The objectives of the manager and board of directors of local cooperatives and their impact on the behavior of the firm

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THE OBJECTIVES OF THE MANAGER AND BOARD OF DIRECTORS OF LOCAL COOPERATIVES AND THEIR IMPACT ON THE BEHAVIOR OF THE FIRM

by

Bernard Oliver McCabe

A Thesis Submitted to the Graduate Faculty in Partial Fulfillment of The Requirements for the Degree of

MASTER OF SCIENCE

Major Subject: Agricultural Economics

Approved:

Signatures have been redacted for privacy

Iowa State University Of Science and Technology Ames, Iowa

1966
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INTRODUCTION AND REVIEW OF LITERATURE

In a study of Profit, Growth and Sales Maximization, Williamson (12) suggests that his most general conclusion is "that in all cases except where profitability is at best the minimum sum necessary to prevent take-over, the policies the firm pursue will depend on the form of its objectives. Profit, growth and sales maximizers will act differently." Mr. Williamson's conclusion is by no means as trivial as it appears at first sight and indeed is a partial answer to questions that are being raised by many economists in both the theoretical and applied branches of economic research. These questions may be stated somewhat generally in the following manner: (1) What are the goals and objectives pursued at the different levels of management, and how are they formulated? (2) What effect has the goals and objectives of the management on the behavior of the firm?

The classical economists got over such problems by making the plausible assumption that the only objective of management was profit maximization. With profit maximization as the motivating force and the assumption of the rational or "economic" man, the classical economists were able to develop a comparatively simple model of the theory of the firm.

At the time when classical economic theory was formulated the profit maximization assumption may have had more validity than can be claimed for it at the present stage of economic development. The classical
economists were dealing with a predominance of privately owned firms where management and ownership were usually embodied in the same individual and to the classical economist this was the entrepreneur. The entrepreneur assumed the risk and received in return the residual share of the business after the other three factors of production had received their remuneration. That the entrepreneur would be motivated by self interest and seek to maximize his own income seemed plausible, hence the profit maximization assumption.

At the present stage in economic development the conditions under which the profit maximization assumption was hypothesized no longer hold but nevertheless it still lives on. With the increase in size and complexity of the modern business enterprise management and ownership became divorced. Rarely is the financial resources and the business acumen necessary to run a large and complex enterprise found in the same individual. More and more, businesses are owned by a large number of joint owners whose main objectives are to receive a stable or increasing income from their investment and be assured that their capital is reasonably safe. They rarely take an interest in the operation of the business so long as these conditions are met. The management function is performed by salaried personnel. That the management at the various levels will be motivated to maximize the profits of the firm under these conditions is no longer as acceptable and it is not surprising that the profit maximization assumption has been criticized in recent economic literature.
A number of alternative hypotheses has been suggested to explain the firm behavior, and it is evident that while there is agreement that the profit maximization assumption is no longer acceptable, there is no general agreement as to what motivates the different levels of management. This study may be looked upon as an attempt to test some of these alternative hypotheses.

The alternative assumptions to profit maximization may be grouped generally into two classifications, although many writers specify the conditions under which they expect their assumptions to hold. This is not surprising when one thinks of the complexity of the modern cooperation as opposed to the privately owned small firm, and perhaps there is no single alternative to the profit maximization assumption. The solution may lie in better understanding of the basic motivational forces in man and their interaction with the environment in which the individual finds himself.

The first broad group suggests, that while profit is an important goal of the firm, it is not maximum profit that is sought but some subjective level of "satisfactory" profit. What constitutes a "satisfactory" profit has been variously defined as that level which keeps the shareholders happy to some subjective level set by the management. In general what constitutes a satisfactory level has been loosely defined. Of this group the best known is March and Simon's (7) satisficing hypothesis, "Most human decision-making, whether individual or organizational, is concerned with the discovery and selection of satisfactory
alternatives; only in exceptional cases is it concerned with the discovery and selection of optimal alternatives". Into this general category, we put a closely related group who suggest that profit is sought up to some "satisfactory" level and once this is assured other goals are sought. Baumol (3) suggests that sales revenue is an end in itself which is above profits, at least in oligopolistic situations and hypothesizes the goal of the firm to be "sales maximization subject to a minimum profit constraint". Anthony (1) suggests that once a satisfactory profit level is reached then other ends are pursued, such as sales growth, or service.

The second group is that represented by Cyert and March (4) who argue that a business is composed of a coalition of individuals with different goals and at best there is only agreement on rather ambiguous goals. Some empirical content was given to this assumption in a study by Nelson (9) of Indiana farmer cooperatives when he found that none of the cooperatives had a formalized set of goals. Liebenstein (6) suggests that survival of the firm is the only necessary goal and that firms react to given situations according to some rough rules of thumb; governing satisfactory behavior. Shubik (11) suggests that profit is only one of a large number of goals pursued by management. "As complexity grows, the objective function becomes subjective and less quantitative as multiple goals, social and political goals and uncertainty and ill perception are taken into account". While writing specifically for large managerial firms, the hypothesis put forward by Monson and Downs (8) also fit into this category. They claim "managers maximize their
own self interest by maximizing their discounted incomes over the course of their entire lives. This includes monetary and non-monetary elements.

As can be seen from this brief review, there is little agreement as to what the goals of the firm are, if indeed there are "goals of the firm" as opposed to the personal goals of the individuals at different levels of management. It would appear that, especially in the larger firms, the "goals of the firm" are being looked upon more as constraints within which the management must work, rather than an overall objective function. Little empirical evidence is available to show what effect the goals of the management (or lack of goals) have on the success of the firm, although there is some evidence that an overall policy which the firm pursues lends itself to the best chances of success. As Phillips (10) says in speaking of management in local cooperatives, "Another prerequisite to effective business leadership is the trait of knowing and communicating the objectives, goals and targets of the business. A clear-cut long-range plan -- is extremely useful in this connection. Without well defined objectives of what he wants the business to accomplish, no manager can achieve his full productivity. These objectives must first be clear and without conflict in the manager's own mind. And they must be stated without ambiguity so that subordinates understand them fully."
QUESTIONNAIRE DEVELOPMENT

From a review of the literature and a number of informal discussions with cooperative managers and board of director members, a list of 15 cooperative goals was compiled. The list was as comprehensive as possible, so as to leave out no goal which was important to the business, yet goals which were looked upon as being the same goal by cooperative personnel were treated as the same goal. These goals were then defined so as to reduce ambiguity and worded so as to reduce as far as possible the chances of biasing the results by the use of words or phrases which have a high socially desirable or undesirable element. A panel of 10 judges were then asked to rate the goals on a social desirability scale and goals showing up very high or very low on this scale were reworded to bring them closer to the neutral point. The 15 goals were then put in a paired comparison format and a pretest run using 5 cooperatives. The questionnaire was given to both the manager and the president of the board of directors in each case. As a result of the pretest, three of the fifteen goals originally listed were omitted from the final questionnaire. One of the goals was universally rejected by all ten respondents as not being a goal which they held. Three of the remaining goals were very highly correlated and were incorporated as one goal in the final list. The remaining twelve goals with their definitions are as follows.

Goal 1. Increasing the area served by the cooperative

The goal is to take actions which lead to an increase in the area
served by the cooperative.

Goal 2. **Maximizing the income of the members**

The goal is to operate the cooperative to enable the members to earn maximum income from their farming operations.

Goal 3. **Increasing the sales volume of the cooperative**

The goal is to increase the amount of business done by the cooperative as rapidly as possible as long as a satisfactory level of savings is achieved.

Goal 4. **To provide products and services at lowest prices**

The goal is to provide products and services to members at lowest prices consistent with practical business methods.

Goal 5. **To be a business leader in the area**

The goal is to obtain a strong competitive position in order to be able to influence the general price level in the area and be among the first in offering new products and services.

Goal 6. **To serve our members by providing a policing type of competition to other agribusiness firms**

The primary purpose of our cooperative is to give our members an alternative place to buy supplies and sell their products.

Goal 7. **To maintain the present policies and practices and avoid risks in the operation of the cooperative**

The goal is to adhere to present tried and true policies and practices rather than risk changes which may lead to losses.

Goal 8. **Maximum operational efficiency of the cooperative**
The goal is to ensure that the day to day operations of the cooperative are carried out at the lowest possible cost per unit of merchandise handled.

Goal 9. To build a good public image for the cooperative

The goal is to operate the cooperative and take part in community activities in such a way as to build a good name for the cooperative.

Goal 10. To make a satisfactory net savings each year

The goal is to make an annual net savings which is considered acceptable by the manager, board of directors and members.

Goal 11. To expand and update the facilities of the cooperative

The goal is to make decisions and take actions which lead to a steady expansion of the cooperative facilities.

Goal 12. Maximum net savings of the cooperative

The goal is to make decisions and take actions which are calculated to lead to the highest possible net savings of the cooperative, in accordance with good business practices.

Each goal was paired with every other goal giving

\[
\frac{n(n-1)}{2} = 66
\]

pairs. The order of appearance of pairs, and goals within pairs, was randomized by drawing the 66 pairs from a box and flipping a coin to determine which goal came first.

The general outline of the questionnaire followed the usual paired comparison format modified by the inclusion of a certainty scale.
For the purposes of this method each of the goals were put in the form of a statement by a hypothetical third party, and instead of checking which goal statement he preferred, each respondent was asked to rate on a scale from 1 to 99 how certain he was that the statement presented first in the pair described a goal of his more closely than the statement presented second. For the instructions given the respondents and a copy of the questionnaire, see Appendix A.

Statement of the Problem

As can be inferred from the introduction, the problem consists of a lack of knowledge as to: (1) What are the goals and objectives at the various levels of management, (2) What effect the goals and objectives of management at the various levels have on the efficiency and success of the firm.

With regard to the first part of the problem, those engaged in economic research are no longer happy to include the profit maximization assumption as a basic axiom of their models, yet there is no satisfactory alternative. There are a number of alternative hypotheses but none tested sufficiently that the range of their usefulness has been clearly demonstrated. It is little use to substitute one assumption for another, unless we are sure that it will bring us closer to an understanding of the economic nature of man.

The second part of the problem follows from the first. Little is known at present as to the effect of the goals and objectives at the various levels of management have on the behavior of the firm, yet the
answer to this question is of critical importance if management is to attain its full productive potential, and if management training programs are to have their full impact.

The importance of the problem can be visualized if we consider the role of management at the various levels. Management is one of the major productive resources and any inefficiencies in management adversely affects the whole economy. Phillips (10) defines the functions of management as falling into five distinct areas: These areas in which managers must be skilled are:

- Planning
- Organizing
- Directing
- Coordinating
- Controlling.

These five areas cover the whole of the management function from long range policy setting to the smallest detail in the day to day operation of the business. For the purpose of this study we will use the dichotomous breakdown of management used by Baumel and Fuller (2). This consists of a breakdown into two distinct levels. "The first level is strategic management. The responsibilities of strategic management include decision making with respect to the combination and levels of inputs and outputs, plant location, financial structure and basic operating policies. These are long-run decisions and determine the profit potential of the firm. The strategic level of management is normally performed by the owners on the board of directors.

The second level of management is operational management. The operational manager is responsible for operating the business from day
to day and must operate within the restrictions imposed by strategic management. In the short run, he must take, as given, certain assets of the firm, the type of organization, the financial structure, the labor resources, basic operating policies and the market situation. Thus, the decision making responsibilities of the operational manager consist primarily of recurring or tactical decisions."

In this study therefore, we look at the goals and objectives of the firm at the board of directors level and at the level of operational management, and try to answer the two questions asked at the beginning of this section.

Objectives of the Study

All of the answers to the problem stated in the previous section will not be answered in one or a few studies, and it is as well to state just what it is hoped this study will achieve.

The principal purpose of this study is to describe the present goals and objectives pursued by the manager and the president of the board of directors of local agribusiness firms in Iowa. The goals and objectives of the president of the board of directors are assumed to be representative of all members of the board. From the methods used in the development and administration of the questionnaire and the analysis performed it is also hoped to determine if goals can be scaled on some continuum.

The second objective of this study is to determine the extent of the competitiveness and complimentarity of the selected goals and objectives of different levels of management. The degree to which the
manager and the board of directors agree on the goals pursued by the firm may be related to the success of the cooperative. A one to one relationship between the goals pursued by the manager and those pursued by the board of directors may not be the best strategy for success of the firm due to the different functions which these two levels of management perform. It is hoped to determine the strategy calculated to lead to the economic success of local agribusiness firms.

Thirdly, it is hoped that the relationship between the goals and objectives of the manager and the president of the board and the economic success of the cooperative may be determined. Indices of economic success based on the past actions of the cooperative are calculated. It is assumed that goals and objectives are invariant over the short time span covered by the study.

Cooperatives were chosen for this study for a number of reasons, the chief of which were: One, the structure of cooperatives, consisting of a board of directors and a salaried manager, is the type of firm structure in which it is believed the management is least likely to be motivated by profit maximization, and there is need for information on the goals of firms with this type of structure. Two, cooperatives handle a large proportion of the inputs used in agriculture and also are engaged in the processing and marketing of agricultural products. The efficiency of the cooperative is, therefore, linked with the efficiency of farming and agricultural income which is of great interest in agricultural economic research at present. If, as is hypothesized, the goals and objectives of the management are related to the economic success
of the business, information on this relationship will be of benefit in management training programs directed both at the salaried manager and the board of directors, and will increase the efficiency of the local agribusiness firm and therefore the economic income of the farmer. Three, cooperatives provided a population from which a large sample of comparable businesses were available for study.

Sampling Procedure

The population for this study consisted of the local agricultural cooperatives in the state of Iowa with the following three restrictions. First, the cooperative must be engaged in the handling of more than one line of merchandise and must have a minimum dollar sales of fertilizer of $10,000 in 1965. This restriction means that cooperatives specializing in one product, such as dairy cooperatives and oil cooperatives were not included. Secondly, the cooperatives must be all independently controlled and operated by a local board of directors and a manager, and not a branch of a larger cooperative controlled from the main office. Third, the manager must have held his present position for at least nine months of the 1964 fiscal year. This third restriction was established because it was felt that this was the minimum amount of time necessary for the influence of the manager to show up in the financial results of the business.

The sample of one hundred cooperatives was selected at random from this population. Before taking the questionnaire to the field it was found that two of the cooperatives were unavailable for the project and
a third did not fulfill condition three but was overlooked in the initial screening. The next three cooperatives chosen in the randomization procedure were substituted for the three which were eliminated.
ANALYSIS

The method used in this study is a variation on the paired comparison method. The method was chosen because it was felt that the distance between goals on the individual's psychological continuum, or the relative intensity with which goals are held, as well as the ordinal ranking of the goals, influences behavior. If the assumptions involved in the model hold, then it is possible to obtain some measure beyond a purely ordinal ranking of the goals.

The model for comparative judgments is as follows.

Let $Y_{ijk}$ be the response of person $i$ to goal $j$ at time $k$. The assumed model is

$$Y_{ijk} = U + \alpha_i + \beta_j + \gamma_k + (\alpha_j \beta_i)_{ij} + (\alpha_i \gamma_k)_{ik} + e_{ijk}$$

where:

- $X_{ijk} = f(Y_{ijk})$
- $e_{ijk} = N(0, \sigma^2_e)$
- $\alpha_i \sim N(0, \sigma^2_\alpha)$

and

- $\alpha_i$ is the portion of the response due to person $i$,
- $\beta_j$ is the portion of the response due to goal $j$,
- $\gamma_k$ is the portion of the response due to time $k$,
- $(\alpha_j \beta_i)_{ij}$ is the portion of the response due to person-goal interaction,
- $(\alpha_i \gamma_k)_{ik}$ is the portion of the response due to person-time interaction,
- $e_{ijk}$ is the portion of the response due to error.
Let $j'$ be any other goal which is paired with $j$ and presented to person $i$; then,

$$x_{ijk} - x_{ij'k} = \beta_j - \beta_{j'} + (\epsilon \beta)_{ij} - (\epsilon \beta)_{ij'} + e_{ijk} - e_{ij'k}.$$  

Since the paired goals are presented simultaneously, $k$, is not a factor, thus

$$x_{ij} - x_{ij'} = \beta_j - \beta_{j'} + (\epsilon \beta)_{ij} - (\epsilon \beta)_{ij'} + e_{ij} - e_{ij'},$$

or rewriting

$$d_{ij} = \delta_j + \delta_{ij} + E_{ij}.$$  

Each response therefore, includes a portion of the variation due to goal differences alone, a portion due to the difference in the reaction of person $i$ to both goals and a portion due to the error differences.

Assume $j'$ constant so that each $j$ is compared with $j'$, then the variation due to the various sources is as follows.

<table>
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<th>Source</th>
<th>d.f.</th>
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<td>Goal pairs</td>
<td>$n' - 1$</td>
<td>$n' \sigma^2_p + \sigma^2_{px} + \sigma^2_{sp}$</td>
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<tr>
<td>Person x goal pairs</td>
<td>$Nn' - N - n' + 1$</td>
<td>$n' \sigma^2_p + \sigma^2_{px} + \sigma^2_{sp}$</td>
</tr>
<tr>
<td>Error</td>
<td>$N - 1$</td>
<td>$n' \sigma^2_p$</td>
</tr>
</tbody>
</table>

The model is then expanded to let both $j$ and $j'$ vary and each goal is paired with every other goal and each respondent replies to

$$\frac{n(n-1)}{2}$$ pairs.

If the portion of the variation accounted for by person x goal pairs interaction is low, then there is evidence that respondents are judging the goals with respect to the same attribute. In this case, there is evidence
of a unidimensional scale for goals and some degree of cardinality can be attributed to the distance between the scale values given the goals by the respondents.

If however, the proportion of the variation due to person x goal pairs interaction is high, there is evidence that there are more than one type of person involved and more than one type of goal involved. In this case we do not have a unidimensional scale and distances between scale values for individuals do not have a cardinal quality.

If the data shows the former true, and goals are judged with respect to the same attribute then respondents can be grouped not only with respect to differences in goal orderings but also with respect to the distances between goals on the psychological continuum. Correlations between groups with similar goal profiles and indices of economic success could then be calculated.

It should be emphasized, that in order to attach a certain degree of cardinality to the distances between scale values it is not necessary to have small differences between individuals. All that is necessary is that each individual be consistent within himself in his judging of the goals. It is this within individual consistency that is tested by the model.

Procedure

The responses to the questionnaires were punched on I.B.M. cards and transformed to normal deviates. Economic indices were calculated for 99 cooperatives. Financial data was unavailable in one case. The figures for the economic indices were rounded to three digits and also punched on cards.
For the analysis the respondents were divided into two groups on an a priori basis. These groups consisted of managers and board presidents. For each cooperative there were, therefore, 132 responses consisting of 66 from the manager and 66 from the board president. The responses of the manager were designated 1 through 66 in the computer program and the responses of the presidents were designated 70 through 135. The six economic indices were designated 139 through 144. A correlation program was run giving a 144 x 144 correlation matrix.
RESULTS

For ease of presentation and interpretation the main results are presented in a series of tables and diagrams and others are presented verbally in this section.

Table 1 shows the $Z_{ij}$ matrix for managers. It was constructed in a slightly different manner than in the usual paired comparison method (6) but has the same interpretation. The $Z_{ij}$ matrix was constructed by plotting the 66 means of normal deviates in the top half of a 12 x 12 matrix corresponding to the 12 goals. The entries below the diagonal are the negative equivalents of those above. Summing by columns gives the scale values of each of the goals in terms of its deviation from the mean of all the scale values. Goals with negative scale values are judged to be held less highly than the average of the scale values of all the goals and goals with positive scale values are judged to be held more highly than the average. Row 14 shows the scale values of the 12 goals for managers.

Row 15 shows the scale values plus the absolute magnitude of the greatest negative scale values. This makes the lowest held goal zero and the remainder positive but does not change the distance between goals nor the relative ordering of the goals on the scale. Table 2 shows the $Z_{ij}$ matrix for board presidents. Table 3 shows the 12 goals with the relative rankings given by both managers and board presidents. Tables 4 through 9 show the correlations between responses of managers and board presidents and each of the six economic indices. Table 4 was extracted from the computer program data in the following manner. The 66 correlation coefficients between
Table 1. $Z_{ij}$ matrix for managers

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Table 4. Correlation matrix showing correlation coefficients between responses and $Y_1$, average return on fixed investment

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Table 7. Correlation matrix showing correlation coefficients between responses and $Y_4$, gross total sales

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Table 8. Correlation matrix showing correlation coefficients between responses and $Y_5$, net operating savings

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Table 9. Correlation matrix showing correlation coefficients between responses and \( Y_6 \), change in total assets

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managers' responses and $Y_1$ were plotted in the top half of a 12 x 12 matrix and the 66 correlation coefficients between the board presidents' responses and $Y_1$ were plotted below the diagonal. The entries in Tables 5 through 9 were constructed in a similar manner for the other economic indices $Y_2$ through $Y_6$ (Appendix B).

An investigation of the data shows a large person-stimulus interaction. This is evidenced by numerous inconsistencies between responses in the $Z_{ij}$ matrices (Tables 1 and 2) and in Tables 5 through 9. For example, in Table 1, the mean of the normal deviates for responses to goal pair (1-5) = -5.21; the mean for responses to goal pair (1-6) = -9.38. With perfect consistency, therefore, we might expect the mean of responses to goal pair (6-5) = (1-5) - (1-6) = -5.21 + 9.38 = 4.17. It is in fact -2.30. An example in Table 4 is as follows:

$$r_{3Y_1} - r_{12Y_1} = 31$$

$$r_{6Y_1} = r_{12Y_1} = -30.$$  

With perfect consistency, we might expect $r_{3Y_1} - r_{6Y_1} = 61$, $r_{3Y_1} - r_{6Y_1}$ is in fact 0.03. Numerous other examples can be found. These inconsistencies mean that respondents are not all judging the goals with respect to the same attribute, the scales are not additive, and interpersonal comparison of the distances between scale values is not justified.

Even in this case, we can talk of group goals and distances between group scale values as more than a purely ordinal ranking. We cannot however, infer information from the group back to specific individuals.
As was stated in the last chapter the respondents were divided into two groups, managers and board presidents, and a number of interesting results were obtained with respect to these groups.

The first broad objective of this study was to answer the question, what are the goals and objectives of cooperative managers and boards of directors, represented by the president of the board. Provided no important goals were omitted in drawing up the questionnaire, the answer to this question is contained in Tables 1, 2 and 3.

Looking at Table 3 first, we see that both managers and board presidents ranked goal 10, making a satisfactory net savings each year, first; while goal 12, making maximum net savings of the cooperative was ranked seventh and eighth by managers and board presidents, respectively. It appears that both managers and board presidents are more interested in satisfactory savings than maximum savings. Both managers and board presidents were also interested in expanding the facilities of the cooperative. This goal was ranked 2 and 4 by managers and board presidents, respectively. Goal 7, to maintain the present policies and practices and avoid risks in the operation of the cooperative, was also held highly by both groups, managers ranking it 3 and board presidents ranking it 5. Goal 8, maximum operational efficiency of the cooperative, was ranked 2 by board presidents but 8 by managers. This is a somewhat surprising result as operational management supposedly is the responsibility of the manager rather than the board of directors. The goal, increasing the area served by the cooperative was ranked 5 by managers and 7 by board presidents. Another surprising
result is that goal 2, maximizing the income of the members, was ranked very low by managers. Board presidents ranked this goal third. Both groups ranked increasing the sales volume of the cooperative sixth. Neither group appeared too interested in providing products and services at lowest prices, managers ranking this goal ninth and board presidents, ranking it eleventh. Neither group appeared relatively interested in building a good public image for the cooperative, which was ranked tenth by both groups, nor being a business leader in the area, which was ranked last by both groups. Providing a policing type of competition to other agribusiness firms, was ranked fourth by managers and ninth by board presidents.

While it is not valid to compare the scale values attributed to goals by individuals we may sum individual values to give group values and the distances between goals for the groups do have a degree of cardinality, and can be compared. The justification lies in the fact that if a large enough sample is used we obtain in the group values an approximation to the mean of that group and individual differences are balanced out. The mean will hold true for the group but not for the individual.

Looking at the scale values for the two groups, managers and board presidents, the distance between goals ranked first and second by managers is 8.39 while that of board presidents is 0.28. The spread between goals ranked first and last by managers and presidents is 54.69 and 45.07 respectively. Figure 1 shows the distances between goals as shown by the scale values for managers and board presidents. It indicates that managers distinguish more clearly between goals which they rank highly than those that come lower; while board presidents distinguish clearly between their
Goals as rated by board presidents

Scale values

Goals as rated by managers

Scale values

Figure 1. Relative distances between scale values of goals as rated by managers and board presidents. Left to right shows lowest to highest ranked goals.
least important goals, but not those which they rank highly.

Figure 2 was constructed by plotting the scale value attributed to each goal by the managers against the scale value attributed to it by the board presidents. It shows there is a high correlation between the ranking of goals by managers and board presidents, except for goal 2 and goal 8. Figures 3 through 14 were constructed to show the reasons why these two goals were evaluated so differently by managers and board presidents. Figure 3 was obtained by plotting the cell entries of column 1 of Table 1 against the cell entries of column 1 of Table 2. The cell entries in column 1 of Tables 1 and 2 are the means of the normal deviates of responses to the goal pairs when goal 1 is always included. Figures 4 through 14 were constructed in a similar fashion using columns 2 through 12 of Tables 1 and 2. All the diagrams show high correlations except Figure 4 which was constructed using column 2 as the pivot column. One interpretation is that managers and board presidents do not perceive goal 2 in the same way and do not judge this goal with respect to the same attribute. It appears that goal 2, maximizing the income of the members, does not mean the same thing to managers and board presidents although it is often held as the basic purpose of cooperatives. This indicates a need for managers and board presidents to get together on a precise and operational definition of company purpose. There is no evidence that there was any ambiguity in the perception of goal 8, maximum operational efficiency of the cooperative, so it appears that board members rank this goal higher relative to the other goals than do managers.
Figure 2. Relationship between scale values of managers and board presidents.
Figure 3. Relationship between the means of the normal deviates of responses to goal pairs by managers and board presidents when goal 1 is always one of the pair.
Figure 4. Relationship between the means of normal deviates of responses to goal pairs by managers and board presidents when goal 2 is always one of the pair.
Figure 5. Relationship between the means of the normal deviates of responses to goal pairs by managers and board presidents when goal 3 is always one of the pair.
Figure 6. Relationship between the means of the normal deviates of responses to goal pairs by managers and board presidents when goal 4 is always one of the pair.
Figure 7. Relationship between the means of the normal deviates of responses to goal pairs by managers and board presidents when goal 5 is always one of the pair.
Figure 8. Relationship between the means of the normal deviates of responses to goal pairs by managers and board presidents when goal 6 is always one of the pair.
Figure 9. Relationship between the means of the normal deviates of responses to goal pairs by managers and board presidents when goal 7 is always one of the pair.
Figure 10. Relationship between the means of the normal deviates of responses to goal pairs by managers and board presidents when goal 2 is always one of the pair.
Figure 11. Relationship between the means of the normal deviates of responses to goal pairs by managers and board presidents when goal 9 is always one of the pair.
Figure 12. Relationship between the means of the normal deviates of responses to goal pairs by managers and board presidents when goal10 is always one of the pair.
Figure 13. Relationship between the means of the normal deviates of responses to goal pairs by managers and board presidents when goal 11 is always one of the pair.
Figure 14. Relationship between the means of the normal deviates of responses to goal pairs by managers and board presidents when goal 12 is always one of the pair.
Figure 15. Histogram showing the distribution of correlation coefficients between the responses of managers and board presidents from the same cooperative to the same goal pairs.
There is no evidence in the data to show that the goals of managers and board presidents from the same cooperative are more highly correlated than the goals of managers and board presidents from different cooperatives, because on examination of the correlation matrix, no systematic correlation between the responses of managers and board presidents from the same cooperative to the same goal pair was found. This indicates that working for the same cooperative does not mean that managers and presidents will adopt the goals of the cooperative. See Figure 15.

Relationship between the Goals of Managers and Presidents and Indices of Economic Success

One of the major objectives of this study was stated as being an attempt to find out what is the relationship between the goals and objectives of the managers and board presidents and the success of the cooperative as measured by six economic indices.

Tables 4 through 9 show the correlation coefficients between the responses of managers and board presidents to goal pairs and each of the six economic indices.

With $N = 99$, the number of cooperatives for which financial information was available, correlation coefficients $> .196$ are significant at the 5% level and correlation coefficients $> .256$ are significant at the 1% level. A number of significant correlations appear in the tables. It should be remembered that since there is evidence of intransitivity, these significant correlations must be interpreted independently of each other.
Relationship between goal ordering of managers and board members and $Y_1$, average return on fixed investment

Table 4 shows only one significant correlation between the responses of board presidents and $Y_1$, while six significant correlations are shown between managers' responses and $Y_1$. The relative ordering of pairs of goals the managers that are related to average return on fixed investment are:

1) The more goal 3 is preferred to goal 12 the greater $Y_1$
2) The more goal 6 is preferred to goal 12 the lower $Y_1$
3) The more goal 7 is preferred to goal 12 the lower $Y_1$
4) The more goal 9 is preferred to goal 12 the lower $Y_1$
5) The more goal 3 is preferred to goal 10 the lower $Y_1$
6) The more goal 6 is preferred to goal 10 the lower $Y_1$

Relationship between the goal ordering of managers and board presidents and $Y_2$, average return on total investment

In this case, only one significant correlation between the relative ordering of goals and $Y_2$ appears for managers. This indicates that:

The more goal 3 is preferred to goal 12 the lower $Y_2$.

Four significant correlations between goal ordering and $Y_2$ appear for presidents:

1) The more goal 5 is preferred to goal 2, the higher $Y_2$
2) The more goal 6 is preferred to goal 1, the higher $Y_2$
3) The more goal 6 is preferred to goal 5, the higher $Y_2$
4) The more goal 12 is preferred to goal 1, the lower $Y_2$. 
Relationship between the goal ordering of managers and board presidents and $Y_3$, cost per dollar sale

In this case, 15 correlations between relative goal orderings of managers and $Y_3$ are significant.

1) The more goal 1 is preferred to goals 2, 3, 4, 8, 11, and 12, the lower the cost per dollar sale.

2) The more goal 2 is preferred to goal 6, the greater $Y_3$

3) The more goal 2 is preferred to goal 7 the greater $Y_3$

4) The more goal 3 is preferred to goal 9 the greater $Y_3$

5) The more goal 4 is preferred to goal 7 the greater $Y_3$

6) The more goal 6 is preferred over goal 7, the greater $Y_3$

7) The more goal 7 is preferred over goal 12, the lower $Y_3$

8) The more goal 9 is preferred over goals 10, 11, 12, the lower $Y_3$.

Four correlations between relative goal orderings of board presidents and $Y_3$ are significant.

1) The more goal 12 is preferred to goals 7 and 8, the lower $Y_3$

2) The more goal 8 is preferred to goal 7 the greater $Y_3$

3) The more goal 7 is preferred to goal 1 the greater $Y_3$.

Relationship between the goal ordering of managers and board presidents and $Y_4$, gross total sales

Five correlations between relative goal orderings of managers and $Y_4$ are significant.

1) The more goal 5 is preferred to goal 6, the greater $Y_4$

2) The more goal 5 is preferred to goal 9, the greater $Y_4$
3) The more goal 9 is preferred to goal 10, the lower $Y_4$
4) The more goal 10 is preferred to goal 11, the greater $Y_4$.

Two correlations between relative goal orderings of board presidents and $Y_4$ are significant.
1) The more goal 5 is preferred to goal 3, the greater $Y_4$
2) The more goal 8 is preferred to goal 7, the lower $Y_4$.

Relationships between the goal ordering of managers and board presidents and $Y_5$, net operating savings

Two correlations between relative goal orderings of managers and $Y_5$ are significant.
1) The more goal 3 is preferred to goal 10, the lower $Y_5$
2) The more goal 10 is preferred to goal 11, the higher $Y_5$.

Two correlations between relative goal orderings of board presidents and $Y_5$ are significant.
1) The more goal 5 is preferred to goal 2, the higher $Y_5$
2) The more goal 6 is preferred to goal 3, the higher $Y_5$.

Relationship between the goal ordering of managers and board presidents and $Y_6$, change in total assets

Four correlations between relative goal orderings of managers and $Y_6$ are significant.
1) The more goal 2 is preferred to goals 5 and 8, the greater $Y_6$
2) The more goal 3 is preferred to goal 10, the lower $Y_6$
3) The more goal 4 is preferred to goal 10 the lower $Y_6$
4) The more goal 5 is preferred to goal 6 the lower $Y_6$.

None of the correlations between relative goal orderings of board presidents and $Y_6$ are significant.
SUMMARY AND DISCUSSION OF RESULTS

The purposes of this study were

1) to obtain information on the goals and objectives pursued by the different levels of management in local cooperatives; and

2) to investigate the relationship between the goals and objectives pursued and the success of the cooperative.

Twelve cooperative goals were put in a paired comparison format and presented to the manager and president of the board of directors of 100 local cooperatives in a personal interview. Each respondent was asked to rate on a scale from 1 through 99 how certain he was that the goal presented first in each part was closer to a goal of his than the goal presented second.

Six indices of economic success were computed for 99 of the 100 cooperatives.

The results of this study raise as many questions as they answer. From the appearance of inconsistencies between responses to good pairs in both the $Z_{ij}$ matrices and the correlation matrices we know that all the respondents did not judge all of the goals with respect to the same attribute so that there is no justification for comparing individual distances between scale values. It may be that a factor analysis will isolate a number of groups within which respondents respond to the goals in a similar fashion and additivity can be assumed within groups. We could then compare individual distances between scale values within groups and relate overall goal profiles to economic indices. Further investigation of this area is indicated.
A second point of interest is the apparent ambiguity about the meaning of goal 2. This goal, "to maximize the income of the members", is held by many as the basic goal of cooperatives; yet the data indicate that this goal as stated did not mean the same thing to managers and board presidents. Another interesting result is that managers and board presidents from the same cooperative showed no greater similarity in the goals they endorsed than did managers and board presidents from different cooperatives. It would appear that managers or board presidents show little tendency to adopt the goals of the cooperative. This result is modified somewhat by the high correlation between the goals of the managers and board presidents.

Looking at the ranking of the goals by managers and board presidents it appears that making a satisfactory net savings each year is the most important goal to both groups. The data indicates that both groups were judging this goal with respect to the same attribute, though what constitutes satisfactory savings is not indicated. Both managers and board presidents also ranked, maintaining the present policies and practices and avoiding risk, highly. Both groups favored expanding and updating the facilities over most of the other goals presented. Maximizing the income of the members has been already discussed and was ranked third by board presidents and second to last by managers.

Next to goal 2 managers and board presidents were in greatest disagreement with regard to the goal, maximum operational efficiency of the cooperative. Unlike goal 2, there is no evidence in the data that there was confusion as to the interpretation of the goal, and the rankings given the goal can be accepted. The goals of lower prices, public image of the
cooperative, or business leadership in the area held little interest for either the managers or board presidents. Managers apparently rank those goals which show the cooperative and themselves in a good light above maximizing the income of the members.

With regard to the relationship between goals of managers and presidents and economic success, as measured by the six economic indices we can say:

1) No overall goal structure correlates with all the economic indices.

2) Inconsistencies in the responses mean that individual goals can not be directly related to the economic indices.

3) Significant correlations are evident between the relative ordering of certain pairs of goals and the economic indices. Some of these relationships do not appear reasonable if we interpret the chain of causality as going from goals to economic success. It should be remembered that in a correlation study we cannot discover the direction of causality. Further research of a time series nature is necessary to test the predictive value of the relationships between the responses to goal pairs and economic success.

A greater number of significant correlations between managers' responses and the economic indices occur in the tables than occur for board presidents. This is especially evident in Table 6. There is little doubt that the responses of managers are concomitant with the success criteria. The number of significant correlations between the responses of board presidents and the success criteria could conceivably occur by chance. It
It would appear that further attempts to predict cooperative success from the goals of the cooperative might usefully concentrate more on the goals of the manager than on the goals of the board of directors.

Implications of the Study

The results of this study have a number of important implications, and these will be discussed from the point of view of (1) management training, (2) economic theory, (3) national agricultural policy, and (4) future research.

From the point of view of management training, it would appear that some importance should be attached to the relative ordering of goals by future managers. Relative goal orderings of managers are significantly related to the economic success of the cooperatives while this is not true for board presidents. Further research is necessary to test the predictive value of these relationships but it is conceivable that the potential of management trainees can be indicated by their responses to certain goal pairs.

The results of the study indicate that respondents were not consistent in their responses to goal pairs. The assumption of rationality or transitivity by individuals has been basic to the theory of decision making and economic theory in general. The results imply that a reevaluation of this assumption may be necessary.

The national agricultural policy of the United States has been mainly directed at raising the income of agriculture to parity with other sectors of the economy. Recent trends have indicated that in this effort much re-
liance is placed on cooperatives to play a major role. The results of this study imply that the goal of maximizing the income of the farmers was not held very highly by managers. The results also indicate that there is much confusion as to what this goal means or how it should be achieved. If the cooperatives are to play their full role in raising the income of farm families then there is need for all concerned to reach a consensus as to what is the best way to achieve this goal. There is also a need to investigate the cooperative structure to see if changes cannot be made in the incentives offered to managers to motivate them to pursue the goal of maximizing members' incomes.

The results indicate that future research on relationship between cooperative goals and economic success should concentrate more on managers than on the board of directors as board president goals do not seem to be significantly related to cooperative success. There is need for research of a time-series nature to test the predictive value of the results of this study. A more complete application of the theoretical model outlined in this study is indicated. If factor analysis of the data can show up groups of respondents within which respondents are consistent in their responses, then respondents can be compared, not only on relative goal ordering, but also on the distances between scale values attributed to goals. It is reasonable to assume that relationships between the goals of these homogenous groups and economic indices would be more complete and of greater predictive values than the independent relationships between responses to goal pairs and economic indices reported in this study. Future research in
this area should also aim at discovering the relationship between managerial goals and personal characteristics of managers. There is also a need for further study on the methods of goal formulation by managers and the influence of environmental factors in determining the goals pursued.
LITERATURE CITED


ACKNOWLEDGEMENTS

This study was completed as a part of a larger study at Iowa State University.

The author wishes to express his appreciation for the generous help given him by all who participated in the research project and in the preparation of this paper.

I am especially grateful to Dr. C. Phillip Baumel, my major professor, and to Dr. Leroy Wolins for suggesting the research method and for his patient clarification of statistical procedures. I also wish to express my thanks to Dan Heimes for his efforts in drawing the sample; to Mrs. Theta Ballentine and Michael Madden who aided in interviewing, and to Bob Burcham for his help in collection of financial data. My thanks also to Mrs. Henry, who typed this paper and to Ann Miskella for her help in the presentation of the material.
APPENDIX A
Following these directions the 12 goals are listed in pairs in the form of statements. For each pair of statements we are interested in which one describes a goal of yours more closely. A good way to keep the directions in mind is to imagine you heard two persons at a meeting making the statements. For each pair of statements rate on a scale from 1 to 99 how certain you are that Statement A is closer to one of your goals than Statement B.

1. The more certain you are that Statement A describes a goal of yours more closely than Statement B, the closer your rating will be to 99.

2. The more certain you are that Statement B describes a goal of yours more closely than Statement A, the closer your rating will be to 1.

3. To the degree that you are uncertain as to which statement comes closer to describing a goal of yours, your rating will tend toward 50.

You may use any number from "1" to "99". This does not mean that you have to use all the numbers from 1 to 99. Some people only use the numbers 1, 25, 50, 75 and 99. Others use 1, 10, 20, 30, 40 --- up to 99. The point is, the distinctions should be as fine as you feel you can make.

Remember, answering "99" means that you are certain Statement A describes a goal of yours more closely than Statement B; answering "1" means that you are certain Statement B describes a goal of yours more closely than Statement A and answering "50" means you are uncertain which statement describes a goal of yours better. Numbers between 50 and 99 indicate degrees of certainty that Statement A describes a goal of yours more closely. Numbers between 50 and 1 indicate degrees of certainty that Statement B describes a goal of yours more closely.

Please be sure to respond to every pair of statements. Respond to one pair of statements at a time and use the scale under each pair to indicate your answer.
1. **Statement A.** My goal is increasing the area served by the cooperative  
**Statement B.** My goal is to be a business leader in the area

![Rating Scale](chart)

Certainty:  
- Certain statement B describes me better  
- Uncertain which statement describes me better  
- Certain statement A describes me better

2. **Statement A.** My goal is maximizing the income of the members  
**Statement B.** My goal is to serve our members by providing a policing type of competition to other agribusiness firms

![Rating Scale](chart)

Certainty:  
- Certain statement B describes me better  
- Uncertain which statement describes me better  
- Certain statement A describes me better

3. **Statement A.** My goal is to expand and update the facilities of the cooperative  
**Statement B.** My goal is increasing the sales volume of the cooperative

![Rating Scale](chart)

Certainty:  
- Certain statement B describes me better  
- Uncertain which statement describes me better  
- Certain statement A describes me better
4. **Statement A.** My goal is to make a satisfactory net savings each year  
**Statement B.** My goal is increasing the area served by the cooperative

![Rating Scale]

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better

5. **Statement A.** My goal is to serve our members by providing a policing type of competition to other agribusiness firms  
**Statement B.** My goal is maximum operational efficiency of the cooperative

![Rating Scale]

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better

6. **Statement A.** My goal is to make a satisfactory net savings each year  
**Statement B.** My goal is to provide products and services at lowest prices

![Rating Scale]

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better
7. **Statement A.** My goal is to make a satisfactory net savings each year  
**Statement B.** My goal is maximum operational efficiency of the cooperative

![Rating Scale]

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better

8. **Statement A.** My goal is maximum net savings of the cooperative  
**Statement B.** My goal is increasing the sales volume of the cooperative

![Rating Scale]

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better

9. **Statement A.** My goal is to serve our members by providing a policing type of competition to other agribusiness firms  
**Statement B.** My goal is to make a satisfactory net savings each year

![Rating Scale]

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better
10. **Statement A.** My goal is to make a satisfactory net savings each year  
**Statement B.** My goal is increasing the sales volume of the cooperative

```
| 1 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 99 |
```

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better

11. **Statement A.** My goal is increasing the area served by the cooperative  
**Statement B.** My goal is maximum operational efficiency of the cooperative

```
| 1 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 99 |
```

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better

12. **Statement A.** My goal is to make a satisfactory net savings each year  
**Statement B.** My goal is to expand and update the facilities of the cooperative

```
| 1 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 99 |
```

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better
13. **Statement A.** My goal is to expand and update the facilities of the cooperative  
**Statement B.** My goal is to maintain the present policies and practices and avoid risks in the operation of the cooperative

14. **Statement A.** My goal is to be a business leader in the area  
**Statement B.** My goal is to build a good public image for the cooperative

15. **Statement A.** My goal is to expand and update the facilities of the cooperative  
**Statement B.** My goal is to serve our members by providing a policing type of competition to other agribusiness firms
16. **Statement A.** My goal is to expand and update the facilities of the cooperative  
**Statement B.** My goal is maximizing the income of the members

Certain statement B describes me better  
Uncertain which statement describes me better 
Certain statement A describes me better

17. **Statement A.** My goal is to make a satisfactory net savings each year  
**Statement B.** My goal is to be a business leader in the area

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better

18. **Statement A.** My goal is maximum operational efficiency of the cooperative  
**Statement B.** My goal is maximum net savings of the cooperative

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better
19. **Statement A.** My goal is increasing the area served by the cooperative  
**Statement B.** My goal is to expand and update the facilities of the cooperative

![Rating Scale](image)

- Certain statement B describes me better
- Uncertain which statement describes me better
- Certain statement A describes me better

20. **Statement A.** My goal is to build a good public image for the cooperative  
**Statement B.** My goal is to provide products and services at lowest prices

![Rating Scale](image)

- Certain statement B describes me better
- Uncertain which statement describes me better
- Certain statement A describes me better

21. **Statement A.** My goal is maximum net savings of the cooperative  
**Statement B.** My goal is to serve our members by providing a policing type of competition to other agribusiness firms

![Rating Scale](image)

- Certain statement B describes me better
- Uncertain which statement describes me better
- Certain statement A describes me better
22. **Statement A.** My goal is to expand and update the facilities of the cooperative  
**Statement B.** My goal is to build a good public image for the cooperative

![Rating Scale]

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better

23. **Statement A.** My goal is maximum operational efficiency of the cooperative  
**Statement B.** My goal is to be a business leader in the area

![Rating Scale]

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better

24. **Statement A.** My goal is maximum net savings of the cooperative  
**Statement B.** My goal is to make a satisfactory net savings each year

![Rating Scale]

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better
25. **Statement A.** My goal is maximum operational efficiency of the cooperative

**Statement B.** My goal is to build a good public image for the cooperative

![Rating Scale]

- Which statement describes me better:
  - Certain statement B
  - Uncertain which statement describes me better
  - Certain statement A describes me better

26. **Statement A.** My goal is maximum operational efficiency of the cooperative

**Statement B.** My goal is increasing the sales volume of the cooperative

![Rating Scale]

- Which statement describes me better:
  - Certain statement B describes me better
  - Uncertain which statement describes me better
  - Certain statement A describes me better

27. **Statement A.** My goal is maximizing the income of the members

**Statement B.** My goal is to provide products and services at lowest prices

![Rating Scale]

- Which statement describes me better:
  - Certain statement B describes me better
  - Uncertain which statement describes me better
  - Certain statement A describes me better
28. **Statement A.** My goal is to make a satisfactory net savings each year
   **Statement B.** My goal is to build a good public image for the cooperative

   ![Rating Scale](image)

   Certain statement B describes me better
   Uncertain which statement describes me better
   Certain statement A describes me better

29. **Statement A.** My goal is increasing the sales volume of the cooperative
   **Statement B.** My goal is to maintain the present policies and practices and avoid risks in the operation of the cooperative

   ![Rating Scale](image)

   Certain statement B describes me better
   Uncertain which statement describes me better
   Certain statement A describes me better

30. **Statement A.** My goal is increasing the sales volume of the cooperative
    **Statement B.** My goal is to provide products and services at lowest prices

   ![Rating Scale](image)

   Certain statement B describes me better
   Uncertain which statement describes me better
   Certain statement A describes me better
31. **Statement A.** My goal is to maintain the present policies and practices and avoid risks in the operation of the cooperative

**Statement B.** My goal is maximum net savings of the cooperative

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32. **Statement A.** My goal is to be a business leader in the area

**Statement B.** My goal is to provide products and services at lowest prices

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33. **Statement A.** My goal is to make a satisfactory net savings each year

**Statement B.** My goal is to maintain the present policies and practices and avoid risks in the operation of the cooperative

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34. **Statement A.** My goal is maximum operational efficiency of the cooperative  
**Statement B.** My goal is to maintain the present policies and practices and avoid risks in the operation of the cooperative

![Likert Scale]

- 1: Certain statement B describes me better  
- 10: Uncertain which statement describes me better  
- 99: Certain statement A describes me better

35. **Statement A.** My goal is maximum net savings of the cooperative  
**Statement B.** My goal is to be a business leader in the area

![Likert Scale]

- 1: Certain statement B describes me better  
- 10: Uncertain which statement describes me better  
- 99: Certain statement A describes me better

36. **Statement A.** My goal is maximum operational efficiency of the cooperative  
**Statement B.** My goal is to expand and update the facilities of the cooperative

![Likert Scale]

- 1: Certain statement B describes me better  
- 10: Uncertain which statement describes me better  
- 99: Certain statement A describes me better
37. **Statement A.** My goal is maximizing the income of the members  

**Statement B.** My goal is maximum net savings of the cooperative

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better

38. **Statement A.** My goal is to build a good public image for the cooperative  

**Statement B.** My goal is increasing the area served by the cooperative

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better

39. **Statement A.** My goal is to be a business leader in the area  

**Statement B.** My goal is increasing the sales volume of the cooperative

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better
40. **Statement A.** My goal is increasing the area served by the cooperative

**Statement B.** My goal is to provide products and services at lowest prices

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Certain statement B. describes me better
Uncertain which statement describes me better
Certain statement A. describes me better

41. **Statement A.** My goal is maximizing the income of the members

**Statement B.** My goal is to make a satisfactory net savings each year

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Certain statement B. describes me better
Uncertain which statement describes me better
Certain statement A. describes me better

42. **Statement A.** My goal is to build a good public image for the cooperative

**Statement B.** My goal is to maintain the present policies and practices and avoid risks in the operation of the cooperative

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Certain statement B. describes me better
Uncertain which statement describes me better
Certain statement A. describes me better
43. **Statement A.** My goal is to provide products and services at lowest prices  
**Statement B.** My goal is maximum net savings of the cooperative

```
1 10 20 30 40 50 60 70 80 90 99
```

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better

44. **Statement A.** My goal is to be a business leader in the area  
**Statement B.** My goal is to maintain the present policies and practices and avoid risks in the operation of the cooperative

```
1 10 20 30 40 50 60 70 80 90 99
```

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better

45. **Statement A.** My goal is to expand and update the facilities of the cooperative  
**Statement B.** My goal is maximum net savings of the cooperative

```
1 10 20 30 40 50 60 70 80 90 99
```

Certain statement B describes me better  
Uncertain which statement describes me better  
Certain statement A describes me better
46. **Statement A.** My goal is to serve our members by providing a policing type of competition to other agribusiness firms

**Statement B.** My goal is to be a business leader in the area

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47. **Statement A.** My goal is maximizing the income of the members

**Statement B.** My goal is to be a business leader in the area

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48. **Statement A.** My goal is maximizing the income of the members

**Statement B.** My goal is to build a good public image for the cooperative

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49. **Statement A.** My goal is to maintain the present policies and practices and avoid risks in the operation of the cooperative

**Statement B.** My goal is increasing the area served by the cooperative

![Rating Scale]

Certain statement B describes me better
Uncertain which statement describes me better
Certain statement A describes me better

50. **Statement A.** My goal is increasing the sales volume of the cooperative

**Statement B.** My goal is to serve our members by providing a policing type of competition to other agribusiness firms

![Rating Scale]

Certain statement B describes me better
Uncertain which statement describes me better
Certain statement A describes me better

51. **Statement A.** My goal is to provide products and services at lowest prices

**Statement B.** My goal is to expand and update the facilities of the cooperative

![Rating Scale]

Certain statement B describes me better
Uncertain which statement describes me better
Certain statement A describes me better
52. **Statement A.** My goal is increasing the sales volume of the cooperative

**Statement B.** My goal is maximizing the income of the members

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53. **Statement A.** My goal is to provide products and services at lowest prices

**Statement B.** My goal is to maintain the present policies and practices and avoid risks in the operation of the cooperative

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54. **Statement A.** My goal is increasing the area served by the cooperative

**Statement B.** My goal is to serve our members by providing a policing type of competition to other agribusiness firms

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55. **Statement A.** My goal is to serve our members by providing a policing type of competition to other agribusiness firms  
**Statement B.** My goal is to provide products and services at lowest prices

![Rating Scale](image)

Certain statement B describes me better
Uncertain which statement describes me better
Certain statement A describes me better

56. **Statement A.** My goal is increasing the sales volume of the cooperative  
**Statement B.** My goal is increasing the area served by the cooperative

![Rating Scale](image)

Certain statement B describes me better
Uncertain which statement describes me better
Certain statement A describes me better

57. **Statement A.** My goal is maximum net savings of the cooperative  
**Statement B.** My goal is to build a good public image for the cooperative

![Rating Scale](image)

Certain statement B describes me better
Uncertain which statement describes me better
Certain statement A describes me better
58. **Statement A.** My goal is to expand and update the facilities of the cooperative  
**Statement B.** My goal is to be a business leader in the area

![Rating Scale]

- Certain statement B describes me better  
- Uncertain which statement describes me better  
- Certain statement A describes me better

59. **Statement A.** My goal is maximizing the income of the members  
**Statement B.** My goal is increasing the area served by the cooperative

![Rating Scale]

- Certain statement B describes me better  
- Uncertain which statement describes me better  
- Certain statement A describes me better

60. **Statement A.** My goal is increasing the sales volume of the cooperative  
**Statement B.** My goal is to build a good public image for the cooperative

![Rating Scale]

- Certain statement B describes me better  
- Uncertain which statement describes me better  
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61. **Statement A.** My goal is maximum operational efficiency of the cooperative

**Statement B.** My goal is to provide products and service at lowest prices

![Scale](image)

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62. **Statement A.** My goal is maximizing the income of the members

**Statement B.** My goal is to maintain the present policies and practices and avoid risks in the operation of the cooperative

![Scale](image)

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63. **Statement A.** My goal is maximum operational efficiency of the cooperative

**Statement B.** My goal is maximizing the income of the members

![Scale](image)

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**Statement B.** My goal is to maintain the present policies and practices and avoid risks in the operation of the cooperative

Certain statement B describes me better

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65. **Statement A.** My goal is maximum net savings of the cooperative

**Statement B.** My goal is increasing the area served by the cooperative

Certain statement B describes me better

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66. **Statement A.** My goal is to build a good public image for the cooperative

**Statement B.** My goal is to serve our members by providing a policing type of competition to other agribusiness firms

Certain statement B describes me better

Uncertain which statement describes me better

Certain statement A describes me better
APPENDIX B

Explanation and Derivation of Economic Variables

$Y_1$. **Average return on fixed investment**

This is the ratio on net operating savings ($1964 + 1965$) + twice the change in accumulated amortization divided by fixed assets ($1964 + 1965$) + total accumulated amortization, and is a measure of operational efficiency when some of the inputs are fixed. Typically this is the field of operation of the manager alone.

$Y_2$. **Average return on total investment**

This is the ratio of net operating savings ($1964 + 1965$) + twice the change in accumulated amortization divided by total assets ($1964 + 1965$) + total accumulated amortization, and is a measure of the overall efficiency of the cooperative when all inputs are variable. Here the board of directors takes a hand in the decision-making process.

$Y_3$. **Average cost per dollar sale**

This is the ratio of total expenses ($1964 + 1965$) + twice the change in accumulated amortization divided by total sales ($1964 + 1965$). This is a third measure of overall economic efficiency.

$Y_4$. **Average gross total sales**

This is merely the average total sales of the cooperative for the year 1964 and 1965, before deduction of cash discounts.
Y₅. **Average net operating savings**

\[ Y_5 = BB + CC - DD, \]

where

BB = gross total sales - cost of merchandise - cash discounts.

CC = income from government grain + grinding and mixing and other services + patronage refund received.

DD = Total expenses.

Y₆. **Change in total assets**

This is total assets 1965 - total assets 1964, and is a measure of the growth of the cooperative.