matter items in fourteen different categories, was designed so the respondents could check the scale "strong", "moderate", or "none" to indicate the relative value of educational need for their position as a manager of a local agricultural cooperative.

In the development of the specific subject matter items, items were sought that would enhance management capabilities of managers of agricultural cooperatives. An initial listing of items was developed by the researcher after reviewing textbooks and other literature relative to the management of cooperatives. This initial listing was revised with the aid of three agricultural economists and two representatives of regional agricultural cooperatives.

Pretesting the Instrument

The instrument was developed by the researcher with the aid of an advisory committee consisting of three agricultural economists, two statisticians and one adult educator. The questionnaire was then pretested with one state council representative, two Cooperative Extension Service representatives, two representatives of national cooperative organizations and three representatives of regional cooperatives during the months of October and November, 1970. The purpose of the pretest was to determine the clarity of each question and to determine if some questions should be

deleted and additional questions added to the instrument. Results of the pretesting brought about changes to improve the quality of the instrument.

Collection of Data

On December 14, 1970, a cover letter, as shown in Appendix A, the coded questionnaire, as shown in Appendix B and an addressed return envelope was mailed to each of the 238 managers of local agricultural cooperatives identified in the sample. The cover letter explained the importance and purpose of the study and asked for their cooperation in completing the questionnaire. Such cooperation would make a significant contribution to sounder decision making regarding future educational programs designed for the management personnel of agricultural cooperatives.

A follow-up letter, as shown in Appendix C, was sent on February 8, 1971, to the 182 local managers who had failed to respond. By March 14, 1971, a total of 66 questionnaires had been returned.

Both the cover letter for the first questionnaire and its follow-up letter used the official title of Lee R. Kolmer, Assistant Director, Cooperative Extension Service, Iowa State University, to legitimize the research study.

On March 15, 1971, a cover letter, as shown in Appendix D, a "mini" coded questionnaire, as shown in Appendix E and an addressed return envelope was mailed to the 172 local managers who had failed to respond to the first questionnaire and follow-up letter. This second questionnaire only asked for information that was pertinent to this study.

A follow-up letter, as shown in Appendix F, was sent on April 1, 1971 to the 92 local managers who had failed to respond to this second questionnaire. On May 1, 1971, the last response to the "mini" questionnaire was received, making for a total of 89 responses to the "mini" questionnaire.

Both the cover letter for the second questionnaire and its follow-up letter carried the name and title of the researcher.

The 66 responses to the first questionnaire added to the 89 responses to the second questionnaire yielded a total of 155 returns for the sample size of 238 as previously discussed.

In addition to the information gathered by the mail questionnaire, the researcher made personal visits to 18 regional agricultural cooperatives and eight national cooperative organizations. These personal visits, as a part of the nationwide project funded by the Extension Service, U.S.D.A., provided valuable personal background information for interpreting these data gathered by the questionnaires. Eight of the regional cooperatives visited were located in the eleven state area represented in this study.

Another source of information which proved beneficial in providing the researcher with background information for interpreting the results of these data was two regional "listening sessions". Cooperative leaders, representing regional cooperatives, Farm Credit Banks, state cooperative councils and committees, national cooperative organizations and the Cooperative Extension Service were invited to participate in a discussion on meeting the educational needs of cooperative leadership personnel based on some of the preliminary findings of the nationwide project. Approximately 25 people attended each session, with one session being held

in the geographic area represented by this study.

Basic Assumptions

For the purposes of this study, the following basic assumptions were made:

1. Accurate and unbiased answers were provided by the local managers of agricultural cooperatives.
2. The 95 item educational needs statements were valid and reliable measures of the educational needs of local managers of agricultural cooperatives.

Analysis and Treatment of Data

Data from the questionnaires were coded by the researcher and transferred to code sheets. The coded information was keypunched on International Business Machine (IBM) cards and verified. The facilities of the Computer Center at Iowa State University were used to process and analyze portions of these data.

Frequency counts, mean scores, correlations and chi-square tests of significance were used in the treatments of these data. Frequency counts were used to record the number of responses by selected variables. Correlations were used to determine relationships between the dependent and independent variables. A chi-square test of significant differences was used to determine the independence between selected variables while the mean scores gave a total mean value to each variable. In all tests of significance where a chi-square was used, rows and/or columns of cells were combined to eliminate those cells which did not have the required frequency counts.

This study involved the use of descriptive statistical units in the measurement of the respondent's educational need to 95 subject matter items. These descriptive statistics were transmuted to numerical values for statistical treatment by the chi-square test. To facilitate the calculation of mean scores for these educational needs which had been rated "strong", "moderate" or "none", numerical values of "5", "3" and "1" were assigned respectively to these descriptive statistics. These descriptive statistics were the dependent variables and the face data on age, experience, education and gross sales served as the independent variables.

CHAPTER IV

FINDINGS

The findings in this study are discussed in four general areas. These areas include a) characteristics of the sample, b) educational needs of managers in fourteen subject matter categories, c) overall mean scores for subject matter items and categories and d) correlation of independent and dependent variables.

Characteristics of the Sample

These data for this study were gathered and analyzed from 143 managers of agricultural cooperatives in eleven midwestern states. The characteristics of these managers by the independent variables of age, experience, formal education and gross sales of their cooperatives in 1970 by state and Farm Credit District are shown in Tables 2, 3, 4 and 5 respectively.

The largest number of managers fell into the "45 to 54" years of age category, while the smallest number fell into the "20 to 34" years of age category, frequencies being 50 and 22 respectively.

In considering experience as a manager of an agricultural cooperative, the largest number had 4 to 8 years of experience, while the smallest number had 14 to 19 years of experience, frequencies being 42 and 19 respectively.

The greatest variation in independent variables was noted in the categories of level of formal education. The largest category was represented by 82 managers who possessed a high school education, while the smallest categories were represented by ten managers each in the categories

of "vocational-technical" and "completed college".

The least variation in independent variables was noted in the categories of gross sales of the cooperatives in 1970. The largest category of "$500,001 to $1,000,000" was represented by 39 managers, while the smallest category of "$1,000,001 to $1,500,000" was represented by 22 managers.

Table 2. Age of local managers of agricultural cooperatives by state and Farm Credit District

District and state	Age 20 - 34	35 - 44	45 - 54	55 and over
St. Paul Farm Credit District				
Michigan	0	3	2	3
Minnesota	4	4	11	9
North Dakota	3	5	6	1
Wisconsin	1	3	7	6
Sub-total	8	15	26	19
Omaha Farm Credit District				
Iowa	6	8	4	7
Nebraska	2	1	7	3
South Dakota	2	2	3	1
Wyoming	0	1	1	0
Sub-total	10	12	15	11
St. Louis Farm Credit District				
Arkansas	0	1	2	0
Illinois	3	9	5	3
Missouri	1	1	2	0
Sub-total	4	11	9	3
Total	22	38	50	33

Table 3. Years of experience as a manager of an agricultural cooperative by state and Farm Credit District

District and state	Experience				
	3 or less	4 - 8	9 - 13	14 - 19	20 or more
St. Paul Farm Credit District					
Michigan	3	1	1	1	2
Minnesota	5	6	2	5	10
North Dakota	4	6	1	2	2
Wisconsin	2	3	3	4	5
Sub-total	14	16	7	12	19
Omaha Farm Credit District					
Iowa	3	9	5	0	8
Nebraska	1	5	6	0	1
South Dakota	1	2	1	2	2
Wyoming	2	0	0	0	0
Sub-total	7	16	12	2	11
St. Louis Farm Credit District					
Arkansas	1	1	0	0	1
Illinois	3	8	2	4	3
Missouri	2	1	0	1	0
Sub-total	6	10	2	5	4
Total	27	42	21	19	34

Table 4. Formal education level of managers of agricultural cooperatives by state and Farm Credit District

District and state	Education				
	Elementary 8 or less	High school	Vocational-Technical	Attended college	Completed college
St. Paul Farm Credit District					
Michigan	1	1	0	4	2
Minnesota	5	19	1	2	1
North Dakota	3	12	0	0	0
Wisconsin	2	7	2	5	1
Sub-total	11	39	3	11	4
Omaha Farm Credit District					
Iowa	0	13	3	6	3
Nebraska	1	10	0	2	0
South Dakota	2	4	2	0	0
Wyoming	0	0	0	2	0
Sub-total	3	27	5	10	3
St. Louis Farm Credit District					
Arkansas	0	3	0	0	0
Illinois	0	10	1	6	3
Missouri	0	3	1	0	0
Sub-total	0	16	2	6	3
Total	14	82	10	27	10

Table 5. Gross sales of the agricultural cooperatives in 1970 by state and Farm Credit District

District and state	Gross sales				
	$500,000 or less	$ 500,001 $1,000,000	$1,000,001 1,500,000	$1,500,001 3,000,000	$3,000,001 or more
St. Paul Farm Credit District					
Michigan	1	0	0	5	2
Minnesota	10	9	5	3	1
North Dakota	3	6	5	0	1
Wisconsin	3	7	4	1	2
Sub-total	17	22	14	9	6
Omaha Farm Credit District					
Iowa	2	4	0	9	10
Nebraska	2	4	4	2	1
South Dakota	3	4	0	1	0
Wyoming	1	1	0	0	0
Sub-total	8	13	4	12	11
St. Louis Farm Credit District					
Arkansas	0	1	0	1	1
Illinois	1	1	3	8	7
Missouri	1	2	1	0	0
Sub-total	2	4	4	9	8
Total	27	39	22	30	25

Educational Needs of Managers of Agricultural Cooperatives

The managers were asked to indicate their educational needs for each of 95 specific subject matter items. As noted in the questionnaire in Appendix E, these subject matter items are divided into fourteen subject matter categories. The subject matter categories are as follows:

1. Business organization functions of cooperative organization.
2. Legal aspects of cooperative organization.
3. Policy development functions of cooperative operations.
4. Business management functions of cooperative operations.
5. Sales management functions of cooperative operations.
6. Communication functions of cooperative operations.
7. Internal financial control functions of financial management.
8. Capital structure management functions of financial management.
9. Economic trends and outlook of cooperative environment.
10. Legislative climate of cooperative environment.
11. Public relations functions of human behavior.
12. Member relations functions of human behavior.
13. Employee relations functions of human behavior.
14. Leadership training functions of human behavior.

Each of the fourteen subject matter categories have been presented individually as an area, yet, the individuality of each of the 95 specific subject matter items have been retained for purposes of statistical testing for significant differences.

The chi-square test was used to determine if a significant difference[1] existed between the independent and dependent variables. Unless otherwise noted, the following procedures were used in calculating the chi-square values:

1. If all cells contained a frequency count of at least one, the chi-square value was calculated without combining cells.

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[1]For this study, any value exceeding the requirement for significance at the 5 percent level of confidence has been considered significant and indicated by *, and any value exceeding the requirement for significance at the 1 percent level of confidence has been considered highly significant and indicated by **.

This procedure is substantiated by Snedecor and Cochran (23, p. 241) by stating, "... The chi-square test can still be used with some expectations as low as 1, provided that most of the expectations (say 4 out of 5) are substantially larger." Also, Roscoe (21, p. 203) states, "... A satisfactory approximation is assured if at least 80 percent of the cells in the table have expected frequencies equal to five or more."

2. If a zero appeared in a cell, the cells for either "none" and "moderate" or "moderate" and "strong" were combined before the chi-square value was calculated.

The chi-square contingency tables reveal the actual responses for each category. However, if a zero appeared in a cell, either rows and/or columns were combined before the chi-square value was calculated.

Business organization functions of cooperative organization

In determining educational needs for understanding business organization functions of cooperative organization, managers were asked to indicate their educational needs for the following nine items:

1. Forms of business organization, including ownership, partnership, corporation and cooperatives.
2. Principles and theory of cooperatives.
3. Business coordination, including horizontal and vertical integration.
4. Coordination through federation.
5. Business diversification.
6. Methods of growth, including acquisition, merger and consolidation.
7. Organization of business operations and activity sequences.
8. Organization of personnel, including line and staff positions, organizational charts and assigning and delegating responsibilities.
9. Office procedures and techniques.

To evaluate how managers saw their educational needs to these subject matter items by the independent variables, the first major hypothesis was stated as follows:

> MAJOR HYPOTHESIS 1: The need for understanding business organization functions of cooperative organization by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

Four subhypotheses in the null form were tested. The results of the analysis are presented after each of the subhypotheses.

SUBHYPOTHESIS 1a: There is no difference between the age levels of managers of agricultural cooperatives and how they see their needs for understanding business organization functions of cooperative organization.

As shown in Table 6, none of the chi-square values for the individual subject matter items were significant at the 5 percent level of confidence. Thus, the null hypothesis was not rejected for any of the nine items.

Table 6. Need for understanding business organization functions of cooperative organization by age

Item number	Age	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	20 - 34		0	17	5	22	3.45
	35 - 44	1	3	21	13	38	3.54
	45 - 54	3	4	33	10	50	3.25
	55 and over	1	1	17	14	33	3.81
	Total	5	8	88	42	143	3.49
	Chi-square = 5.545 (d.f. = 3)						
2	20 - 34		0	13	9	22	3.81
	35 - 44		2	13	23	38	4.10
	45 - 54	1	2	27	20	50	3.73
	55 and over	3	3	9	18	33	4.00
	Total	4	7	62	70	143	3.90
	Chi-square = 5.258 (d.f. = 3)						
3	20 - 34		0	14	8	22	3.72
	35 - 44	1	2	23	12	38	3.54
	45 - 54	3	7	28	12	50	3.21
	55 and over	2	3	22	6	33	3.19
	Total	6	12	87	38	143	3.37
	Chi-square = 2.424 (d.f. = 3)						
4	20 - 34		6	14	2	22	2.63
	35 - 44	2	8	19	9	38	3.05
	45 - 54	4	11	30	5	50	2.73
	55 and over	3	4	19	7	33	3.20
	Total	9	29	82	23	143	2.91
	Chi-square = 5.827 (d.f. = 6)						

Table 6. (Continued)

Item number	Age	No response	Educational need: None	Moderate	Strong	Total	Mean score
5	20 - 34		2	9	11	22	3.81
	35 - 44	2	3	14	19	38	3.88
	45 - 54	2	5	26	17	50	3.50
	55 and over	2	4	16	11	33	3.45
	Total	6	14	65	58	143	3.64
	Chi-square = 3.816 (d.f. = 6)						
6	20 - 34		3	9	10	22	3.63
	35 - 44	1	3	11	23	38	4.08
	45 - 54		4	23	23	50	3.75
	55 and over	2	2	14	15	33	3.83
	Total	3	12	57	71	143	3.84
	Chi-square = 3.768 (d.f. = 6)						
7	20 - 34		2	9	11	22	3.81
	35 - 44	1	1	16	20	38	4.02
	45 - 54	1	3	31	15	50	3.48
	55 and over	2	1	15	15	33	3.90
	Total	4	7	71	61	143	3.77
	Chi-square = 6.963 (d.f. = 6)						
8	20 - 34		0	9	13	22	4.18
	35 - 44	1	3	14	20	38	3.91
	45 - 54	2	4	17	27	50	3.95
	55 and over	2	3	10	18	33	3.96
	Total	5	10	50	78	143	3.98
	Chi-square = 0.182 (d.f. = 3)						
9	20 - 34		0	13	9	22	3.81
	35 - 44		3	16	19	38	3.84
	45 - 54	2	4	25	19	50	3.62
	55 and over	1	1	13	18	33	4.06
	Total	3	8	67	65	143	3.81
	Chi-square = 2.610 (d.f. = 3)						

SUBHYPOTHESIS 1b: There is no difference between experience levels of managers of agricultural cooperatives and how they see their needs for understanding business organization functions of cooperative organization.

Again, none of the chi-square values for the individual subject matter items were significant at the 5 percent level of confidence and thus, the null hypothesis was not rejected for any of the nine items. The results are shown in Table 7.

Table 7. Need for understanding business organization functions of cooperative organization by years of experience

Item number	Experience	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	3 or less		1	19	7	27	3.44
	4 - 8	1	2	30	9	42	3.34
	9 - 13	1	1	15	4	21	3.29
	14 - 19		1	9	9	19	3.84
	20 or more	3	3	15	13	34	3.64
	Total	5	8	88	42	143	3.49
	Chi-square = 9.203 (d.f. = 8)						
2	3 or less		1	11	15	27	4.03
	4 - 8	1	2	18	21	42	3.92
	9 - 13		1	9	11	21	3.95
	14 - 19		1	11	7	19	3.63
	20 or more	3	2	13	16	34	3.90
	Total	4	7	62	70	143	3.90
	Chi-square = 2.004 (d.f. = 8)						
3	3 or less		2	16	9	27	3.51
	4 - 8	3	5	23	11	42	3.30
	9 - 13	1	1	14	5	21	3.40
	14 - 19		1	14	4	19	3.31
	20 or more	2	3	20	9	34	3.37
	Total	6	12	87	38	143	3.37
	Chi-square = 2.713 (d.f. = 8)						

Table 7. (Continued)

Item number	Experience	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
4	3 or less	1	3	16	7	27	3.30
	4 - 8	4	14	21	3	42	2.42
	9 - 13		5	14	2	21	2.71
	14 - 19		4	12	3	19	2.89
	20 or more	4	3	19	8	34	3.33
	Total	9	29	82	23	143	2.91
	Chi-square = 13.225 (d.f. = 8)						
5	3 or less	1	2	13	11	27	3.69
	4 - 8	3	6	13	20	42	3.71
	9 - 13		2	9	10	21	3.76
	14 - 19		1	10	8	19	3.73
	20 or more	2	3	20	9	34	3.37
	Total	6	14	65	58	143	3.64
	Chi-square = 7.474 (d.f. = 8)						
6	3 or less		2	7	18	27	4.18
	4 - 8	2	3	19	18	42	3.75
	9 - 13		3	6	12	21	3.85
	14 - 19		2	11	6	19	3.42
	20 or more	1	2	14	17	34	3.90
	Total	3	12	57	71	143	3.84
	Chi-square = 8.448 (d.f. = 8)						
7	3 or less	1	1	16	9	27	3.61
	4 - 8	1	3	21	17	42	3.68
	9 - 13		0	10	11	21	4.04
	14 - 19		0	8	11	19	4.15
	20 or more	2	3	16	13	34	3.62
	Total	4	7	71	61	143	3.77
	Chi-square = 3.273 (d.f. = 4)						
8	3 or less	1	3	12	11	27	3.61
	4 - 8	1	3	15	23	42	3.97
	9 - 13		0	8	13	21	4.23
	14 - 19		1	4	14	19	4.36
	20 or more	3	3	11	17	34	3.90
	Total	5	10	50	78	143	3.98
	Chi-square = 4.701 (d.f. = 4)						
9	3 or less		2	12	13	27	3.81
	4 - 8		2	24	16	42	3.66
	9 - 13	1	0	10	10	21	4.00
	14 - 19		1	9	9	19	3.84
	20 or more	2	3	12	17	34	3.87
	Total	3	8	67	65	143	3.81
	Chi-square = 1.891 (d.f. = 4)						

SUBHYPOTHESIS 1c: There is no difference between the levels of formal education of managers of agricultural cooperatives and how they see their needs for understanding business organization functions of cooperative organization.

As noted in Table 8, the chi-square value for the individual subject matter item number 2 was significant at the 5 percent level of confidence and thus the null hypothesis was rejected for this item. The null hypothesis was not rejected for the remaining eight subject matter items.

Table 8. Need for understanding business organization functions of cooperative organization by level of education

Item number	Education	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	Elem. 8 or less	4	0	5	5	14	4.00
	High school	1	4	56	21	82	3.41
	Vocational-Tech.		0	9	1	10	3.20
	Attended college		2	14	11	27	3.66
	Completed college		2	4	4	10	3.40
	Total	5	8	88	42	143	3.49
	Chi-square = 6.345 (d.f. = 4)						
2	Elem. 8 or less	3	1	1	9	14	4.45
	High school		2	35	45	82	4.04
	Vocational-Tech.		0	7	3	10	3.59
	Attended college	1	3	12	11	27	3.61
	Completed college		1	7	2	10	3.20
	Total	4	7	62	70	143	3.90
	Chi-square = 11.044* (d.f. = 4)						
3	Elem. 8 or less	3	2	7	2	14	3.00
	High school	2	7	53	20	82	3.32
	Vocational-Tech.	1	0	7	2	10	3.44
	Attended college		3	16	8	27	3.37
	Completed college		0	4	6	10	4.20
	Total	6	12	87	38	143	3.37
	Chi-square = 6.178 (d.f. = 4)						

Table 8. (Continued)

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
4	Elem. 8 or less	5	1	7	1	14	3.00
	High school	2	18	48	14	82	2.90
	Vocational-Tech.	1	2	7	0	10	2.55
	Attended college	1	5	16	5	27	3.00
	Completed college		3	4	3	10	3.00
	Total	9	29	82	23	143	2.91
	Chi-square = 1.125 (d.f. = 4)						
5	Elem. 8 or less	4	2	5	3	14	3.20
	High school	1	7	39	35	82	3.69
	Vocational-Tech.	1	1	6	2	10	3.22
	Attended college		4	13	10	27	3.44
	Completed college		0	2	8	10	4.59
	Total	6	14	65	58	143	3.64
	Chi-square = 8.262 (d.f. = 4)						
6	Elem. 8 or less	2	0	7	5	14	3.83
	High school	1	8	29	44	82	3.88
	Vocational-Tech.		1	8	1	10	3.00
	Attended college		2	10	15	27	3.96
	Completed college		1	3	6	10	4.00
	Total	3	12	57	71	143	3.84
	Chi-square = 8.045 (d.f. = 4)						
7	Elem. 8 or less	3	0	7	4	14	3.72
	High school	1	4	43	34	82	3.74
	Vocational-Tech.		1	4	5	10	3.79
	Attended college		2	12	13	27	3.81
	Completed college		0	5	5	10	4.00
	Total	4	7	71	61	143	3.77
	Chi-square = 0.876 (d.f. = 4)						
8	Elem. 8 or less	3	1	3	7	14	4.09
	High school	2	8	28	44	82	3.90
	Vocational-Tech.		0	4	6	10	4.20
	Attended college		1	11	15	27	4.03
	Completed college		0	4	6	10	4.20
	Total	5	10	50	78	143	3.98
	Chi-square = 0.411 (d.f. = 4)						
9	Elem. 8 or less	2	0	8	4	14	3.66
	High school	1	8	39	34	82	3.64
	Vocational-Tech.		0	7	3	10	3.59
	Attended college		0	8	19	27	4.40
	Completed college		0	5	5	10	4.00
	Total	3	8	67	65	143	3.81
	Chi-square = 8.832 (d.f. = 4)						

SUBHYPOTHESIS 1d: There is no difference between volume of business managed by managers of agricultural cooperatives and how they see their needs for understanding business organization functions of cooperative organization.

As shown in Table 9, none of the chi-square values for the individual subject matter items were significant at the 5 percent level of confidence when compared by the independent variable of gross sales. The null hypothesis was not rejected for any of the nine items.

Table 9. Need for understanding business organization functions of cooperative organization by gross sales of the cooperative in 1970

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	$ 500,000 or less	1	1	19	6	27	3.38
	500,001-1,000,000	2	4	21	12	39	3.43
	1,000,001-1,500,000	1	1	14	6	22	3.47
	1,500,001-3,000,000	1	1	18	10	30	3.62
	3,000,001 or more		1	16	8	25	3.55
	Total	5	8	88	42	143	3.49
	Chi-square = 3.620 (d.f. = 8)						
2	$ 500,000 or less	1	2	9	15	27	4.00
	500,001-1,000,000	1	0	17	21	39	4.10
	1,000,001-1,500,000		0	10	12	22	4.09
	1,500,001-3,000,000	1	3	14	12	30	3.62
	3,000,001 or more	1	2	12	10	25	3.66
	Total	4	7	62	70	143	3.90
	Chi-square = 2.740 (d.f. = 4)						
3	$ 500,000 or less	2	5	15	5	27	3.00
	500,001-1,000,000	2	3	22	12	39	3.48
	1,000,001-1,500,000	1	1	15	5	22	3.38
	1,500,001-3,000,000	1	0	22	7	30	3.48
	3,000,001 or more		3	13	9	25	3.48
	Total	6	12	87	38	143	3.37
	Chi-square = 2.354 (d.f. = 4)						

Table 9. (Continued)

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
4	$ 500,000 or less	4	5	13	5	27	3.00
	500,001-1,000,000	1	10	22	6	39	2.78
	1,000,001-1,500,000	2	1	16	3	22	3.20
	1,500,001-3,000,000	1	5	20	4	30	2.93
	3,000,001 or more	1	8	11	5	25	2.75
	Total	9	29	82	23	143	2.91
	Chi-square = 7.993 (d.f. = 8)						
5	$ 500,000 or less	2	3	14	8	27	3.40
	500,001-1,000,000	2	6	14	17	39	3.59
	1,000,001-1,500,000	1	3	10	8	22	3.47
	1,500,001-3,000,000	1	1	15	13	30	3.82
	3,000,001 or more		1	12	12	25	3.87
	Total	6	14	65	58	143	3.64
	Chi-square = 6.252 (d.f. = 8)						
6	$ 500,000 or less	1	0	15	11	27	3.84
	500,001-1,000,000		6	19	14	39	3.41
	1,000,001-1,500,000		2	8	12	22	3.90
	1,500,001-3,000,000	2	3	7	18	30	4.07
	3,000,001 or more		1	8	16	25	4.20
	Total	3	12	57	71	143	3.84
	Chi-square = 8.119 (d.f. = 4)						
7	$ 500,000 or less	2	0	19	6	27	3.48
	500,001-1,000,000	1	4	16	18	39	3.73
	1,000,001-1,500,000		1	9	12	22	4.00
	1,500,001-3,000,000	1	0	17	12	30	3.82
	3,000,001 or more		2	10	13	25	3.87
	Total	4	7	71	61	143	3.77
	Chi-square = 5.959 (d.f. = 4)						
8	$ 500,000 or less	3	2	8	14	27	4.00
	500,001-1,000,000	1	4	11	23	39	4.00
	1,000,001-1,500,000		3	5	14	22	4.00
	1,500,001-3,000,000	1	1	15	13	30	3.82
	3,000,001 or more		0	11	14	25	4.12
	Total	5	10	50	78	143	3.98
	Chi-square = 2.350 (d.f. = 4)						
9	$ 500,000 or less		2	16	9	27	3.51
	500,001-1,000,000	2	4	16	17	39	3.70
	1,000,001-1,500,000		0	9	13	22	4.18
	1,500,001-3,000,000	1	1	15	13	30	3.82
	3,000,001 or more		1	11	13	25	3.95
	Total	3	8	67	65	143	3.81
	Chi-square = 3.625 (d.f. = 4)						

In summarizing how managers saw their educational needs for understanding business organization functions of cooperative organization by the independent variables of age, experience, formal education and volume of business managed, only the independent variable of formal education showed a significant difference to one subject matter item on the need for understanding principles and theory of cooperatives. Managers with less formal education saw a greater need for understanding the principles and theory of cooperatives than did the managers with more formal education.

The analysis basically revealed that the need for understanding business organization functions of cooperative organization by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

Legal aspects of cooperative organization

The following seven subject matter items were used to determine how managers saw their educational needs for understanding legal aspects of cooperative organization:

1. Cooperative law, national and state.
2. Articles and by-laws.
3. Membership agreements.
4. Antitrust and business regulations.
5. Contracts and lawsuits.
6. Civil liabilities of firms and individuals.
7. Tax laws.

In evaluating how managers saw their educational needs to these subject matter items by the independent variables, the second major hypothesis was stated as follows:

MAJOR HYPOTHESIS 2: The need for understanding legal aspects of cooperative organization by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

Four subhypotheses were tested. The findings of the analysis are presented after each of the subhypotheses.

SUBHYPOTHESIS 2a: There is no difference between the age levels of managers of agricultural cooperatives and how they see their needs for understanding legal aspects of cooperative organization.

The results of the chi-square tests shown in Table 10 reveal that none of the individual subject matter items yielded a significant chi-square value at the 5 percent level of confidence when tested by the independent variable of age. The null hypothesis was not rejected for any of the seven subject matter items.

Table 10. Need for understanding legal aspects of cooperative organization by age

Item number	Age	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	20 - 34		1	8	13	22	4.09
	35 - 44		3	18	17	38	3.73
	45 - 54	1	1	26	22	50	3.85
	55 and over		1	13	19	33	4.09
	Total	1	6	65	71	143	3.91
	Chi-square = 4.398 (d.f. = 6)						
2	20 - 34		1	11	10	22	3.81
	35 - 44	1	3	18	16	38	3.70
	45 - 54	2	1	27	20	50	3.79
	55 and over	2	2	12	17	33	3.96
	Total	5	7	68	63	143	3.81
	Chi-square = 3.615 (d.f. = 6)						
3	20 - 34		0	11	11	22	4.00
	35 - 44	2	4	20	12	38	3.44
	45 - 54	2	5	33	10	50	3.20
	55 and over	2	3	15	13	33	3.64
	Total	6	12	79	46	143	3.49
	Chi-square = 7.128 (d.f. = 3)						

Table 10. (Continued)

Item number	Age	No response	Educational need: None	Moderate	Strong	Total	Mean score
4	20 - 34		1	12	9	22	3.72
	35 - 44	2	3	23	10	38	3.38
	45 - 54	3	6	30	11	50	3.21
	55 and over	1	4	18	10	33	3.37
	Total	6	14	83	40	143	3.37
	Chi-square = 3.303 (d.f. = 6)						
5	20 - 34		2	8	12	22	3.90
	35 - 44	1	1	22	14	38	3.70
	45 - 54	5	6	26	13	50	3.31
	55 and over	2	2	20	9	33	3.45
	Total	8	11	76	48	143	3.54
	Chi-square = 8.192 (d.f. = 6)						
6	20 - 34		1	12	9	22	3.72
	35 - 44	2	2	19	15	38	3.72
	45 - 54	5	8	25	12	50	3.17
	55 and over	1	1	19	12	33	3.68
	Total	8	12	75	48	143	3.53
	Chi-square = 7.840 (d.f. = 6)						
7	20 - 34		1	12	9	22	3.72
	35 - 44		2	18	18	38	3.84
	45 - 54	2	3	16	29	50	4.08
	55 and over	1	0	13	19	33	4.18
	Total	3	6	59	75	143	3.98
	Chi-square = 3.344 (d.f. = 3)						

SUBHYPOTHESIS 2b: There is no difference between experience levels of managers of agricultural cooperatives and how they see their needs for understanding legal aspects of cooperative organization.

As noted in Table 11, none of the chi-square values for the individual subject matter items were significant at the 5 percent level of

confidence. Thus, the null hypothesis was not rejected for any of the seven items.

Table 11. Need for understanding legal aspects of cooperative organization by years of experience

Item number	Experience	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	3 or less		1	12	14	27	3.96
	4 - 8		3	19	20	42	3.80
	9 - 13	1	0	10	10	21	4.00
	14 - 19		1	13	5	19	3.42
	20 or more		1	11	22	34	4.23
	Total	1	6	65	71	143	3.91
	Chi-square = 7.337 (d.f. = 4)						
2	3 or less	1	1	14	11	27	3.76
	4 - 8	2	3	19	18	42	3.75
	9 - 13		0	11	10	21	3.95
	14 - 19		1	11	7	19	3.63
	20 or more	2	2	13	17	34	3.93
	Total	5	7	68	63	143	3.81
	Chi-square = 1.471 (d.f. = 4)						
3	3 or less	1	3	16	7	27	3.30
	4 - 8	2	3	23	14	42	3.54
	9 - 13		0	11	10	21	3.95
	14 - 19		3	13	3	19	3.00
	20 or more	3	3	16	12	34	3.58
	Total	6	12	79	46	143	3.49
	Chi-square = 5.471 (d.f. = 4)						
4	3 or less	1	3	14	9	27	3.46
	4 - 8	3	3	24	12	42	3.46
	9 - 13		2	15	4	21	3.19
	14 - 19		2	13	4	19	3.21
	20 or more	2	4	17	11	34	3.43
	Total	6	14	83	40	143	3.37
	Chi-square = 3.318 (d.f. = 8)						

Table 11. (Continued)

Item number	Experience	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
5	3 or less	1	1	16	9	27	3.61
	4 - 8	3	5	17	17	42	3.61
	9 - 13	1	1	13	6	21	3.50
	14 - 19		2	11	6	19	3.42
	20 or more	3	2	19	10	34	3.51
	Total	8	11	76	48	143	3.54
	Chi-square = 4.848 (d.f. = 8)						
6	3 or less	1	1	14	11	27	3.76
	4 - 8	4	3	21	14	42	3.57
	9 - 13		3	13	5	21	3.19
	14 - 19		3	10	6	19	3.31
	20 or more	3	2	17	12	34	3.64
	Total	8	12	75	48	143	3.53
	Chi-square = 4.235 (d.f. = 8)						
7	3 or less		1	13	13	27	3.88
	4 - 8	2	2	20	18	42	3.79
	9 - 13		2	8	11	21	3.85
	14 - 19		0	6	13	19	4.36
	20 or more	1	1	12	20	34	4.15
	Total	3	6	59	75	143	3.98
	Chi-square = 3.854 (d.f. = 4)						

SUBHYPOTHESIS 2c: There is no difference between the levels of formal education of managers of agricultural cooperatives and how they see their needs for understanding legal aspects of cooperative organization.

None of the chi-square values for the individual subject matter items were significant at the 5 percent level of confidence when compared to the independent variable of formal education. The null hypothesis was not rejected for any of the seven items reported in Table 12.

Table 12. Need for understanding legal aspects of cooperative organization by level of education

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	Elem. 8 or less		0	5	9	14	4.28
	High school	1	3	37	41	82	3.93
	Vocational-Tech.		1	5	4	10	3.59
	Attended college		1	12	14	27	3.96
	Completed college		1	6	3	10	3.40
	Total	1	6	65	71	143	3.91
	Chi-square = 3.192 (d.f. = 4)						
2	Elem. 8 or less	4	0	5	5	14	4.00
	High school	1	5	39	37	82	3.79
	Vocational-Tech.		1	5	4	10	3.59
	Attended college		0	14	13	27	3.96
	Completed college		1	5	4	10	3.59
	Total	5	7	68	63	143	3.81
	Chi-square = 0.402 (d.f. = 4)						
3	Elem. 8 or less	3	0	5	6	14	4.09
	High school	3	7	48	24	82	3.43
	Vocational-Tech.		0	8	2	10	3.40
	Attended college		3	14	10	27	3.51
	Completed college		2	4	4	10	3.40
	Total	6	12	79	46	143	3.49
	Chi-square = 3.687 (d.f. = 4)						
4	Elem. 8 or less	3	0	5	6	14	4.09
	High school	2	12	47	21	82	3.22
	Vocational-Tech.	1	0	6	3	10	3.66
	Attended college		1	17	9	27	3.59
	Completed college		1	8	1	10	3.00
	Total	6	14	83	40	143	3.37
	Chi-square = 5.836 (d.f. = 4)						
5	Elem. 8 or less	4	0	9	1	14	3.20
	High school	3	8	44	27	82	3.48
	Vocational-Tech.	1	1	4	4	10	3.66
	Attended college		1	14	12	27	3.81
	Completed college		1	5	4	10	3.59
	Total	8	11	76	48	143	3.54
	Chi-square = 4.243 (d.f. = 4)						

Table 12. (Continued)

Item number	Education	No response	Educational needs None	Moderate	Strong	Total	Mean score
6	Elem. 8 or less	4	0	8	2	14	3.40
	High school	3	8	45	26	82	3.45
	Vocational-Tech.	1	2	3	4	10	3.44
	Attended college		1	13	13	27	3.88
	Completed college		1	6	3	10	3.40
	Total	8	12	75	48	143	3.53
	Chi-square = 3.611 (d.f. = 4)						
7	Elem. 8 or less	3	0	4	7	14	4.27
	High school		4	38	40	82	3.87
	Vocational-Tech.		1	1	8	10	4.40
	Attended college		1	10	16	27	4.11
	Completed college		0	6	4	10	3.79
	Total	3	6	59	75	143	3.98
	Chi-square = 5.105 (d.f. = 4)						

SUBHYPOTHESIS 2d: There is no difference between volume of business managed by managers of agricultural cooperatives and how they see their needs for understanding legal aspects of cooperative organization.

Again, none of the chi-square values for the individual subject matter items as shown in Table 13 were significant at the 5 percent level of confidence and the null hypothesis was not rejected for any of the seven subject matter items.

Table 13. Need for understanding legal aspects of cooperative organization by gross sales of the cooperative in 1970

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	$ 500,000 or less		0	14	13	27	3.96
	500,001-1,000,000		2	15	22	39	4.02
	1,000,001-1,500,000	1	1	9	11	22	3.95
	1,500,001-3,000,000		3	13	14	30	3.73
	3,000,001 or more		0	14	11	25	3.87
	Total	1	6	65	71	143	3.91
	Chi-square = 1.219 (d.f. = 4)						
2	$ 500,000 or less	2	2	14	9	27	3.55
	500,001-1,000,000	1	2	19	17	39	3.78
	1,000,001-1,500,000	1	1	9	11	22	3.95
	1,500,001-3,000,000	1	2	13	14	30	3.82
	3,000,001 or more		0	13	12	25	3.95
	Total	5	7	68	63	143	3.81
	Chi-square = 1.471 (d.f. = 4)						
3	$ 500,000 or less	4	5	11	7	27	3.17
	500,001-1,000,000	1	3	22	13	39	3.52
	1,000,001-1,500,000		0	14	8	22	3.72
	1,500,001-3,000,000	1	2	18	9	30	3.48
	3,000,001 or more		2	14	9	25	3.55
	Total	6	12	79	46	143	3.49
	Chi-square = 0.335 (d.f. = 4)						
4	$ 500,000 or less	3	5	11	8	27	3.25
	500,001-1,000,000	2	6	20	11	39	3.27
	1,000,001-1,500,000	1	0	15	6	22	3.57
	1,500,001-3,000,000		2	19	9	30	3.46
	3,000,001 or more		1	18	6	25	3.40
	Total	6	14	83	40	143	3.37
	Chi-square = 0.544 (d.f. = 4)						
5	$ 500,000 or less	3	4	14	6	27	3.16
	500,001-1,000,000	2	4	22	11	39	3.37
	1,000,001-1,500,000	2	1	10	9	22	3.79
	1,500,001-3,000,000	1	2	13	14	30	3.82
	3,000,001 or more		0	17	8	25	3.63
	Total	8	11	76	48	143	3.54
	Chi-square = 4.679 (d.f. = 4)						

Table 13. (Continued)

Item number	Gross sales	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
6	$ 500,000 or less	4	2	16	5	27	3.26
	500,001-1,000,000	2	5	18	14	39	3.48
	1,000,001-1,500,000	1	1	10	10	22	3.85
	1,500,001-3,000,000	1	2	17	10	30	3.55
	3,000,001 or more		2	14	9	25	3.55
	Total	8	12	75	48	143	3.53
	Chi-square = 5.023 (d.f. = 8)						
7	$ 500,000 or less	2	1	10	14	27	4.04
	500,001-1,000,000		3	16	20	39	3.87
	1,000,001-1,500,000	1	1	10	10	22	3.85
	1,500,001-3,000,000		0	10	20	30	4.33
	3,000,001 or more		1	13	11	25	3.79
	Total	3	6	59	75	143	3.98
	Chi-square = 3.430 (d.f. = 4)						

In summarizing how managers saw their educational needs for understanding legal aspects of cooperative organization by the independent variables of age, experience, formal education and volume of business managed, none of the independent variables tested showed a significant difference to the dependent subject matter items.

The analysis revealed that the need for understanding legal aspects of cooperative organization by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

Policy development functions of cooperative operations

To determine how managers saw their educational needs for understanding policy development functions of cooperative operations, they were asked to indicate their educational needs to the following ten subject matter items:

1. Finance policy, which includes determinations of equity and creditor capital, revolving funds, rates of expansion or contraction, operating budgets and construction programs.
2. Service policy, which includes the type and scope of services to be offered or provided to the membership.
3. Pricing policy, which includes markup practices and quantity discounts.
4. Credit extension policy, which includes the type and terms of credit extended, credit application procedures and collection methods.
5. Membership relations policy, such as newsletters and member grievances.
6. Public relations policy, such as joining trade groups and co-op councils, working with youth groups and releasing information.
7. Employee relations policy, which includes salary and wage scales, incentive and training programs, promotions, fringe benefits and collective bargaining.
8. Internal operations policy, which includes the status and organization of the business and operating and technical records.
9. Management development policy, which includes a program of seminars, courses and workshops for the managerial staff and directors.
10. Affiliation policy, which includes the relationship between local and regional cooperatives.

To analyze how managers saw their educational needs to these subject matter items by the independent variables, the third major hypothesis was stated as follows:

MAJOR HYPOTHESIS 3: The need for understanding policy development functions of cooperative operations by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

The results of four tested subhypotheses are presented after each of the following subhypotheses.

SUBHYPOTHESIS 3a: There is no difference between the age levels of managers of agricultural cooperatives and how they see their needs for understanding policy development functions of cooperative operations.

As shown in Table 14, the chi-square value for subject matter item number 1 was significant at the 5 percent level of confidence and thus the null hypothesis was rejected for this item. The null hypothesis was not rejected for the remaining nine subject matter items.

In evaluating the mean scores for the rejected null hypothesis, it is evident that both younger managers in the "20 - 34" years of age group and older managers in the "55 and over" years of age group saw a greater educational need for understanding finance policies than did the manager in the middle-age groups.

Table 14. Need for understanding policy development functions of cooperative operations by age

Item number	Age	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	20 - 34		0	4	18	22	4.63
	35 - 44		1	12	25	38	4.26
	45 - 54	1	1	24	24	50	3.93
	55 and over	1	1	7	24	33	4.43
	Total	2	3	47	91	143	4.24
	Chi-square = 9.609* (d.f. = 3)						
2	20 - 34		1	11	10	22	3.81
	35 - 44		2	21	15	38	3.68
	45 - 54		1	30	19	50	3.71
	55 and over	2	1	13	17	33	4.03
	Total	2	5	75	61	143	3.79
	Chi-square = 3.402 (d.f. = 6)						

Table 14. (Continued)

Item number	Age	No response	Educational need: None	Moderate	Strong	Total	Mean score
3	20 - 34		0	11	11	22	4.00
	35 - 44		5	16	17	38	3.63
	45 - 54	1	4	25	20	50	3.65
	55 and over	2	1	12	18	33	4.09
	Total	3	10	64	66	143	3.80
	Chi-square = 2.431 (d.f. = 3)						
4	20 - 34		0	6	16	22	4.45
	35 - 44		1	16	21	38	4.05
	45 - 54	1	1	19	29	50	4.14
	55 and over	2	2	4	25	33	4.48
	Total	3	4	45	91	143	4.24
	Chi-square = 6.225 (d.f. = 3)						
5	20 - 34		0	14	8	22	3.72
	35 - 44		5	19	14	38	3.47
	45 - 54	1	7	28	14	50	3.28
	55 and over	2	2	16	13	33	3.70
	Total	3	14	77	49	143	3.50
	Chi-square = 1.620 (d.f. = 3)						
6	20 - 34		0	14	8	22	3.72
	35 - 44	1	3	22	12	38	3.48
	45 - 54	1	2	32	15	50	3.53
	55 and over	2	3	15	13	33	3.64
	Total	4	8	83	48	143	3.57
	Chi-square = 1.189 (d.f. = 3)						
7	20 - 34		0	11	11	22	4.00
	35 - 44		2	16	20	38	3.94
	45 - 54	1	2	20	27	50	4.02
	55 and over	2	0	11	20	33	4.29
	Total	3	4	58	78	143	4.05
	Chi-square = 1.418 (d.f. = 3)						

Table 14. (Continued)

Item number	Age	No response	Educational need: None	Moderate	Strong	Total	Mean score
8	20 - 34		0	14	8	22	3.72
	35 - 44	1	1	20	16	38	3.81
	45 - 54	2	2	32	14	50	3.50
	55 and over	3	4	14	12	33	3.53
	Total	6	7	80	50	143	3.62
	Chi-square = 1.998 (d.f. = 3)						
9	20 - 34		1	11	10	22	3.81
	35 - 44		2	14	22	38	4.05
	45 - 54	2	3	20	25	50	3.91
	55 and over	2	2	18	11	33	3.58
	Total	4	8	63	68	143	3.86
	Chi-square = 4.001 (d.f. = 6)						
10	20 - 34		1	15	6	22	3.45
	35 - 44		4	22	12	38	3.42
	45 - 54	1	5	29	15	50	3.40
	55 and over	3	3	15	12	33	3.59
	Total	4	13	81	45	143	3.46
	Chi-square = 2.152 (d.f. = 6)						

SUBHYPOTHESIS 3b: There is no difference between experience levels of managers of agricultural cooperatives and how they see their needs for understanding policy development functions of cooperative operations.

None of the chi-square values for the individual subject matter items were significant at the 5 percent level of confidence and thus, the null hypothesis was not rejected for any of the ten subject matter items. The results of the chi-square tests are shown in Table 15.

Table 15. Need for understanding policy development functions of cooperative operations by years of experience

Item number	Experience	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	3 or less		0	12	15	27	4.11
	4 - 8		2	12	28	42	4.23
	9 - 13		0	6	15	21	4.42
	14 - 19		0	10	9	19	3.94
	20 or more	2	1	7	24	34	4.43
	Total	2	3	47	91	143	4.24
	Chi-square = 5.448 (d.f. = 4)						
2	3 or less		2	17	8	27	3.44
	4 - 8	1	2	23	16	42	3.68
	9 - 13		0	10	11	21	4.04
	14 - 19		0	9	10	19	4.05
	20 or more	1	1	16	16	34	3.90
	Total	2	5	75	61	143	3.79
	Chi-square = 4.102 (d.f. = 4)						
3	3 or less		2	15	10	27	3.59
	4 - 8	1	3	20	18	42	3.73
	9 - 13		1	8	12	21	4.04
	14 - 19		2	6	11	19	3.94
	20 or more	2	2	15	15	34	3.81
	Total	3	10	64	66	143	3.80
	Chi-square = 3.862 (d.f. = 8)						
4	3 or less		0	13	14	27	4.03
	4 - 8	2	2	13	25	42	4.15
	9 - 13		0	7	14	21	4.33
	14 - 19		0	5	14	19	4.47
	20 or more	1	2	7	24	34	4.33
	Total	3	4	45	91	143	4.24
	Chi-square = 3.683 (d.f. = 4)						
5	3 or less		2	14	11	27	3.66
	4 - 8	1	4	25	12	42	3.39
	9 - 13		3	10	8	21	3.47
	14 - 19		1	13	5	19	3.42
	20 or more	2	4	15	13	34	3.56
	Total	3	14	77	49	143	3.50
	Chi-square = 4.120 (d.f. = 8)						

Table 15. (Continued)

Item number	Experience	No response	Educational need: None	Moderate	Strong	Total	Mean score
6	3 or less	1	2	16	8	27	3.46
	4 - 8	2	1	26	13	42	3.59
	9 - 13		0	14	7	21	3.66
	14 - 19		2	12	5	19	3.31
	20 or more	1	3	15	15	34	3.72
	Total	4	8	83	48	143	3.57
	Chi-square = 2.558 (d.f. = 4)						
7	3 or less		2	16	9	27	3.51
	4 - 8	1	0	15	26	42	4.26
	9 - 13		1	6	14	21	4.23
	14 - 19		1	7	11	19	4.05
	20 or more	2	0	14	18	34	4.12
	Total	3	4	58	78	143	4.05
	Chi-square = 7.528 (d.f. = 4)						
8	3 or less	1	0	20	6	27	3.46
	4 - 8	2	2	20	18	42	3.79
	9 - 13		0	13	8	21	3.76
	14 - 19		2	9	8	19	3.63
	20 or more	3	3	18	10	34	3.45
	Total	6	7	80	50	143	3.62
	Chi-square = 3.790 (d.f. = 4)						
9	3 or less		2	12	13	27	3.81
	4 - 8	1	2	16	23	42	4.02
	9 - 13		1	9	11	21	3.95
	14 - 19		1	8	10	19	3.94
	20 or more	3	2	18	11	34	3.58
	Total	4	8	63	68	143	3.86
	Chi-square = 3.482 (d.f. = 8)						
10	3 or less		2	15	10	27	3.59
	4 - 8	1	5	27	9	42	3.19
	9 - 13		1	14	6	21	3.47
	14 - 19		2	12	5	19	3.31
	20 or more	3	3	13	15	34	3.77
	Total	4	13	81	45	143	3.46
	Chi-square = 7.480 (d.f. = 8)						

SUBHYPOTHESIS 3c: There is no difference between the levels of formal education of managers of agricultural cooperatives and how they see their needs for understanding policy development functions of cooperative operations.

As shown in Table 16, none of the chi-square values for the individual subject matter items were significant at the 5 percent level of confidence when compared to the independent variable of formal education. The null hypothesis was not rejected for any of the ten items.

Table 16. Need for understanding policy development functions of cooperative operations by level of education

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	Elem. 8 or less	2	0	3	9	14	4.50
	High school		3	30	49	82	4.12
	Vocational-Tech.		0	3	7	10	4.40
	Attended college		0	7	20	27	4.48
	Completed college		0	4	6	10	4.20
	Total	2	3	47	91	143	4.24
	Chi-square = 2.686 (d.f. = 4)						
2	Elem. 8 or less	2	0	5	7	14	4.16
	High school		4	46	32	82	3.68
	Vocational-Tech.		0	7	3	10	3.59
	Attended college		1	13	13	27	3.88
	Completed college		0	4	6	10	4.20
	Total	2	5	75	61	143	3.79
	Chi-square = 3.831 (d.f. = 4)						
3	Elem. 8 or less	3	0	7	4	14	3.72
	High school		7	39	36	82	3.70
	Vocational-Tech.		1	6	3	10	3.40
	Attended college		1	11	15	27	4.03
	Completed college		1	1	8	10	4.40
	Total	3	10	64	66	143	3.80
	Chi-square = 7.137 (d.f. = 4)						

Table 16. (Continued)

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
4	Elem. 8 or less	2	0	4	8	14	4.33
	High school		4	29	49	82	4.09
	Vocational-Tech.	1	0	1	8	10	4.77
	Attended college		0	8	19	27	4.40
	Completed college		0	3	7	10	4.40
	Total	3	4	45	91	143	4.24
	Chi-square = 3.716 (d.f. = 4)						
5	Elem. 8 or less	3	0	7	4	14	3.72
	High school		12	47	23	82	3.26
	Vocational-Tech.		1	6	3	10	3.40
	Attended college		1	13	13	27	3.88
	Completed college		0	4	6	10	4.20
	Total	3	14	77	49	143	3.50
	Chi-square = 6.659 (d.f. = 4)						
6	Elem. 8 or less	2	0	7	5	14	3.83
	High school	1	3	52	26	82	3.56
	Vocational-Tech.	1	1	4	4	10	3.66
	Attended college		2	15	10	27	3.59
	Completed college		2	5	3	10	3.20
	Total	4	8	83	48	143	3.57
	Chi-square = 1.039 (d.f. = 4)						
7	Elem. 8 or less	2	0	4	8	14	4.33
	High school		2	39	41	82	3.95
	Vocational-Tech.		1	4	5	10	3.79
	Attended college	1	1	9	16	27	4.15
	Completed college		0	2	8	10	4.59
	Total	3	4	58	78	143	4.05
	Chi-square = 4.549 (d.f. = 4)						
8	Elem. 8 or less	3	1	6	4	14	3.54
	High school	1	5	49	27	82	3.54
	Vocational-Tech.	1	0	6	3	10	3.66
	Attended college	1	1	16	9	27	3.61
	Completed college	0	0	3	7	10	4.40
	Total	6	7	80	50	143	3.62
	Chi-square = 5.272 (d.f. = 4)						

Table 16. (Continued)

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
9	Elem. 8 or less	2	0	6	6	14	4.00
	High school	1	5	39	37	82	3.79
	Vocational-Tech.		1	2	7	10	4.20
	Attended college	1	2	10	14	27	3.92
	Completed college		0	6	4	10	3.79
	Total	4	8	63	68	143	3.86
	Chi-square = 2.695 (d.f. = 4)						
10	Elem. 8 or less	3	1	6	4	14	3.54
	High school		10	44	28	82	3.43
	Vocational-Tech.		1	8	1	10	3.00
	Attended college	1	0	17	9	27	3.69
	Completed college		1	6	3	10	3.40
	Total	4	13	81	45	143	3.46
	Chi-square = 2.570 (d.f. = 4)						

SUBHYPOTHESIS 3d: There is no difference between volume of business managed by managers of agricultural cooperatives and how they see their needs for understanding policy development functions of cooperative operations.

Again, the chi-square values were not significant at the 5 percent level of confidence for any of the subject matter items. The null hypothesis was not rejected for any of the ten subject matter items tested in Table 17.

Table 17. Need for understanding policy development functions of cooperative operations by gross sales of the cooperative in 1970

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	$ 500,000 or less		1	9	17	27	4.18
	500,001-1,000,000	1	2	12	24	39	4.15
	1,000,001-1,500,000		0	5	17	22	4.54
	1,500,001-3,000,000	1	0	12	17	30	4.17
	3,000,001 or more		0	9	16	25	4.28
	Total	2	3	47	91	143	4.24
	Chi-square = 2.067 (d.f. = 4)						
2	$ 500,000 or less	1	2	14	10	27	3.61
	500,001-1,000,000		3	19	17	39	3.71
	1,000,001-1,500,000		0	13	9	22	3.81
	1,500,001-3,000,000	1	0	18	11	30	3.75
	3,000,001 or more		0	11	14	25	4.12
	Total	2	5	75	61	143	3.79
	Chi-square = 2.284 (d.f. = 4)						
3	$ 500,000 or less	1	3	10	13	27	3.76
	500,001-1,000,000	1	3	17	18	39	3.78
	1,000,001-1,500,000		0	11	11	22	4.00
	1,500,001-3,000,000	1	3	15	11	30	3.55
	3,000,001 or more		1	11	13	25	3.95
	Total	3	10	64	66	143	3.80
	Chi-square = 1.382 (d.f. = 4)						
4	$ 500,000 or less	1	1	5	20	27	4.46
	500,001-1,000,000	1	2	10	26	39	4.26
	1,000,001-1,500,000		0	7	15	22	4.36
	1,500,001-3,000,000	1	0	13	16	30	4.10
	3,000,001 or more		1	10	14	25	4.04
	Total	3	4	45	91	143	4.24
	Chi-square = 4.039 (d.f. = 4)						
5	$ 500,000 or less	1	2	14	10	27	3.61
	500,001-1,000,000	1	6	22	10	39	3.21
	1,000,001-1,500,000		2	14	6	22	3.36
	1,500,001-3,000,000	1	4	15	10	30	3.41
	3,000,001 or more		0	12	13	25	4.04
	Total	3	14	77	49	143	3.50
	Chi-square = 5.153 (d.f. = 4)						

Table 17. (Continued)

Item Number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
6	$ 500,000 or less	2	0	17	8	27	3.63
	500,001-1,000,000	1	2	21	15	39	3.68
	1,000,001-1,500,000		0	14	8	22	3.72
	1,500,001-3,000,000	1	3	17	9	30	3.41
	3,000,001 or more		3	14	8	25	3.40
	Total	4	8	83	48	143	3.57
	Chi-square = 0.742 (d.f. = 4)						
7	$ 500,000 or less	1	1	11	14	27	4.00
	500,001-1,000,000	1	0	18	20	39	4.05
	1,000,001-1,500,000		0	13	9	22	3.81
	1,500,001-3,000,000		1	10	19	30	4.20
	3,000,001 or more	1	2	6	16	25	4.16
	Total	3	4	58	78	143	4.05
	Chi-square = 4.010 (d.f. = 4)						
8	$ 500,000 or less	2	1	16	8	27	3.55
	500,001-1,000,000	2	3	22	12	39	3.48
	1,000,001-1,500,000		1	13	8	22	3.63
	1,500,001-3,000,000	1	0	18	11	30	3.75
	3,000,001 or more	1	2	11	11	25	3.75
	Total	6	7	80	50	143	3.62
	Chi-square = 1.410 (d.f. = 4)						
9	$ 500,000 or less	2	2	9	14	27	3.95
	500,001-1,000,000	1	2	22	14	39	3.63
	1,000,001-1,500,000		2	5	15	22	4.18
	1,500,001-3,000,000		1	14	15	30	3.93
	3,000,001 or more	1	1	13	10	25	3.75
	Total	4	8	63	68	143	3.86
	Chi-square = 9.103 (d.f. = 8)						
10	$ 500,000 or less	1	3	18	5	27	3.15
	500,001-1,000,000	1	6	18	14	39	3.42
	1,000,001-1,500,000		1	14	7	22	3.54
	1,500,001-3,000,000	1	3	16	10	30	3.48
	3,000,001 or more	1	0	15	9	25	3.75
	Total	4	13	81	45	143	3.46
	Chi-square = 2.748 (d.f. = 4)						

In summarizing how managers of agricultural cooperatives saw their educational needs for understanding policy development functions of cooperative operations by the independent variables of age, experience, formal education and volume of business managed, only the independent variable of age showed a significant difference to one subject matter item on the need for understanding finance policies. Both the younger and older age groups of managers saw a greater educational need for understanding finance policies than did the middle-age group.

The analysis basically revealed that the need for understanding policy development functions of cooperative operations by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

Business management functions of cooperative operations

In determining educational needs for understanding business management functions of cooperative operations, managers were asked to indicate their educational needs for the following fourteen subject matter items:

1. Principles of management (planning, organizing, directing, controlling and coordinating).
2. Decision-making techniques.
3. Long and short-range planning procedures and techniques.
4. Principles of accounting and record keeping.
5. Cost accounting procedures and techniques.
6. Control information systems and techniques for purchasing control.
7. Control information systems and techniques for inventory control.
8. Control information systems and techniques for operations control.
9. Use of business machines, including computers and data processing systems.
10. External transportation management including commercial carriers.
11. Internal transportation management including least-cost routing and assignment in pick-up and delivery.

12. Interstate Commerce Commission regulations and rulings.
13. Tax management and timing.
14. Hedging.

To evaluate how managers saw their educational needs to these subject matter items by the independent variables, the fourth major hypothesis was stated as follows:

> MAJOR HYPOTHESIS 4: The need for understanding business management functions of cooperative operations by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

Four subhypotheses in the null form were tested. The results of the analysis are presented after each of the subhypotheses.

SUBHYPOTHESIS 4a: There is no difference between the age levels of managers of agricultural cooperatives and how they see their needs for understanding business management functions of cooperative operations.

The findings, as reported in Table 18, reveal that the chi-square value for the individual subject matter item number 14 was highly significant and thus the null hypothesis was rejected for this item. The null hypothesis was not rejected for the remaining thirteen subject matter items.

In comparing mean scores, the rejected null hypothesis revealed that younger managers of agricultural cooperatives saw a greater educational need for understanding hedging than did older managers.

Table 18. Need for understanding business management functions of cooperative operations by age

Item number	Age	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	20 - 34		0	8	14	22	4.27
	35 - 44		2	11	25	38	4.21
	45 - 54		3	17	30	50	4.08
	55 and over	2	1	10	20	33	4.22
	Total	2	6	46	89	143	4.17
	Chi-square = 0.354 (d.f. = 3)						
2	20 - 34		0	10	12	22	4.09
	35 - 44	1	2	15	20	38	3.97
	45 - 54	0	4	22	24	50	3.79
	55 and over	2	1	14	16	33	3.96
	Total	3	7	61	72	143	3.92
	Chi-square = 0.423 (d.f. = 3)						
3	20 - 34		0	9	13	22	4.18
	35 - 44	1	1	12	24	38	4.24
	45 - 54	0	4	26	20	50	3.63
	55 and over	1	2	14	16	33	3.87
	Total	2	7	61	73	143	3.93
	Chi-square = 5.828 (d.f. = 3)						
4	20 - 34		0	12	10	22	3.90
	35 - 44		3	20	15	38	3.63
	45 - 54		4	22	24	50	3.79
	55 and over	2	1	12	18	33	4.09
	Total	2	8	66	67	143	3.83
	Chi-square = 2.411 (d.f. = 3)						
5	20 - 34		0	13	9	22	3.81
	35 - 44	1	4	16	17	38	3.70
	45 - 54	2	3	25	20	50	3.70
	55 and over	4	0	12	17	33	4.17
	Total	7	7	66	63	143	3.82
	Chi-square = 2.444 (d.f. = 3)						

Table 18. (Continued)

Item number	Age	No response	Educational need: None	Moderate	Strong	Total	Mean score
6	20 - 34		1	14	7	22	3.54
	35 - 44	2	5	19	12	38	3.38
	45 - 54	2	2	30	16	50	3.58
	55 and over	4	2	16	11	33	3.62
	Total	8	10	79	46	143	3.53
	Chi-square = 3.635 (d.f. = 6)						
7	20 - 34		0	14	8	22	3.72
	35 - 44	2	4	19	13	38	3.50
	45 - 54	2	2	27	19	50	3.70
	55 and over	4	2	16	11	33	3.62
	Total	8	8	76	51	143	3.63
	Chi-square = 0.128 (d.f. = 3)						
8	20 - 34		0	15	7	22	3.63
	35 - 44	2	4	19	13	38	3.50
	45 - 54	3	4	30	13	50	3.38
	55 and over	4	2	13	14	33	3.82
	Total	9	10	77	47	143	3.55
	Chi-square = 3.474 (d.f. = 3)						
9	20 - 34		2	14	6	22	3.36
	35 - 44	2	8	20	8	38	3.00
	45 - 54	3	13	23	11	50	2.91
	55 and over	4	2	16	11	33	3.62
	Total	9	25	73	36	143	3.16
	Chi-square = 7.951 (d.f. = 6)						
10	20 - 34		1	15	6	22	3.45
	35 - 44	2	11	17	8	38	2.83
	45 - 54	4	15	26	5	50	2.56
	55 and over	4	6	19	4	33	2.86
	Total	10	33	77	23	143	2.84
	Chi-square = 9.938 (d.f. = 6)						
11	20 - 34		2	12	8	22	3.54
	35 - 44	3	14	16	5	38	2.48
	45 - 54	4	9	27	10	50	3.04
	55 and over	4	4	17	8	33	3.27
	Total	11	29	72	31	143	3.03
	Chi-square = 11.660 (d.f. = 6)						

Table 18. (Continued)

Item number	Age	No response	Educational need: None	Moderate	Strong	Total	Mean score
12	20 - 34		1	13	8	22	3.63
	35 - 44	3	8	18	9	38	3.05
	45 - 54	6	10	23	11	50	3.04
	55 and over	4	7	18	4	33	2.79
	Total	13	26	72	32	143	3.09
	Chi-square = 6.280 (d.f. = 6)						
13	20 - 34		2	13	7	22	3.45
	35 - 44	1	5	20	12	38	3.37
	45 - 54	4	7	24	15	50	3.34
	55 and over	3	3	16	11	33	3.53
	Total	8	17	73	45	143	3.41
	Chi-square = 0.919 (d.f. = 6)						
14	20 - 34		2	6	14	22	4.09
	35 - 44	2	4	9	23	38	4.05
	45 - 54	5	15	14	16	50	3.04
	55 and over	4	4	16	9	33	3.34
	Total	11	25	45	62	143	3.56
	Chi-square = 19.001** (d.f. = 6)						

SUBHYPOTHESIS 4b: There is no difference between experience levels of managers of agricultural cooperatives and how they see their needs for understanding business management functions of cooperative operations.

As shown in Table 19, the chi-square value for the individual subject matter item number 14 was significant at the 5 percent level of confidence. Thus, the null hypothesis was rejected for this item. However, the null hypothesis was not rejected for the remaining thirteen subject matter items.

In comparing the mean scores for the rejected null hypothesis, managers of agricultural cooperatives with 9 - 13 years of experience saw

the greatest educational need for understanding hedging, while the least educational need was expressed by managers with 20 or more years of experience.

Table 19. Need for understanding business management functions of cooperative operations by years of experience

Item number	Experience	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	3 or less		1	8	18	27	4.25
	4 - 8	1	3	13	25	42	4.07
	9 - 13		0	7	14	21	4.33
	14 - 19		0	7	12	19	4.26
	20 or more	1	2	11	20	34	4.09
	Total	2	6	46	89	143	4.17
	Chi-square = 0.430 (d.f. = 4)						
2	3 or less	1	0	14	12	27	3.92
	4 - 8		3	16	23	42	3.95
	9 - 13		2	7	12	21	3.95
	14 - 19		0	8	11	19	4.15
	20 or more	2	2	16	14	34	3.75
	Total	3	7	61	72	143	3.92
	Chi-square = 1.824 (d.f. = 4)						
3	3 or less	1	0	15	11	27	3.84
	4 - 8		3	16	23	42	3.95
	9 - 13		0	8	13	21	4.23
	14 - 19		0	8	11	19	4.15
	20 or more	1	4	14	15	34	3.66
	Total	2	7	61	73	143	3.93
	Chi-square = 2.759 (d.f. = 4)						
4	3 or less		2	16	9	27	3.51
	4 - 8		2	21	19	42	3.80
	9 - 13		1	11	9	21	3.76
	14 - 19		1	8	10	19	3.94
	20 or more	2	2	10	20	34	4.12
	Total	2	8	66	67	143	3.83
	Chi-square = 6.031 (d.f. = 8)						

Table 19. (Continued)

Item number	Experience	No response	Educational need: None	Moderate	Strong	Total	Mean score
5	3 or less		2	14	11	27	3.66
	4 - 8	2	1	20	19	42	3.90
	9 - 13	1	0	11	9	21	3.90
	14 - 19		2	9	8	19	3.63
	20 or more	4	2	12	16	34	3.93
	Total	7	7	66	63	143	3.82
	Chi-square = 1.104 (d.f. = 4)						
6	3 or less		2	13	12	27	3.74
	4 - 8	3	4	26	9	42	3.25
	9 - 13	1	1	12	7	21	3.59
	14 - 19		0	12	7	19	3.73
	20 or more	4	3	16	11	34	3.53
	Total	8	10	79	46	143	3.53
	Chi-square = 3.554 (d.f. = 4)						
7	3 or less		1	14	12	27	3.81
	4 - 8	3	3	25	11	42	3.41
	9 - 13	1	1	10	9	21	3.79
	14 - 19		0	11	8	19	3.84
	20 or more	4	3	16	11	34	3.53
	Total	8	8	76	51	143	3.63
	Chi-square = 2.642 (d.f. = 4)						
8	3 or less		1	16	10	27	3.66
	4 - 8	3	5	22	12	42	3.35
	9 - 13	2	1	12	6	21	3.52
	14 - 19		0	13	6	19	3.63
	20 or more	4	3	14	13	34	3.66
	Total	9	10	77	47	143	3.55
	Chi-square = 1.466 (d.f. = 4)						
9	3 or less		5	15	7	27	3.14
	4 - 8	4	10	21	7	42	2.84
	9 - 13	1	2	12	6	21	3.40
	14 - 19		3	9	7	19	3.42
	20 or more	4	5	16	9	34	3.26
	Total	9	25	73	36	143	3.16
	Chi-square = 4.356 (d.f. = 8)						

Table 19. (Continued)

Item number	Experience	No response	Educational need: None	Moderate	Strong	Total	Mean score
10	3 or less		5	19	3	27	2.85
	4 - 8	4	9	20	9	42	3.00
	9 - 13	2	6	10	3	21	2.68
	14 - 19		6	9	4	19	2.78
	20 or more	4	7	19	4	34	2.79
	Total	10	33	77	23	143	2.84
	Chi-square = 4.640 (d.f. = 8)						
11	3 or less	1	6	17	3	27	2.76
	4 - 8	4	9	19	10	42	3.05
	9 - 13	2	4	10	5	21	3.10
	14 - 19		3	12	4	19	3.10
	20 or more	4	7	14	9	34	3.13
	Total	11	29	72	31	143	3.03
	Chi-square = 4.109 (d.f. = 8)						
12	3 or less	1	5	14	7	27	3.15
	4 - 8	5	8	16	13	42	3.27
	9 - 13	3	4	10	4	21	3.00
	14 - 19		3	12	4	19	3.10
	20 or more	4	6	20	4	34	2.86
	Total	13	26	72	32	143	3.09
	Chi-square = 5.573 (d.f. = 8)						
13	3 or less		4	13	10	27	3.44
	4 - 8	4	5	21	12	42	3.36
	9 - 13	1	3	10	7	21	3.40
	14 - 19		1	14	4	19	3.31
	20 or more	3	4	15	12	34	3.51
	Total	8	17	73	45	143	3.41
	Chi-square = 4.095 (d.f. = 8)						
14	3 or less	1	4	11	11	27	3.53
	4 - 8	4	9	8	21	42	3.63
	9 - 13	2	3	2	14	21	4.15
	14 - 19		3	8	8	19	3.52
	20 or more	4	6	16	8	34	3.13
	Total	11	25	45	62	143	3.56
	Chi-square = 16.255* (d.f. = 8)						

SUBHYPOTHESIS 4c: There is no difference between the levels of formal education of managers of agricultural cooperatives and how they see their needs for understanding business management functions of cooperative operations.

The chi-square values for the individual subject matter items numbered 3, 8, 9 and 14 were significant at at least the 5 percent level of confidence and thus the null hypothesis was rejected for these items. The null hypothesis was not rejected for the remaining ten subject matter items. The findings are shown in Table 20.

The mean scores for the rejected null hypothesis revealed the following information:

1. Managers of agricultural cooperatives who possessed more formal education saw a greater educational need for understanding long and short-range planning procedures and techniques than did managers with less formal education.
2. Managers of agricultural cooperatives who had attended college saw a greater educational need for understanding control information systems and techniques for operations control than did the managers in the other educational groups.
3. Managers of agricultural cooperatives who possessed more formal education definitely saw a greater educational need for understanding the use of business machines, including computers and data processing systems than did the managers with less formal education.
4. Managers of agricultural cooperatives who possessed more formal education saw a greater educational need for understanding hedging than did the managers with less formal education.

Table 20. Need for understanding business management functions of cooperative operations by level of education

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	Elem. 8 or less		1	3	10	14	4.28
	High school	1	4	30	47	82	4.06
	Vocational-Tech.		0	4	6	10	4.20
	Attended college	1	1	7	18	27	4.30
	Completed college		0	2	8	10	4.59
	Total	2	6	46	89	143	4.17
	Chi-square = 3.001 (d.f. = 4)						
2	Elem. 8 or less	1	0	6	7	14	4.07
	High school	1	6	36	39	82	3.81
	Vocational-Tech.		0	7	3	10	3.59
	Attended college	1	1	9	16	27	4.15
	Completed college		0	3	7	10	4.40
	Total	3	7	61	72	143	3.92
	Chi-square = 4.662 (d.f. = 4)						
3	Elem. 8 or less		0	9	5	14	3.71
	High school	1	7	37	37	82	3.74
	Vocational-Tech.		0	5	5	10	4.00
	Attended college	1	0	9	17	27	4.30
	Completed college		0	1	9	10	4.79
	Total	2	7	61	73	143	3.93
	Chi-square = 10.445* (d.f. = 4)						
4	Elem. 8 or less	1	1	3	9	14	4.23
	High school		4	39	39	82	3.85
	Vocational-Tech.		1	4	5	10	3.79
	Attended college	1	2	12	12	27	3.76
	Completed college		0	8	2	10	3.40
	Total	2	8	66	67	143	3.83
	Chi-square = 5.538 (d.f. = 4)						
5	Elem. 8 or less	3	0	6	5	14	3.90
	High school	3	4	40	35	82	3.78
	Vocational-Tech.		0	4	6	10	4.20
	Attended college	1	2	10	14	27	3.92
	Completed college		1	6	3	10	3.40
	Total	7	7	66	63	143	3.82
	Chi-square = 2.549 (d.f. = 4)						

Table 20. (Continued)

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
6	Elem. 8 or less	3	0	8	3	14	3.54
	High school	4	8	44	26	82	3.46
	Vocational-Tech.		0	7	3	10	3.59
	Attended college	1	2	11	13	27	3.84
	Completed college		0	9	1	10	3.20
	Total	8	10	79	46	143	3.53
	Chi-square = 5.835 (d.f. = 4)						
7	Elem. 8 or less	3	0	9	2	14	3.36
	High school	4	7	43	28	82	3.53
	Vocational-Tech.		0	5	5	10	4.00
	Attended college	1	1	11	14	27	4.00
	Completed college		0	8	2	10	3.40
	Total	8	8	76	51	143	3.63
	Chi-square = 6.750 (d.f. = 4)						
8	Elem. 8 or less	3	1	9	1	14	3.00
	High school	5	8	43	26	82	3.46
	Vocational-Tech.		0	8	2	10	3.40
	Attended college	1	1	9	16	27	4.15
	Completed college		0	8	2	10	3.40
	Total	9	10	77	47	143	3.55
	Chi-square = 13.311** (d.f. = 4)						
9	Elem. 8 or less	3	4	7	0	14	2.27
	High school	4	17	43	18	82	3.02
	Vocational-Tech.	1	2	5	2	10	3.00
	Attended college	1	2	13	11	27	3.69
	Completed college		0	5	5	10	4.00
	Total	9	25	73	36	143	3.16
	Chi-square[a] = 10.391* (d.f. = 4)						

[a]Categories of "elementary 8 or less" and "high school" combined and categories of "attended college" and "completed college" combined.

Table 20. (Continued)

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
10	Elem. 8 or less	3	4	7	0	14	2.27
	High school	5	21	43	13	82	2.79
	Vocational-Tech.	1	2	6	1	10	2.77
	Attended college	1	4	15	7	27	3.23
	Completed college		2	6	2	10	3.00
	Total	10	33	77	23	143	2.84
	Chi-square = 2.431 (d.f. = 4)						
11	Elem. 8 or less	3	4	5	2	14	2.63
	High school	6	19	38	19	82	3.00
	Vocational-Tech.	1	1	8	0	10	2.77
	Attended college	1	5	13	8	27	3.23
	Completed college		0	8	2	10	3.40
	Total	11	29	72	31	143	3.03
	Chi-square[b] = 4.306 (d.f. = 4)						
12	Elem. 8 or less	4	3	5	2	14	2.79
	High school	7	16	39	20	82	3.10
	Vocational-Tech.	1	2	7	0	10	2.55
	Attended college	1	4	13	9	27	3.38
	Completed college		1	8	1	10	3.00
	Total	13	26	72	32	143	3.09
	Chi-square = 1.707 (d.f. = 4)						
13	Elem. 8 or less	3	2	6	3	14	3.18
	High school	3	10	43	26	82	3.40
	Vocational-Tech.	1	1	8	0	10	2.77
	Attended college	1	4	9	13	27	3.69
	Completed college		0	7	3	10	3.59
	Total	8	17	73	45	143	3.41
	Chi-square[b] = 0.550 (d.f. = 4)						

[b]Categories of "vocational-technical", "attended college" and "completed college" combined.

Table 20. (Continued)

Item number	Education	No response	Educational need None	Moderate	Strong	Total	Mean score
14	Elem. 8 or less	4	4	5	1	14	2.40
	High school	5	17	25	35	82	3.46
	Vocational-Tech.	1	1	6	2	10	3.22
	Attended college	1	2	7	17	27	4.15
	Completed college		1	2	7	10	4.20
	Total	11	25	45	62	143	3.56
	Chi-square = 16.897* (d.f. = 8)						

SUBHYPOTHESIS 4d: There is no difference between volume of business managed by managers of agricultural cooperatives and how they see their needs for understanding business management functions of cooperative operations.

As noted in Table 21, the chi-square value for the individual subject matter item number 14 was again highly significant and the null hypothesis was rejected for this subject matter item. However, the null hypothesis was not rejected for the remaining thirteen subject matter items.

The mean scores for the rejected null hypothesis showed that managers of agricultural cooperatives who have more than $300,000,001 in annual gross sales see a greater educational need for understanding hedging than did managers who have less than $500,000 in annual gross sales.

Table 21. Need for understanding business management functions of cooperative operations by gross sales of the cooperative in 1970

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	$ 500,000 or less		1	7	19	27	4.33
	500,001-1,000,000		3	14	22	39	3.97
	1,000,001-1,500,000	1	1	8	12	22	4.04
	1,500,001-3,000,000		0	10	20	30	4.33
	3,000,001 or more	1	1	7	16	25	4.25
	Total	2	6	46	89	143	4.17
	Chi-square = 1.978 (d.f. = 4)						
2	$ 500,000 or less	1	0	11	15	27	4.15
	500,001-1,000,000		4	15	20	39	3.82
	1,000,001-1,500,000		1	13	8	22	3.63
	1,500,001-3,000,000	1	0	16	13	30	3.89
	3,000,001 or more	1	2	6	16	25	4.16
	Total	3	7	61	72	143	3.92
	Chi-square = 5.144 (d.f. = 4)						
3	$ 500,000 or less	1	1	14	11	27	3.76
	500,001-1,000,000		4	15	20	39	3.82
	1,000,001-1,500,000		1	9	12	22	4.00
	1,500,001-3,000,000		1	14	15	30	3.93
	3,000,001 or more	1	0	9	15	25	4.25
	Total	2	7	61	73	143	3.93
	Chi-square = 2.148 (d.f. = 4)						
4	$ 500,000 or less		3	10	14	27	3.81
	500,001-1,000,000		2	18	19	39	3.87
	1,000,001-1,500,000		1	9	12	22	4.00
	1,500,001-3,000,000	1	1	16	12	30	3.75
	3,000,001 or more	1	1	13	10	25	3.75
	Total	2	8	66	67	143	3.83
	Chi-square = 4.005 (d.f. = 8)						
5	$ 500,000 or less	2	2	12	11	27	3.71
	500,001-1,000,000	1	2	19	17	39	3.78
	1,000,001-1,500,000	1	0	11	10	22	3.95
	1,500,001-3,000,000	1	2	16	11	30	3.62
	3,000,001 or more	2	1	8	14	25	4.13
	Total	7	7	66	63	143	3.82
	Chi-square = 2.886 (d.f. = 4)						

Table 21. (Continued)

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
6	$ 500,000 or less	2	2	12	11	27	3.71
	500,001-1,000,000	2	4	22	11	39	3.37
	1,000,001-1,500,000	1	0	14	7	22	3.66
	1,500,001-3,000,000	1	3	18	8	30	3.34
	3,000,001 or more	2	1	13	9	25	3.69
	Total	8	10	79	46	143	3.53
	Chi-square = 2.218 (d.f. = 4)						
7	$ 500,000 or less	2	2	15	8	27	3.48
	500,001-1,000,000	2	3	21	13	39	3.54
	1,000,001-1,500,000	1	0	12	9	22	3.85
	1,500,001-3,000,000	1	2	17	10	30	3.55
	3,000,001 or more	2	1	11	11	25	3.86
	Total	8	8	76	51	143	3.63
	Chi-square = 1.817 (d.f. = 4)						
8	$ 500,000 or less	2	3	14	8	27	3.40
	500,001-1,000,000	2	4	24	9	39	3.27
	1,000,001-1,500,000	2	0	11	9	22	3.90
	1,500,001-3,000,000	1	2	15	12	30	3.68
	3,000,001 or more	2	1	13	9	25	3.69
	Total	9	10	77	47	143	3.55
	Chi-square = 3.519 (d.f. = 4)						
9	$ 500,000 or less	2	8	13	4	27	2.67
	500,001-1,000,000	3	9	21	6	39	2.83
	1,000,001-1,500,000	1	2	12	7	22	3.47
	1,500,001-3,000,000	1	6	15	8	30	3.13
	3,000,001 or more	2	0	12	11	25	3.95
	Total	9	25	73	36	143	3.16
	Chi-square = 9.006 (d.f. = 4)						
10	$ 500,000 or less	2	8	15	2	27	2.52
	500,001-1,000,000	4	8	21	6	39	2.88
	1,000,001-1,500,000	1	7	10	4	22	2.71
	1,500,001-3,000,000	1	8	18	3	30	2.65
	3,000,001 or more	2	2	13	8	25	3.52
	Total	10	33	77	23	143	2.84
	Chi-square = 10.375 (d.f. = 8)						

Table 21. (Continued)

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
11	$ 500,000 or less	3	7	13	4	27	2.75
	500,001-1,000,000	3	8	16	12	39	3.22
	1,000,001-1,500,000	2	3	14	3	22	3.00
	1,500,001-3,000,000	1	9	14	6	30	2.79
	3,000,001 or more	2	2	15	6	25	3.34
	Total	11	29	72	31	143	3.03
	Chi-square = 8.915 (d.f. = 8)						
12	$ 500,000 or less	3	9	12	3	27	2.50
	500,001-1,000,000	3	5	17	14	39	3.50
	1,000,001-1,500,000	3	6	9	4	22	2.78
	1,500,001-3,000,000	2	4	17	7	30	3.21
	3,000,001 or more	2	2	17	4	25	3.17
	Total	13	26	72	32	143	3.09
	Chi-square = 14.894 (d.f. = 8)						
13	$ 500,000 or less	2	5	13	7	27	3.16
	500,001-1,000,000	2	3	21	13	39	3.54
	1,000,001-1,500,000	2	3	9	8	22	3.50
	1,500,001-3,000,000		4	16	10	30	3.40
	3,000,001 or more	2	2	14	7	25	3.43
	Total	8	17	73	45	143	3.41
	Chi-square = 3.210 (d.f. = 8)						
14	$ 500,000 or less	3	9	11	4	27	2.58
	500,001-1,000,000	3	7	16	13	39	3.33
	1,000,001-1,500,000	2	6	4	10	22	3.40
	1,500,001-3,000,000	1	3	7	19	30	4.10
	3,000,001 or more	2	0	7	16	25	4.39
	Total	11	25	45	62	143	3.56
	Chi-square = 19.345** (d.f. = 4)						

In summarizing how managers saw their educational needs for understanding business management functions of cooperative operations by the independent variables of age, experience, formal education and volume of

business managed, all four of the independent variables showed a significant difference to the subject matter item on hedging. The analysis revealed that the greatest educational need for understanding hedging was expressed by managers who had attended or completed college and were 20 - 44 years of age with 9 - 13 years of experience and managed an agricultural cooperative that had an annual gross sales of over $3,000,001.

Also, the independent variable of formal education showed a significant difference to three additional subject matter items. This analysis revealed that managers of agricultural cooperatives who possessed more formal education saw a greater educational need for understanding the following subject matter items:

1. Long and short-range planning and techniques.
2. Control information systems and techniques for operations control.
3. Use of business machines, including computers and data processing systems.

The analysis basically revealed that the need for understanding business management functions of cooperative operations by managers of agricultural cooperatives is independent of their age, experience and volume of business managed. However, four of the fourteen educational subject matter items showed dependence to the independent variable of formal education.

Sales management functions of cooperative operations

The following seven subject matter items were used in determining how managers saw their educational needs for understanding sales management functions of cooperative operations:

1. How to analyze market position.
2. How to conduct surveys and survey techniques.

3. How to organize, plan and forecast sales.
4. How to conduct sales training programs.
5. How to conduct advertising and sales promotion (product and firm).
6. How to select wholesale outlets and sources.
7. How to identify and evaluate needed custom services.

In evaluating how managers saw their educational needs to these subject matter items by the independent variables, the fifth major hypothesis was stated as follows:

MAJOR HYPOTHESIS 5: The need for understanding sales management functions of cooperative operations by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

Four hypotheses were tested. The findings of the analysis are presented after each of the subhypotheses.

SUBHYPOTHESIS 5a: There is no difference between the age levels of managers of agricultural cooperatives and how they see their needs for understanding sales management functions of cooperative operations.

As shown in Table 22, none of the chi-square values for the individual subject matter items on sales management were significant at the 5 percent level of confidence. The null hypothesis was not rejected for any of the seven subject matter items.

Table 22. Need for understanding sales management functions of cooperative operations by age

Item number	Age	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	20 - 34	1	0	8	13	22	4.23
	35 - 44	1	3	13	21	38	3.97
	45 - 54	3	1	27	19	50	3.76
	55 and over	3	1	10	19	33	4.20
	Total	8	5	58	72	143	3.99
	Chi-square = 5.146 (d.f. = 3)						

Table 22. (Continued)

Item number	Age	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
2	20 - 34	1	1	14	6	22	3.47
	35 - 44	2	3	16	17	38	3.77
	45 - 54	4	5	30	11	50	3.26
	55 and over	3	3	17	10	33	3.46
	Total	10	12	77	44	143	3.48
	Chi-square = 5.960 (d.f. = 6)						
3	20 - 34	1	0	8	13	22	4.23
	35 - 44	1	1	18	18	38	3.91
	45 - 54	4	3	28	15	50	3.52
	55 and over	4	2	13	14	33	3.82
	Total	10	6	67	60	143	3.81
	Chi-square = 5.600 (d.f. = 3)						
4	20 - 34	1	1	12	8	22	3.66
	35 - 44	2	2	18	16	38	3.77
	45 - 54	4	6	26	14	50	3.34
	55 and over	4	4	13	12	33	3.55
	Total	11	13	69	50	143	3.56
	Chi-square = 3.934 (d.f. = 6)						
5	20 - 34	1	1	15	5	22	3.38
	35 - 44	1	3	19	15	38	3.64
	45 - 54	3	7	29	11	50	3.17
	55 and over	3	2	15	13	33	3.73
	Total	8	13	78	44	143	3.45
	Chi-square = 7.106 (d.f. = 6)						
6	20 - 34	1	2	10	9	22	3.66
	35 - 44	2	11	13	12	38	3.05
	45 - 54	4	9	27	10	50	3.04
	55 and over	4	3	11	15	33	3.82
	Total	11	25	61	46	143	3.31
	Chi-square = 12.522 (d.f. = 6)						

Table 22. (Continued)

Item number	Age	No response	Educational need None	Moderate	Strong	Total	Mean score
7	20 - 34	1	0	13	8	22	3.76
	35 - 44	1	4	17	16	38	3.64
	45 - 54	4	3	29	14	50	3.47
	55 and over	4	2	9	18	33	4.10
	Total	10	9	68	56	143	3.70
	Chi-square = 7.470 (d.f. = 3)						

SUBHYPOTHESIS 5b: There is no difference between experience levels of managers of agricultural cooperatives and how they see their needs for understanding sales management functions of cooperative operations.

Again, none of the chi-square values for the individual subject matter items were significant at the 5 percent level of confidence and thus, the null hypothesis was not rejected for any of the seven subject matter items. The results are shown in Table 23.

Table 23. Need for understanding sales management functions of cooperative functions by years of experience

Item number	Experience	No response	Educational need None	Moderate	Strong	Total	Mean score
1	3 or less		1	14	12	27	3.81
	4 - 8	3	3	15	21	42	3.92
	9 - 13	1	0	8	12	21	4.20
	14 - 19		0	8	11	19	4.15
	20 or more	4	1	13	16	34	4.00
	Total	8	5	58	72	143	3.99
	Chi-square = 1.377 (d.f. = 4)						

Table 23. (Continued)

Item number	Experience	No response	Educational need: None	Moderate	Strong	Total	Mean score
2	3 or less		2	17	8	27	3.44
	4 - 8	5	5	21	11	42	3.32
	9 - 13	1	1	11	8	21	3.70
	14 - 19		0	13	6	19	3.63
	20 or more	4	4	15	11	34	3.46
	Total	10	12	77	44	143	3.48
	Chi-square = 0.959 (d.f. = 4)						
3	3 or less		0	15	12	27	3.88
	4 - 8	5	2	20	15	42	3.70
	9 - 13	2	1	6	12	21	4.15
	14 - 19		0	10	9	19	3.94
	20 or more	3	3	16	12	34	3.58
	Total	10	6	67	60	143	3.81
	Chi-square = 3.368 (d.f. = 4)						
4	3 or less		1	15	11	27	3.74
	4 - 8	6	4	22	10	42	3.33
	9 - 13	1	0	11	9	21	3.90
	14 - 19		2	9	8	19	3.63
	20 or more	4	6	12	12	34	3.40
	Total	11	13	69	50	143	3.56
	Chi-square = 2.288 (d.f. = 4)						
5	3 or less		0	17	10	27	3.74
	4 - 8	4	6	23	9	42	3.15
	9 - 13	1	1	13	6	21	3.50
	14 - 19		1	12	6	19	3.52
	20 or more	3	5	13	13	34	3.51
	Total	8	13	78	44	143	3.45
	Chi-square = 2.917 (d.f. = 4)						
6	3 or less	1	3	15	8	27	3.38
	4 - 8	4	11	14	13	42	3.10
	9 - 13	2	3	9	7	21	3.42
	14 - 19		2	10	7	19	3.52
	20 or more	4	6	13	11	34	3.33
	Total	11	25	61	46	143	3.31
	Chi-square = 5.482 (d.f. = 8)						

Table 23. (Continued)

Item number	Experience	No response	Educational need None	Moderate	Strong	Total	Mean score
7	3 or less		1	17	9	27	3.59
	4 - 8	5	4	23	10	42	3.32
	9 - 13	2	1	6	12	21	4.15
	14 - 19		0	9	10	19	4.05
	20 or more	3	3	13	15	34	3.77
	Total	10	9	68	56	143	3.70
	Chi-square = 9.123 (d.f. = 4)						

SUBHYPOTHESIS 5c: There is no difference between the levels of formal education of managers of agricultural cooperatives and how they see their needs for understanding sales management functions of cooperative operations.

As noted in Table 24, the chi-square value for the individual subject matter item number 4 was significant at the 5 percent level of confidence and the null hypothesis was rejected for this item. The null hypothesis was not rejected for the remaining six subject matter items.

In analyzing the mean scores, the rejected null hypothesis revealed that the greatest educational need for understanding how to conduct sales training programs was expressed by both managers who have attended college and those with an eighth grade education or less. The least educational need for understanding how to conduct sales training programs was expressed by managers in the high school education group and the completed college group.

Table 24. Need for understanding sales management functions of cooperative operations by level of education

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	Elem. 8 or less	2	0	5	7	14	4.16
	High school	3	5	34	40	82	3.88
	Vocational-Tech.	1	0	5	4	10	3.88
	Attended college	2	0	9	16	27	4.28
	Completed College		0	5	5	10	4.00
	Total	8	5	58	72	143	3.99
	Chi-square = 1.825 (d.f. = 4)						
2	Elem. 8 or less	3	2	4	5	14	3.54
	High school	4	10	46	22	82	3.30
	Vocational-Tech.	1	0	7	2	10	3.44
	Attended college	2	0	14	11	27	3.87
	Completed college		0	6	4	10	3.79
	Total	10	12	77	44	143	3.48
	Chi-square = 3.640 (d.f. = 4)						
3	Elem. 8 or less	3	0	4	7	14	4.27
	High school	4	6	41	31	82	3.64
	Vocational-Tech.	1	0	6	3	10	3.66
	Attended college	2	0	12	13	27	4.04
	Completed college		0	4	6	10	4.20
	Total	10	6	67	60	143	3.81
	Chi-square = 4.311 (d.f. = 4)						
4	Elem. 8 or less	4	0	5	5	14	4.00
	High school	4	10	46	22	82	3.30
	Vocational-Tech.	1	0	5	4	10	3.88
	Attended college	2	2	7	16	27	4.12
	Completed college		1	6	3	10	3.40
	Total	11	13	69	50	143	3.56
	Chi-square = 11.404* (d.f. = 4)						
5	Elem. 8 or less	2	1	6	5	14	3.66
	High school	3	10	48	21	82	3.27
	Vocational-Tech.	1	0	7	2	10	3.44
	Attended college	2	2	11	12	27	3.79
	Completed college		0	6	4	10	3.79
	Total	8	13	78	44	143	3.45
	Chi-square = 5.140 (d.f. = 4)						

Table 24. (Continued)

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
6	Elem. 8 or less	4	3	2	5	14	3.40
	High school	5	14	39	24	82	3.25
	Vocational-Tech.		3	6	1	10	2.59
	Attended college	2	3	10	12	27	3.71
	Completed college		2	4	4	10	3.40
	Total	11	25	61	46	143	3.31
	Chi-square = 8.522 (d.f. = 8)						
7	Elem. 8 or less	3	1	5	5	14	3.72
	High school	4	7	41	30	82	3.58
	Vocational-Tech.	1	1	3	5	10	3.88
	Attended college	2	0	13	12	27	3.95
	Completed college		0	6	4	10	3.79
	Total	10	9	68	56	143	3.70
	Chi-square = 1.518 (d.f. = 4)						

SUBHYPOTHESIS 5d: There is no difference between volume of business managed by managers of agricultural cooperatives and how they see their needs for understanding sales management functions of cooperative operations.

The chi-square values, reported in Table 25, failed to be significant at the 5 percent level of confidence for any of the individual subject matter items. Thus, the null hypothesis was not rejected for any of the seven subject matter items.

Table 25. Need for understanding sales management functions of cooperative operations by gross sales of the cooperative in 1970

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	$ 500,000 or less	1	1	15	10	27	3.69
	500,001-1,000,000	2	3	11	23	39	4.08
	1,000,001-1,500,000	1	1	9	11	22	3.95
	1,500,001-3,000,000	1	0	12	17	30	4.17
	3,000,001 or more	3	0	11	11	25	4.00
	Total	8	5	58	72	143	3.99
	Chi-square = 3.901 (d.f. = 4)						
2	$ 500,000 or less	1	3	15	8	27	3.38
	500,001-1,000,000	3	6	18	12	39	3.33
	1,000,001-1,500,000	2	1	13	6	22	3.50
	1,500,001-3,000,000	1	2	17	10	30	3.55
	3,000,001 or more	3	0	14	8	25	3.72
	Total	10	12	77	44	143	3.48
	Chi-square = 0.282 (d.f. = 4)						
3	$ 500,000 or less	2	1	12	12	27	3.87
	500,001-1,000,000	1	4	18	16	39	3.63
	1,000,001-1,500,000	3	0	11	8	22	3.84
	1,500,001-3,000,000	1	1	12	16	30	4.03
	3,000,001 or more	3	0	14	8	25	3.72
	Total	10	6	67	60	143	3.81
	Chi-square = 2.158 (d.f. = 4)						
4	$ 500,000 or less	2	3	13	9	27	3.48
	500,001-1,000,000	3	5	19	12	39	3.38
	1,000,001-1,500,000	2	0	10	10	22	4.00
	1,500,001-3,000,000	1	3	13	13	30	3.68
	3,000,001 or more	3	2	14	6	25	3.36
	Total	11	13	69	50	143	3.56
	Chi-square = 3.249 (d.f. = 4)						
5	$ 500,000 or less	1	3	14	9	27	3.46
	500,000-1,000,000	1	4	21	13	39	3.47
	1,000,001-1,500,000	2	0	14	6	22	3.59
	1,500,001-3,000,000	1	3	15	11	30	3.55
	3,000,001 or more	3	3	14	5	25	3.18
	Total	8	13	78	44	143	3.45
	Chi-square = 1.506 (d.f. = 4)						

Table 25. (Continued)

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
6	$ 500,000 or less	3	4	9	11	27	3.58
	500,001-1,000,000	1	4	23	11	39	3.36
	1,000,001-1,500,000	3	5	10	4	22	2.89
	1,500,001-3,000,000	1	6	11	12	30	3.41
	3,000,001 or more	3	6	8	8	25	3.18
	Total	11	25	61	46	143	3.31
	Chi-square = 8.643 (d.f. = 8)						
7	$ 500,000 or less	2	1	13	11	27	3.79
	500,001-1,000,000	1	4	18	16	39	3.63
	1,000,001-1,500,000	3	2	10	7	22	3.52
	1,500,001-3,000,000	1	2	15	12	30	3.68
	3,000,001 or more	3	0	12	10	25	3.90
	Total	10	9	68	56	143	3.70
	Chi-square = 0.360 (d.f. = 4)						

In summarizing how managers saw their educational needs for understanding sales management functions of cooperative operations by the independent variables of age, experience, formal education and volume of business managed, only the independent variable of formal education showed a significant difference to one subject matter item on the need for understanding how to conduct sales training programs. Managers who fell into the formal education categories of "attended college" and "elementary 8 or less" saw the greatest educational need for understanding how to conduct sales training programs and those who fell into the categories of "high school" and "completed college" saw the least educational need to this item.

The analysis basically revealed that the need for understanding sales management functions of cooperative operations by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

Communication functions of cooperative operations

To determine how managers viewed their educational needs for understanding communication functions of cooperative operations, they were asked to indicate their educational needs to the following two items:

1. Internal publications, including newsletters, newspapers and magazines.
2. Commercial mass media, including radio, TV, newspapers and magazines.

To analyze how managers saw their educational needs to these subject matter items by the independent variables, the sixth major hypothesis was stated as follows:

MAJOR HYPOTHESIS 6: The need for understanding communication functions of cooperative operations by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

The results of four tested subhypotheses are presented after each of the following subhypotheses.

SUBHYPOTHESIS 6a: There is no difference between the age levels of managers of agricultural cooperatives and how they see their needs for understanding communication functions of cooperative operations.

As shown in Table 26, neither of the two chi-square values for the individual subject matter items were significant at the 5 percent level of confidence. The null hypothesis was not rejected for the two subject matter items.

Table 26. Need for understanding communication functions of cooperative operations by age

Item number	Age	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	20 - 34		2	16	4	22	3.18
	35 - 44	2	8	16	12	38	3.22
	45 - 54	3	4	35	8	50	3.17
	55 and over	2	5	16	10	33	3.32
	Total	7	19	83	34	143	3.22
	Chi-square = 10.452 (d.f. = 6)						
2	20 - 34	0	3	18	1	22	2.81
	35 - 44	2	9	20	7	38	2.88
	45 - 54	3	10	33	4	50	2.74
	55 and over	3	5	16	9	33	3.26
	Total	8	27	87	21	143	2.91
	Chi-square = 10.977 (d.f. = 6)						

SUBHYPOTHESIS 6b: There is no difference between experience levels of managers of agricultural cooperatives and how they see their needs for understanding communication functions of cooperative operations.

Again, the chi-square values for the individual subject matter items were not significant at the 5 percent level of confidence and the null hypothesis was not rejected for the two subject matter items. The results are shown in Table 27.

Table 27. Need for understanding communication functions of cooperative operations by years of experience

Item number	Experience	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	3 or less	1	5	14	7	27	3.15
	4 - 8	3	4	28	7	42	3.15
	9 - 13	1	3	13	4	21	3.09
	14 - 19		1	12	6	19	3.52
	20 or more	2	6	16	10	34	3.25
	Total	7	19	83	34	143	3.22
	Chi-square = 5.977 (d.f. = 8)						
2	3 or less	1	6	15	5	27	2.92
	4 - 8	4	9	28	1	42	2.57
	9 - 13	1	2	17	1	21	2.90
	14 - 19		3	11	5	19	3.21
	20 or more	2	7	16	9	34	3.12
	Total	8	27	87	21	143	2.91
	Chi-square = 15.170 (d.f. = 8)						

SUBHYPOTHESIS 6c: There is no difference between the levels of formal education of managers of agricultural cooperatives and how they see their needs for understanding communication functions of cooperative operations.

In Table 28, it will be noted that a significant chi-square value was obtained for the individual subject matter item number 1 and the null hypothesis was rejected for this item. The null hypothesis was not rejected for subject matter item number 2.

An analysis of the mean scores for the rejected null hypothesis revealed that managers of agricultural cooperatives who had completed college saw the greatest educational need for understanding internal publications, including newsletters, newspapers and magazines.

Table 28. Need for understanding communication functions of cooperative operations by level of education

Item number	Education	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	Elem. 8 or less	1	0	10	3	14	3.46
	High school	4	17	45	16	82	2.97
	Vocational-Tech.	1	2	5	2	10	3.00
	Attended college	1	0	20	6	27	3.46
	Completed college		0	3	7	10	4.40
	Total	7	19	83	34	143	3.22
	Chi-square = 11.752* (d.f. = 4)						
2	Elem. 8 or less	2	2	7	3	14	3.16
	High school	4	21	47	10	82	2.71
	Vocational-Tech.	1	2	6	1	10	2.77
	Attended college	1	2	20	4	27	3.15
	Completed college		0	7	3	10	3.59
	Total	8	27	87	21	143	2.91
	Chi-square = 2.983 (d.f. = 4)						

SUBHYPOTHESIS 6d: There is no difference between volume of business managed by managers of agricultural cooperatives and how they see their needs for understanding communication functions of cooperative operations.

Again, neither of the two chi-square values for the individual subject matter items shown in Table 29 were significant at the 5 percent level of confidence and the null hypothesis was not rejected for the two subject matter items.

Table 29. Need for understanding communication functions of cooperative operations by gross sales of the cooperative in 1970

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	$ 500,000 or less	2	3	20	2	27	2.91
	500,001-1,000,000	1	10	18	10	39	3.00
	1,000,001-1,500,000	2	1	13	6	22	3.50
	1,500,001-3,000,000		4	18	8	30	3.26
	3,000,001 or more	2	1	14	8	25	3.60
	Total	7	19	83	34	143	3.22
	Chi-square = 13.623 (d.f. = 8)						
2	$ 500,000 or less	3	4	16	4	27	3.00
	500,001-1,000,000	1	10	22	6	39	2.78
	1,000,001-1,500,000	2	2	17	1	22	2.90
	1,500,001-3,000,000		8	17	5	30	2.79
	3,000,001 or more	2	3	15	5	25	3.17
	Total	8	27	87	21	143	2.91
	Chi-square = 7.023 (d.f. = 8)						

In summarizing how managers saw their educational needs for understanding communication functions of cooperative operations by the independent variables of age, experience, formal education and volume of business managed, only the independent variable of formal education showed a significant difference to one subject matter item on the need for understanding internal publications, including newsletters, newspapers and magazines. Managers who had completed college saw the greatest educational need for this subject matter item.

The analysis basically revealed that the need for understanding communication functions of cooperative operations by managers of agricultural cooperatives is independent of their age, experience and volume of

business managed. One of the two subject matter items tested showed dependence to the independent variable of formal education.

Internal financial control functions of financial management

To determine educational needs for understanding internal financial control functions of financial management, managers were asked to indicate their educational needs for the following six subject matter items:

1. Internal management reports - what is needed?
2. Internal capital allocations, including working capital and operating budgets.
3. Financial statements (balance sheet, operating statement, cash flow charts) - their analysis and interpretation.
4. Short and intermediate term financing, including leasing.
5. Extension of credit to patrons (applications, terms, collections).
6. Investments in other organizations and businesses.

In evaluating how managers viewed their educational needs to these subject matter items by the independent variables, the seventh major hypothesis was stated as follows:

MAJOR HYPOTHESIS 7: The need for understanding internal financial control functions of financial management by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

Four subhypotheses in the null form were tested. The results of the analysis are presented after each of the subhypotheses.

SUBHYPOTHESIS 7a: There is no difference between the age levels of managers of agricultural cooperatives and how they see their needs for understanding internal financial control functions of financial management.

The chi-square values, reported in Table 30, failed to yield a significant value at the 5 percent level of confidence for any of the individual subject matter items. The null hypothesis was not rejected for

any of the six subject matter items.

Table 30. Need for understanding internal financial control functions of financial management by age

Item number	Age	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	20 - 34		0	11	11	22	4.00
	35 - 44		2	20	16	38	3.73
	45 - 54	3	3	19	25	50	3.93
	55 and over	2	2	13	16	33	3.90
	Total	5	7	63	68	143	3.88
	Chi-square = 1.142 (d.f. = 3)						
2	20 - 34		0	7	15	22	4.36
	35 - 44		2	12	24	38	4.15
	45 - 54	3	3	15	29	50	4.10
	55 and over	2	2	12	17	33	3.96
	Total	5	7	46	85	143	4.13
	Chi-square = 1.041 (d.f. = 3)						
3	20 - 34		0	8	14	22	4.27
	35 - 44	1	5	11	21	38	3.86
	45 - 54	3	2	13	32	50	4.27
	55 and over	1	2	10	20	33	4.12
	Total	5	9	42	87	143	4.13
	Chi-square = 1.148 (d.f. = 3)						
4	20 - 34		0	6	16	22	4.45
	35 - 44	1	4	15	18	38	3.75
	45 - 54	4	3	24	19	50	3.69
	55 and over	1	2	17	13	33	3.68
	Total	6	9	62	66	143	3.83
	Chi-square = 6.916 (d.f. = 3)						
5	20 - 34		0	7	15	22	4.36
	35 - 44	1	2	16	19	38	3.91
	45 - 54	3	2	17	28	50	4.10
	55 and over	2	2	8	21	33	4.22
	Total	6	6	48	83	143	4.12
	Chi-square = 2.538 (d.f. = 3)						

Table 30. (Continued)

Item number	Age	No response	Educational need: None	Moderate	Strong	Total	Mean score
6	20 - 34		1	15	6	22	3.45
	35 - 44	2	7	16	13	38	3.33
	45 - 54	3	6	27	14	50	3.34
	55 and over	2	2	20	9	33	3.45
	Total	7	16	78	42	143	3.38
	Chi-square = 5.800 (d.f. = 6)						

SUBHYPOTHESIS 7b: There is no difference between experience levels of managers of agricultural cooperatives and how they see their needs for understanding internal financial control functions of financial management.

As shown in Table 31, none of the chi-square values for the individual subject matter items were significant at the 5 percent level of confidence and the null hypothesis was not rejected for any of the six subject matter items.

Table 31. Need for understanding internal financial control functions of financial management by years of experience

Item number	Experience	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	3 or less		1	16	10	27	3.66
	4 - 8	2	2	16	22	42	4.00
	9 - 13		1	9	11	21	3.95
	14 - 19		0	11	8	19	3.84
	20 or more	3	3	11	17	34	3.90
	Total	5	7	63	68	143	3.88
	Chi-square = 2.998 (d.f. = 4)						

Table 31. (Continued)

Item number	Experience	No response	Educational need: None	Moderate	Strong	Total	Mean score
2	3 or less		0	12	15	27	4.11
	4 - 8	2	2	13	25	42	4.15
	9 - 13		2	5	14	21	4.14
	14 - 19		0	7	12	19	4.26
	20 or more	3	3	9	19	34	4.03
	Total	5	7	46	85	143	4.13
	Chi-square = 0.679 (d.f. = 4)						
3	3 or less		1	13	13	27	3.88
	4 - 8	3	3	9	27	42	4.23
	9 - 13		1	6	14	21	4.23
	14 - 19		1	7	11	19	4.05
	20 or more	2	3	7	22	34	4.18
	Total	5	9	42	87	143	4.13
	Chi-square = 6.960 (d.f. = 8)						
4	3 or less		1	14	12	27	3.81
	4 - 8	4	4	13	21	42	3.89
	9 - 13		1	10	10	21	3.85
	14 - 19		0	10	9	19	3.94
	20 or more	2	3	15	14	34	3.68
	Total	6	9	62	66	143	3.83
	Chi-square = 1.174 (d.f. = 4)						
5	3 or less	1	0	17	9	27	3.69
	4 - 8	2	2	12	26	42	4.20
	9 - 13		1	5	15	21	4.33
	14 - 19		0	6	13	19	4.36
	20 or more	3	3	8	20	34	4.09
	Total	6	6	48	83	143	4.12
	Chi-square = 9.393 (d.f. = 4)						
6	3 or less	1	3	16	7	27	3.30
	4 - 8	3	5	21	13	42	3.41
	9 - 13		3	12	6	21	3.28
	14 - 19		2	13	4	19	3.21
	20 or more	3	3	16	12	34	3.58
	Total	7	16	78	42	143	3.38
	Chi-square = 2.492 (d.f. = 8)						

SUBHYPOTHESIS 7c: There is no difference between the levels of formal education of managers of agricultural cooperatives and how they see their needs for understanding internal financial control functions of financial management.

As noted in Table 32, the chi-square values for individual subject matter items number 1 and 3 were significant at at least the 5 percent level of confidence and thus, the null hypothesis was rejected for these two items. The null hypothesis was not rejected for the remaining four subject matter items.

An analysis of the mean scores for the rejected null hypotheses revealed that managers in the education categories of "elementary 8 or less", "attended college" and "completed college" saw a greater educational need for understanding internal management reports and financial statements than did managers in the education categories of "high school" and "vocational-technical".

Table 32. Need for understanding internal financial control functions of financial management by level of education

Item number	Education	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	Elem. 8 or less	4	0	4	6	14	4.20
	High school	1	7	43	31	82	3.59
	Vocational-Tech.		0	6	4	10	3.79
	Attended college		0	6	21	27	4.55
	Completed college		0	4	6	10	4.20
	Total	5	7	63	68	143	3.88
	Chi-square = 13.964** (d.f. = 4)						

Table 32. (Continued)

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
2	Elem. 8 or less	4	0	4	6	14	4.20
	High school	1	7	28	46	82	3.96
	Vocational-Tech.		0	5	5	10	4.00
	Attended college		0	5	22	27	4.62
	Completed college		0	4	6	10	4.20
	Total	5	7	46	85	143	4.13
	Chi-square = 5.894 (d.f. = 4)						
3	Elem. 8 or less	3	1	0	10	14	4.63
	High school	2	6	30	44	82	3.95
	Vocational-Tech.		1	5	4	10	3.59
	Attended college		0	5	22	27	4.62
	Completed college		1	2	7	10	4.20
	Total	5	9	42	87	143	4.13
	Chi-square = 12.314* (d.f. = 4)						
4	Elem. 8 or less	3	0	3	8	14	4.45
	High school	2	9	39	32	82	3.57
	Vocational-Tech.	1	0	6	3	10	3.66
	Attended college		0	10	17	27	4.25
	Completed college		0	4	6	10	4.20
	Total	6	9	62	66	143	3.83
	Chi-square = 8.516 (d.f. = 4)						
5	Elem. 8 or less	4	0	2	8	14	4.59
	High school	2	6	30	44	82	3.95
	Vocational-Tech.		0	2	8	10	4.59
	Attended college		0	11	16	27	4.18
	Completed college		0	3	7	10	4.40
	Total	6	6	48	83	143	4.12
	Chi-square = 4.593 (d.f. = 4)						
6	Elem. 8 or less	4	2	5	3	14	3.20
	High school	3	11	48	20	82	3.22
	Vocational-Tech.		1	7	2	10	3.20
	Attended college		1	13	13	27	3.88
	Completed college		1	5	4	10	3.59
	Total	7	16	78	42	143	3.38
	Chi-square = 7.514 (d.f. = 8)						

SUBHYPOTHESIS 7d: There is no difference between volume of business managed by managers of agricultural cooperatives and how they see their needs for understanding internal financial control functions of financial management.

The findings reported in Table 33 reveal that none of the chi-square values for the individual subject matter items were significant at the 5 percent level of confidence. The null hypothesis was not rejected for any of the six subject matter items.

Table 33. Need for understanding internal financial control functions of financial management by gross sales of the cooperative in 1970

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	$ 500,000 or less	2	2	13	10	27	3.63
	500,001-1,000,000	1	4	17	17	39	3.68
	1,000,001-1,500,000	1	0	11	10	22	3.95
	1,500,001-3,000,000	1	1	15	13	30	3.82
	3,000,001 or more		0	7	18	25	4.44
	Total	5	7	63	68	143	3.88
	Chi-square = 6.591 (d.f. = 4)						
2	$ 500,000 or less	2	2	9	14	27	3.95
	500,001-1,000,000	1	4	14	20	39	3.84
	1,000,001-1,500,000	1	0	9	12	22	4.14
	1,500,001-3,000,000	1	1	10	18	30	4.17
	3,000,001 or more		0	4	21	25	4.67
	Total	5	7	46	85	143	4.13
	Chi-square = 7.105 (d.f. = 4)						
3	$ 500,000 or less	2	3	8	14	27	3.87
	500,001-1,000,000	2	3	12	22	39	4.02
	1,000,001-1,500,000	1	0	8	13	22	4.23
	1,500,001-3,000,000		1	10	19	30	4.20
	3,000,001 or more		2	4	19	25	4.36
	Total	5	9	42	87	143	4.13
	Chi-square = 2.550 (d.f. = 4)						

Table 33. (Continued)

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
4	$ 500,000 or less	2	2	14	9	27	3.55
	500,001-1,000,000	3	5	16	15	39	3.55
	1,000,001-1,500,000	1	0	10	11	22	4.04
	1,500,001-3,000,000		2	13	15	30	3.86
	3,000,001 or more		0	9	16	25	4.28
	Total	6	9	62	66	143	3.83
	Chi-square = 4.792 (d.f. = 4)						
5	$ 500,000 or less	3	1	6	17	27	4.33
	500,001-1,000,000	1	3	13	22	39	4.00
	1,000,001-1,500,000	1	0	7	14	22	4.33
	1,500,001-3,000,000	1	1	13	15	30	3.96
	3,000,001 or more		1	9	15	25	4.12
	Total	6	6	48	83	143	4.12
	Chi-square = 2.453 (d.f. = 4)						
6	$ 500,000 or less	3	5	14	5	27	3.00
	500,001-1,000,000	2	4	21	12	39	3.43
	1,000,001-1,500,000	1	3	12	6	22	3.28
	1,500,001-3,000,000	1	3	18	8	30	3.34
	3,000,001 or more		1	13	11	25	3.79
	Total	7	16	78	42	143	3.38
	Chi-square = 5.739 (d.f. = 8)						

In summarizing how managers saw their educational needs for understanding internal financial control functions of financial management by the independent variables of age, experience, formal education and volume of business managed, only the independent variable of formal education showed a significant difference to two subject matter items. Managers who fell into the formal education categories of "elementary 8 or less", "attended college" and "completed college" saw the greatest educational need

for understanding internal management reports and financial statements.

The analysis basically revealed that the need for understanding internal financial control functions of financial management by managers of agricultural cooperatives is independent of their age, experience and volume of business managed. Two of the six subject matter items tested showed a dependence to the independent variable of formal education.

Capital structure management functions of financial management

The following three subject matter items were used to determine how managers saw their educational needs for understanding capital structure management functions of financial management:

1. External financing, including use of capital markets, bonds and stocks.
2. Internal financing, including patronage refunds, and revolving funds.
3. Capital budgeting and fixed asset management.

To evaluate how managers saw their educational needs to these subject matter items by the independent variables, the eighth major hypothesis was stated as follows:

MAJOR HYPOTHESIS 8: The need for understanding capital structure management functions of financial management by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

Four subhypotheses were tested. The findings of the analysis are presented after each of the subhypotheses.

SUBHYPOTHESIS 8a: There is no difference between the age levels of managers of agricultural cooperatives and how they see their needs for understanding capital structure management functions of financial management.

As shown in Table 34, the chi-square values for the individual subject matter items were not significant at the 5 percent level of confidence. Thus, the null hypothesis was not rejected for any of the three subject matter items.

Table 34. Need for understanding capital structure management functions of financial management by age

Item number	Age	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	20 - 34		4	11	7	22	3.27
	35 - 44	2	12	12	12	38	3.00
	45 - 54	3	12	22	13	50	3.04
	55 and over	1	10	14	8	33	2.87
	Total	6	38	59	40	143	3.02
	Chi-square = 3.043 (d.f. = 6)						
2	20 - 34		0	10	12	22	4.09
	35 - 44	2	3	12	21	38	4.00
	45 - 54	3	2	17	28	50	4.10
	55 and over	1	1	12	19	33	4.12
	Total	6	6	51	80	143	4.08
	Chi-square = 0.174 (d.f. = 3)						
3	20 - 34		0	13	9	22	3.81
	35 - 44	1	4	10	23	38	4.02
	45 - 54	3	2	25	20	50	3.76
	55 and over	1	1	13	18	33	4.06
	Total	5	7	61	70	143	3.91
	Chi-square = 4.431 (d.f. = 3)						

SUBHYPOTHESIS 8b: There is no difference between experience levels of managers of agricultural cooperatives and how they see their needs for understanding capital structure management functions of financial management.

The findings reported in Table 35 again show that none of the chi-square values were significant at the 5 percent level of confidence for any of the individual subject matter items. The null hypothesis was not rejected for any of the three subject matter items.

Table 35. Need for understanding capital structure management functions of financial management by years of experience

Item number	Experience	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	3 or less	1	4	15	7	27	3.23
	4 - 8	3	10	15	14	42	3.20
	9 - 13		9	6	6	21	2.71
	14 - 19		6	8	5	19	2.89
	20 or more	2	9	15	8	34	2.93
	Total	6	38	59	40	143	3.02
	Chi-square = 6.841 (d.f. = 8)						
2	3 or less	1	1	11	14	27	4.00
	4 - 8	3	1	14	24	42	4.17
	9 - 13		2	6	13	21	4.04
	14 - 19		0	9	10	19	4.05
	20 or more	2	2	11	19	34	4.06
	Total	6	6	51	80	143	4.08
	Chi-square = 0.759 (d.f. = 4)						
3	3 or less		1	13	13	27	3.88
	4 - 8	3	1	14	24	42	4.17
	9 - 13		3	8	10	21	3.66
	14 - 19		0	13	6	19	3.63
	20 or more	2	2	13	17	34	3.93
	Total	5	7	61	70	143	3.91
	Chi-square = 4.838 (d.f. = 4)						

SUBHYPOTHESIS 8c: There is no difference between the levels of formal education of managers of agricultural cooperatives and how they see their needs for understanding capital structure management functions of financial management.

The chi-square value for the individual subject matter item number 3 was significant at the 5 percent level of confidence and thus the null hypothesis was rejected for this item. The null hypothesis was not rejected for subject matter items number 1 and 2. The findings are shown in Table 36.

In analyzing the mean scores for the rejected null hypothesis, the findings revealed that the greatest educational need for understanding capital budgeting and fixed asset management was shown by managers in the education categories of "elementary 8 or less" and "completed college".

Table 36. Need for understanding capital structure management functions of financial management by level of education

Item number	Education	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	Elem. 8 or less	3	5	2	4	14	2.81
	High school	3	24	38	17	82	2.82
	Vocational-Tech.		2	6	2	10	3.00
	Attended college		6	8	13	27	3.51
	Completed college		1	5	4	10	3.59
	Total	6	38	59	40	143	3.02
	Chi-square = 12.845 (d.f. = 8)						
2	Elem. 8 or less	3	0	2	9	14	4.63
	High school	3	6	32	41	82	3.88
	Vocational-Tech.		0	5	5	10	4.00
	Attended college		0	10	17	27	4.25
	Completed college		0	2	8	10	4.59
	Total	6	6	51	80	143	4.08
	Chi-square = 6.300 (d.f. = 4)						

Table 36. (Continued)

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
3	Elem. 8 or less	3	0	3	8	14	4.45
	High school	2	7	34	39	82	3.79
	Vocational-Tech.		0	9	1	10	3.20
	Attended college		0	12	15	27	4.11
	Completed college		0	3	7	10	4.40
	Total	5	7	61	70	143	3.91
	Chi-square = 10.629* (d.f. = 4)						

SUBHYPOTHESIS 8d: There is no difference between volume of business managed by managers of agricultural cooperatives and how they see their needs for understanding capital structure management functions of financial management.

As reported in Table 37, the chi-square values for the individual subject matter items were not significant at the 5 percent level of confidence and thus the null hypothesis was not rejected for any of the three subject matter items.

Table 37. Need for understanding capital structure management functions of financial management by gross sales of the cooperative in 1970

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	$ 500,000 or less	3	8	12	4	27	2.66
	500,001-1,000,000	2	11	16	10	39	2.94
	1,000,001-1,500,000	1	7	8	6	22	2.90
	1,500,001-3,000,000		8	12	10	30	3.13
	3,000,001 or more		4	11	10	25	3.48
	Total	6	38	59	40	143	3.02
	Chi-square = 4.803 (d.f. = 8)						

Table 37. (Continued)

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
2	$ 500,000 or less	3	2	10	12	27	3.83
	500,001-1,000,000	2	3	11	23	39	4.08
	1,000,001-1,500,000	1	0	10	11	22	4.04
	1,500,001-3,000,000		1	13	16	30	4.00
	3,000,001 or more		0	7	18	25	4.44
	Total	6	6	51	80	143	4.08
	Chi-square = 3.446 (d.f. = 4)						
3	$ 500,000 or less	2	2	9	14	27	3.95
	500,001-1,000,000	2	3	21	13	39	3.54
	1,000,001-1,500,000	1	0	10	11	22	4.04
	1,500,001-3,000,000		2	13	15	30	3.86
	3,000,001 or more		0	8	17	25	4.36
	Total	5	7	61	70	143	3.91
	Chi-square = 6.890 (d.f. = 4)						

In summarizing how managers saw their educational needs for understanding capital structure management functions of financial management by the independent variables of age, experience, formal education and volume of business managed, only the independent variable of formal education showed a significant difference to one subject matter item on capital budgeting and fixed asset management. Managers in the formal education categories of "elementary 8 or less" and "completed college" saw the greatest educational need for this subject matter item.

The analysis basically revealed that the need for understanding capital structure management functions of financial management by managers of agricultural cooperatives is independent of their age, experience and

volume of business managed. One of the three subject matter items tested showed a dependence to the independent variable of formal education.

Economic trends and outlook of cooperative environment

In determining how managers saw their educational needs for understanding economic trends and outlook of cooperative environment, they were asked to indicate their educational needs to the following four subject matter items:

1. Agricultural trends and outlook.
2. General trends and outlook.
3. Forces and motivations affecting today's consumer.
4. Forces and motivations affecting today's farmer.

To analyze how managers saw their educational needs to these subject matter items by the independent variables, the ninth major hypothesis was stated as follows:

MAJOR HYPOTHESIS 9: The need for understanding economic trends and outlook of cooperative environment by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

The results of four tested subhypotheses are presented after each of the following subhypotheses.

SUBHYPOTHESIS 9a: There is no difference between the age levels of managers of agricultural cooperatives and how they see their needs for understanding economic trends and outlook of cooperative environment.

As shown in Table 38, none of the chi-square values were significant at the 5 percent level of confidence for any of the individual subject matter items. The null hypothesis was not rejected for any of the four subject matter items.

Table 38. Need for understanding economic trends and outlook of cooperative environment by age

Item number	Age	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	20 - 34		0	14	8	22	3.72
	35 - 44	1	2	18	17	38	3.81
	45 - 54	3	2	26	19	50	3.72
	55 and over	2	3	16	12	33	3.58
	Total	6	7	74	56	143	3.71
	Chi-square = 0.643 (d.f. = 3)						
2	20 - 34		0	16	6	22	3.54
	35 - 44	1	2	23	12	38	3.54
	45 - 54	3	4	26	17	50	3.55
	55 and over	2	3	18	10	33	3.45
	Total	6	9	83	45	143	3.52
	Chi-square = 0.553 (d.f. = 3)						
3	20 - 34		1	17	4	22	3.27
	35 - 44		3	21	14	38	3.57
	45 - 54	4	3	26	17	50	3.60
	55 and over	1	3	18	11	33	3.50
	Total	5	10	82	46	143	3.52
	Chi-square = 3.734 (d.f. = 6)						
4	20 - 34		0	13	9	22	3.81
	35 - 44		1	19	18	38	3.89
	45 - 54	3	3	20	24	50	3.89
	55 and over	2	3	14	14	33	3.70
	Total	5	7	66	65	143	3.84
	Chi-square = 0.683 (d.f. = 3)						

SUBHYPOTHESIS 9b: There is no difference between experience levels of managers of agricultural cooperatives and how they see their needs for understanding economic trends and outlook of cooperative environment.

The chi-square values reported in Table 39 failed to be significant at the 5 percent level of confidence for any of the four individual subject matter items and thus, the null hypothesis was not rejected for any of the items.

Table 39. Need for understanding economic trends and outlook of cooperative environment by years of experience

Item number	Experience	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	3 or less	1	1	13	12	27	3.84
	4 - 8	2	2	22	16	42	3.70
	9 - 13		0	14	7	21	3.66
	14 - 19		0	10	9	19	3.94
	20 or more	3	4	15	12	34	3.51
	Total	6	7	74	56	143	3.71
	Chi-square = 1.198 (d.f. = 4)						
2	3 or less	1	1	15	10	27	3.69
	4 - 8	2	2	27	11	42	3.45
	9 - 13		1	15	5	21	3.38
	14 - 19		0	11	8	19	3.84
	20 or more	3	5	15	11	34	3.38
	Total	6	9	83	45	143	3.52
	Chi-square = 2.504 (d.f. = 4)						
3	3 or less		0	15	12	27	3.88
	4 - 8	3	3	24	12	42	3.46
	9 - 13		2	15	4	21	3.19
	14 - 19		1	11	7	19	3.63
	20 or more	2	4	17	11	34	3.43
	Total	5	10	82	46	143	3.52
	Chi-square = 3.665 (d.f. = 4)						
4	3 or less		0	10	17	27	4.25
	4 - 8	2	2	20	18	42	3.79
	9 - 13		1	12	8	21	3.66
	14 - 19		0	12	7	19	3.73
	20 or more	3	4	12	15	34	3.70
	Total	5	7	66	65	143	3.84
	Chi-square = 4.304 (d.f. = 4)						

SUBHYPOTHESIS 9c: There is no difference between the levels of formal education of managers of agricultural cooperatives and how they see their needs for understanding economic trends and outlook of cooperative environment.

Significant chi-square values were obtained for individual subject matter items number 3 and 4 and thus, the null hypothesis was rejected for these two items. The null hypothesis was not rejected for subject matter items number 1 and 2. The findings are shown in Table 40.

The mean scores for the two rejected null hypotheses revealed that managers of agricultural cooperatives who had completed college saw a greater educational need for understanding forces and motivations affecting today's consumer and farmer than did managers in the other education categories.

Table 40. Need for understanding economic trends and outlook of cooperative environment by level of education

Item number	Education	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	Elem. 8 or less	4	1	7	2	14	3.20
	High school	2	4	44	32	82	3.70
	Vocational-Tech.		0	6	4	10	3.79
	Attended college		2	15	10	27	3.59
	Completed college		0	2	8	10	4.59
	Total	6	7	74	56	143	3.71
	Chi-square = 8.330 (d.f. = 4)						

Table 40. (Continued)

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
2	Elem. 8 or less	4	1	8	1	14	3.00
	High school	2	6	48	26	82	3.50
	Vocational-Tech.		0	9	1	10	3.20
	Attended college		2	14	11	27	3.66
	Completed college		0	4	6	10	4.20
	Total	6	9	83	45	143	3.52
	Chi-square = 8.843 (d.f. = 4)						
3	Elem. 8 or less	3	0	8	3	14	3.54
	High school	1	7	48	26	82	3.46
	Vocational-Tech.	1	0	8	1	10	3.22
	Attended college		2	17	8	27	3.44
	Completed college		1	1	8	10	4.40
	Total	5	10	82	46	143	3.52
	Chi-square = 12.204* (d.f. = 4)						
4	Elem. 8 or less	4	1	6	3	14	3.40
	High school	1	4	40	37	82	3.81
	Vocational-Tech.		0	7	3	10	3.59
	Attended college		2	12	13	27	3.81
	Completed college		0	1	9	10	4.79
	Total	5	7	66	65	143	3.84
	Chi-square = 9.811* (d.f. = 4)						

SUBHYPOTHESIS 9d: There is no difference between volume of business managed by managers of agricultural cooperatives and how they see their needs for understanding economic trends and outlook of cooperative environment.

As noted in Table 41, none of the chi-square values for the individual subject matter items were significant at the 5 percent level of confidence.

Thus, the null hypothesis was not rejected for any of the four subject matter items.

Table 41. Need for understanding economic trends and outlook of cooperative environment by gross sales of the cooperative in 1970

Item number	Gross sales	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	$ 500,000 or less	3	2	16	6	27	3.33
	500,001-1,000,000	1	2	19	17	39	3.78
	1,000,001-1,500,000	1	1	11	9	22	3.76
	1,500,001-3,000,000	1	1	17	11	30	3.68
	3,000,001 or more		1	11	13	25	3.95
	Total	6	7	74	56	143	3.71
	Chi-square = 4.582 (d.f. = 8)						
2	$ 500,000 or less	3	2	14	8	27	3.50
	500,001-1,000,000	1	3	23	12	39	3.47
	1,000,001-1,500,000	1	2	15	4	22	3.19
	1,500,001-3,000,000	1	1	18	10	30	3.62
	3,000,001 or more		1	13	11	25	3.79
	Total	6	9	83	45	143	3.52
	Chi-square = 4.126 (d.f. = 8)						
3	$ 500,000 or less	2	1	18	6	27	3.40
	500,001-1,000,000	2	4	20	13	39	3.48
	1,000,001-1,500,000	1	0	16	5	22	3.47
	1,500,001-3,000,000		2	17	11	30	3.59
	3,000,001 or more		3	11	11	25	3.63
	Total	5	10	82	46	143	3.52
	Chi-square = 3.321 (d.f. = 4)						
4	$ 500,000 or less	2	1	16	8	27	3.55
	500,001-1,000,000	1	3	15	20	39	3.89
	1,000,001-1,500,000	1	1	11	9	22	3.76
	1,500,001-3,000,000	1	1	15	13	30	3.82
	3,000,001 or more		1	9	15	25	4.12
	Total	5	7	66	65	143	3.84
	Chi-square = 6.153 (d.f. = 8)						

In summarizing how managers saw their educational needs for understanding economic trends and outlook of cooperative environment by the independent variables of age, experience, formal education and volume of business managed, only the independent variable of formal education showed a significant difference to two subject matter items. Managers who had completed college saw a greater educational need for understanding forces and motivations affecting today's consumer and farmer than did managers in the other education categories.

The analysis basically revealed that the need for understanding economic trends and outlook of cooperative environment by managers of agricultural cooperatives is independent of their age, experience and volume of business managed. Two of the four subject matter items tested showed a dependence to the independent variable of formal education.

Legislative climate of cooperative environment

In determining educational needs for understanding legislative climate of cooperative environment, managers were asked to indicate their educational needs for the following three items:

1. Current legislative activity and issues.
2. Possible future legislative needs.
3. How to develop and influence legislation.

To evaluate how managers viewed their educational needs to these subject matter items by the independent variables, the tenth major hypothesis was stated as follows:

MAJOR HYPOTHESIS 10: The need for understanding legislative climate of cooperative environment by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

Four subhypotheses in the null form were tested. The results of the analysis are presented after each of the subhypotheses.

SUBHYPOTHESIS 10a: There is no difference between the age levels of managers of agricultural cooperatives and how they see their needs for understanding legislative climate of cooperative environment.

A significant chi-square value was obtained at the 5 percent level of confidence for the individual subject matter item number 3 and the null hypothesis was rejected for this item. The null hypothesis was not rejected for subject matter items number 1 and 2. Table 42 reveals these findings.

Mean scores for the rejected null hypothesis revealed that the greatest educational need for understanding how to develop and influence legislation was expressed by managers in the "45 - 54" years of age category; where as the least educational need was expressed by managers in the "35 - 44" years of age category.

Table 42. Need for understanding the legislative climate of cooperative environment by age

Item number	Age	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	20 - 34		1	17	4	22	3.27
	35 - 44		6	24	8	38	3.10
	45 - 54	3	3	26	18	50	3.63
	55 and over	1	3	19	10	33	3.43
	Total	4	13	86	40	143	3.38
	Chi-square = 7.077 (d.f. = 6)						

Table 42. (Continued)

Item number	Age	No response	Educational need: None	Moderate	Strong	Total	Mean score
2	20 - 34		2	13	7	22	3.45
	35 - 44		7	24	7	38	3.00
	45 - 54	3	3	24	20	50	3.72
	55 and over	1	5	17	10	33	3.31
	Total	4	17	78	44	143	3.38
	Chi-square = 7.487 (d.f. = 6)						
3	20 - 34		2	15	5	22	3.27
	35 - 44		9	22	7	38	2.89
	45 - 54	3	7	18	22	50	3.63
	55 and over	1	6	12	14	33	3.50
	Total	4	24	67	48	143	3.34
	Chi-square = 12.814* (d.f. = 6)						

SUBHYPOTHESIS 10b: There is no difference between experience levels of managers of agricultural cooperatives and how they see their needs for understanding legislative climate of cooperative environment.

As shown in Table 43, none of the chi-square values for the individual subject matter items were significant at the 5 percent level of confidence and thus, the null hypothesis was not rejected for any of the three subject matter items.

Table 43. Need for understanding the legislative climate of cooperative environment by years of experience

Item number	Experience	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	3 or less		2	16	9	27	3.51
	4 - 8	2	6	24	10	42	3.20
	9 - 13		1	18	2	21	3.09
	14 - 19		0	11	8	19	3.84
	20 or more	2	4	17	11	34	3.43
	Total	4	13	86	40	143	3.38
	Chi-square = 6.486 (d.f. = 4)						
2	3 or less		2	17	8	27	3.44
	4 - 8	2	9	17	14	42	3.25
	9 - 13		1	17	3	21	3.19
	14 - 19		0	9	10	19	4.05
	20 or more	2	5	18	9	34	3.25
	Total	4	17	78	44	143	3.38
	Chi-square = 7.235 (d.f. = 4)						
3	3 or less		4	15	8	27	3.29
	4 - 8	2	9	19	12	42	3.15
	9 - 13		3	15	3	21	3.00
	14 - 19		0	9	10	19	4.05
	20 or more	2	8	9	15	34	3.43
	Total	4	24	67	48	143	3.34
	Chi-square = 9.368 (d.f. = 4)						

SUBHYPOTHESIS 10c: There is no difference between the levels of formal education of managers of agricultural cooperatives and how they see their needs for understanding legislative climate of cooperative environment.

Again, the chi-square values were not significant at the 5 percent level of confidence for any of the three individual subject matter items.

Thus, the null hypothesis was not rejected for any of the three subject matter items shown in Table 44.

Table 44. Need for understanding the legislative climate of cooperative environment by level of education

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	Elem. 8 or less	3	2	4	5	14	3.54
	High school	1	9	51	21	82	3.29
	Vocational-Tech.		1	6	3	10	3.40
	Attended college		1	19	7	27	3.44
	Completed college		0	6	4	10	3.79
	Total	4	13	86	40	143	3.38
	Chi-square = 2.543 (d.f. = 4)						
2	Elem. 8 or less	3	2	4	5	14	3.54
	High school	1	12	47	22	82	3.24
	Vocational-Tech.		1	4	5	10	3.79
	Attended college		1	20	6	27	3.37
	Completed college		1	3	6	10	4.00
	Total	4	17	78	44	143	3.38
	Chi-square = 12.034 (d.f. = 8)						
3	Elem. 8 or less	3	2	3	6	14	3.72
	High school	1	16	40	25	82	3.22
	Vocational-Tech.		1	5	4	10	3.59
	Attended college		3	17	7	27	3.29
	Completed college		2	2	6	10	3.79
	Total	4	24	67	48	143	3.34
	Chi-square = 9.273 (d.f. = 8)						

SUBHYPOTHESIS 10d: There is no difference between volume of business managed by managers of agricultural cooperatives and how they see their needs for understanding legislative climate of cooperative environment.

As noted in Table 45, none of the chi-square values were significant at the 5 percent level of confidence for the subject matter items on legislative climate of cooperative environment. The null hypothesis was not rejected for any of the three subject matter items.

Table 45. Need for understanding the legislative climate of cooperative environment by gross sales of the cooperative in 1970

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	$ 500,000 or less	2	5	17	3	27	2.83
	500,001-1,000,000	1	3	21	14	39	3.57
	1,000,001-1,500,000	1	3	13	5	22	3.19
	1,500,001-3,000,000		0	20	10	30	3.66
	3,000,001 or more		2	15	8	25	3.48
	Total	4	13	86	40	143	3.38
	Chi-square = 5.323 (d.f. = 4)						
2	$ 500,000 or less	2	6	16	3	27	2.75
	500,001-1,000,000	1	3	19	16	39	3.68
	1,000,001-1,500,000	1	3	14	4	22	3.09
	1,500,001-3,000,000		1	17	12	30	3.73
	3,000,001 or more		4	12	9	25	3.40
	Total	4	17	78	44	143	3.38
	Chi-square = 13.188 (d.f. = 8)						
3	$ 500,000 or less	2	6	14	5	27	2.91
	500,001-1,000,000	1	5	17	16	39	3.57
	1,000,001-1,500,000	1	5	11	5	22	3.00
	1,500,001-3,000,000		2	14	14	30	3.79
	3,000,001 or more		6	11	8	25	3.16
	Total	4	24	67	48	143	3.34
	Chi-square = 8.935 (d.f. = 8)						

In summarizing how managers saw their educational needs for understanding legislative climate of cooperative environment by the independent variables of age, experience, formal education and volume of business managed, only the independent variable of age showed a significant difference to one subject matter item on how to develop and influence legislation. Managers over 45 years of age saw a greater educational need for understanding how to develop and influence legislation than did managers under 45 years of age.

The analysis basically revealed that the need for understanding legislative climate of cooperative environment by managers of agricultural cooperatives is independent of their experience, formal education and volume of business managed. One of the three subject matter items tested showed a dependence to the independent variable of age.

Public relations functions of human behavior

The following eight subject matter items were used to determine how managers saw their educational needs for understanding public relations functions of human behavior:

1. Advantages and disadvantages of belonging to trade associations and/or cooperative councils.
2. Customer relations procedures and techniques.
3. How to establish a role in community action or affairs.
4. How to develop tours and prepare exhibits.
5. How to develop publicity programs.
6. How to prepare and conduct educational programs on cooperative theory and principles for the general public.
7. How to prepare and conduct educational programs on cooperative theory and principles for public officials.
8. How to prepare and conduct special programs for selected audiences, such as youth and young adults.

In evaluating how managers saw their educational needs to these subject matter items by the independent variables, the eleventh major hypothesis was stated as follows:

MAJOR HYPOTHESIS 11: The need for understanding public relations functions of human behavior by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

Four subhypotheses were tested. The findings of the analysis are presented after each of the subhypotheses.

SUBHYPOTHESIS 11a: There is no difference between the age levels of managers of agricultural cooperatives and how they see their needs for understanding public relations functions of human behavior.

As reported in Table 46, none of the chi-square values were significant at the 5 percent level of confidence for any of the individual subject matter items. The null hypothesis was not rejected for any of the eight subject matter items.

Table 46. Need for understanding public relations functions of human behavior by age

Item number	Age	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	20 - 34		0	17	5	22	3.45
	35 - 44	2	1	24	11	38	3.55
	45 - 54	4	4	30	12	50	3.34
	55 and over	1	3	16	13	33	3.62
	Total	7	8	87	41	143	3.48
	Chi-square = 2.606 (d.f. = 3)						

Table 46. (Continued)

Item number	Age	No response	Educational need: None	Moderate	Strong	Total	Mean score
2	20 - 34		0	11	11	22	4.00
	35 - 44	3	3	17	15	38	3.68
	45 - 54	3	1	19	27	50	4.10
	55 and over	1	2	15	15	33	3.81
	Total	7	6	62	68	143	3.91
	Chi-square = 1.882 (d.f. = 3)						
3	20 - 34		0	12	10	22	3.90
	35 - 44	2	6	16	14	38	3.44
	45 - 54	4	3	23	20	50	3.73
	55 and over	1	6	12	14	33	3.50
	Total	7	15	63	58	143	3.63
	Chi-square = 0.308 (d.f. = 3)						
4	20 - 34		0	19	3	22	3.27
	35 - 44	2	13	18	5	38	2.55
	45 - 54	4	6	30	10	50	3.17
	55 and over	2	8	16	7	33	2.93
	Total	8	27	83	25	143	2.97
	Chi-square = 1.514 (d.f. = 3)						
5	20 - 34		0	20	2	22	3.18
	35 - 44	2	7	19	10	38	3.16
	45 - 54	4	8	27	11	50	3.13
	55 and over	2	5	14	12	33	3.45
	Total	8	20	80	35	143	3.22
	Chi-square = 6.046 (d.f. = 3)						
6	20 - 34		0	14	8	22	3.72
	35 - 44	2	4	18	14	38	3.55
	45 - 54	4	5	21	20	50	3.65
	55 and over	2	5	14	12	33	3.45
	Total	8	14	67	54	143	3.59
	Chi-square = 0.393 (d.f. = 3)						

Table 46. (Continued)

Item number	Age	No response	Educational need: None	Moderate	Strong	Total	Mean score
7	20 - 34		0	15	7	22	3.63
	35 - 44	2	9	15	12	38	3.16
	45 - 54	4	6	22	18	50	3.52
	55 and over	1	6	13	13	33	3.43
	Total	7	21	65	50	143	3.42
	Chi-square = 0.730 (d.f. = 3)						
8	20 - 34		0	13	9	22	3.81
	35 - 44	2	3	19	14	38	3.61
	45 - 54	4	5	19	22	50	3.73
	55 and over	1	4	13	15	33	3.68
	Total	7	12	64	60	143	3.70
	Chi-square = 0.846 (d.f. = 3)						

SUBHYPOTHESIS 11b: There is no difference between experience levels of managers of agricultural cooperatives and how they see their needs for understanding public relations functions of human behavior.

The chi-square values reported in Table 47 failed to yield a significant value at the 5 percent level of confidence for any of the individual subject matter items and thus, the null hypothesis was not rejected for any of the eight items.

Table 47. Need for understanding public relations functions of human behavior by years of experience

Item number	Experience	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	3 or less		1	16	10	27	3.66
	4 - 8	5	2	25	10	42	3.43
	9 - 13		1	14	6	21	3.47
	14 - 19		1	14	4	19	3.31
	20 or more	2	3	18	11	34	3.50
	Total	7	8	87	41	143	3.48
	Chi-square = 2.997 (d.f. = 8)						
2	3 or less		2	10	15	27	3.96
	4 - 8	5	1	18	18	42	3.91
	9 - 13		0	13	8	21	3.76
	14 - 19		0	9	10	19	4.05
	20 or more	2	3	12	17	34	3.87
	Total	7	6	62	68	143	3.91
	Chi-square = 1.728 (d.f. = 4)						
3	3 or less		3	13	11	27	3.59
	4 - 8	5	5	16	16	42	3.59
	9 - 13		1	11	9	21	3.76
	14 - 19		1	12	6	19	3.52
	20 or more	2	5	11	16	34	3.68
	Total	7	15	63	58	143	3.63
	Chi-square = 5.529 (d.f. = 8)						
4	3 or less		6	16	5	27	2.92
	4 - 8	5	8	23	6	42	2.89
	9 - 13		4	13	4	21	3.00
	14 - 19		2	13	4	19	3.21
	20 or more	3	7	18	6	34	2.93
	Total	8	27	83	25	143	2.97
	Chi-square = 1.500 (d.f. = 8)						
5	3 or less		3	17	7	27	3.29
	4 - 8	5	5	24	8	42	3.16
	9 - 13		5	12	4	21	2.90
	14 - 19		2	13	4	19	3.21
	20 or more	3	5	14	12	34	3.45
	Total	8	20	80	35	143	3.22
	Chi-square = 6.070 (d.f. = 8)						

Table 47. (Continued)

Item number	Experience	No response	Educational need: None	Moderate	Strong	Total	Mean score
6	3 or less		2	10	15	27	3.96
	4 - 8	5	3	23	11	42	3.43
	9 - 13		2	11	8	21	3.57
	14 - 19		3	11	5	19	3.21
	20 or more	3	4	12	15	34	3.70
	Total	8	14	67	54	143	3.59
	Chi-square = 8.290 (d.f. = 8)						
7	3 or less		4	9	14	27	3.74
	4 - 8	5	6	20	11	42	3.27
	9 - 13		4	12	5	21	3.09
	14 - 19		3	11	5	19	3.21
	20 or more	2	4	13	15	34	3.68
	Total	7	21	65	50	143	3.42
	Chi-square = 7.580 (d.f. = 8)						
8	3 or less		2	12	13	27	3.81
	4 - 8	5	3	18	16	42	3.70
	9 - 13		2	11	8	21	3.57
	14 - 19		2	10	7	19	3.52
	20 or more	2	3	13	16	34	3.81
	Total	7	12	64	60	143	3.70
	Chi-square = 1.518 (d.f. = 8)						

SUBHYPOTHESIS 11c: There is no difference between the levels of formal education of managers of agricultural cooperatives and how they see their needs for understanding public relations functions of human behavior.

Again, the values for the chi-square tests failed to be significant at the 5 percent level of confidence for any of the individual subject matter items. The null hypothesis was not rejected for any of the eight subject matter items reported in Table 48.

Table 48. Need for understanding public relations functions of human behavior by level of education

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	Elem. 8 or less	3	0	9	2	14	3.36
	High school	3	7	48	24	82	3.43
	Vocational-Tech.	1	0	7	2	10	3.44
	Attended college		1	17	9	27	3.59
	Completed college		0	6	4	10	3.79
	Total	7	8	87	41	143	3.48
	Chi-square = 1.609 (d.f. = 4)						
2	Elem. 8 or less	4	0	5	5	14	4.00
	High school	3	3	41	35	82	3.81
	Vocational-Tech.		2	1	7	10	4.00
	Attended college		1	9	17	27	4.18
	Completed college		0	6	4	10	3.79
	Total	7	6	62	68	143	3.91
	Chi-square = 4.840 (d.f. = 4)						
3	Elem. 8 or less	3	0	4	7	14	4.27
	High school	3	9	36	34	82	3.63
	Vocational-Tech.	1	2	4	3	10	3.22
	Attended college		3	14	10	27	3.51
	Completed college		1	5	4	10	3.59
	Total	7	15	63	58	143	3.63
	Chi-square = 2.681 (d.f. = 4)						
4	Elem. 8 or less	4	3	6	1	14	2.59
	High school	3	20	45	14	82	2.84
	Vocational-Tech.	1	1	7	1	10	3.00
	Attended college		3	19	5	27	3.14
	Completed college		0	6	4	10	3.79
	Total	8	27	83	25	143	2.97
	Chi-square = 3.900 (d.f. = 4)						
5	Elem. 8 or less	4	2	4	4	14	3.40
	High school	3	15	43	21	82	3.15
	Vocational-Tech.	1	1	7	1	10	3.00
	Attended college		2	19	6	27	3.29
	Completed college		0	7	3	10	3.59
	Total	8	20	80	35	143	3.22
	Chi-square = 2.357 (d.f. = 4)						

Table 48. (Continued)

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
6	Elem. 8 or less	4	1	7	2	14	3.20
	High school	3	9	38	32	82	3.58
	Vocational-Tech.	1	1	3	5	10	3.88
	Attended college		2	14	11	27	3.66
	Completed college		1	5	4	10	3.59
	Total	8	14	67	54	143	3.59
	Chi-square = 3.251 (d.f. = 8)						
7	Elem. 8 or less	3	2	6	3	14	3.18
	High school	3	14	37	28	82	3.35
	Vocational-Tech.	1	2	4	3	10	3.22
	Attended college		3	13	11	27	3.59
	Completed college		0	5	5	10	4.00
	Total	7	21	65	50	143	3.42
	Chi-square = 1.468 (d.f. = 4)						
8	Elem. 8 or less	3	2	4	5	14	3.54
	High school	3	9	37	33	82	3.60
	Vocational-Tech.	1	1	4	4	10	3.66
	Attended college		0	14	13	27	3.96
	Completed college		0	5	5	10	4.00
	Total	7	12	64	60	143	3.70
	Chi-square = 0.503 (d.f. = 4)						

SUBHYPOTHESIS 11d: There is no difference between volume of business managed by managers of agricultural cooperatives and how they see their needs for understanding public relations functions of human behavior.

As shown in Table 49, none of the chi-square values were significant for any of the individual subject matter items on public relations functions of human behavior at the 5 percent level of confidence. Thus, the null hypothesis was not rejected for any of the eight subject matter items.

Table 49. Need for understanding public relations functions of human behavior by gross sales of the cooperative in 1970

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	$ 500,000 or less	2	2	16	7	27	3.40
	500,001-1,000,000	3	2	25	9	39	3.38
	1,000,001-1,500,000	1	1	11	9	22	3.76
	1,500,001-3,000,000	1	0	20	9	30	3.62
	3,000,001 or more		3	15	7	25	3.32
	Total	7	8	87	41	143	3.48
	Chi-square = 2.184 (d.f. = 4)						
2	$ 500,000 or less	2	1	11	13	27	3.95
	500,001-1,000,000	2	2	17	18	39	3.86
	1,000,001-1,500,000	2	0	9	11	22	4.09
	1,500,001-3,000,000	1	1	14	14	30	3.89
	3,000,001 or more		2	11	12	25	3.79
	Total	7	6	62	68	143	3.91
	Chi-square = 0.342 (d.f. = 4)						
3	$ 500,000 or less	2	1	14	10	27	3.71
	500,001-1,000,000	3	4	17	15	39	3.61
	1,000,001-1,500,000	1	3	5	13	22	3.95
	1,500,001-3,000,000	1	4	13	12	30	3.55
	3,000,001 or more		3	14	8	25	3.40
	Total	7	15	63	58	143	3.63
	Chi-square = 7.424 (d.f. = 8)						
4	$ 500,000 or less	2	5	14	6	27	3.08
	500,001-1,000,000	3	8	22	6	39	2.88
	1,000,001-1,500,000	1	6	12	3	22	2.71
	1,500,001-3,000,000	2	5	16	7	30	3.14
	3,000,001 or more		3	19	3	25	3.00
	Total	8	27	83	25	143	2.97
	Chi-square = 4.739 (d.f. = 8)						
5	$ 500,000 or less	2	4	12	9	27	3.40
	500,001-1,000,000	3	6	22	8	39	3.11
	1,000,001-1,500,000	1	3	12	6	22	3.28
	1,500,001-3,000,000	2	5	16	7	30	3.14
	3,000,001 or more		2	18	5	25	3.24
	Total	8	20	80	35	143	3.22
	Chi-square = 3.921 (d.f. = 8)						

Table 49. (Continued)

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
6	$ 500,000 or less	2	3	13	9	27	3.48
	500,001-1,000,000	3	6	16	14	39	3.44
	1,000,001-1,500,000	1	0	13	8	22	3.76
	1,500,001-3,000,000	2	4	13	11	30	3.50
	3,000,001 or more		1	12	12	25	3.87
	Total	8	14	67	54	143	3.59
	Chi-square = 0.890 (d.f. = 4)						
7	$ 500,000 or less	2	4	13	8	27	3.32
	500,001-1,000,000	3	6	18	12	39	3.33
	1,000,001-1,500,000	1	4	9	8	22	3.38
	1,500,001-3,000,000	1	5	11	13	30	3.55
	3,000,001 or more		2	14	9	25	3.55
	Total	7	21	65	50	143	3.42
	Chi-square = 3.150 (d.f. = 8)						
8	$ 500,000 or less	2	2	11	12	27	3.79
	500,001-1,000,000	3	4	21	11	39	3.38
	1,000,001-1,500,000	1	3	10	8	22	3.47
	1,500,001-3,000,000	1	3	9	17	30	3.96
	3,000,001 or more		0	13	12	25	3.95
	Total	7	12	64	60	143	3.70
	Chi-square = 5.775 (d.f. = 4)						

In summarizing how managers saw their educational needs for understanding public relations functions of human behavior by the independent variables of age, experience, formal education and volume of business managed, none of the independent variables showed a significant difference to any of the eight subject matter items.

The analysis revealed that the need for understanding public relations functions of human behavior by managers of agricultural cooperatives is

independent of their age, experience, formal education and volume of business managed.

Member relations functions of human behavior

To determine how managers viewed their educational needs for understanding member relations functions of human behavior, they were asked to indicate their educational needs to the following six subject matter items:

1. Member - management communication procedures and techniques.
2. Director - member communication procedures and techniques.
3. How to determine member needs.
4. How to analyze costs and benefits of member services.
5. How to earn member loyalty.
6. How to prepare and conduct educational programs on cooperative theory and principles for members.

To analyze how managers saw their educational needs to these subject matter items by the independent variables, the twelfth major hypothesis was stated as follows:

MAJOR HYPOTHESIS 12: The need for understanding member relations functions of human behavior by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

The results of four tested subhypotheses are presented after each of the following subhypotheses.

SUBHYPOTHESIS 12a: There is no difference between the age levels of managers of agricultural cooperatives and how they see their needs for understanding member relations functions of human behavior.

The chi-square values reported in Table 50 reveal that none of the individual subject matter items were significant at the 5 percent level of confidence. The null hypothesis was not rejected for any of the six subject matter items.

Table 50. Need for understanding member relations functions of human behavior by age

Item number	Age	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	20 - 34		0	10	12	22	4.09
	35 - 44	2	3	12	21	38	4.00
	45 - 54	3	1	23	23	50	3.93
	55 and over	2	3	13	15	33	3.77
	Total	7	7	58	71	143	3.94
	Chi-square = 0.973 (d.f. = 3)						
2	20 - 34		0	8	14	22	4.27
	35 - 44	2	3	14	19	38	3.88
	45 - 54	3	2	22	23	50	3.89
	55 and over	2	4	10	17	33	3.83
	Total	7	9	54	73	143	3.94
	Chi-square = 1.331 (d.f. = 3)						
3	20 - 34		0	12	10	22	3.90
	35 - 44	2	2	17	17	38	3.83
	45 - 54	4	2	22	22	50	3.86
	55 and over	1	3	14	15	33	3.75
	Total	7	7	65	64	143	3.83
	Chi-square = 0.034 (d.f. = 3)						
4	20 - 34		0	13	9	22	3.81
	35 - 44	2	3	14	19	38	3.88
	45 - 54	3	2	21	24	50	3.93
	55 and over	2	2	11	18	33	4.03
	Total	7	7	59	70	143	3.92
	Chi-square = 1.550 (d.f. = 3)						
5	20 - 34		0	6	16	22	4.45
	35 - 44	2	3	13	20	38	3.94
	45 - 54	3	2	13	32	50	4.27
	55 and over	2	3	9	19	33	4.03
	Total	7	8	41	87	143	4.16
	Chi-square = 2.280 (d.f. = 3)						

Table 50. (Continued)

Item number	Age	No response	Educational need None	Moderate	Strong	Total	Mean score
6	20 - 34		0	12	10	22	3.90
	35 - 44	2	3	16	17	38	3.77
	45 - 54	3	4	22	21	50	3.72
	55 and over	2	3	11	17	33	3.90
	Total	7	10	61	65	143	3.80
	Chi-square = 0.852 (d.f. = 3)						

SUBHYPOTHESIS 12b: There is no difference between experience levels of managers of agricultural cooperatives and how they see their needs for understanding member relations functions of human behavior.

As shown in Table 51, none of the chi-square values were significant at the 5 percent level of confidence for any of the individual subject matter items on member relations functions of human behavior. Thus, the null hypothesis was not rejected for any of the six subject matter items.

Table 51. Need for understanding member relations functions of human behavior by years of experience

Item number	Experience	No response	Educational need None	Moderate	Strong	Total	Mean score
1	3 or less		2	11	14	27	3.88
	4 - 8	4	2	17	19	42	3.89
	9 - 13		0	9	12	21	4.14
	14 - 19		0	11	8	19	3.84
	20 or more	3	3	10	18	34	3.96
	Total	7	7	58	71	143	3.94
	Chi-square = 1.484 (d.f. = 4)						

Table 51. (Continued)

Item number	Experience	No response	Educational need: None	Moderate	Strong	Total	Mean score
2	3 or less		2	10	15	27	3.96
	4 - 8	4	2	17	19	42	3.89
	9 - 13		1	7	13	21	4.14
	14 - 19		1	10	8	19	3.73
	20 or more	3	3	10	18	34	3.96
	Total	7	9	54	73	143	3.94
	Chi-square = 3.433 (d.f. = 8)						
3	3 or less		2	12	13	27	3.81
	4 - 8	4	1	20	17	42	3.84
	9 - 13		1	8	12	21	4.04
	14 - 19		0	12	7	19	3.73
	20 or more	3	3	13	15	34	3.77
	Total	7	7	65	64	143	3.83
	Chi-square = 1.770 (d.f. = 4)						
4	3 or less		2	14	11	27	3.66
	4 - 8	4	2	16	20	42	3.94
	9 - 13		1	9	11	21	3.95
	14 - 19		0	9	10	19	4.05
	20 or more	3	2	11	18	34	4.03
	Total	7	7	59	70	143	3.92
	Chi-square = 1.822 (d.f. = 4)						
5	3 or less		2	8	17	27	4.11
	4 - 8	4	1	12	25	42	4.26
	9 - 13		1	6	14	21	4.23
	14 - 19		0	7	12	19	4.26
	20 or more	3	4	8	19	34	3.96
	Total	7	8	41	87	143	4.16
	Chi-square = 0.235 (d.f. = 4)						
6	3 or less		2	11	14	27	3.88
	4 - 8	4	2	23	13	42	3.57
	9 - 13		1	9	11	21	3.95
	14 - 19		1	10	8	19	3.73
	20 or more	3	4	8	19	34	3.96
	Total	7	10	61	65	143	3.80
	Chi-square = 9.757 (d.f. = 8)						

SUBHYPOTHESIS 12c: There is no difference between the levels of formal education of managers of agricultural cooperatives and how they see their needs for understanding member relations functions and human behavior.

As noted in Table 52, a significant chi-square value was obtained at the 5 percent level of confidence for individual subject matter items number 1 and 2 and thus, the null hypothesis was rejected for these two items. The null hypothesis was not rejected for the remaining four subject matter items.

An analysis of the mean scores for the two rejected hypotheses revealed that managers who had attended and completed college saw the greatest educational need for understanding member - management communication procedures and techniques where as managers in the formal education categories of "elementary 8 or less" and "completed college" saw the greatest educational need for understanding director - member communication procedures and techniques.

Table 52. Need for understanding member relations functions of human behavior by level of education

Item number	Education	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	Elem. 8 or less	4	0	5	5	14	4.00
	High school	3	5	41	33	82	3.70
	Vocational-Tech.		1	4	5	10	3.79
	Attended college		1	7	19	27	4.33
	Completed college		0	1	9	10	4.79
	Total	7	7	58	71	143	3.94
	Chi-square = 12.781* (d.f. = 4)						

Table 52. (Continued)

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
2	Elem. 8 or less	4	0	1	9	14	4.79
	High school	3	6	39	34	82	3.70
	Vocational-Tech.		1	4	5	10	3.79
	Attended college		2	9	16	27	4.03
	Completed college		0	1	9	10	4.79
	Total	7	9	54	73	143	3.94
	Chi-square = 14.601** (d.f. = 4)						
3	Elem. 8 or less	3	0	4	7	14	4.27
	High school	3	5	41	33	82	3.70
	Vocational-Tech.	1	1	5	3	10	3.44
	Attended college		1	11	15	27	4.03
	Completed college		0	4	6	10	4.20
	Total	7	7	65	64	143	3.83
	Chi-square = 4.235 (d.f. = 4)						
4	Elem. 8 or less	4	1	2	7	14	4.20
	High school	3	5	38	36	82	3.78
	Vocational-Tech.		1	5	4	10	3.59
	Attended college		0	12	15	27	4.11
	Completed college		0	2	8	10	4.59
	Total	7	7	59	70	143	3.92
	Chi-square = 6.442 (d.f. = 4)						
5	Elem. 8 or less	4	1	1	8	14	4.40
	High school	3	5	27	47	82	4.06
	Vocational-Tech.		1	3	6	10	4.00
	Attended college		1	8	18	27	4.25
	Completed college		0	2	8	10	4.59
	Total	7	8	41	87	143	4.16
	Chi-square = 3.070 (d.f. = 4)						
6	Elem. 8 or less	4	1	3	6	14	4.00
	High school	3	7	38	34	82	3.68
	Vocational-Tech.		1	5	4	10	3.59
	Attended college		1	12	14	27	3.96
	Completed college		0	3	7	10	4.40
	Total	7	10	61	65	143	3.80
	Chi-square = 3.711 (d.f. = 4)						

SUBHYPOTHESIS 12d: There is no difference between volume of business managed by managers of agricultural cooperatives and how they see their needs for understanding member relations functions of human behavior.

Table 53 reveals that none of the chi-square values were significant at the 5 percent level of confidence for any of the six individual subject matter items and thus, the null hypothesis was not rejected for any of the items.

Table 53. Need for understanding member relations functions of human behavior by gross sales of the cooperative in 1970

Item number	Gross sales	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	$ 500,000 or less	2	1	16	8	27	3.55
	500,001-1,000,000	2	2	20	15	39	3.70
	1,000,001-1,500,000	1	1	7	13	22	4.14
	1,500,001-3,000,000	2	2	9	17	30	4.07
	3,000,001 or more		1	6	18	25	4.36
	Total	7	7	58	71	143	3.94
	Chi-square = 12.909 (d.f. = 8)						
2	$ 500,000 or less	2	2	10	13	27	3.87
	500,001-1,000,000	2	3	20	14	39	3.59
	1,000,001-1,500,000	1	1	2	18	22	4.61
	1,500,001-3,000,000	2	2	13	13	30	3.78
	3,000,001 or more		1	9	15	25	4.12
	Total	7	9	54	73	143	3.94
	Chi-square = 13.937 (d.f. = 8)						
3	$ 500,000 or less	1	1	15	10	27	3.69
	500,001-1,000,000	3	2	17	17	39	3.83
	1,000,001-1,500,000	1	2	8	11	22	3.85
	1,500,001-3,000,000	2	1	13	14	30	3.92
	3,000,001 or more		1	12	12	25	3.87
	Total	7	7	65	64	143	3.83
	Chi-square = 2.629 (d.f. = 8)						

Table 53. (Continued)

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
4	$ 500,000 or less	2	2	12	11	27	3.71
	500,001-1,000,000	2	2	18	17	39	3.81
	1,000,001-1,500,000	1	2	8	11	22	3.85
	1,500,001-3,000,000	2	1	13	14	30	3.92
	3,000,001 or more		0	8	17	25	4.36
	Total	7	7	59	70	143	3.92
	Chi-square = 3.776 (d.f. = 4)						
5	$ 500,000 or less	2	2	9	14	27	3.95
	500,001-1,000,000	2	2	14	21	39	4.02
	1,000,001-1,500,000	1	2	3	16	22	4.33
	1,500,001-3,000,000	2	1	7	20	30	4.35
	3,000,001 or more		1	8	16	25	4.20
	Total	7	8	41	87	143	4.16
	Chi-square = 5.403 (d.f. = 8)						
6	$ 500,000 or less	2	2	13	10	27	3.63
	500,001-1,000,000	2	3	20	14	39	3.59
	1,000,001-1,500,000	1	2	7	12	22	3.95
	1,500,001-3,000,000	2	2	11	15	30	3.92
	3,000,001 or more		1	10	14	25	4.04
	Total	7	10	61	65	143	3.80
	Chi-square = 4.508 (d.f. = 8)						

In summarizing how managers saw their educational needs for understanding member relations functions of human behavior by the independent variables of age, experience, formal education and volume of business managed, only the independent variable of formal education showed a significant difference to two subject matter items. Managers who had attended and completed college saw the greatest educational need for understanding member - management communication procedures and techniques where as managers in the formal education categories of "elementary 8 or less"

and "completed college" saw the greatest educational need for understanding director - member communication procedures and techniques.

The analysis basically revealed that the need for understanding member relations functions of human behavior by managers of agricultural cooperatives is independent of their age, experience and volume of business managed. Two of the six subject matter items tested showed a dependence to the independent variable of formal education.

Employee relations functions of human behavior

In determining educational needs for understanding employee relations functions of human behavior, managers were asked to indicate their educational needs for the following ten items:

1. Internal communication procedures and techniques, including employee meetings.
2. How to recruit and select employees.
3. How to prepare job analysis and description, including performance standards and appraisal techniques.
4. How to establish and evaluate commission, bonus and incentive plans.
5. How to develop wage and salary scales and promotion procedures.
6. How to prepare and conduct induction (beginning) training programs.
7. How to prepare and conduct in-service (supplemental) training programs.
8. How to prepare and conduct employee training programs on cooperative theory and principles.
9. How to handle employee grievances.
10. Collective bargaining procedures and techniques.

To evaluate how managers saw their educational needs to these subject matter items by the independent variables, the thirteenth major hypothesis was stated as follows:

MAJOR HYPOTHESIS 13: The need for understanding employee relations functions of human behavior by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

Four subhypotheses in the null form were tested. The results of the analysis are presented after each of the subhypotheses.

SUBHYPOTHESIS 13a: There is no difference between the age levels of managers of agricultural cooperatives and how they see their needs for understanding employee relations functions of human behavior.

As noted in Table 54, a significant chi-square value was obtained at the 5 percent level of confidence for individual subject matter items number 6 and 7 and thus, the null hypothesis was rejected for these two items. The null hypothesis was not rejected for the remaining eight subject matter items.

An analysis of the mean scores for the two rejected null hypotheses revealed that older managers saw a greater educational need for understanding how to prepare and conduct induction and in-service training programs for employees than did younger managers.

Table 54. Need for understanding employee relations functions of human behavior by age

Item number	Age	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	20 - 34		0	10	12	22	4.09
	35 - 44	1	5	8	24	38	4.02
	45 - 54	4	1	22	23	50	3.95
	55 and over	1	2	13	17	33	3.93
	Total	6	8	53	76	143	3.99
	Chi-square = 1.958 (d.f. = 3)						

Table 54. (Continued)

Item number	Age	No response	Educational need: None	Moderate	Strong	Total	Mean score
2	20 - 34		0	9	13	22	4.18
	35 - 44	1	3	11	23	38	4.08
	45 - 54	4	1	15	30	50	4.26
	55 and over	1	1	7	24	33	4.43
	Total	6	5	42	90	143	4.24
	Chi-square = 1.865 (d.f. = 3)						
3	20 - 34		1	13	8	22	3.63
	35 - 44	1	2	17	18	38	3.86
	45 - 54	4	2	25	19	50	3.73
	55 and over	1	1	15	16	33	3.93
	Total	6	6	70	61	143	3.80
	Chi-square = 1.672 (d.f. = 6)						
4	20 - 34		2	12	8	22	3.54
	35 - 44	1	3	13	21	38	3.97
	45 - 54	4	3	23	20	50	3.73
	55 and over	1	2	9	21	33	4.18
	Total	6	10	57	70	143	3.87
	Chi-square = 6.662 (d.f. = 6)						
5	20 - 34		0	13	9	22	3.81
	35 - 44	1	3	13	21	38	3.97
	45 - 54	4	1	21	24	50	4.00
	55 and over	1	2	10	20	33	4.12
	Total	6	6	57	74	143	3.99
	Chi-square = 2.624 (d.f. = 3)						
6	20 - 34		0	14	8	22	3.72
	35 - 44	1	3	14	20	38	3.91
	45 - 54	5	3	27	15	50	3.53
	55 and over	1	3	8	21	33	4.12
	Total	7	9	63	64	143	3.80
	Chi-square = 9.567* (d.f. = 3)						
7	20 - 34		1	17	4	22	3.27
	35 - 44	1	4	19	14	38	3.54
	45 - 54	5	3	29	13	50	3.44
	55 and over	1	3	10	19	33	4.00
	Total	7	11	75	50	143	3.57
	Chi-square = 14.214* (d.f. = 6)						

Table 54. (Continued)

Item number	Age	No response	Educational need: None	Moderate	Strong	Total	Mean score
8	20 - 34		0	17	5	22	3.45
	35 - 44	1	5	15	17	38	3.64
	45 - 54	4	1	27	18	50	3.73
	55 and over	1	4	11	17	33	3.81
	Total	6	10	70	57	143	3.68
	Chi-square = 5.378 (d.f. = 3)						
9	20 - 34		0	9	13	22	4.18
	35 - 44	1	4	15	18	38	3.75
	45 - 54	3	1	19	27	50	4.10
	55 and over	1	1	13	18	33	4.06
	Total	5	6	56	76	143	4.01
	Chi-square = 0.886 (d.f. = 3)						
10	20 - 34		3	15	4	22	3.09
	35 - 44	2	7	18	11	38	3.22
	45 - 54	5	5	27	13	50	3.35
	55 and over	1	2	15	15	33	3.81
	Total	8	17	75	43	143	3.38
	Chi-square = 7.588 (d.f. = 6)						

SUBHYPOTHESIS 13b: There is no difference between experience levels of managers of agricultural cooperatives and how they see their needs for understanding employee relations functions of human behavior.

The chi-square values reported in Table 55 failed to be significant at the 5 percent level of confidence for any of the individual subject matter items and thus, the null hypothesis was not rejected for any of the ten subject matter items.

Table 55. Need for understanding employee relations functions of human behavior by years of experience

Item number	Experience	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	3 or less		2	11	14	27	3.88
	4 - 8	4	3	15	20	42	3.89
	9 - 13		1	8	12	21	4.04
	14 - 19		0	8	11	19	4.15
	20 or more	2	2	11	19	34	4.06
	Total	6	8	53	76	143	3.99
	Chi-square = 0.534 (d.f. = 4)						
2	3 or less		1	9	17	27	4.18
	4 - 8	4	1	13	24	42	4.21
	9 - 13		1	8	12	21	4.04
	14 - 19		0	6	13	19	4.36
	20 or more	2	2	6	24	34	4.37
	Total	6	5	42	90	143	4.24
	Chi-square = 2.171 (d.f. = 4)						
3	3 or less		1	15	11	27	3.74
	4 - 8	4	1	21	16	42	3.78
	9 - 13		2	8	11	21	3.85
	14 - 19		0	10	9	19	3.94
	20 or more	2	2	16	14	34	3.75
	Total	6	6	70	61	143	3.80
	Chi-square = 0.841 (d.f. = 4)						
4	3 or less		3	11	13	27	3.74
	4 - 8	4	1	19	18	42	3.89
	9 - 13		1	8	12	21	4.04
	14 - 19		0	10	9	19	3.94
	20 or more	2	5	9	18	34	3.81
	Total	6	10	57	70	143	3.87
	Chi-square = 1.058 (d.f. = 4)						
5	3 or less		2	13	12	27	3.74
	4 - 8	4	0	16	22	42	4.15
	9 - 13		1	8	12	21	4.04
	14 - 19		0	9	10	19	4.05
	20 or more	2	3	11	18	34	3.93
	Total	6	6	57	74	143	3.99
	Chi-square = 1.388 (d.f. = 4)						

Table 55. (Continued)

Item number	Experience	No response	Educational need: None	Moderate	Strong	Total	Mean score
6	3 or less		2	13	12	27	3.74
	4 - 8	5	1	22	14	42	3.70
	9 - 13		1	8	12	21	4.04
	14 - 19		1	9	9	19	3.84
	20 or more	2	4	11	17	34	3.81
	Total	7	9	63	64	143	3.80
	Chi-square = 6.825 (d.f. = 8)						
7	3 or less		2	16	9	27	3.51
	4 - 8	5	4	22	11	42	3.37
	9 - 13		1	12	8	21	3.66
	14 - 19		0	11	8	19	3.84
	20 or more	2	4	14	14	34	3.62
	Total	7	11	75	50	143	3.57
	Chi-square = 1.845 (d.f. = 4)						
8	3 or less		3	12	12	27	3.66
	4 - 8	5	1	26	10	42	3.48
	9 - 13		1	9	11	21	3.95
	14 - 19		1	10	8	19	3.73
	20 or more	1	4	13	16	34	3.72
	Total	6	10	70	57	143	3.68
	Chi-square = 9.926 (d.f. = 8)						
9	3 or less		2	13	12	27	3.74
	4 - 8	4	1	13	24	42	4.21
	9 - 13		1	8	12	21	4.04
	14 - 19		0	8	11	19	4.15
	20 or more	1	2	14	17	34	3.90
	Total	5	6	56	76	143	4.01
	Chi-square = 2.503 (d.f. = 4)						
10	3 or less		2	16	9	27	3.51
	4 - 8	6	4	24	8	42	3.22
	9 - 13		6	10	5	21	2.90
	14 - 19		0	11	8	19	3.84
	20 or more	2	5	14	13	34	3.50
	Total	8	17	75	43	143	3.38
	Chi-square = 4.246 (d.f. = 4)						

SUBHYPOTHESIS 13c: There is no difference between the levels of formal education of managers of agricultural cooperatives and how they see their needs for understanding employee relations functions of human behavior.

A significant chi-square value was obtained at at least the 5 percent level of confidence for individual subject matter items number 1, 3, 4, 6, 7, and 10 and thus, the null hypothesis was rejected for these six items. The null hypothesis was not rejected for the remaining four subject matter items. The findings are shown in Table 56.

An analysis of the mean scores for the six rejected null hypotheses basically revealed that the greatest educational need for understanding the following six subject matter items was held by managers who have attended or completed college:

1. Internal communication procedures and techniques, including employee meetings.
2. How to prepare job analysis and description, including performance standards and appraisal techniques.
3. How to establish and evaluate commission, bonus and incentive plans.
4. How to prepare and conduct induction (beginning) training programs.
5. How to prepare and conduct in-service (supplemental) training programs.
6. Collective bargaining procedures and techniques.

Table 56. Need for understanding employee relations functions of human behavior by level of education

Item number	Education	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	Elem. 8 or less	3	0	4	7	14	4.27
	High school	3	7	36	36	82	3.73
	Vocational-Tech.		1	3	6	10	4.00
	Attended college		0	9	18	27	4.33
	Completed college		0	1	9	10	4.79
	Total	6	8	53	76	143	3.99
	Chi-square = 9.713* (d.f. = 4)						
2	Elem. 8 or less	3	0	3	8	14	4.45
	High school	3	5	29	45	82	4.01
	Vocational-Tech.		0	2	8	10	4.59
	Attended college		0	6	21	27	4.55
	Completed college		0	2	8	10	4.59
	Total	6	5	42	90	143	4.24
	Chi-square = 6.480 (d.f. = 4)						
3	Elem. 8 or less	3	0	7	4	14	3.72
	High school	3	6	45	28	82	3.55
	Vocational-Tech.		0	4	6	10	4.20
	Attended college		0	12	15	27	4.11
	Completed college		0	2	8	10	4.59
	Total	6	6	70	61	143	3.80
	Chi-square = 10.329* (d.f. = 4)						
4	Elem. 8 or less	3	0	9	2	14	3.36
	High school	3	8	35	36	82	3.70
	Vocational-Tech.		1	4	5	10	3.79
	Attended college		1	8	18	27	4.25
	Completed college		0	1	9	10	4.79
	Total	6	10	57	70	143	3.87
	Chi-square = 14.416** (d.f. = 4)						
5	Elem. 8 or less	3	0	5	6	14	4.09
	High school	3	4	36	39	82	3.88
	Vocational-Tech.		1	4	5	10	3.79
	Attended college		1	9	17	27	4.18
	Completed college		0	3	7	10	4.40
	Total	6	6	57	74	143	3.99
	Chi-square = 2.652 (d.f. = 4)						

Table 56. (Continued)

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
6	Elem. 8 or less	3	1	7	3	14	3.36
	High school	3	6	42	31	82	3.63
	Vocational-Tech.	1	1	2	6	10	4.11
	Attended college		1	8	18	27	4.25
	Completed college		0	4	6	10	4.20
	Total	7	9	63	64	143	3.80
	Chi-square = 9.895* (d.f. = 4)						
7	Elem. 8 or less	3	0	9	2	14	3.36
	High school	3	10	47	22	82	3.30
	Vocational-Tech.	1	1	3	5	10	3.88
	Attended college		0	13	14	27	4.03
	Completed college		0	3	7	10	4.40
	Total	7	11	75	50	143	3.57
	Chi-square = 13.097* (d.f. = 4)						
8	Elem. 8 or less	3	0	6	5	14	3.90
	High school	2	7	44	29	82	3.54
	Vocational-Tech.	1	1	4	4	10	3.66
	Attended college		1	13	13	27	3.88
	Completed college		1	3	6	10	4.00
	Total	6	10	70	57	143	3.68
	Chi-square = 2.910 (d.f. = 4)						
9	Elem. 8 or less	3	0	4	7	14	4.27
	High school	2	5	38	37	82	3.79
	Vocational-Tech.		1	3	6	10	4.00
	Attended college		0	9	18	27	4.33
	Completed college		0	2	8	10	4.59
	Total	5	6	56	76	143	4.01
	Chi-square = 6.919 (d.f. = 4)						
10	Elem. 8 or less	4	2	5	3	14	3.20
	High school	3	12	51	16	82	3.10
	Vocational-Tech.	1	1	5	3	10	3.44
	Attended college		1	12	14	27	3.96
	Completed college		1	2	7	10	4.20
	Total	8	17	75	43	143	3.38
	Chi-square = 18.019* (d.f. = 8)						

SUBHYPOTHESIS 13d: There is no difference between volume of business managed by managers of agricultural cooperatives and how they see their needs for understanding employee relations functions of human behavior.

As shown in Table 57, none of the chi-square values were significant at the 5 percent level of confidence for any of the individual subject matter items. The null hypothesis was not rejected for any of the ten subject matter items.

Table 57. Need for understanding employee relations functions of human behavior by gross sales of the cooperative in 1970

Item number	Gross sales	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	$ 500,000 or less	2	2	11	12	27	3.79
	500,001-1,000,000	3	3	15	18	39	3.83
	1,000,001-1,500,000	1	1	9	11	22	3.95
	1,500,001-3,000,000		2	10	18	30	4.06
	3,000,001 or more		0	8	17	25	4.36
	Total	6	8	53	76	143	3.99
	Chi-square = 2.920 (d.f. = 4)						
2	$ 500,000 or less	2	2	5	18	27	4.28
	500,001-1,000,000	3	2	11	23	39	4.16
	1,000,001-1,500,000	1	0	9	12	22	4.14
	1,500,001-3,000,000		1	10	19	30	4.20
	3,000,001 or more		0	7	18	25	4.44
	Total	6	5	42	90	143	4.24
	Chi-square = 1.690 (d.f. = 4)						
3	$ 500,000 or less	2	2	12	11	27	3.71
	500,001-1,000,000	3	2	19	15	39	3.72
	1,000,001-1,500,000	1	0	14	7	22	3.66
	1,500,001-3,000,000		2	14	14	30	3.79
	3,000,001 or more		0	11	14	25	4.12
	Total	6	6	70	61	143	3.80
	Chi-square = 2.575 (d.f. = 4)						

Table 57. (Continued)

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
4	$ 500,000 or less	2	2	14	9	27	3.55
	500,001-1,000,000	3	3	15	18	39	3.83
	1,000,001-1,500,000	1	0	11	10	22	3.95
	1,500,001-3,000,000		3	9	18	30	4.00
	3,000,001 or more		2	8	15	25	4.04
	Total	6	10	57	70	143	3.87
	Chi-square = 4.144 (d.f. = 4)						
5	$ 500,000 or less	2	2	10	13	27	3.87
	500,001-1,000,000	3	1	17	18	39	3.94
	1,000,001-1,500,000	1	0	11	10	22	3.95
	1,500,001-3,000,000		2	9	19	30	4.13
	3,000,001 or more		1	10	14	25	4.04
	Total	6	6	57	74	143	3.99
	Chi-square = 1.709 (d.f. = 4)						
6	$ 500,000 or less	2	2	11	12	27	3.79
	500,001-1,000,000	4	2	16	17	39	3.85
	1,000,001-1,500,000	1	0	11	10	22	3.95
	1,500,001-3,000,000		3	13	14	30	3.73
	3,000,001 or more		2	12	11	25	3.71
	Total	7	9	63	64	143	3.80
	Chi-square = 0.139 (d.f. = 4)						
7	$ 500,000 or less	2	2	14	9	27	3.55
	500,001-1,000,000	4	3	19	13	39	3.57
	1,000,001-1,500,000	1	1	11	9	22	3.76
	1,500,001-3,000,000		4	17	9	30	3.33
	3,000,001 or more		1	14	10	25	3.71
	Total	7	11	75	50	143	3.57
	Chi-square = 2.550 (d.f. = 8)						
8	$ 500,000 or less	1	3	14	9	27	3.46
	500,001-1,000,000	4	2	17	16	39	3.79
	1,000,001-1,500,000	1	1	11	9	22	3.76
	1,500,001-3,000,000		3	16	11	30	3.53
	3,000,001 or more		1	12	12	25	3.87
	Total	6	10	70	57	143	3.68
	Chi-square = 2.660 (d.f. = 8)						

Table 57. (Continued)

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
9	$ 500,000 or less	1	2	9	15	27	4.00
	500,001-1,000,000	3	2	14	20	39	4.00
	1,000,001-1,500,000	1	0	12	9	22	3.85
	1,500,001-3,000,000		2	11	17	30	4.00
	3,000,001 or more		0	10	15	25	4.20
	Total	5	6	56	76	143	4.01
	Chi-square = 1.618 (d.f. = 4)						
10	$ 500,000 or less	2	4	16	5	27	3.08
	500,001-1,000,000	4	5	17	13	39	3.45
	1,000,001-1,500,000	2	1	15	4	22	3.29
	1,500,001-3,000,000		2	18	10	30	3.53
	3,000,001 or more		5	9	11	25	3.48
	Total	8	17	75	43	143	3.38
	Chi-square = 10.440 (d.f. = 8)						

In summarizing how managers saw their educational needs for understanding employee relations functions of human behavior by the independent variables of age, experience, formal education and volume of business managed, both the independent variables of age and formal education showed a significant difference to two and six subject matter items respectively.

In general, older managers with more formal education saw a greater educational need for understanding how to prepare and conduct induction and in-service training programs for employees than did younger managers with less formal education. In addition, the managers with more formal education saw the greatest educational need for understanding the following items:

1. Internal communication procedures and techniques, including employee meetings.
2. How to prepare job analysis and description, including performance standards and appraisal techniques.
3. How to establish and evaluate commission, bonus and incentive plans.
4. Collective bargaining procedures and techniques.

The analysis basically revealed that the need for understanding employee relations functions of human behavior by managers of agricultural cooperatives is independent of their experience and volume of business managed. Two of the ten subject matter items tested showed a dependence to the independent variable of age and six of the ten subject matter items tested showed a dependence to the independent variable of formal education.

Leadership training functions of human behavior

The following six subject matter items were used to determine how managers saw their educational needs for understanding leadership training functions of human behavior:

1. Principles of leadership and motivation of people.
2. Board responsibilities, including role of the board and job description for directors.
3. New director training.
4. Selection of a manager.
5. Board - manager relations and communications.
6. Management team responsibilities.

In evaluating how managers viewed their educational needs to these subject matter items by the independent variables, the fourteenth major hypothesis was stated as follows:

MAJOR HYPOTHESIS 14: The need for understanding leadership training functions of human behavior by managers of agricultural cooperatives is independent of their age, experience, formal education and volume of business managed.

Four subhypotheses were tested. The findings of the analysis are presented after each of the subhypotheses.

SUBHYPOTHESIS 14a: There is no difference between age levels of managers of agricultural cooperatives and how they see their needs for understanding leadership training functions of human behavior.

As shown in Table 58, none of the chi-square values were significant at the 5 percent level of confidence for any of the individual subject matter items. The null hypothesis was not rejected for any of the six subject matter items.

Table 58. Need for understanding leadership training functions of human behavior by age

Item number	Age	No response	Educational need			Total	Mean score
			None	Moderate	Strong		
1	20 - 34		0	12	10	22	3.90
	35 - 44	1	3	12	22	38	4.02
	45 - 54	3	2	17	28	50	4.10
	55 and over		1	12	20	33	4.15
	Total	4	6	53	80	143	4.06
	Chi-square = 1.578 (d.f. = 3)						
2	20 - 34		0	4	18	22	4.63
	35 - 44	1	3	15	19	38	3.86
	45 - 54	4	2	20	24	50	3.95
	55 and over		3	10	20	33	4.03
	Total	5	8	49	81	143	4.05
	Chi-square = 6.532 (d.f. = 3)						
3	20 - 34		0	11	11	22	4.00
	35 - 44	2	3	17	16	38	3.72
	45 - 54	5	3	20	22	50	3.84
	55 and over	1	4	11	17	33	3.81
	Total	8	10	59	66	143	3.82
	Chi-square = 0.525 (d.f. = 3)						

Table 58. (Continued)

Item number	Age	No response	Educational need None	Moderate	Strong	Total	Mean score
4	20 - 34		2	11	9	22	3.63
	35 - 44	4	6	12	16	38	3.58
	45 - 54	6	3	18	23	50	3.90
	55 and over	3	3	8	19	33	4.06
	Total	13	14	49	67	143	3.81
	Chi-square = 5.659 (d.f. = 6)						
5	20 - 34		0	7	15	22	4.36
	35 - 44	1	4	11	22	38	3.97
	45 - 54	4	3	14	29	50	4.13
	55 and over	2	1	9	21	33	4.29
	Total	7	8	41	87	143	4.16
	Chi-square = 0.704 (d.f. = 3)						
6	20 - 34		0	9	13	22	4.18
	35 - 44	1	3	12	22	38	4.02
	45 - 54	4	2	17	27	50	4.08
	55 and over	2	1	7	23	33	4.41
	Total	7	6	45	85	143	4.16
	Chi-square = 2.348 (d.f. = 3)						

SUBHYPOTHESIS 14b: There is no difference between experience levels of managers of agricultural cooperatives and how they see their needs for understanding leadership training functions of human behavior.

The chi-square values reported in Table 59 failed to be significant at the 5 percent level of confidence for any of the six individual subject matter items and thus, the null hypothesis was not rejected for any of the subject matter items.

Table 59. Need for understanding leadership training functions of human behavior by years of experience

Item number	Experience	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	3 or less		1	10	16	27	4.11
	4 - 8	3	2	15	22	42	4.02
	9 - 13		1	8	12	21	4.04
	14 - 19		0	8	11	19	4.15
	20 or more	1	2	12	19	34	4.03
	Total	4	6	53	80	143	4.06
	Chi-square = 0.055 (d.f. = 4)						
2	3 or less		2	10	15	27	3.96
	4 - 8	3	2	12	25	42	4.17
	9 - 13		0	9	12	21	4.14
	14 - 19		2	9	8	19	3.63
	20 or more	2	2	9	21	34	4.18
	Total	5	8	49	81	143	4.05
	Chi-square = 3.392 (d.f. = 4)						
3	3 or less	1	1	13	12	27	3.84
	4 - 8	3	2	17	20	42	3.92
	9 - 13	1	1	9	10	21	3.90
	14 - 19		3	10	6	19	3.31
	20 or more	3	3	10	18	34	3.96
	Total	8	10	59	66	143	3.82
	Chi-square = 6.201 (d.f. = 8)						
4	3 or less	1	2	10	14	27	3.92
	4 - 8	5	7	14	16	42	3.48
	9 - 13	2	0	9	10	21	4.05
	14 - 19		2	9	8	19	3.63
	20 or more	5	3	7	19	34	4.10
	Total	13	14	49	67	143	3.81
	Chi-square = 4.030 (d.f. = 4)						
5	3 or less		2	9	16	27	4.03
	4 - 8	4	3	10	25	42	4.15
	9 - 13		1	4	16	21	4.42
	14 - 19		0	9	10	19	4.05
	20 or more	3	2	9	20	34	4.16
	Total	7	8	41	87	143	4.16
	Chi-square = 2.739 (d.f. = 4)						

Table 59. (Continued)

Item number	Experience	No response	Educational need None	Moderate	Strong	Total	Mean score
6	3 or less		2	10	15	27	3.96
	4 - 8	4	2	13	23	42	4.10
	9 - 13		0	6	15	21	4.42
	14 - 19		0	8	11	19	4.15
	20 or more	3	2	8	21	34	4.22
	Total	7	6	45	85	143	4.16
	Chi-square = 1.868 (d.f. = 4)						

SUBHYPOTHESIS 14c: There is no difference between the levels of formal education of managers of agricultural cooperatives and how they see their needs for understanding leadership training functions of human behavior.

None of the chi-square values for the individual subject matter items on leadership training functions were significant at the 5 percent level of confidence. The null hypothesis was not rejected for any of the subject matter items reported in Table 60.

Table 60. Need for understanding leadership training functions of human behavior by level of education

Item number	Education	No response	Educational need None	Moderate	Strong	Total	Mean score
1	Elem. 8 or less	2	0	4	8	14	4.33
	High school	2	6	32	42	82	3.90
	Vocational-Tech.		0	5	5	10	4.00
	Attended college		0	9	18	27	4.33
	Completed college		0	3	7	10	4.40
	Total	4	6	53	80	143	4.06
	Chi-square = 3.030 (d.f. = 4)						

Table 60. (Continued)

Item number	Education	No response	Educational need: None	Moderate	Strong	Total	Mean score
2	Elem. 8 or less	2	0	2	10	14	4.66
	High school	3	5	29	45	82	4.01
	Vocational-Tech.		1	5	4	10	3.59
	Attended college		1	10	16	27	4.11
	Completed college		1	3	6	10	4.00
	Total	5	8	49	81	143	4.05
	Chi-square = 4.555 (d.f. = 4)						
3	Elem. 8 or less	2	2	3	7	14	3.83
	High school	5	6	35	36	82	3.77
	Vocational-Tech.		0	5	5	10	4.00
	Attended college	1	1	12	13	27	3.92
	Completed college		1	4	5	10	3.79
	Total	8	10	59	66	143	3.82
	Chi-square = 0.592 (d.f. = 4)						
4	Elem. 8 or less	6	0	3	5	14	4.25
	High school	6	12	26	38	82	3.68
	Vocational-Tech.		0	6	4	10	3.79
	Attended college	1	2	8	16	27	4.07
	Completed college		0	6	4	10	3.79
	Total	13	14	49	67	143	3.81
	Chi-square = 2.564 (d.f. = 4)						
5	Elem. 8 or less	3	1	0	10	14	4.63
	High school	3	6	28	45	82	3.98
	Vocational-Tech.		1	4	5	10	3.79
	Attended college	1	0	6	20	27	4.53
	Completed college		0	3	7	10	4.40
	Total	7	8	41	87	143	4.16
	Chi-square = 8.044 (d.f. = 4)						
6	Elem. 8 or less	3	0	2	9	14	4.63
	High school	3	5	29	45	82	4.01
	Vocational-Tech.		1	4	5	10	3.79
	Attended college	1	0	8	18	27	4.38
	Completed college		0	2	8	10	4.59
	Total	7	6	45	85	143	4.16
	Chi-square = 5.261 (d.f. = 4)						

SUBHYPOTHESIS 14d: There is no difference between volume of business managed by managers of agricultural cooperatives and how they see their needs for understanding leadership training functions of human behavior.

Again, none of the chi-square values shown in Table 61 were significant at the 5 percent level of confidence for any of the individual subject matter items. Thus, the null hypothesis was not rejected for any of the six subject matter items.

Table 61. Need for understanding leadership training functions of human behavior by gross sales of the cooperative in 1970

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
1	$ 500,000 or less		2	10	15	27	3.96
	500,001-1,000,000	3	3	14	19	39	3.88
	1,000,001-1,500,000	1	0	10	11	22	4.04
	1,500,001-3,000,000		1	9	20	30	4.26
	3,000,001 or more		0	10	15	25	4.20
	Total	4	6	53	80	143	4.06
	Chi-square = 1.691 (d.f. = 4)						
2	$ 500,000 or less	1	3	7	16	27	4.00
	500,001-1,000,000	3	3	11	22	39	4.05
	1,000,001-1,500,000	1	0	6	15	22	4.42
	1,500,001-3,000,000		2	11	17	30	4.00
	3,000,001 or more		0	14	11	25	3.87
	Total	5	8	49	81	143	4.05
	Chi-square = 3.856 (d.f. = 4)						
3	$ 500,000 or less	2	4	8	13	27	3.71
	500,001-1,000,000	3	3	17	16	39	3.72
	1,000,001-1,500,000	2	0	8	12	22	4.20
	1,500,001-3,000,000		2	12	16	30	3.93
	3,000,001 or more	1	1	14	9	25	3.66
	Total	8	10	59	66	143	3.82
	Chi-square = 2.853 (d.f. = 4)						

Table 61. (Continued)

Item number	Gross sales	No response	Educational need: None	Moderate	Strong	Total	Mean score
4	$ 500,000 or less	4	3	11	9	27	3.52
	500,001-1,000,000	3	4	10	22	39	4.00
	1,000,001-1,500,000	3	1	8	10	22	3.94
	1,500,001-3,000,000	1	3	10	16	30	3.89
	3,000,001 or more	2	3	10	10	25	3.60
	Total	13	14	49	67	143	3.81
	Chi-square = 4.408 (d.f. = 8)						
5	$ 500,000 or less	2	3	6	16	27	4.04
	500,001-1,000,000	3	4	9	23	39	4.05
	1,000,001-1,500,000	1	0	7	14	22	4.33
	1,500,001-3,000,000		1	13	16	30	4.00
	3,000,001 or more	1	0	6	18	25	4.50
	Total	7	8	41	87	143	4.16
	Chi-square = 2.806 (d.f. = 4)						
6	$ 500,000 or less	2	2	9	14	27	3.95
	500,001-1,000,000	3	3	9	24	39	4.16
	1,000,001-1,500,000	1	0	10	11	22	4.04
	1,500,001-3,000,000		1	10	19	30	4.20
	3,000,001 or more	1	0	7	17	25	4.41
	Total	7	6	45	85	143	4.16
	Chi-square = 2.355 (d.f. = 4)						

In summarizing how managers saw their educational needs for understanding leadership training functions of human behavior by the independent variables of age, experience, formal education and volume of business managed, none of the independent variables showed a significant difference to any of the subject matter items.

The analysis revealed that the need for understanding leadership training functions of human behavior by managers of agricultural

cooperatives is independent of their age, experience, formal education and volume of business managed.

An overall evaluation of this section on educational needs of managers of agricultural cooperatives revealed that the level of formal education is the independent variable which most commonly produces a significant difference to the 95 individual subject matter items tested. As shown in Table 62, the independent variable of formal education showed a significant difference to 20 subject matter items, where as the independent variables of experience and gross sales each showed a significant difference to only one subject matter item.

Overall Mean Scores for Subject Matter Items and Categories

Overall mean scores were calculated for the degree of educational need for the fourteen subject matter categories. These overall mean scores were obtained by summing the degree of educational need (strong = 5, moderate = 3 and none = 1) for all individual subject matter items within a subject matter category.

As shown in Table 63, managers of agricultural cooperatives expressed their greatest educational need in the subject matter categories of leadership training, member relations and internal financial control with overall mean scores being 4.01, 3.93 and 3.91 respectively. They expressed their least educational need in the subject matter categories of communication, legislative climate and public relations with overall mean scores being 3.06, 3.37 and 3.49 respectively.

Table 62. Number of subject matter items which were significant at at least the 5 percent level of confidence by independent variables

Subject matter categories	Independent variables			
	Age	Experience	Education	Gross sales
COOPERATIVE ORGANIZATION				
Business Organization	-	-	1	-
Legal Aspects	-	-	-	-
COOPERATIVE OPERATION				
Policy Development	1	-	-	-
Business Management	1	1	4	1
Sales Management	-	-	1	-
Communication	-	-	1	-
FINANCIAL MANAGEMENT				
Internal Financial Control	-	-	2	-
Capital Structure Management	-	-	1	-
ENVIRONMENT				
Economic Trend and Outlook	-	-	2	-
Legislative Climate	1	-	-	-
HUMAN BEHAVIOR				
Public Relations	-	-	-	-
Member Relations	-	-	2	-
Employee Relations	2	-	6	-
Leadership Training	-	-	-	-
TOTAL	5	1	20	1

Table 63 also reveals the mean scores for the subject matter categories by the subdivisions within the independent variables of age, experience, formal education and volume of business managed.

Mean scores were also calculated for each of the 95 individual subject matter items. These findings, presented in Appendix G, Table 68, revealed that managers saw their greatest educational need for

Table 63. Mean scores for subject matter categories by categories within each independent variable

Independent variables	Subject matter categories						
	Business Organization	Legal Aspects	Policy Development	Business Management	Sales Management	Communi-cation	Internal Financial Control
Age							
20 - 34	3.65	3.85	3.93	3.76	3.77	3.00	4.15
35 - 44	3.78	3.65	3.78	3.50	3.68	3.05	3.79
45 - 54	3.48	3.52	3.71	3.41	3.37	2.95	3.91
55 and over	3.71	3.77	3.94	3.63	3.81	3.29	3.89
Experience							
3 or less	3.69	3.68	3.67	3.52	3.65	3.03	3.75
4 - 8	3.54	3.65	3.80	3.50	3.41	2.87	3.98
9 - 13	3.69	3.66	3.94	3.64	3.86	3.00	3.96
14 - 19	3.69	3.48	3.81	3.61	3.78	3.36	3.94
20 or more	3.66	3.79	3.87	3.51	3.58	3.18	3.91
Education							
Elem. 8 or less	3.68	3.93	3.98	3.32	3.83	3.32	4.22
High school	3.61	3.60	3.71	3.47	3.46	2.84	3.71
Vocational-Tech.	3.41	3.68	3.78	3.44	3.53	2.88	3.81
Attended college	3.70	3.83	3.96	3.84	3.97	3.30	4.35
Completed college	3.84	3.45	4.08	3.70	3.77	4.00	4.13
Gross sales							
$ 500,000 or less	3.51	3.50	3.79	3.34	3.61	2.95	3.72
500,001-1,000,000	3.58	3.62	3.74	3.49	3.55	2.89	3.75
1,000,001-1,500,000	3.75	3.81	3.90	3.57	3.62	3.20	4.00
1,500,001-3,000,000	3.66	3.74	3.78	3.53	3.72	3.03	3.89
3,000,001 or more	3.72	3.68	3.92	3.83	3.58	3.39	4.28
OVERALL MEAN SCORE FOR SUBJECT MATTER CATEGORIES	3.64	3.67	3.81	3.54	3.61	3.06	3.91

Table 63. (Continued)

Independent variables	Subject matter categories						
	Capital Structure Management	Economic Trends and Outlook	Legislative Climate	Public Relations	Member Relations	Employee Relations	Leader-ship Training
Age							
20 - 34	3.72	3.59	3.33	3.62	4.07	3.70	4.12
35 - 44	3.67	3.70	3.00	3.34	3.88	3.80	3.87
45 - 54	3.63	3.69	3.66	3.55	3.93	3.79	4.00
55 and over	3.68	3.55	3.41	3.49	3.88	4.04	4.12
Experience							
3 or less	3.70	3.92	3.41	3.62	3.88	3.74	3.97
4 - 8	3.85	3.60	3.20	3.42	3.90	3.79	3.98
9 - 13	3.47	3.47	3.09	3.39	4.07	3.86	4.17
14 - 19	3.52	3.78	3.98	3.40	3.89	3.98	3.82
20 or more	3.64	3.51	3.37	3.58	3.94	3.85	4.11
Education							
Elem. 8 or less	3.96	3.29	3.60	3.45	4.27	3.80	4.39
High school	3.50	3.62	3.25	3.42	3.77	3.62	3.89
Vocational-Tech.	3.40	3.46	3.59	3.43	3.71	3.95	3.83
Attended college	3.96	3.62	3.37	3.62	4.12	4.19	4.22
Completed college	4.20	4.50	3.86	3.77	4.56	4.45	4.16
Gross sales							
$ 500,000 or less	3.49	3.44	2.83	3.52	3.74	3.71	3.87
500,001-1,000,000	3.52	3.66	3.61	3.38	3.76	3.82	3.98
1,000,001-1,500,000	3.66	3.54	3.09	3.55	4.12	3.83	4.17
1,500,001-3,000,000	3.66	3.68	3.73	3.55	4.00	3.83	4.05
3,000,001 or more	4.09	3.87	3.34	3.52	4.16	4.00	4.04
OVERALL MEAN SCORE FOR SUBJECT MATTER CATEGORIES	3.67	3.65	3.37	3.49	3.93	3.83	4.01

understanding the following subject matter items:

Subject matter items	Mean score
1. Finance policy, which includes determinations of equity and creditor capital, revolving funds, rates of expansion or contraction, operating budgets and construction programs.	4.24
2. Credit extension policy, which includes the type and terms of credit extended, credit application procedures and collection methods.	4.24
3. How to recruit and select employees.	4.24
4. Principles of management (planning, organizing, directing, controlling and coordination).	4.17
5. How to earn member loyalty.	4.16
6. Board - manager relations and communications.	4.16
7. Management team responsibilities.	4.16

Managers expressed their least educational need for understanding the following subject matter items:

Subject matter items	Mean score
1. External transportation management including commercial carriers.	2.84
2. Coordination through federation.	2.91
3. Commercial mass media, including radio, TV, newspapers and magazines.	2.91
4. How to develop tours and prepare exhibits.	2.97

Correlation of Independent and Dependent Variables

The chi-square tests in the preceding section of this chapter reveal if a difference existed between the independent and dependent variables. If the difference was significant, the mean scores were used to determine between which variables the difference existed.

To determine if the difference was linear, coefficients of correlation[1] were calculated between the independent variables of age, experience, formal

[1]Correlation coefficients of .174 or greater are required for significance at the .05 level of confidence and correlation coefficients of .228 or greater are required for significance at the .01 level of confidence.

education and volume of business managed (gross sales) and the 95 subject matter items which comprised the dependent variables.

It will be noted in Tables 64 to 67 that a statistically significant coefficient of correlation existed between variables which did not produce a statistically significant chi-square test. In these cases, the difference was linear, but not of sufficient magnitude to produce a significant chi-square test.

The coefficient of correlation test basically explains if the correlation between the variables is or is not zero. Because this test is a function of the sample size, a low correlation can be statistically significant but still not be substantively significant or important. For example, a correlation value of only .174 was required for statistical significance at the .05 level of confidence in this study, but, this value is basically not substantively significant because it only explains about three percent of the difference. The highest correlation value found was .377 between the independent variable of gross sales and the dependent variable on hedging, however, this correlation value only explains about 14 percent of the difference and about 86 percent of the difference is not explained.

Table 64. Significant correlations of subject matter items with the independent variable of age

Subject matter item	Correlation value	Significant chi-square value (Yes - No)
Business Management		
1. Hedging	-0.236	Yes
Employee Relations		
1. Collective bargaining procedures and techniques	0.194	No
2. How to prepare and conduct in-service (supplemental) training programs	0.175	Yes

Table 65. Significant correlations of subject matter items with the independent variable of experience

Subject matter item	Correlation value	Significant chi-square value (Yes - No)
Economic Trends and Outlook		
1. Forces and motivations affecting today's farmer	-0.187	No

Table 66. Significant correlations of subject matter items with the independent variable of education

Subject matter item	Correlation value	Significant chi-square value (Yes - No)
Business Organization		
1. Principles and theory of cooperatives	-0.262	Yes
2. Business coordination, including horizontal and vertical integration	0.218	No
3. Office procedures and techniques	0.208	No
Policy Development		
1. Membership relations policy, such as newsletters and member grievances	0.179	No
Business Management		
1. Use of business machines, including computers and data processing systems	0.304	Yes
2. Long and short-range planning procedures and techniques	0.272	Yes
3. Hedging	0.220	Yes
Sales Management		
1. How to conduct advertising and sales promotion (product and firm)	0.179	No
Communication		
1. Commercial mass media, including radio, TV, newspapers and magazines	0.288	No
2. Internal publications, including newsletters, newspapers and magazines	0.258	Yes
Internal Financial Control		
1. Internal management reports - what is needed?	0.249	Yes

Table 66. (Continued)

Subject matter items	Correlation value	Significant chi-square value (Yes - No)
Capital Structure Management		
1. External financing, including use of capital markets, bonds and stocks	0.178	No
Public Relations		
1. How to develop tours and prepare exhibits	0.175	No
Member Relations		
1. Member - management communication procedures and techniques	0.239	Yes
Employee Relations		
1. How to establish and evaluate commission, bonus and incentive plans	0.301	Yes
2. How to prepare and conduct in-service (supplemental) training programs	0.294	Yes
3. Collective bargaining procedures and techniques	0.287	Yes
4. How to prepare and conduct induction (beginning) training programs	0.264	Yes
5. How to prepare job analysis and description, including performance standards and appraisal techniques	0.260	Yes
6. Internal communication procedures and techniques, including employee meetings	0.230	Yes
7. How to handle employee grievances	0.175	No

Table 67. Significant correlations of subject matter items with the independent variable of gross sales

Subject matter item	Correlation value	Significant chi-square value (Yes - No)
Business Organization		
1. Methods of growth, including acquisition, merger and consolidation	0.186	No
Business Management		
1. Hedging	0.377	Yes
2. Use of business machines, including computers and data processing systems	0.291	No
Communication		
1. Internal publications, including newsletter, newspapers and magazines	0.176	No
Internal Financial Control		
1. Internal capital allocations, including working capital and operating budgets	0.202	No
2. Short and intermediate term financing, including leasing	0.202	No
3. Internal management reports - what is needed?	0.187	No
Legislative Climate		
1. Possible future legislative needs	0.175	No
Member Relations		
1. Member - management communication procedures and techniques	0.215	No

CHAPTER V

DISCUSSION

Expanding and strengthening the leadership capabilities of the management personnel of agricultural cooperatives is a continuous challenge to those involved in providing educational programs for this audience. Leadership capabilities of the management personnel must be continuously expanded and strengthened for the economic survival of agricultural cooperatives in our complex economic revolution. The cooperative form of business must be able to compete both efficiently and effectively with the other forms of business. To be able to meet this challenge educators need to develop more effective educational programs tailored to the individual needs of the management personnel in line with their duties and responsibilities.

This study was undertaken to aid educators in determining the educational needs of but one audience of the management personnel; specifically managers of local agricultural cooperatives. The study was designed to ascertain their educational needs which enhance management capabilities. No attempt was made to determine their educational needs in the technical or product areas, important as they may be to the successful management of an agricultural cooperative.

This study was also designed to serve as a curriculum guide for educators. As managers checked the importance of each subject matter item, they only checked it as to degree of educational need, irrespective of whether the educational need for the individual subject matter item was met

or unmet. Educators will need to check the subject matter content of future educational programs in accordance with the relative importance of the subject matter items in this study. If educators feel that certain items which rated high in importance are items which have been deficient from past educational programs, then they should add these items to future programs. Conversely, if the subject matter content of past educational programs has included items ranked high in importance, then one could somewhat conclude that the educational need has been met and fulfilled. One would say "somewhat" because it is doubtful that all managers were reached and because new managers are always being employed. Also, past educational programs attended by managers could have lacked in effectiveness, thus requiring new and different approaches to be taken in programming strategy.

The findings presented in the preceding chapter were divided into four general areas. Discussion of each area has been included in this chapter plus the conclusions, limitations of the study, program development and suggestions for further research.

Characteristics of the Sample

The sample for this study consisted of 143 managers of agricultural cooperatives in the Omaha, St. Louis and St. Paul Farm Credit Bank Districts. This eleven state, midwestern area was selected to conform with the states served by these three Farm Credit Banks. By design, the findings of this study can only be projected to the population of managers in this midwestern region.

There were two basic reasons why this study was limited to this geographic region. First, this midwestern region is basically served by federated cooperatives with overlapping trade territories as opposed to semi-federated and centralized cooperatives in other areas of the United States. As federated cooperatives, the local cooperative retains full local autonomy. All decisions regarding the operations of the local cooperative, including participation in educational programs, are made by the management personnel of the local cooperative. Such is not always the case with semi-federated and centralized cooperatives. Thus, this sample basically represents managers of federated local cooperatives who retain local autonomy, including the decision to participate in educational programs.

Second, educators are beginning to develop regional programming efforts for the leadership personnel of agricultural cooperatives. To limit the scope of this study to one state would likewise limit its projectability. However, with eleven midwestern states included in the sample, it can be projected to this geographic area for insights in planning regional programs.

It was hypothesized that four characteristics of these managers would have a significant influence on how they saw their educational needs to the predetermined list of 95 subject matter items. These four characteristics, including age, experience, formal education and gross sales of their cooperative in 1970, served as the independent variables.

However, as revealed by the findings, the independent variable of formal education produced far more significant chi-square values when

comparing the independent and dependent variables than did the independent variables of age, experience and gross sales in 1970.

Because the independent variable of formal education created the most significant chi-square values, it is imperative that the sample be analyzed in terms of this variable. It will be noted in Appendix G, Table 69, that the majority of managers with an "elementary 8 or less" education are in the "45 - 54" and "55 and over" years of age categories. Managers with college experience cut fairly evenly across all four age categories.

In analyzing formal education by experience in Appendix G, Table 70, it will be noted that the majority with an "elementary 8 or less" education had the greatest number of years of experience where as those who had college training cut fairly evenly across the five categories of experience.

Appendix G, Table 71 revealed that the majority of managers with an "elementary 8 or less" level of education were managing the smaller agricultural cooperatives where as the larger cooperatives were managed by managers who had college experience.

These characteristics of the sample relative to the level of formal education possessed by the manager are fairly consistent with what one would normally expect to find. In general, as age increases, level of formal education decreases; as years of experience increase, level of formal education decrease; and as size of cooperative managed increases, level of formal education increases.

Educational Needs of Managers of Agricultural Cooperatives

First, an evaluation of the 95 specific subject matter items by the independent variables of age, experience, formal education and volume of business managed was conducted. By using the chi-square test, this evaluation revealed if a significant difference existed between the established categories within the independent variables and the individual subject matter items. If a significant difference was observed, then the mean scores were used to determine between which categories the difference existed.

The independent variable of age revealed a significant difference to five subject matter items. The items were:

Policy Development

1. Finance policy, which includes determinations of equity and creditor capital, revolving funds, rate of expansion or contraction, operating budgets and construction programs.

   Both the younger and older managers saw a greater educational need for understanding finance policies than did middle-age managers.

Business Management

1. Hedging.

   Younger managers saw a greater educational need for understanding hedging than did older managers.

Legislative Climate

1. How to develop and influence legislation.

   Older managers saw a greater educational need for understanding how to develop and influence legislation than did

younger managers.

Employee Relations

1. How to prepare and conduct induction (beginning) training programs.
2. How to prepare and conduct in-service (supplemental) training programs.

In both cases, older managers saw a greater educational need for understanding how to prepare and conduct induction (beginning) and in-service (supplemental) training programs than did younger managers.

With only five of the 95 subject matter items showing a significant difference to the variable of age, it was concluded that the variable of age is only a moderately significant criterion on which to base the educational needs of managers of agricultural cooperatives. In general, the criterion of age does not greatly influence how managers see their educational needs for understanding subject matter items designed to enhance management capabilities.

The independent variable of experience only revealed a significant difference to one subject matter item. The item was:

Business Management

1. Hedging.

Managers with 9-13 years of experience saw the greatest educational need for understanding hedging, while the least educational need was expressed by managers with 20 or more years of experience.

With only one of the 95 subject matter items showing a significant difference to the variable of experience, it was concluded that the

variable of experience is not a significant criterion on which to base the educational needs of managers of agricultural cooperatives. The criterion of experience basically does not influence how managers see their educational needs for understanding subject matter items designed to enhance management capabilities.

The independent variable of formal education revealed a significant difference to 20 subject matter items. The items were:

Business Organization

1. Principles and theory of cooperatives.

   Managers with less formal education saw a greater educational need for understanding principles and theory of cooperatives than did managers with more formal education.

Business Management

1. Long and short-range planning procedures and techniques.
2. Control information systems and techniques for operations control.
3. Use of business machines, including computers and data processing systems.
4. Hedging.

   For all four of these subject matter items, managers with more formal education saw a greater educational need than did managers with less formal education.

Sales Management

1. How to conduct sales training programs.

   Managers in the education categories of "attended college" and "elementary 8 or less" saw the greatest educational need for understanding how to conduct sales training

programs where as the managers in the educational categories of "high school" and "completed college" saw the least educational need.

Communication

1. Internal publications, including newsletters, newspapers and magazines.

   Managers who had completed college saw the greatest educational need for understanding internal publications where as the least educational need was expressed by managers in the education categories of "high school" and "vocational-technical".

Internal Financial Control

1. Internal management reports - what is needed?
2. Financial statements (balance sheet, operating statements, cash flow charts) - their analysis and interpretation.

   In both cases, managers in the education categories of "elementary 8 or less", "attended college" and "completed college" saw a greater educational need for understanding internal management reports and financial statements than did managers in the education categories of "high school" and "vocational-technical".

Capital Structure Management

1. Capital budgeting and fixed asset management.

   The greatest educational need for understanding capital budgeting and fixed asset management was expressed by managers in the education categories of "elementary 8 or less" and "completed college".

Economic Trends and Outlook

1. Forces and motivations affecting today's consumer.
2. Forces and motivations affecting today's farmer.

The greatest educational need for understanding forces and motivations affecting today's consumer and farmer was expressed by managers who had completed college.

Member Relations

1. Members - management communication procedures and techniques.
2. Director - member communication procedures and techniques.

In both cases, managers with the least and most formal education saw a greater educational need for understanding member - management and director - member communication procedures and techniques than did managers with an average level of formal education.

Employee Relations

1. Internal communication procedures and techniques, including employee meetings.
2. How to prepare job analysis and description, including performance standards and appraisal techniques.
3. How to establish and evaluate commission, bonus and incentive plans.
4. How to prepare and conduct induction (beginning) training programs.
5. How to prepare and conduct in-service (supplemental) training programs.
6. Collective bargaining procedures and techniques.

For all six subject matter items, managers with more formal education saw a greater educational need than did managers with less formal education.

With 20 of the 95 subject matter items showing a significant difference to the variable of formal education, it was concluded that the

variable of formal education is a significant criterion on which to base the educational needs of managers of agricultural cooperatives. Even though the criterion of formal education only produced a significant difference to about one-fifth of the subject matter items, it was by far a more significant criterion than was the second place independent variable of age. In general, the criterion of formal education does influence how managers see their educational needs for understanding subject matter items designed to enhance management capabilities.

The independent variable of volume of business managed (gross sales) only revealed a significant difference to one subject matter item. Again, the item was:

Business Management

1. Hedging.

   Managers of larger agricultural cooperatives (as determined by annual gross sales) saw a greater educational need for understanding hedging than did managers of smaller agricultural cooperatives.

Again, with only one of the 95 subject matter items showing a significant difference to the variable of volume of business managed, it was concluded that the variable of volume of business managed is not a significant criterion on which to base the educational needs of managers of agricultural cooperatives. The criterion of volume of business managed basically does not influence how managers see their educational needs for understanding subject matter items designed to enhance management capabilities.

Even though the independent variable of formal education most commonly produced a significant difference to the subject matter items tested, it is interesting to note that only the subject matter item on hedging produced a significant difference to all four independent variables. The greatest educational need for understanding hedging was expressed by managers who had attended and completed college and were 20-44 years of age with 9-13 years of experience and managed an agricultural cooperative that had an annual gross sales volume of over $3,000,001.

Two subject matter items yielded a significant difference to two of the independent variables. The subject matter items on "How to prepare and conduct induction (beginning) training programs" and "How to prepare and conduct in-service (supplemental) training programs" produced a significant difference to the independent variables of age and education. For both subject matter items, older managers with more formal education saw a greater educational need than did younger managers with less formal education.

Overall Mean Scores for Subject Matter Items and Categories

Overall mean scores were calculated for each of the 95 subject matter items irrespective of the independent variables. These mean scores, shown in Appendix G, Table 68, reveal the relative importance that the 143 managers placed on the educational need for each of the subject matter items. The top seven items, all receiving a mean score above 4.00, are as follows:

Subject matter items	Mean score
1. Finance policy, which includes determinations of equity and creditor capital, revolving funds, rates of expansion or contraction, operating budgets and construction programs.	4.24
2. Credit extension policy, which includes the type and terms of credit extended, credit application procedures and collection methods.	4.24
3. How to recruit and select employees.	4.24
4. Principles of management (planning, organizing, directing, controlling and coordination).	4.17
5. How to earn member loyalty.	4.16
6. Board - member relations and communications.	4.16
7. Management team responsibilities.	4.16

Why should these items approach a "strong" educational need for managers of agricultural cooperatives? One possible explanation is that all items are related to the basic fundamental operations of the cooperative. Sound policy development in the areas of finance and credit extension is a necessity to the economic survival of the business. Even though policy development is one of the duties and responsibilities of the board of directors, it must be realized that in most cases, the board of directors look to the manager and his staff for recommendations before enacting the policy.

Because of the close working relationship between the manager and the board of directors in a cooperative, it is logical that the need for understanding board-manager relations and communications and management team responsibilities would rank high. These people comprise the leadership personnel of a cooperative and again, survival of the cooperative is dependent upon their actions.

The managers' need for the basic principles of management is obvious -- planning, organizing, directing, controlling and coordinating are the duties and responsibilities of the manager.

The manager must use the basic principles of management in working with the employees. This human resource must be successfully combined with the raw materials of the business so as to create an efficient and effective enterprise which satisfies both the individual needs of the employees and the established policies of the board of directors. Thus, successful recruitment and selection of qualified employees is essential. Also, the general public has more contact with the employees than they do with the manager or board of directors. Thus, the image of the cooperative can be either strengthened or weakened through the general public's contact with employees. To bolster the cooperative's image, managers should strive to recruit and select qualified employees.

Today's patrons of agricultural cooperatives are different from the farmers of the depression years. Today's patrons did not help in the early development and organization of the cooperative in its formative years. They do not possess the same evangelistic cooperative philosophy of loyalty as did their forefathers. Today's patron exercises his prerogative of choice when he enters the marketplace and many times makes his choice by the quality of service offered. Because the patron is not necessarily loyal to a business in which he holds membership (such as a cooperative), it is readily apparent to see why managers express a strong educational need on how to earn member loyalty. Many managers today realize that the cooperative can no longer demand member loyalty, but

rather, must earn member loyalty through quality products and "qualified - timely" service.

The four subject matter items which ranked at the bottom of the list of 95 items were as follows:

Subject matter items	Mean score
1. External transportation management including commercial carriers.	2.84
2. Coordination through federation.	2.91
3. Commercial mass media, including radio, TV, newspapers and magazines.	2.91
4. How to develop tours and prepare exhibits.	2.97

These four items, with mean scores of less than 3.00, only approached a "moderate" educational need. With one exception, managers probably ranked these items lowest because they do not affect the basic fundamental operations of the cooperative.

However, the lowest ranking subject matter item deserves some attention. For managers to express their lowest educational need for understanding external transportation management including commercial carriers during an era of boxcar shortages and railroad strikes seems unbelieveable. When elevators have piles of corn and wheat stored in the streets awaiting boxcars and when managers and directors eagerly attend educational meetings dealing with transportation problems, how can managers rank their educational need for this subject matter item at the bottom of the list?

One possible explanation is that managers undoubtedly realize the problems involved with external transportation and its affect upon their cooperative, but probably feel it is a problem which they individually

cannot do anything about. External transportation is a problem which requires collective action of those affected with the problem.

Also, this problem would be greatest for the larger cooperative elevators who depend heavily upon sources of external transportation to move their commodities to external markets. It is known that only 25 managers of the sample of 143 represented cooperatives with an annual gross sales volume of over $3,000,001. However, no determination was made as to the number of managers who represented marketing, supply or combination marketing and supply cooperatives in the sample. It is possible that the larger marketing cooperatives (cooperative elevators) only represented a small portion of the sample.

The overall mean scores for the fourteen subject matter categories were as follows:

Subject matter categories	Mean score
1. Leadership training.	4.01
2. Member relations.	3.93
3. Internal financial control.	3.91
4. Employee relations.	3.83
5. Policy development.	3.81
6. Capital structure management.	3.67
7. Legal aspects.	3.67
8. Economic trends and outlook.	3.65
9. Business organization.	3.64
10. Sales management.	3.61
11. Business management.	3.54
12. Public relations	3.49
13. Legislative climate.	3.37
14. Communication.	3.06

Because the mean scores were calculated from a composite of the individual subject matter items making up the subject matter categories, it is first important to look at the subject matter items within each

category so as to gain a perspective as to why the categories fell in this rank order.

The two subject matter items making up the category of communication only referred to internal publications and commercial mass media. Communication procedures and techniques dealing specifically with members, management, employees and the board of directors were listed in the categories on member relations, employee relations and leadership training. Because these forms of communication are more important, as noted by higher mean scores for the individual subject matter items, it is logical to see how managers could rate the category of communications composed of internal publications and commercial mass media at the bottom of the list.

Another example is the subject matter category on public relations. In the Kentucky (13) study and the Colorado (7) study, public relations ranked third and fourth respectively by management personnel as an educational need. In both of these studies, the respondents only responded to the category of public relations and not to individual subject matter items in the category. The respondents made their own judgment as to the content which would be included in public relations.

In this study, the subject matter items under the category of public relations basically dealt with how to develop, prepare and conduct educational programs for the public. Because the content was thus limited and differentiated from the items listed under member relations, employee relations and leadership training, one can understand why it could rank toward the bottom of the list in importance.

Another category which ranked low in importance for the same line of reasoning was business management. The Kentucky (13) study ranked business management as the first priority unmet educational need of managers, but again, they were making their own judgments as to the content of the category of business management. If one would include internal financial control, policy development, capital structure management and sales management items in a broad category of business management, then it would have ranked higher in this study. However, by limiting the category of business management to subject matter items on basic principles of management, principles of accounting, long and short-range planning, control information systems, transportation, use of business machines, tax management and hedging, it is reasonable to see why it could rank lower than the categories of leadership training, member relations and internal financial control.

As the mean scores for the subject matter categories were analyzed by the categories within the independent variable of formal education in Table 63, it was noted that there is a trend for managers in the categories of "elementary 8 or less", "attended college" and "completed college" to see a greater educational need for many of the subject matter categories than did managers in the categories of "high school" and "vocational-technical". This same trend was noted when analyzing some of the subject matter items by the variable of formal education.

Thus, it is logical to raise the question, "What factors could possibly cause managers with both the least and most formal education to see a greater educational need than did managers with an average or moderate

amount of formal education?" One possible explanation is that managers with the least formal education might recognize their educational deficiencies and see a greater need to rectify them so as to better serve as a manager. And, managers with the most formal education might have a greater realization of the value of management training and its importance and thus also rank the subject matter items and categories high in importance.

The mean scores also reveal how the subject matter categories rank in importance of educational need by the categories within the independent variables. For example, the top three subject matter categories by age are as follows:

Age	Subject matter categories	Mean score
20 - 34	Internal financial control	4.15
	Leadership training	4.12
	Member relations	4.07
35 - 44	Member relations	3.88
	Leadership training	3.87
	Employee relations	3.80
45 - 54	Leadership training	4.00
	Member relations	3.93
	Internal financial control	3.91
55 and over	Leadership training	4.12
	Employee relations	4.04
	Policy development	3.94

The top three subject matter categories by level of formal education are as follows:

Education	Subject matter categories	Mean score
Elem. 8 or less	Leadership training	4.39
	Member relations	4.27
	Internal financial control	4.22
High school	Leadership training	3.89
	Member relations	3.77
	Internal financial control	3.71
	Policy development	3.71
Vocational-Tech.	Employee relations	3.95
	Leadership training	3.83
	Internal financial control	3.81
Attended college	Internal financial control	4.35
	Leadership training	4.22
	Employee relations	4.19
Completed college	Member relations	4.56
	Economic trends and outlook	4.50
	Employee relations	4.45

If educational programs for managers were to be stratified by the independent variables, then the mean scores could be used to interpret the relative importance of the educational need placed on each subject matter category by managers in the independent variable categories. For example, by age, managers in the youngest age category see their greatest educational need in the area of internal financial control. This is the only age group that ranked this subject matter category in either first or second place. Thus, it would be logical to assume that this age category of managers would be most willing to participate in an educational program covering items on internal financial control.

Even though these subject matter categories were not tested for a statistically significant difference, the mean scores show that an observed difference does exist. One observed difference that is extremely noticeable

is the educational need placed on the subject matter category of "Economic trends and outlook" by the level of formal education of managers. Those who had completed college ranked its importance noticeably higher than those in the other categories. Because these managers tend to operate the larger cooperatives, they are undoubtedly more involved with forces and motivations that will affect trends, projections and outlook data, both for their suppliers and consumers.

Correlation of Independent and Dependent Variables

Coefficients of correlation were calculated to determine if a linear relationship existed between the independent and dependent variables. If a significant linear relationship was found and if the chi-square test revealed that a significant difference was present between the variables, then one could conclude that a real difference existed between the subject matter items and the dependent variable categories in a linear fashion. If a significant linear relationship was found, and the chi-square test was not significant, then one could conclude that the linear difference was not of sufficient magnitude to produce a real difference between the independent and dependent variables.

Because a significant correlation value is a function of the sample size, caution must be used in its interpretation. In this study, a correlation value of .174 or greater was statistically significant at the .05 level of confidence, however, this value is basically not substantively significant because it only explains about three percent of the difference.

As was noted in Tables 64 to 67, the independent variable of formal education again showed the most subject matter items with a significant

linear relationship. Of the 21 subject matter items showing a significant linear relationship with formal education, 13 produced a significant chi-square difference. Twelve of the 13 subject matter items produced a positive linear relationship, meaning that as the level of formal education increased with managers, they saw a greater educational need for the subject matter item.

The subject matter item on principles and theory of cooperatives produced a negative linear relationship, meaning that as the level of formal education increased with managers, the educational need decreased. Because the manager with less formal education tended to be the older managers operating smaller volume cooperatives, it is quite possible and logical that they would see a greater need for understanding principles and theory of cooperatives because they might have a stronger belief in the cooperative as a "brotherhood economics" rather than as a means of doing business.

It is also interesting to note in Table 67 that nine subject matter items showed a significant linear relationship with the variable of gross sales. However, only one item showed a difference with sufficient magnitude to produce a significant chi-square value. Even though managers of larger agricultural cooperatives saw a greater educational need for these subject matter items than did managers of smaller cooperatives, only the subject matter item on hedging revealed a difference of sufficient magnitude to be significant. Such a difference could be expected, because the larger cooperatives would undoubtedly be more involved in buying and selling commodity futures as a protection against losses due to price fluctuations.

The subject matter items which produced both a significant coefficient of correlation and a significant chi-square value with the independent variables could be logical items on which to build an educational program for a select audience of managers by an independent variable. For example, all positively correlated items in Table 66 with significant chi-square values would be items of greater educational need for managers with more formal education rather than for managers with less formal education. If the educational need was unmet, then one could assume that these managers might want to participate in educational programs on these topics.

Conclusions

The most obvious conclusion that could be drawn from the findings in this study was that the level of formal education of managers of agricultural cooperatives is the most significant criterion which influences how managers see their educational needs for understanding subject matter items designed to enhance their management capabilities. The criterion of age is at best, only moderately significant and the criterions of experience and volume of business managed basically appear to have no influence at all.

Somewhat contrary to expectation, one would believe that the volume of business managed would be a significant criterion. Even though managers who operated the larger volume of business cooperatives had a tendency to see a greater educational need for some of the subject

matter items, the need was not of sufficient magnitude to produce a significant difference.

With the subject matter item on hedging producing a significant difference to all four independent variables tested and a linear correlation to three of the four independent variables, it was obvious to conclude that younger managers with more formal education and 9-13 years of experience who operated the larger cooperatives see the greatest educational need for educational programs on hedging.

From the analysis of the overall mean scores for the individual subject matter items, it was concluded that managers saw their greatest educational need in the subject matter items that are basically related to the overall fundamental operations of the cooperative, including subject matter items on finance and credit extension policies, principles of management, management team responsibilities, recruiting employees and board - member relations and communications. Their least educational need was basically expressed to auxiliary and supplemental operations, including subject matter items on coordination through federation, commercial mass media and developing tours and preparing exhibits. The analysis of the overall mean scores for the subject matter categories also revealed this same basic conclusion.

Also, it was concluded that effective educational programs for managers of agricultural cooperatives can and will result from a program planning process that considers their educational needs in conjunction with the educational resources available from the educators.

Limitations of the Study

One of the limitations of this study was in the instrument used to determine the educational needs of managers of agricultural cooperatives. Because the instrument was developed solely for this study and the nation-wide project which was identified in Chapter III, validity and reliability test norms were not established.

The second limitation of this study was in the development of the subject matter items within the subject matter categories. It was difficult to identify a uniform number of appropriate subject matter items for each subject matter category, thus, the final number of subject matter items per subject matter category varied from two to fourteen items. This variation could lessen the validity of the mean scores for the subject matter categories.

The third limitation of this study was in the assigning of subject matter items to the subject matter categories. Because no two people would assign them in the same way, it is imperative that the subject matter categories be interpreted in light of the subject matter items which comprise them.

The fourth limitation of this study, which was not identified by pretesting the instrument or by any of the respondents, was the frame of reference which should be used when checking the degree of educational need to the subject matter items. Because the respondents were only asked to indicate how they saw their educational needs to the subject matter items, it was impossible to determine if they checked the

needs 1) as those for a person employed as a managers of an agricultural cooperative or, 2) as their personal unmet educational needs. These data were interpreted by using the first frame of reference. Future studies should attempt to identify both levels of educational need so as to enable educators to first rank the subject matter items in importance of educational need and second, rank the items which are unmet needs. The first ranking could serve as a guide for developing a curriculum for new managers and the second ranking could serve as a guide for the development of continuing education programs for present managers.

Program Development

The professional development of educational programs for managers of agricultural cooperatives must take into account the manager's educational needs in the program planning process. Such educational programs of the systematically organized learning experience type must be designed to "bridge the gap" which exists between the present or actual situation and the desired situation.

There are different models which can be used to illustrate and describe the program planning process, however, two essential characteristics must be present. First, the model must allow the clientele to express their desired educational needs. In this phase, their educational needs must be integrated into a program that considers the resources available by the educator. Thus, both the clientele and the educator must work together in this phase of the program planning process (see Brower model, p. 12, herein).

Second, the model must consider the characteristics of adults as learners and the factors that influence adult learning. Even though systematically organized and random experiential learning situations are not new developments in adult and continuing education, the concept of adults as continuous learners is a relatively new and bold idea. In an era of rapid change when man's acquired knowledge can be obsolete in a few years, continuous learning by adults is imperative.

The concept of continuous learning should ideally be developed during the childhood stage. At this stage of development, child and youth characteristics of learning must be considered in the educative process. Because adult characteristics of learning differ from child and youth characteristics, they too must be considered in the educative process for adults.

A model or process for program development which lacks these two characteristics would be seriously hampered in providing effective and lasting education for managers of agricultural cooperatives.

Suggestions for Further Research

Planning, developing and implementing educational programs for the management personnel of agricultural cooperatives will continue to be a challenge to educators. As the conditions surrounding the management personnel change, so do their educational needs.

As educational programs are conceived and planned in our dynamic industrial society, three alternatives are available for the program

planning process. First, programs can be planned in a "top-down" manner with educators determining program content for the clientele. Second, programs can be planned in a "bottom-up" manner with the clientele determining the program content. Third, a combination or mix between the educators and the clientele can plan the programs in light of the educational needs as expressed by the clientele and the resources available to the educators.

If the educational needs of the management personnel are to be considered in the program planning procedure (and they should be), then continued research as to their changing educational needs will be imperative. Their changing educational needs could logically be stratified by position, i.e., manager, first and second line management personnel, president of the board of directors, members of the board of directors, etc. Such research on their changing unmet educational needs would serve as a base on which to develop continuing educational programs, both in the area of management training and in the area of technical and product knowledge.

Continued research is also needed in the area of program strategy. For educators to be able to conduct successful educational programs for the management personnel of agricultural cooperatives, they need factual information in the following areas:

1. Motivation - Who and what motivates the management personnel to participate in an educational program? Such an educational program could be a group meeting, home study correspondence course, closed circuit TV program, independent research or study, etc.

2. Sponsorship - Which organizations or agencies or mix of organizations and agencies should be involved in conducting educational programs? Which subject matter area competencies do each possess and how can they be integrated into an effective educational strategy for the total development of an educational thrust in the state, region or nation?

3. Program Techniques - To provide the ever changing answers to questions on methods to be used, length and frequency of educational programs, participant profile, geographic scope of program, etc.

4. Evaluation - To determine the educational accomplishments of educational programs. As the economic situation tightens, cooperatives are more reluctant to send their employees to educational meets for social reasons. Educational programs must be continually evaluated and strengthened to merit their existence.

CHAPTER VI

SUMMARY

As agricultural cooperatives continue to grow and expand through new cooperative formations, acquisitions, mergers and consolidations, and as the management functions become more sophisticated and complex during an era of change and new technology, educational programming too must change in light of the new and developing educational needs of the management personnel of these cooperatives. A viable business structure must first succeed as an economic entity and its success is dependent upon the management capabilities of both its employed and elected management personnel.

This investigation was designed to study and evaluate the educational needs of managers of agricultural cooperatives. Only their educational needs designed to enhance management capabilities were studied, realizing that product and technical educational needs are also an important component to be fulfilled in designing a total educational program. Educational needs were expressed and interpreted as those needed for a person serving as a manager of an agricultural cooperative.

The major objectives of this study were to examine how four independent variables influenced the educational needs of managers to 95 subject matter items which are designed to enhance management capabilities. These independent variables consisted of age, years of experience as a manager, level of formal education and size of cooperative managed as determined by annual gross dollar sales in 1970.

These data for this study were gathered by a mailed questionnaire from a random sample of 143 managers of agricultural cooperatives in eleven midwestern states. The states represented the geographic area served by the St. Paul, Omaha and St. Louis Farm Credit Banks.

In evaluating the educational needs of managers to the 95 subject matter items by the independent variables of age, experience, formal education and volume of business managed, it was concluded that the variable of formal education is by far the most significant criterion on which to base the educational needs of managers of agricultural cooperatives. In general, the criterion of formal education does influence how managers see their educational needs for understanding subject matter items designed to enhance their management capabilities. The independent variable of age was only a moderately significant criterion and the variables of experience and volume of business managed basically did not appear to have any influence on how managers saw their educational needs for understanding subject matter items designed to enhance their management capabilities.

With the individual subject matter item on hedging producing a significant difference to all four independent variables tested, it was obvious to conclude that younger managers with more formal education who had 9-13 years of experience and managed the larger agricultural cooperatives see the greatest educational need for understanding hedging as a protection against losses due to price fluctuations.

An evaluation of the overall mean scores for the 95 individual subject matter items irrespective of the independent variables revealed that managers saw their greatest educational needs in the subject matter items

related to the basic fundamental operations of the cooperative, including subject matter items on finance and credit extension policies, principles of management, management team responsibilities, recruiting employees and board - member relations and communications. Their least educational needs were basically expressed to the subject matter items related to auxiliary and supplemental operations of the cooperative, including subject matter items on coordination through federation, commercial mass media and developing tours and preparing exhibits. The analysis of the overall mean scores for the fourteen subject matter categories also revealed this same basic conclusion.

An analysis of the coefficients of correlation between the subject matter items and the independent variables revealed that the independent variable of formal education showed the most subject matter items with a significant linear relationship. Of the significant coefficients of correlation, all but one was positive, meaning that as the level of formal education increased with managers, they saw a greater educational need for the subject matter item. Even though the coefficients of correlation were statistically significant, the largest correlation value of .304 only explained about nine percent of the difference.

With the criterion of formal education being the most influential variable on how managers saw their educational needs for understanding subject matter items designed to enhance their management capabilities and with it also showing the most subject matter items with a significant linear relationship to this same variable, it was concluded that the variable of formal education would be a logical criterion on which to stratify educational programs for managers of agricultural cooperatives.

Many subject matter items also showed a significant linear relationship to the variable of volume of business managed (gross sales), but the differences were not of sufficient magnitude to cause this variable to be an influential criterion for determining the educational needs of managers of agricultural cooperatives.

Effective educational program development processes must take into account the educational needs of the clientele and the characteristics of the clientele as learners. The program development process for designing educational programs for managers of agricultural cooperatives is no exception.

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The acquisition of knowledge at an institution of higher learning does not produce an educated man. According to Chalmer Roy, Dean of the College of Sciences and Humanities, Iowa State University, "College prepares students to become educated. When students reach the point where they can learn without the faculty prodding them on, then they are truly prepared to go out into the world."

To all of the university men and women who have helped prepare me to become educated, I am greatly indebted and express my grateful thanks. And, to all of my associates and friends, both young and old, who have and continue to help me in "learning to live a life", I sincerely express my appreciation.

As I continue my lifelong career of being educated to live a life based on knowledge, I hope I will be able to pass on to others a philosophy of education for reality in living a life.

APPENDIX A. COVER LETTER FOR ORIGINAL QUESTIONNAIRE

Cooperative Extension Service
IOWA STATE UNIVERSITY
Ames, Iowa 50010

Administrative Offices
Curtiss Hall

December 14, 1970

Dear Sir:

Iowa State University has undertaken a project to study the educational activities and educational needs of agricultural cooperatives. In this project, we will be developing a nationwide inventory of all organizations and agencies which are presently involved in conducting educational programs relative to agricultural cooperatives.

The purpose of this study is to develop information helpful to organizations and agencies conducting educational programs and meetings for directors and management personnel of cooperatives. You can help us develop this information for managers by completing the enclosed questionnaire. Your answers to the questions are important to the success of the survey and, ultimately, to decisions that are made concerning future educational programs for cooperatives.

Although your questionnaire may appear long at first glance, you will find that it is easy to fill out because most of the questions only require a check mark (✔).

The information you provide will be held in strictest confidence. The anonymity of all respondents is assured. The data you provide will be used only for research purposes and will appear only in group summaries.

A similar questionnaire designed for board members has been sent to the President of your Board of Directors.

Please return the questionnaire by January 10, 1971 in the enclosed prepaid envelope.

With your cooperation, this survey can make a significant contribution to sounder decision-making regarding future educational programs for the management personnel of agricultural cooperatives.

Sincerely,

Lee R. Kolmer
Assistant Director

P.S. Please leave this cover letter attached when returning the questionnaire in the enclosed envelope.

LRK/mh
Enc.

APPENDIX B. ORIGINAL QUESTIONNAIRE

COOPERATIVE MANAGER AND DIRECTOR SURVEY

CONFIDENTIAL QUESTIONNAIRE NUMBER _____

PERSONAL PROFILE

1. Present position(s) (check all categories that apply to your present position(s))

Local Manager____	Local Director____	Regional Manager ____	Regional Director____

If presently both a manager and director, please fill out both of the following sections

If manager, complete this section

	Local	Regional
2. Number of years in present position as general manager?	____	____
3. Number of years as general manager of other cooperatives?	____	____
4. Total years of co-op senior management responsibilities? (Sum 2 & 3)	____	____

5. Number of years in senior management positions other than co-op management? ____

6. Total years of senior management responsibilities? (sum 4 & 5) ____

If director, complete this section

	Local	Regional
7. Number of years of service as a director in this cooperative?	____	____
8. Number of years of service as a director of other cooperatives?	____	____
9. Total years of co-op directorship responsibilities? (sum 7 & 8)	____	____
10. Number of years in present position as an officer of the board?	____	____
11. Number of years of previous service as an officer of the board?	____	____
12. Total years as an officer of the board? (sum 10 & 11)	____	____

13. Occupation _____
(write here)

14. Age (check one)

20 - 24 ____
25 - 29 ____
30 - 34 ____
35 - 39 ____
40 - 44 ____
45 - 49 ____
50 - 54 ____
55 - 59 ____
60 & over___

15. Formal educational level (check one)

____ Elementary 8 or less
____ High School
____ Vocational-technical school training
____ Attended College
____ Completed college with BA or BS
____ Graduate training
____ Other (specify) _____

16. Sex (check one) Male ____ Female ____

PAST EDUCATIONAL PROGRAMS ATTENDED

1. Please complete the following section for the educational programs and meetings you have attended during the past two years (1969 & 1970) which were three days or more in length.

   * For "WHY ATTENDED PROGRAM", use the following codes:
   (Select no more than 3 different code numbers for each program)

Code	Reason
1	To generally become a better informed person.
2	To prepare myself for a new job or occupation.
3	To improve myself in my present job or occupation.
4	To have an opportunity to visit with other managers and/or directors.
5	The program subject matter was of interest.
6	The program was held at a time of year when I could attend.
7	Was issued a directive to attend.
8	To improve my leadership to my cooperative as a director.
9	Because of the location of the program.
10	Opportunity to combine with a vacation.

PROGRAM TITLE OR SUBJECT	YEAR ATTENDED	PROGRAM SPONSOR	WHY ATTENDED PROGRAM* (see code above and circle appropriate number)
_____	_____	_____	1 2 3 4 5 6 7 8 9 10
_____	_____	_____	1 2 3 4 5 6 7 8 9 10
_____	_____	_____	1 2 3 4 5 6 7 8 9 10
_____	_____	_____	1 2 3 4 5 6 7 8 9 10
_____	_____	_____	1 2 3 4 5 6 7 8 9 10
_____	_____	_____	1 2 3 4 5 6 7 8 9 10

2. How many programs did you attend in 1969 and 1970 that were less than three days in length?

	1969	1970
1 to 2 days	____	____
½ day or less (including evening meetings). .	____	____

3. Please make any desired comments on the above programs which you have listed.

4. Approximately, how many educational programs were available for people in your position that you did not attend in the past two years?

YEAR	NUMBER OF PROGRAMS
1969	_____
1970	_____

In general, what were the major reasons why you did not attend these programs?

5. Briefly, in what program topics would you be most interested (most likely to attend)?

FUTURE EDUCATIONAL PROGRAMS

When future program topics are offered in line with your major educational interests:

1. What are the maximum number of miles you are willing to travel? (check one)

Less than 25	____	200 to 299	____
25 to 49	____	300 to 399	____
50 to 99	____	400 to 499	____
100 to 199	____	500 or over	____

2. What is the maximum length of time you would be willing to spend at each program (check one)

up to ½ day	____	3 days	____	more than 5 days	____
1 day	____	4 days	____		
2 days	____	5 days	____		

3. Which three months of the year do you find most convenient? (number the most convenient no. 1, the second most convenient no. 2, and the third no. 3.)

January	____	May	____	September	____	No	
February	____	June	____	October	____	Preference	____
March	____	July	____	November	____		
April	____	August	____	December	____		

4. Rank the weeks of the month 1, 2, 3 and 4 in the order of their convenience.

1st week	____	3rd week	____	No preference	____
2nd week	____	4th week	____		

5. What do you feel is a maximum registration fee per day to meet costs of program staff, materials, facilities, etc.? (meals and lodging not included) (check one)

Less than $5	____	$30 to $49	____
$5 to $9	____	$50 to $99	____
$10 to $19	____	100 & over	____
$20 to $29	____		

6. Where should the program be held (location)? (check one)

on college campus	____	special training centers	____
off college campus	____	other (specify)	____

7. What type of instruction do you prefer? (rank in order of preference with 1 being the most important)

Lecture	____	Case study	____	Other (please specify)	
Discussion	____	Field trip	____	____	____
Workshop	____	Video tape	____	Combinations	____

8. In your opinion, who can best carry out your training and educational programs? (check as many as appropriate)

__Local co-op	__State Cooperative organizations
__Regional co-ops	__Regional farm credit banks
__Outside consulting firms	__National cooperative organizations such
__County or area extension service	as; AIC, CLUSA, NRECA, CUNA.
__State extension service	__Federal agencies
__Community college	__Others ____
__Departments of State Government	__Jointly sponsored by several of the above.

9. As a manager or director, which of the following sources of information for new management ideas do you utilize?

USE	NOT USE	
		MASS MEDIA AND PUBLICATIONS
___	___	1. Radio and T.V.
___	___	2. Newspapers
___	___	3. Trade magazines
___	___	4. Farm magazines
___	___	5. Company publications
___	___	6. National cooperative organizations publications
___	___	7. University or government publications
___	___	8. Books and journals concerning management
___	___	9. Other (specify) ____
		EDUCATIONAL PROGRAMS AND MEETINGS SPONSORED OR CONDUCTED BY:
___	___	10. Commercial companies
___	___	11. Regional cooperatives
___	___	12. National cooperative organizations
___	___	13. State Cooperative Councils or committees
___	___	14. Extension service
___	___	15. Professional associations
___	___	16. Other (specify) ____
___	___	17. Several of these institutions and/or organizations (10 to 16)
		PERSONAL CONTACTS
___	___	18. Credit representatives
___	___	19. Manufacturer representatives and salesmen
___	___	20. Management consultants
___	___	21. University specialists
___	___	22. Managers of neighboring cooperatives
___	___	23. Other (specify) ____

Of the above sources of information (1 to 23), which three (3) do you find most helpful for new management ideas?

____, ____, ____ (use numbers)

DATA ON COOPERATIVE OF WHICH YOU ARE THE MANAGER

1. Kind of business function (check the most appropriate one)

Agricultural supply and marketing	____	Memorial society	____
Farm Credit	____	Housing	____
Credit Unions	____	Medical and Health	____
Consumer	____	Electric	____
Insurance	____	Fishery	____
Other: (specify)	____	Telephone	____

2. Patronage (fill in figures where appropriate)

   a. Direct membership cooperative, number of patrons. _____
   b. Federated membership, number of locals _____, and estimated number of patrons of these locals _____.

3. What was the approximate gross dollar sales volume reached by your cooperative in each of the past three fiscal years?

   1968 $_____ 1969 $_____ 1970 $_____

4. What was the approximate net savings of your cooperative in each of the past three fiscal years?

   1968 $_____ 1969 $_____ 1970 $_____

5. Date and State of Incorporation: _____ (Date) _____ (State)

6. List state or states in which you operate _____

7. Budget for Education and Training Programs

   a. How much money do you budget for conducting educational programs? $_____
   b. How much money do you budget for employee training programs? $_____

8. How many members of your staff devote the following portion of their time to planning and/or conducting educational and/or training programs?

   0 - 25% ____ 26% - 50% ____ 51% - 75% ____ 76% - 100% ____

9. Do you have volunteer workers, either elected or appointed, who devote a portion of their time to planning and/or conducting educational and/or training programs?

   NO ____ YES ____

   If "YES", how many volunteer workers devote the following portions of their time to planning and/or conducting educational and/or training programs?

   0 - 25% ____ 26% - 50% ____ 51% - 75% ____ 76% - 100% ____

10. Do you have volunteer groups, such as advisory councils? NO ____ YES ____

    If "YES", do you provide educational and training programs for them? NO ___ YES ___

11. What is your cooperative's board policy (time, money, etc.) on managers and directors attending educational meetings? If no policy, what has been past practice? WRITE HERE:

EDUCATIONAL NEEDS FOR MANAGERS AND BOARDS OF DIRECTORS

Please indicate how you see the educational needs of both the MANAGERS and BOARDS OF DIRECTORS of both LOCAL and REGIONAL cooperatives. Please check (✔) strong, moderate or none for each subject matter topic for both MANAGERS and BOARDS OF DIRECTORS of both LOCAL and REGIONAL cooperatives. If you feel some subject matter topics have been omitted, please write them in the spaces provided.

SUBJECT MATTER TOPICS	DEGREE OF EDUCATIONAL NEEDS											
	MANAGERS						BOARDS OF DIRECTORS					
	LOCAL COOPERATIVES			REGIONAL COOPERATIVES			LOCAL COOPERATIVES			REGIONAL COOPERATIVES		
	Strong	Moderate	None	Strong	Moderate	None	Strong	Moderate	None	Strong	Moderate	None
COOPERATIVE ORGANIZATION												
I. Business Organization												
1. Forms of business organization, including ownership, partnership, corporation and cooperatives												
2. Principles and theory of cooperatives												
3. Business coordination, including horizontal and vertical integration												
4. Coordination through federation												
5. Business diversification												
6. Methods of growth, including acquisition, merger and consolidation												
7. Organization of business operations and activity sequences												
8. Organization of personnel, including line and staff positions, organizational charts and assigning and delegating responsibilities												
9. Office procedures and techniques												
10. _____												
II. Legal Aspects												
1. Cooperative law, national and state												
2. Articles and by-laws												
3. Membership agreements												
4. Antitrust and business regulations												
5. Contracts and lawsuits												
6. Civil liabilities of firms and individuals												
7. Tax laws												
8. _____												

SUBJECT MATTER TOPICS (con't)	DEGREE OF EDUCATIONAL NEEDS											
	MANAGERS						BOARDS OF DIRECTORS					
	LOCAL COOPERATIVES			REGIONAL COOPERATIVES			LOCAL COOPERATIVES			REGIONAL COOPERATIVES		
	Strong	Moderate	None	Strong	Moderate	None	Strong	Moderate	None	Strong	Moderate	None
COOPERATIVE OPERATION												
I. Policy Development												
1. Finance policy, which includes determinations of equity and creditor, capital, revolving funds, rates of expansion or contraction, operating budgets and construction programs.												
2. Service policy, which includes the type and scope of services to be offered or provided to the membership.												
3. Pricing policy, which includes markup practices and quantity discounts.												
4. Credit extension policy, which includes the type and terms of credit extended, credit application procedures and collection methods												
5. Membership relations policy, such as newsletters and member grievances.												
6. Public relations policy, such as joining trade groups and co-op councils, working with youth groups and releasing information												
7. Employee relations policy, which includes salary and wage scales, incentive and training programs, promotions, fringe benefits and collective bargaining												
8. Internal operations policy, which includes the status and organization of the business and operating and technical records.												
9. Management development policy, which includes a program of seminars, courses and workshops for the managerial staff and directors.												
10. Affiliation policy, which includes the relationships between local and regional cooperatives.												
11. _____												
II. Business Management												
1. Principles of management (planning, organizing, directing, controlling and coordinating)												
2. Decision-making techniques												
3. Long and short-range planning procedures and techniques												
4. Principles of accounting and record keeping												

SUBJECT MATTER TOPICS (con't)	DEGREE OF EDUCATIONAL NEEDS											
	MANAGERS						BOARDS OF DIRECTORS					
	LOCAL COOPERATIVES			REGIONAL COOPERATIVES			LOCAL COOPERATIVES			REGIONAL COOPERATIVES		
	Strong	Moderate	None	Strong	Moderate	None	Strong	Moderate	None	Strong	Moderate	None
5. Cost accounting procedures and techniques												
6. Control information systems and techniques for purchasing control												
7. Control information systems and techniques for inventory control												
8. Control information systems and techniques for operations control												
9. Use of business machines, including computers and data processing systems												
10. External transportation management including commercial carriers												
11. Internal transportation management including least-cost routing and assignment in pick-up and delivery												
12. Interstate Commerce Commission regulations and rulings												
13. Tax management and timing												
14. Hedging												
15. _____												
III. Sales Management												
1. How to Analyze market position												
2. How to conduct surveys and survey techniques												
3. How to organize plan and forecast sales												
4. How to conduct sales training programs												
5. How to conduct advertising and sales promotion (product & firm)												
6. How to select wholesale outlets and sources												
7. How to identify & evaluate needed custom services												
8. _____												
IV. Communication												
1. Internal publications, including newsletters, newspapers and magazines												
2. Commercial mass media, including radio, TV, newspapers and magazines												
3. _____												

SUBJECT MATTER TOPICS (con't)	DEGREE OF EDUCATIONAL NEEDS											
	MANAGERS						BOARDS OF DIRECTORS					
	LOCAL COOPERATIVES			REGIONAL COOPERATIVES			LOCAL COOPERATIVES			REGIONAL COOPERATIVES		
	Strong	Moderate	None	Strong	Moderate	None	Strong	Moderate	None	Strong	Moderate	None
FINANCIAL MANAGEMENT												
I. Internal Financial Control												
1. Internal management reports - what is needed?												
2. Internal capital allocations, including working capital and operating budgets												
3. Financial statements (balance sheet, operating statement, cash flow charts) - their analysis and interpretation												
4. Short and intermediate term financing, including leasing												
5. Extension of credit to patrons (applications, terms, collections)												
6. Investments in other organizations & businesses												
7. _____												
II. Capital Structure Management												
1. External financing, including use of capital markets, bonds and stocks												
2. Internal financing, including patronage refunds, and revolving funds												
3. Capital budgeting and fixed asset management												
4. _____												
ENVIRONMENT												
I. Economic Trends and Outlook												
1. Agricultural trends and outlook												
2. General trends and outlook												
3. Forces and motivations affecting today's consumer												
4. Forces and motivations affecting today's farmer												
5. _____												
II. Legislative Climate												
1. Current legislative activity and issues												
2. Possible future legislative needs												
3. How to develop and influence legislation												
4. _____												

SUBJECT MATTER TOPICS (con't)	DEGREE OF EDUCATIONAL NEEDS											
	MANAGERS						BOARDS OF DIRECTORS					
	LOCAL COOPERATIVES			REGIONAL COOPERATIVES			LOCAL COOPERATIVES			REGIONAL COOPERATIVES		
	Strong	Moderate	None	Strong	Moderate	None	Strong	Moderate	None	Strong	Moderate	None
HUMAN BEHAVIOR												
I. Public Relations												
1. Advantages and disadvantages of belonging to trade associations and/or cooperative councils												
2. Customer relations procedures and techniques												
3. How to establish a role in community action or affairs												
4. How to develop tours and prepare exhibits												
5. How to develop publicity programs												
6. How to prepare and conduct educational programs on cooperative theory and principles for the general public												
7. How to prepare and conduct educational programs on cooperative theory and principles for public officials												
8. How to prepare and conduct special programs for selected audiences, such as youth and young adults												
9. _____												
II. Member Relations												
1. Member - management communication procedures and techniques												
2. Director - member communication procedures and techniques												
3. How to determine member needs												
4. How to analyze costs and benefits of member services												
5. How to earn member loyalty												
6. How to prepare and conduct educational programs on cooperative theory and principles for members												
7. _____												
III. Employee Relations												
1. Internal communication procedures and techniques, including employee meetings												
2. How to recruit and select employees												
3. How to prepare job analysis and description, including performance standards and appraisal techniques												
4. How to establish and evaluate commission, bonus and incentive plans												
5. How to develop wage & salary scales and promotion procedures												
6. How to prepare and conduct induction (beginning) training programs												

SUBJECT MATTER TOPICS (con't)	DEGREE OF EDUCATIONAL NEEDS											
	MANAGERS						BOARDS OF DIRECTORS					
	LOCAL COOPERATIVES			REGIONAL COOPERATIVES			LOCAL COOPERATIVES			REGIONAL COOPERATIVES		
	Strong	Moderate	None	Strong	Moderate	None	Strong	Moderate	None	Strong	Moderate	None
7. How to prepare and conduct in-service (supplemental) training programs												
8. How to prepare and conduct employee training programs on cooperative theory and principles												
9. How to handle employee grievances												
10. Collective bargaining procedures and techniques												
11. ___												
IV. Leadership Training												
1. Principles of leadership and motivation of people												
2. Board responsibilities, including role of the board and job description for directors												
3. New director training												
4. Selection of a manager												
5. Board - manager relations and communications												
6. Management team responsibilities												
7. ___												
TECHNICAL												
1. ___												
2. ___												
3. ___												

APPENDIX C. FOLLOW-UP LETTER FOR ORIGINAL QUESTIONNAIRE

Cooperative Extension Service
IOWA STATE UNIVERSITY
Ames, Iowa 50010

Administrative Offices
Curtiss Hall

February 8, 1971

R E M I N D E R

Dear Friend:

Recently, you received a questionnaire relative to your involvement in educational programs for agricultural cooperatives. This information is needed as a part of a nationwide study of educational programs and educational needs of cooperatives. As of today, we haven't received your questionnaire.

Please disregard this letter if your questionnaire is already in the mail. Otherwise, would you please return your questionnaire within the next 10 days so that we can start compiling this information.

If you have any questions concerning this questionnaire, please place a collect call to 515-294-7478 and ask for Mrs. Patricia Coffey or Mr. C. Dean Johnson.

Thank you for your assistance and cooperation.

Sincerely,

Lee R. Kolmer
Assistant Director

LRK:mh

APPENDIX D. COVER LETTER FOR "MINI" QUESTIONNAIRE

Cooperative Extension Service
IOWA STATE UNIVERSITY
Ames, Iowa 50010

Administrative Offices
Curtiss Hall

March 15, 1971

Dear Co-op Manager:

Last winter we missed receiving your completed questionnaire on educational needs for managers of agricultural cooperatives. Because your answers to the questions are important to the success of the project and, ultimately, to decisions that are made concerning future educational programs, we would like for you to complete the enclosed "mini" questionnaire.

The "mini" questionnaire is relatively short and easy to complete. In most cases, only a check mark (✔) is required.

The information you provide will be held in strictest confidence. The anonymity of all respondents is assured. The data will be used only for research purposes and will appear only in group summaries.

We would appreciate your returning the "mini" questionnaire by April 1st. To make a prompt reply easy for you, we have included a self-addressed, postage-paid envelope for the return of your completed questionnaire.

Thank you.

Sincerely yours,

C. Dean Johnson
Extension Studies Assistant

P.S. Please leave this cover letter attached when returning the "mini" questionnaire in the enclosed envelope.

CDJ:mh

Enc.

APPENDIX E. "MINI" QUESTIONNAIRE

COOPERATIVE MANAGER SURVEY

CONFIDENTIAL

QUESTIONNAIRE NUMBER _____

PERSONAL PROFILE

1. Number of years in present position as general manager? _____

2. Number of years as general manager of other cooperatives? _____

3. Total years of co-op senior management responsibilities? (Sum 2 & 3) _____

4. Number of years in senior management positions other than co-op management? _____

5. Total years of senior management responsibilities? (Sum 4 & 5) _____

6. Age (check one)

   20 - 24 ____
   25 - 29 ____
   30 - 34 ____
   35 - 39 ____
   40 - 44 ____
   45 - 49 ____
   50 - 54 ____
   55 - 59 ____
   60 & Over ____

7. Formal educational level (check one)

   ____ Elementary 8 or less
   ____ High School
   ____ Vocational-technical school training
   ____ Attended College
   ____ Completed college with BA or BS
   ____ Graduate training
   ____ Other (specify) _____

DATA ON COOPERATIVE OF WHICH YOU ARE THE MANAGER

1. What was the approximate gross dollar sales volume reached by your cooperative in the following years:

   1969 $_____

   1970 $_____

EDUCATIONAL NEEDS FOR MANAGERS

Please indicate how you see the educational needs for MANAGERS of LOCAL cooperatives. Please check (✓) strong, moderate or none for each subject matter topic.

SUBJECT MATTER TOPICS	Educational Need		
	Strong	Moderate	None
COOPERATIVE ORGANIZATION			
I. Business Organization			
1. Forms of business organization, including ownership, partnership, corporation and cooperatives			
2. Principles and theory of cooperatives			
3. Business coordination, including horizontal and vertical integration			
4. Coordination through federation			
5. Business diversification			
6. Methods of growth, including acquisition, merger and consolidation			
7. Organization of business operations and activity sequences			
8. Organization of personnel, including line and staff positions, organizational charts and assigning and delegating responsibilities			
9. Office procedures and techniques			
II. Legal Aspects			
1. Cooperative law, national and state			
2. Articles and by-laws			
3. Membership Agreements			
4. Antitrust and business regulations			
5. Contracts and lawsuits			
6. Civil Liabilities of firms and individuals			
7. Tax laws			
COOPERATIVE OPERATION			
I. Policy Development			
1. Finance policy, which includes determination of equity and creditor capital, revolving funds, rates of expansion or contraction, operating budgets and construction programs.			
2. Service policy, which includes the type and scope of services to be offered or provided to the membership.			
3. Pricing policy, which includes markup practices and quantity discounts.			
4. Credit extension policy, which includes the type and terms of credit extended, credit application procedures and collection methods			
5. Membership relations policy, such as newsletters and member grievances			
6. Public relations policy, such as joining trade groups and co-op councils, working with youth groups and releasing information			

SUBJECT MATTER TOPICS (con't)	Educational Need		
	Strong	Moderate	None
7. Employee relations policy, which includes salary and wage scales, incentive and training programs, promotions, fringe benefits and collective bargaining			
8. Internal operations policy, which includes the status and organization of the business and operating and technical records			
9. Management development policy, which includes a program of seminars, courses and workshops for the managerial staff and directors			
10. Affiliation policy, which includes the relationship between local and regional cooperatives			
II. Business Management			
1. Principles of management (planning, organizing, directing, controlling and coordinating)			
2. Decision-making techniques			
3. Long and short-range planning procedures and techniques			
4. Principles of accounting and record keeping			
5. Cost accounting procedures and techniques			
6. Control information systems and techniques for purchasing control			
7. Control information systems and techniques for inventory control			
8. Control information systems and techniques for operations control			
9. Use of business machines, including computers and data processing systems			
10. External transportation management including commercial carriers			
11. Internal transportation management including least-cost routing and assignment in pick-up and delivery			
12. Interstate Commerce Commission regulations and rulings			
13. Tax management and timing			
14. Hedging			
III. Sales Management			
1. How to analyze market position			
2. How to conduct surveys and survey techniques			
3. How to organize, plan and forecast sales			
4. How to conduct sales training programs			
5. How to conduct advertising and sales promotion (product & firm)			
6. How to select wholesale outlets and sources			
7. How to identify & evaluate needed custom services			
IV. Communication			
1. Internal publications, including newsletters, newspapers and magazines			
2. Commercial mass media, including radio, TV, newspapers and magazines			

SUBJECT MATTER TOPICS (con't)	Educational Need		
	Strong	Moderate	None
FINANCIAL MANAGEMENT			
I. Internal Financial Control			
1. Internal management reports - what is needed?			
2. Internal capital allocations, including working capital and operating budgets			
3. Financial statements (balance sheet, operating statement, cash flow charts) - their analysis and interpretation			
4. Short and intermediate term financing, including leasing			
5. Extension of credit to patrons (applications, terms, collections)			
6. Investments in other organizations & businesses			
II. Capital Structure Management			
1. External financing, including use of capital markets, bonds and stocks			
2. Internal financing, including patronage refunds, and revolving funds			
3. Capital budgeting and fixed asset management			
ENVIRONMENT			
I. Economic Trends and Outlook			
1. Agricultural trends and outlook			
2. General trends and outlook			
3. Forces and motivations affecting today's consumer			
4. Forces and motivations affecting today's farmer			
II. Legislative Climate			
1. Current legislative activity and issues			
2. Possible future legislative needs			
3. How to develop and influence legislation			
HUMAN BEHAVIOR			
I. Public Relations			
1. Advantages and disadvantages of belonging to trade associations and/or cooperative councils			
2. Customer relations procedures and techniques			
3. How to establish a role in community action or affairs			
4. How to develop tours and prepare exhibits			
5. How to develop publicity programs			
6. How to prepare and conduct educational programs on cooperative theory and principles for the general public			
7. How to prepare and conduct educational programs on cooperative theory and principles for public officials			
8. How to prepare and conduct special programs for selected audiences, such as youth and young adults			
II. Member relations			
1. Member - management communication procedures and techniques			
2. Director - member communication procedures and techniques			
3. How to determine member needs			
4. How to analyze costs and benefits of member services			
5. How to earn member loyalty			
6. How to prepare and conduct educational programs on cooperative theory and principles for members			

SUBJECT MATTER TOPICS (con't)	Educational Need		
	Strong	Moderate	None
III. Employee Relations			
1. Internal communication procedures and techniques, including employee meetings			
2. How to recruit and select employees			
3. How to prepare job analysis and description, including performance standards and appraisal techniques			
4. How to establish and evaluate commission, bonus and incentive plans			
5. How to develop wage & salary scales and promotion procedures			
6. How to prepare and conduct induction (beginning) training programs			
7. How to prepare and conduct in-service (supplemental) training programs			
8. How to prepare and conduct employee training programs on cooperative theory and principles			
9. How to handle employee grievances			
10. Collective bargaining procedures and techniques			
IV. Leadership Training			
1. Principles of leadership and motivation of people			
2. Board responsibilities, including role of the board and job description for directors			
3. New director training			
4. Selection of a manager			
5. Board - manager relations and communications			
6. Management team responsibilities			

PLEASE RETURN THE QUESTIONNAIRE IN THE POSTAGE PAID ENVELOPE. THANK YOU FOR YOUR COOPERATION.

APPENDIX F. FOLLOW-UP LETTER FOR "MINI" QUESTIONNAIRE

Cooperative Extension Service
IOWA STATE UNIVERSITY
Ames, Iowa 50010

Administrative Offices
Curtiss Hall

April 1, 1971

Dear Co-op Manager:

Help! HELP! Recently, you received a "mini" questionnaire relative to educational needs for managers of agricultural cooperatives. As of today, we haven't received your completed questionnaire. This information is needed as a part of a study on educational needs for managers of agricultural cooperatives.

Would you please return your questionnaire within the next 5 days so that we can start compiling this information. If your questionnaire is already in the mail, please disregard this letter.

Thank you for your assistance and cooperation.

Sincerely,

C. Dean Johnson
Extension Studies Assistant

CDJ/dj

APPENDIX G. ADDITIONAL TABLES

Table 68. Mean scores for individual subject matter items

Subject matter items	Mean score
COOPERATIVE ORGANIZATION	
I. Business Organization	
1. Forms of business organization, including ownership, partnership, corporation and cooperatives	3.49
2. Principles and theory of cooperatives	3.90
3. Business coordination, including horizontal and vertical integration	3.37
4. Coordination through federation	2.91
5. Business diversification	3.64
6. Methods of growth, including acquisition, merger and consolidation	3.84
7. Organization of business operations and activity sequences	3.77
8. Organization of personnel, including line and staff positions, organizational charts and assigning and delegating responsibilities	3.98
9. Office procedures and techniques	3.81
II. Legal Aspects	
1. Cooperative law, national and state	3.91
2. Articles and by-laws	3.81
3. Membership Agreements	3.49
4. Antitrust and business regulations	3.37
5. Contracts and lawsuits	3.54
6. Civil liabilities of firms and individuals	3.53
7. Tax laws	3.98
COOPERATIVE OPERATION	
I. Policy Development	
1. Finance policy, which includes determination of equity and creditor capital, revolving funds, rates of expansion or contraction, operating budgets and construction programs.	4.24
2. Service policy, which includes the type and scope of services to be offered or provided to the membership.	3.79
3. Pricing policy, which includes markup practices and quantity discounts.	3.80

Table 68. (Continued)

Subject matter items	Mean score
4. Credit extension policy, which includes the type and terms of credit extended, credit application procedures and collection methods	4.24
5. Membership relations policy, such as newsletters and member grievances	3.50
6. Public relations policy, such as joining trade groups and co-op councils, working with youth groups and releasing information	3.57
7. Employee relations policy, which includes salary and wage scales, incentive and training programs, promotions, fringe benefits and collective bargaining	4.05
8. Internal operations policy, which includes the status and organization of the business and operating and technical records	3.62
9. Management development policy, which includes a program of seminars, courses and workshops for the managerial staff and directors	3.86
10. Affiliation policy, which includes the relationship between local and regional cooperatives	3.46
II. Business Management	
1. Principles of management (planning, organizing, directing, controlling and coordinating)	4.17
2. Decision-making techniques	3.92
3. Long and short-range planning procedures and techniques	3.93
4. Principles of accounting and record keeping	3.83
5. Cost accounting procedures and techniques	3.82
6. Control information systems and techniques for purchasing control	3.53
7. Control information systems and techniques for inventory control	3.63
8. Control information systems and techniques for operations control	3.55
9. Use of business machines, including computers and data processing systems	3.16
10. External transportation management including commercial carriers	2.84

Table 68. (Continued)

Subject matter items	Mean score
11. Internal transportation management including least-cost routing and assignment in pick-up and delivery	3.03
12. Interstate Commerce Commission regulations and rulings	3.09
13. Tax management and timing	3.41
14. Hedging	3.56
III. Sales Management	
1. How to analyze market position	3.99
2. How to conduct surveys and survey techniques	3.48
3. How to organize, plan and forecast sales	3.81
4. How to conduct sales training programs	3.56
5. How to conduct advertising and sales promotion (product and firm)	3.45
6. How to select wholesale outlets and sources	3.31
7. How to identify and evaluate needed custom services	3.70
IV. Communication	
1. Internal publications, including newsletters, newspapers and magazines	3.22
2. Commercial mass media, including radio, TV, newspapers and magazines	2.91
FINANCIAL MANAGEMENT	
I. Internal Financial Control	
1. Internal management reports - what is needed?	3.88
2. Internal capital allocations, including working capital and operating budgets	4.13
3. Financial statements (balance sheet, operating statement, cash flow charts) - their analysis and interpretation	4.13
4. Short and intermediate term financing, including leasing	3.83
5. Extension of credit to patrons (applications, terms, collections)	4.12
6. Investments in other organizations and businesses	3.38

Table 68. (Continued)

Subject matter items	Mean score
II. Capital Structure Management	
1. External financing, including use of capital markets, bonds and stocks	3.02
2. Internal financing, including patronage refunds, and revolving funds	4.08
3. Capital budgeting and fixed asset management	3.91
ENVIRONMENT	
I. Economic Trends and Outlook	
1. Agricultural trends and outlook	3.71
2. General trends and outlook	3.52
3. Forces and motivations affecting today's consumer	3.52
4. Forces and motivations affecting today's farmer	3.84
II. Legislative Climate	
1. Current legislative activity and issues	3.38
2. Possible future legislative needs	3.38
3. How to develop and influence legislation	3.34
HUMAN BEHAVIOR	
I. Public Relations	
1. Advantages and disadvantages of belonging to trade associations and/or cooperative councils	3.48
2. Customer relations procedures and techniques	3.91
3. How to establish a role in community action or affairs	3.63
4. How to develop tours and prepare exhibits	2.97
5. How to develop publicity programs	3.22
6. How to prepare and conduct educational programs on cooperative theory and principles for the general public	3.59
7. How to prepare and conduct educational programs on cooperative theory and principles for the public officials	3.42
8. How to prepare and conduct special programs for selected audiences, such as youth and young adults	3.70

Table 68. (Continued)

Subject matter items	Mean score
II. Member Relations	
1. Member - management communication procedures and techniques	3.94
2. Director - member communication procedures and techniques	3.94
3. How to determine member needs	3.83
4. How to analyze costs and benefits of member services	3.92
5. How to earn member loyalty	4.16
6. How to prepare and conduct educational programs on cooperative theory and principles for members	3.80
III. Employee Relations	
1. Internal communication procedures and techniques, including employee meetings	3.99
2. How to recruit and select employees	4.24
3. How to prepare job analysis and description, including performance standards and appraisal techniques	3.80
4. How to establish and evaluate commission, bonus and incentive plans	3.87
5. How to develop wage and salary scales and promotion procedures	3.99
6. How to prepare and conduct induction (beginning) training programs	3.80
7. How to prepare and conduct in-service (supplemental) training programs	3.57
8. How to prepare and conduct employee training programs on cooperative theory and principles	3.68
9. How to handle employee grievances	4.01
10. Collective bargaining procedures and techniques	3.38
IV. Leadership Training	
1. Principles of leadership and motivation of people	4.06
2. Board responsibilities, including role of the board and job description for directors	4.05
3. New director training	3.82
4. Selection of a manager	3.81
5. Board - manager relations and communications	4.16
6. Management team responsibilities	4.16

Table 69. Level of formal education by age

Age	Education									
	Elem. 8 or less		High school		Vocational-Tech.		Attended College		Completed College	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
20 - 34	0	0.00	13	15.9	2	20.0	5	18.6	2	20.0
35 - 44	2	14.3	24	29.3	2	20.0	6	22.2	4	40.0
45 - 54	7	50.0	29	35.3	4	40.0	7	25.9	3	30.0
55 and over	5	35.7	16	19.5	2	20.0	9	33.3	1	10.0
Total	14	100.0	82	100.0	10	100.0	27	100.0	10	100.0

Table 70. Level of formal education by years of experience

Experience	Education									
	Elem. 8 or less		High school		Vocational-Tech.		Attended college		Completed college	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
3 or less	0	00.0	16	19.5	1	10.0	8	29.6	2	20.0
4 - 8	6	42.9	27	32.9	3	30.0	3	11.1	3	30.0
9 - 13	0	00.0	14	17.1	1	10.0	4	14.9	2	20.0
14 - 19	3	21.4	6	7.3	4	40.0	3	11.1	3	30.0
20 or more	5	35.7	19	23.2	1	10.0	9	33.3	0	00.0
Total	14	100.0	82	100.0	10	100.0	27	100.0	10	100.0

Table 71. Level of formal education by gross sales of the cooperative in 1970

Gross sales	Education									
	Elem. 8 or less		High school		Vocational-Tech.		Attended college		Completed college	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
$ 500,000 or less	6	42.9	16	19.5	1	10.0	4	14.9	0	00.0
500,001-1,000,000	3	21.4	26	31.7	3	30.0	6	22.2	1	10.0
1,000,001-1,500,000	3	21.4	13	15.9	2	20.0	3	11.1	1	10.0
1,500,001-3,000,000	2	14.3	17	20.7	2	20.0	7	25.9	2	20.0
3,000,001 or more	0	00.0	10	12.2	2	20.0	7	25.9	6	60.0
Total	14	100.0	82	100.0	10	100.0	27	100.0	10	100.0