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Agricultural Cooperative Managers and the Business Environment

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Managers of agricultural cooperatives were contacted to determine their knowledge/capabilities and perspectives of the cooperative environment with special emphasis given to the importance of cooperative principles to the operation and success of the business, division of responsibility between management and the board of directors, and business decision making in the areas of financial analysis plus selected scenarios. Managers showed strong adherence to traditional cooperative principles and basic decision areas. Self-assessments were positive and consistent with performance measures. The opportunity exists to improve manager knowledge/capabilities related to cooperative principles, division of responsibility between managers and the board, and financial analysis.

Key Words: board of directors, cooperative principles, cooperatives (agricultural), leadership, management, managers

Cooperatives have been and continue to be an important aspect of rural and farm communities through provision of services, credit, farm and home supplies, and markets or outlets for farm products (Kraenzle, 1996, p. 37; 1998, p. 4). Many agricultural cooperatives are small and lack sufficient economies of size and scale to effectively compete with the often larger investor-owned businesses (Fulton and Keenan, 1997, p. 35). Nevertheless, Webb (1990, p. 56) suggests that cooperatives may be the single most cost-effective structure farmers can implement to improve their economic status. In fact, numerous farmers are evaluating and forming cooperatives to improve their economic plight. Also, existing agricultural cooperatives are using mergers, consolidations, and acquisitions to improve their competitive position (Merlo, 1998).

In many ways, cooperatives are similar to other businesses, especially in terms of facilities, functions, and business practices. Both cooperative and corporate structures elect a board of directors that establishes a vision and develops broad policies for the organizations, and both structures hire a manager or management team to oversee daily operations and implement these policies. There are, however,

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differences in principles, goals, and organizational structure that make managerial roles in a cooperative distinct from those in an investor-owned firm. Cook (1994, p. 42) notes that the duties of some managerial roles in cooperatives are not only significantly different, but are often more difficult than those of investor-oriented businesses. Cook points to such role examples as conflict resolution, resource allocation, information spokesperson, and leadership.

Cooperatives also differ in terms of purpose, ownership and control, and distribution of benefits. These differences relate to cooperative principles, and include four traditional as well as three more contemporary principles. Traditional principles involve service-at-cost, financial obligation of member/owners, limited return on equity capital, and democratic control (Meyer, 1994, p. 2). Contemporary principles are described as user-owner (i.e., those who use the cooperative finance it); user-control (i.e., those who use the cooperative control it); and user-benefit (i.e., benefits are to be distributed based on use of the cooperative).

These principles and the roles they play in the operation and success of the cooperative may lead to conflicts within the organization. Conflicts, especially as related to ownership rights and member benefits, may occur among members, or between the board and management, or members and the manager and/or board (Cook, 1994, p. 47). To minimize conflict, it is important that these parties have an understanding of cooperative principles and the contribution of these principles to the viable operation and success of the firm. Education and training of these individuals and groups is essential in this process (Poorbaugh, 1995, p. 64).

Reporting on a training needs assessment of 90 Nebraska, Iowa, and Kansas board presidents and managers, Turner (1990, p. 96) notes that the assessment provides helpful insights into these participants' perceptions of high-priority training needs. More than 70% of the directors identified, in order of priority, the following important areas of concern: understanding the use of financial statements, leadership training, strategic planning, board/manager relations, legal responsibilities, and performance assessment. Managers identified strategic planning, financial management, marketing, and personnel management as priority issues.

The purpose of our analysis is to provide a better understanding of agricultural cooperative managers' roles. An assessment of managers' attitudes and perceptions of the business environment contributes to this goal. Special attention is given to a manager's perspective and knowledge of cooperative principles, responsibilities of the manager and directors, use and knowledge of financial statements and relationships, business decision making, management philosophy, and education of members and employees.

Methodology and Background for Analysis

A mail questionnaire which included six sections was developed and used to collect data from Alabama agricultural cooperative managers concerning various aspects of the cooperative environment. The focus of the survey included farm supply/

marketing and agricultural finance cooperatives. Participating managers in the farm supply/marketing category were affiliated with Alabama Farmers Cooperatives, Southern States Cooperative (formerly Gold Kist supply stores), and Dairy Farmers of America. For the agricultural finance area, focus centered on managers of the Federal Land Banks and Production Credit Associations of Alabama. Since the number of agricultural cooperative managers was relatively small, a total enumeration was undertaken. Response rates were favorable for each grouping at 38% for the supply/marketing and 75% for the financial cooperatives. In total, 41 usable questionnaires were returned for an overall response rate of 39%.

In developing the first section of the questionnaire, the Rochdale Principles were used as guidelines to evaluate managers' knowledge and perceptions of traditional cooperative principles. Many of these principles, which evolved during the mid-1800s, have served as the foundation for cooperatively organized businesses over the years (Cobia, 1989, p. 27). Bruynis, Hahn, and Taylor (1997, p. 54) found that adherence to basic cooperative principles was a key factor in the success of a cooperatively organized business. If a manager is unfamiliar with these principles, and consequently they are not implemented in the operation of the business, the firm could be adversely affected. Cooperative principles were presented to managers in matrix format for their evaluation relative to importance to the operation and success of their business, with response choices ranging from 1–5 (where 1 = not important, 5 = extremely important).

The second section of the questionnaire considered managers' perceptions of the division of responsibility between the manager and board of directors for selected items based on existing literature (Meyer, 1994; Mather, Ingalsbe, and Volkin, 1990). In a 1998 study, Kiser reported that board members were often unclear as to the proper division of responsibility between themselves and management. This lack of understanding could lead to managers performing activities that are usually the responsibility of the board, or even to tasks not being performed by anyone. Also, such uncertainty could result in conflicts between the board and manager regarding control issues and decision-making authority within the cooperative (Cook, 1994, p. 47). These alternatives were also presented in matrix format, where managers were instructed to choose, on a 1–5 scale, the division of responsibility (where 1 = board most responsible, 2 = board more responsible, 3 = board and manager equally responsible, 4 = manager more responsible, and 5 = manager most responsible).

The third section of the survey dealt with financial knowledge and operations. In Siebert's 1992 study, cooperative members noted the efficient use of financial resources as one of the important characteristics of a successful cooperative manager (p. 209). We therefore incorporated questions relating to whether the cooperative's financial performance is evaluated and who is involved in the process. Also included were questions relating to favorable and representative financial ratios for the manager's cooperative.

With regard to the ratio analysis survey questions, the general areas of evaluation included liquidity, solvency, profitability, and efficiency. Since the importance of particular ratios is not consistent among cooperative types, financial sections of questionnaires were modified to correspond to specific cooperative type: supply/marketing, dairy, and financial. Alternative potential responses to financial ratio questions were placed on corresponding number lines provided for managers' review. Appropriate responses were determined according to industry averages or levels defined by individuals who are experienced with each cooperative type. These levels were compared to responses by managers to identify the perspectives of managers.

The questionnaire's fourth section, scenario analysis, related to possible real-world situations the manager may confront in day-to-day activities. Managers were asked to read and evaluate each scenario and then indicate their recommended initial action or response from the choices provided. Responses allowed decision-making abilities of the manager to be analyzed.

The next survey section included a series of questions that identified characteristics of the manager and the cooperative. Responses were used to relate the manager's knowledge/capabilities or perceptions of the cooperative environment with personal attributes and characteristics of the cooperative. Examples from this section included manager's age, management experience, educational attainment, and training program participation by the manager. Also evaluated was the manager's perception of the importance of various issues to successful cooperative management.

The final section of the questionnaire included a self-assessment by managers covering cooperative principles, financial analysis, business decision making, strategic planning, conflict resolution, and human resource management. Managers were asked to rate their knowledge/capabilities in each of the defined areas based on a 1–5 scale ranging from 1 = poor to 5 = excellent.

Survey Interpretation

Data were analyzed using two methods, general descriptive statistics and regression analysis. Regression analysis identified key relationships to help explain the capabilities and/or perceptions of managers. Responses were scored on a 1–5 scale according to the proximity of manager responses to the defined desirable response as indicated by prior information from industry leaders and relevant literature. For instance, if management's response corresponded with the defined appropriate response, a score of 5 was assigned. Alternatively, if the actual response did not match the defined response, a score was assigned according to its relative proximity to the defined response. To derive the manager's comprehensive score, his/her score in the areas of cooperative principles, manager versus board responsibilities, financial knowledge, and decision making were summarized.

Empirical Models

Two similar models were developed to relate various characteristics of the manager and cooperative to scores that represent the manager's knowledge, perceptions, and capabilities. The score derived from questionnaire responses was the dependent variable used in the respective models that represented cooperative principles, manager versus board responsibilities, financial analysis, decision making, and comprehensive analysis.

The empirical model used in the analysis is specified in equation (1):

$$
\begin{aligned}
(1) \qquad SCORE = {} & \beta_0 + \beta_1(MGREXP) + \beta_2(SALES) + \beta_3(EDULVL) \\
& + \beta_4(AGE) + \beta_5(BRDPERC) + \beta_6(OFFDMGR) \\
& + \beta_7(MNGTRN) + e_i,
\end{aligned}
$$

where the notations are defined as follows:

- *SCORE* = numerical rating of 1–5, with a score being assigned in each section according to the proximity of the manager's response to the response deemed appropriate by industry leaders and relevant literature (i.e., when a manager's response mirrored the defined appropriate response, a score of 5 was assigned);
- *MGREXP* = number of years as a manager of a cooperative;
- *SALES* = sales of the cooperative in 1997;
- *EDULVL* = education level attained by the manager (high school or less = 0, some college or more = 1);
- *AGE* = age of the manager in years;
- *BRDPERC* = manager's response on a scale of 1–5 concerning the importance of the board of directors' perception of him/her (not important = 1, extremely important = 5);
- *OFFDMGR* = whether the cooperative offered an educational training program to the managers concerning the structure and principles of cooperatives (yes = 1, no = 0);
- *MNGTRN* = whether the manager participated in a cooperative management training program (yes = 1, no = 0);
- $\$_0$ = intercept (constant value);
- $\$_1, \$_2, \ldots, \$_7$ = regression coefficients; and
- e_i = an error term.

When analyzing the comprehensive and financial statement analysis sections, an additional independent variable (*FINTRN*) was used. This variable evaluated management's participation in some type of financially related training program (yes = 1, no = 0).

Each variable included in the empirical model was expected to have a positive impact on the dependent variable, *SCORE*. The longer a manager has managed a cooperative (*MGREXP*), the better acquainted he/she should become with its functions and responsibilities. The extended time as a manager of a cooperative would also give the manager additional opportunities to learn from formal training sessions, hands-on experience, and trial and error.

The cooperative's size, as represented by *SALES*, indicates a flow of funds through the organization from which additional activities (such as management training programs or legal counsel concerning various issues) could be supported. In these situations, the manager's access to training programs or individuals would potentially increase his/her knowledge base and capabilities, thus leading to positive impacts on *SCORE*. Similar to manager experience, the size of the cooperative might also give the manager a greater diversity of experiences and opportunities, in which case he/she might learn through additional hands-on activities and trial and error.

A manager's education level (*EDULVL*) should positively influence his/her ability to comprehend and address various issues concerning the business environment. It may also give the manager prior exposure to ideas and philosophies needed in a management position. Likewise, the manager's age (*AGE*) represents more time and opportunity to become knowledgeable about the cooperative environment. As with manager experience and size of the cooperative, age should provide an opportunity to experience more situations concerning the cooperative and the world in which cooperatives function.

Management training programs (*MNGTRN*), financial statement training programs (*FINTRN*), and educational programs dealing with the structure and principles of cooperatives (*OFFDMGR*) should also expand the manager's knowledge base and capabilities and have a positive influence on responses and scores.

As for the final variable, managers' concern with the board's perception of them (*BRDPERC*), it is important to remember the relationship between the board of directors and management. The board of directors is responsible for hiring, evaluating, and firing the manager; thus, generally, the more concerned the manager is with the board's perception, the more the manager will strive to ensure the cooperative is operating at its full potential and will seek to satisfy the board. This relationship should drive managers to expand their knowledge base and increase their management capabilities.

Analysis and Discussion

Manager and Cooperative Characteristics

The average age of managers was 44.8 years, with a range from 24 to 61 years (a span of 37 years from youngest to oldest). Almost 40% of the managers had prior management experience, with an average of 12.9 years. Half had received college degrees, and the vast majority (90.2%) had participated in a management training program. The majority of cooperatives offered training programs for managers (77.8%), board members (66.7%), employees (77.8%), and members (50.1%). The most frequent source of training, outside that provided by the cooperative, was through colleges and universities. Average annual sales of cooperatives were $196.9 million, with an average management team size and number of employees of 2.9 and 15.9, respectively.

Table 1. Alabama Managers' Rankings of Importance of Selected Cooperative Principles to the Operation and Success of Agricultural Cooperatives, 1998

		Response Ranking [a]				
Cooperative Principle	N	1	2	3	4	5
		! ! ! ! ! ! ! ! ! ! !		(%)		! ! ! ! ! ! ! ! ! ! !
1. Voting is by members on democratic (one-member, one-vote) basis	41	0.0	2.4	24.4	39.0	34.1
2. Membership is open	40	0.0	2.5	10.0	50.0	37.5
3. Equity is provided by patrons/owners	40	0.0	0.0	20.0	32.5	47.5
4. Equity ownership share is limited for each single member	41	14.6	17.1	34.1	24.4	9.8
5. Net income is allocated to patrons as patronage refunds	41	0.0	2.4	19.5	34.1	43.9
6. Dividend on equity capital is limited	41	9.8	7.3	41.5	34.1	7.3
7. Exchange of goods and services is at market prices	41	0.0	0.0	4.9	56.1	39.0
8. Have a duty to educate members	41	0.0	4.9	19.5	53.7	22.0
9. Use of cash trading only	40	22.5	15.0	47.5	10.0	5.0
10. No unusual risk is assumed	40	2.5	5.0	25.0	41.5	25.0
11. Maintain political and religious neutrality	41	4.9	9.8	34.1	22.0	29.3
12. Have equality of the sexes in membership	41	17.1	4.9	17.1	29.3	31.7

[a] The response rankings are defined as follows: 1 = not important, 2 = slightly important, 3 = somewhat important, 4 = very important, and 5 = extremely important.

Cooperative Principles

Managers were asked to rank, in terms of importance to the operation and success of their cooperative, 12 cooperative principles. A strong positive orientation relative to traditional and contemporary principles was noted (table 1). For seven of the 12 principles, two-thirds of the responses could be combined under the categories of "very important" and "extremely important." Managers noted "exchange of goods and services is at market prices" (95.1%), "membership is open" (87.5%), and "equity is provided by patrons/owners" (80%) as most important.

Manager versus Board Responsibility

Managers were provided 14 areas associated with the operation of a cooperatively organized business and asked to determine whether responsibility for performing these activities falls primarily upon the board, the manager, or equally between them (table 2). For five of the 14 activities, managers were considered "more responsible" or "most responsible." However, responses showed that managers were assuming the correct level of responsibility in only four cases, as determined by

Table 2. Alabama Managers' Responses for Division of Primary Responsibility Between Management and the Board of Directors, 1998

		Response Ranking[a]				
Area of Responsibility	N	1	2	3	4	5
		!!!!!!!!!!!		(%)		!!!!!!!!!!!
1. Setting the direction of the business for the welfare of the cooperative members	41	17.1	14.6	43.9	12.2	12.2
2. Managing the day-to-day operations of the cooperative	41	0.0	0.0	0.0	14.6	85.4
3. Maintaining accuracy of the minutes of the board of directors' meetings	41	4.9	0.0	39.0	14.6	41.5
4. Acting in good faith with reasonable care in handling the affairs of the cooperative	41	0.0	0.0	58.5	17.1	24.4
5. Ensuring employees understand cooperative philosophy	41	2.4	2.4	14.6	36.6	43.9
6. Approving purchase of major capital assets	41	26.8	31.7	31.7	2.4	7.3
7. Developing programs for implementation of cooperative policies	41	9.8	12.2	41.5	22.0	14.6
8. Establishment and evaluation of programs	41	0.0	12.2	41.5	22.0	14.6
9. Furnishing information needed for long-range planning	41	2.4	2.4	26.8	34.1	34.1
10. Educating the general public about the cooperative and its activities	41	2.4	0.0	56.1	26.8	14.6
11. Keeping current on legislation concerning cooperatives	41	0.0	2.4	68.3	19.5	9.8
12. Encouraging membership and active patronage	41	2.4	0.0	75.6	14.6	7.3
13. Informing members of developments within the cooperative	41	0.0	0.0	56.1	29.3	14.6
14. Hiring, training, and setting compensation for employees	41	2.4	0.0	4.9	29.3	63.4

[a] The response rankings are defined as follows: 1 = board most responsible, 2 = board more responsible, 3 = board and manager equally responsible, 4 = manager more responsible, and 5 = manager most responsible.

literature review (Meyer, 1994, p. 4; and Mather, Ingalsbe, and Volkin, 1990). The key areas where managers seemed to understand that responsibility was more or mostly theirs included "managing the day-to-day operations of the cooperative" (100%); "hiring, training, and setting compensation for employees" (92.7%); "ensuring employees understand cooperative philosophy" (80.5%); and "furnishing information needed for long-range planning" (68.2%).

Managers were somewhat successful in identifying two of the four responsibilities oriented toward board involvement: "approving purchase of major capital assets" (58.5%) and "setting the direction of the business for the welfare of the cooperative members" (31.7%). However, managers failed to identify the boards' large roles in "establishment and evaluation of programs" and "maintaining accuracy of the minutes of the board of directors' meetings."

A majority of managers appropriately noted that both groups should "encourage membership and active patronage" and "keep current on legislation concerning cooperatives." The other three frequently shared responsibilities showed responses biased toward manager dominance: "acting in good faith with reasonable care in handling the affairs of the cooperative" (58.5% equal), "educating the general public about the cooperative and its activities" (56.1% equal), and "informing members of developments within the cooperative" (56.1% equal).

Financial Analysis

Eighty-eight percent of the managers had participated in a financial statement training program, while 81% had participated in a formal budget training program. The cooperative provided 94% of the financial statement training and 88% of the budget training sessions.

Analysis of financial ratio knowledge revealed that managers' average responses were within the ranges specified by industry leaders and selected literature in the areas of liquidity, efficiency, and profitability. However, with respect to the solvency ratio, their average response was slightly above the appropriate range, indicating that some cooperatives may be burdened with excessive debt or managers may have higher perceptions of debt loads. Of course, appropriate ratios for a particular cooperative can vary greatly depending on such factors as competition in the area, age of the firm, and growth goals.

Eighty percent of the agricultural cooperatives established and evaluated performance standards, and 97% used financial ratios to evaluate operations and performance. Emphasis was placed on evaluation of profitability, with all managers noting involvement. A majority of the managers also noted evaluation of efficiency (78.1%), liquidity (59.4%), and solvency (53.1%) measures. Approximately 75% of the managers identified monthly evaluations as being the most common time frame, although 40% also reported annual evaluations. When specifying who was involved in these evaluations, the most frequent responses were the manager (84.4%) and the board of directors (62.5%).

On a scale of 1–5 (with 5 = excellent), 90% of the managers ranked their ability to understand financial statements as 4 or higher. About 75% expressed the same confidence when ranking their ability to make decisions using financial statements. Over 90% of managers ranked their ability to understand the goals and objectives set forth by the board of directors as good or excellent.

Decision-Making Scenario Analysis

Responses were surprising concerning the following decision-making scenario: "A cooperative member has informed you that he/she received bad service from an employee of the cooperative." Although the majority of managers (63.4%) chose to check for prior incidents by the employee in question and to refer the situation to the board of directors, this response is actually not in accordance with the responsibilities of management. The preferred initial action (chosen by 34.1%) was to request a conference with the employee and his/her supervisor.

When questioned about the initial response to a situation involving a long-term employee accused of sexual harassment in the manager's department, managers once again deviated from the defined appropriate response. Over 90% of managers chose to refer the situation to the board of directors when it is actually the duty of the manager to discipline employees. The most correct initial response (chosen by less than 5% of managers) was to discuss the circumstances of the claim and the cooperative's policy concerning the issue with both employees.

Responses varied in relation to handling an employee with the habit of being late for work despite a large workload. The majority of managers (58.5%) responded correctly with "inform the employee's supervisor and request a written counseling statement." Approximately 25% of the managers responded that a threat of termination would be the appropriate action.

Managers' responses were consistent but inappropriate when compared to the defined response for resolving a conflict with a board member who may be misusing cooperative equipment. Approximately 80% of managers reported they would request a meeting of the board, excluding the accused member, to discuss the information. A small percentage of managers (14.6%) responded correctly when they stated they would "include the accused member and a general counsel in the called board meeting."

When faced with the scenario that a board member is sharing privileged information on a patron's financial situation with a competing firm, most managers (84.3%) responded correctly by "calling a meeting of the board of directors and general counsel to discuss the matter."

When managers were questioned about implementing policy changes within certain departments due to changes brought about by a recent merger, they often failed to choose the appropriate response, which was to "meet with the department foreman/supervisor, discuss the policy changes, and jointly develop a plan for implementing the changes." The majority of managers (53.7%) chose to "talk with the employees within the affected section and let them make policy changes needed." About 40% of the managers noted they would develop a plan within established policies and implement the changes. These inappropriate responses may be due to cooperatives having only limited sized management teams. Nevertheless, it is still the manager's responsibility (not the employees') to coordinate and implement policy changes, although employees may have some involvement.

Managers generally provided appropriate responses when asked how to handle members who have become disturbed about their equity in the cooperative. Roughly 75% chose the appropriate response and, if the two best responses were combined, all of the managers were included—i.e., "involve members in discussion of bylaws relative to equity," and "involve members in discussion of how change in equity will affect funds available to the cooperative."

In the last scenario, managers faced a situation where the secretary of the board was not keeping appropriate minutes of meetings. The majority of managers (70.7%) chose to "do nothing." This response may be due to managers realizing the minutes of a board meeting are the responsibility of the board of directors. Also, several of the smaller cooperatives use the manager to keep minutes of the meetings. Regardless of the reason, the manager needs to ensure the minutes are complete and correct since they serve as his/her guideline between board meetings and as the recorded memory for the cooperative. The most appropriate response for this scenario was to "offer additional instruction to the secretary," which surprisingly was not chosen.

Management Issues

Managers were asked to rank the importance of various management issues relating to the operation and success of the cooperative with which they are affiliated (table 3). The more emphasis a manager places on the way he/she is perceived within the organization, the more likely the manager will strive to make the cooperative successful. Members', directors', and employees' perceptions of management were identified by 92.7%, 92.7%, and 95.1%, respectively, of the managers as being "very important" or "extremely important." Managers also placed a great deal of emphasis on the importance of how members perceived the directors.

Financial analysis and budget use allow managers to determine what, if any, portion of the cooperative is deviating from acceptable performance levels, and bring focus to any part of the cooperative that may need additional attention. Over 75% of the managers noted use of budgets within departments as being very or extremely important to the operation and success of the business. Similarly, almost 90% noted importance for financial analysis within each department.

Most managers responded that written policies and procedures (92.7%) and preventive maintenance programs for buildings and warehouses (90.3%) and equipment (90.3%) were very or extremely important to the cooperative. Smaller portions of managers ranked written job descriptions (58.5%) and established performance goals and/or standards (83%) as very or extremely important.

Managers reported that both employees' knowledge (100%) and management's knowledge (97.6%) of products/services offered by the cooperative were very or extremely important. Managers placed less emphasis on introducing or researching new products, with 82.9% giving ratings of very or extremely important. The majority of managers noted that education of the cooperative's employees and providing them with adequate resources for advancement were very or extremely important.

Self-Assessment

As reported in table 4, managers' average responses in the self-assessment section of the survey ranged from 3.6 to 3.9 on a 1–5 scale (1 = poor, 5 = excellent). The lowest assessment scores were recorded in the management knowledge/capabilities

Table 3. Alabama Managers' Indications of the Importance of Selected Management Issues to the Operation and Success of Their Cooperatives, 1998

Management Issue	N	Response Ranking[a] 1	2	3	4	5
		!!!!!!!!!!! (%) !!!!!!!!!!!				
1. Co-op members' perception of management	41	2.4	2.4	2.4	53.7	39.0
2. Board members' perception of management	41	2.4	0.0	4.9	56.1	36.6
3. Employees' perception of management	41	0.0	0.0	4.9	58.5	36.6
4. Co-op members' perception of the board of directors	41	0.0	4.9	14.6	68.3	12.2
5. Use of budgets within each department	41	0.0	2.4	22.0	56.1	19.5
6. Financial analysis within each department	40	0.0	2.5	10.0	60.0	27.5
7. Written policies/procedures	41	0.0	0.0	7.3	51.2	41.5
8. Written job descriptions	41	2.4	0.0	39.0	31.7	26.8
9. Established performance goals and/or standards	41	0.0	4.9	12.2	61.0	22.0
10. Preventive maintenance programs for buildings and warehouses	41	2.4	0.0	7.3	36.6	53.7
11. Preventive maintenance programs for equipment	41	2.4	0.0	7.3	36.6	53.7
12. Management's knowledge of products/ services offered by the cooperative	41	0.0	2.4	0.0	31.7	65.9
13. Employees' knowledge of products/services offered by the cooperative	41	0.0	0.0	0.0	34.1	65.9
14. Introducing/researching new products	41	0.0	4.9	12.2	58.5	24.4
15. Employees' understanding of cooperative principles	41	0.0	2.4	22.0	53.7	22.0
16. Effective employee incentive program	41	0.0	2.4	22.0	51.2	24.4
17. Advanced training for employees	41	2.4	0.0	19.5	51.2	26.8

[a] The response rankings are defined as follows: 1 = not important, 2 = slightly important, 3 = somewhat important, 4 = very important, and 5 = extremely important.

areas of financial analysis and strategic planning, while the highest ratings were noted for business decision making and cooperative principles. This ranking was generally consistent with managers' actual results already discussed pertaining to these management performance measures.

Statistical Analysis

Regression analysis was used to analyze the effect of manager and cooperative characteristics on managers' responses or perceptions within each management area as well as the magnitude of that effect. Five regression models were used for this

Table 4. Alabama Cooperative Managers' Self-Assessment Scores by Management Knowledge/Capabilities Area, 1998

Management Knowledge/ Capabilities Area	Mean	Response Ranking Range [a]	
		Minimum	Maximum
Cooperative Principles	3.9	2.0	5.0
Financial Analysis	3.6	2.0	4.0
Business Decision Making	3.9	3.0	5.0
Strategic Planning	3.6	2.0	5.0
Conflict Resolution	3.7	2.0	5.0
Human Resource Management	3.8	2.0	5.0

[a] The response ranking choices were as follows: 1 = poor, 2 = fair, 3 = average, 4 = good, and 5 = excellent.

analysis, four of which dealt with individual areas, while the last (comprehensive analysis) was a combination of the first four: cooperative principles, manager versus board responsibility, decision-making scenarios, and financial analysis.

The model for cooperative principles (model 1 in table 5) was of poor quality with low explanatory power (R^2 = 16.5%) and a low F-value. Manager experience (*MGREXP*) and age of the manager (*AGE*) were both significant at the .05 level, with manager experience having a negative impact (! 0.298) and age having a positive impact (0.347) on *SCORE*. The impact of manager experience differed from expectations.

The regression analysis was better in explaining variation in managers' score for the importance of manager versus board responsibility, with 55.9% of the variation explained (model 2, table 5). Two variables were found to be significant: manager's concern with the board's perception of him/her (*BRDPERC*) and participation in a management training program (*MNGTRN*). As managers' concern with the board's perception increased by one unit, their score increased by 5.059 points. Therefore, if managers felt the board's perception of them was extremely important, their score in this section was 36% higher than a manager who felt the board's perception was not important. Surprisingly, participation in a management training program lowered a manager's score in this section by 4.918 points (about 8% of the maximum).

The model was a good predictor of variation in score in the area of decision making, as represented by a high R^2 (58.2%) and F-value (model 3, table 5). Education level (*EDULVL*) and age of the manager (*AGE*) had positive effects on the managers' score. The smaller impact was by age (0.338). However, if the large range in age of managers was taken into consideration (a span of 37 years), the eldest manager would score over 30% higher in this section than the youngest manager. For education level, the *EDULVL* variable was segmented into high school or less and some college or more. Thus, the parameter estimate of 5.312 indicated that at least some college education increased the score for the decision-making section by 13% of the maximum.

Table 5. Regression Results for Cooperative Principles, Manager versus Board Responsibility, Decision Making, Financial Analysis, and Comprehensive Analysis for Alabama Agricultural Cooperative Managers, 1998

	Regression Model for Management Knowledge/Capabilities Area				
Independent Variable	(1) Cooperative Principles	(2) Manager vs. Board Responsibility	(3) Decision Making	(4) Financial Analysis	(5) Compre-hensive Analysis
Intercept, $\$_0$	25.430***	44.310***	13.118***	7.230	89.676***
	(9.860)	(7.360)	(4.128)	(9.880)	(17.604)
MGREXP	!0.298**	0.074	!0.066	!0.173	!0.471*
	(0.134)	(0.100)	(0.056)	(0.138)	(0.245)
SALES	!0.000	0.000	!0.000	!0.000	!0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
EDULVL	4.546	!1.302	5.312***	2.912	11.535**
	(2.912)	(2.172)	(1.218)	(2.837)	(5.065)
AGE	0.347**	!0.182	0.338***	0.215	0.726**
	(0.155)	(0.115)	(0.065)	(0.159)	(0.282)
BRDPERC	0.310	5.059***	!0.376	!1.045	4.622**
	(1.204)	(0.898)	(0.504)	(1.188)	(2.124)
OFFDMGR	2.471	!0.223	0.241	0.543	2.937
	(2.116)	(1.578)	(0.885)	(2.047)	(3.652)
MNGTRN	1.566	!4.918**	0.119	!0.304	!0.642
	(3.214)	(2.397)	(1.344)	(3.505)	(5.905)
FINTRN	—	—	—	9.957***	10.770*
				(3.175)	(5.676)
F-Value	0.933	5.964**	6.556***	1.536	1.866*
R^2	0.165	0.559	0.582	0.227	0.318

Notes: Single, double, and triple asterisks (*) denote statistical significance at the .10, .05, and .01 levels, respectively. Values in parentheses are standard errors. Dependent variable is *SCORE*.

In the financial analysis model (model 4, table 5), an additional variable was included to represent attendance by the manager in a financial statement training program (*FINTRN*). The R^2 (0.277) was acceptable for cross-sectional data, but the F-value was low. *FINTRN* was the only variable found to be significant, with managers who participated in training increasing their score by 9.957 (almost 35% of the maximum points available).

The comprehensive score model explained 31.8% of the variation in score, with five variables being significant (model 5, table 5). Education level (*EDULVL*) and participation in financial statement training (*FINTRN*) had the largest parameter estimates at 11.535 and 10.770, respectively. Thus, a manager's college attendance or participation in financial statement training would account for a 5–6% increase in the comprehensive score. Two of the other significant variables, age of the manager (*AGE*) and importance of the board's perception of the manager (*BRDPERC*), had smaller parameter estimates (0.726 and 4.622, respectively), but they also had the capability of accounting for a larger percentage of the comprehensive score. In the case of age, it would take about 15 years to make the same impact as higher educational attainment.

Summary and Conclusions

Survey responses indicated that managers were knowledgeable within all areas of the analysis: cooperative principles, manager versus board responsibility, financial analysis, and business decision making. Average scores generated were at or above 75% of the maximum possible score, with the highest scores in the area of business decision making. Managers scored lowest in the area of financial analysis. Average scores in the self-assessment section of the questionnaire were consistent with actual performance measure results. Overall, self-assessment scores tended to be highest for business decision making and cooperative principles, and lowest for financial analysis. Thus, actual and self-assessments were generally consistent. Therefore, given that the survey questions were representative of the cooperative decision environment, managers' appraisals of their knowledge/capabilities were realistic.

Managers showed strong support for selected management issues related to perceptions of their position by the cooperative board, members, and employees. They also recognized the importance of budgeting, financial analysis, written policies and procedures, and employee training programs to the success of their organizations.

All variables in the estimated models were expected to have positive impacts on managers' scores; therefore, our finding that manager experience (*MGREXP*) had a significant negative influence on cooperative principles and comprehensive scores was surprising. The only other significant negative influence was participation in a management training program (*MNGTRN*) for the manager versus board responsibility area.

In each of the evaluation areas of cooperative principles, manager versus board responsibility, and financial analysis, one variable had a significant positive influence on managers' scores. The respective variables were age (*AGE*), importance of the board's perception of the manager (*BRDPERC*), and participation in financial statement training (*FINTRN*). In the remaining two areas of focus, business decision making and comprehensive analysis, multiple variables had significant positive impacts on scores. Both age (*AGE*) and education level (*EDULVL*) had positive impacts on business decision making. The comprehensive score model should represent a manager's understanding of a major portion of the cooperative environment by summing the areas of cooperative principles, division of responsibility, business decision making, and financial analysis. Participation in financial statement training (*FINTRN*), education level (*EDULVL*), age (*AGE*), and the importance the managers placed on the board's perception of them (*BRDPERC*) all had positive impacts in the comprehensive model.

Results of the study are encouraging, and corroborate the notion that knowledgeable managers are leading participating cooperatives. Support by managers for cooperative ideals and principles is evident. However, our findings indicate an opportunity exists to strengthen managers' knowledge/capabilities in the areas of cooperative principles, division of responsibility between managers and the board of directors, and financial analysis. The management issue of participation in training programs appeared to have mixed results, suggesting that current training programs may need to be evaluated to determine their strengths and weaknesses. Since the importance managers placed on the board's perception of them seemed to have a substantial positive impact, implementation of an appropriate evaluation program may heighten managers' awareness and performance—i.e., high expectations by the board may translate into better managers. Educational attainment had a positive impact on managers' decision-making and comprehensive scores, supporting the idea of increased hiring of college graduates by cooperatives.

The rapidly evolving business world forces cooperatives to adjust and adapt or face the possibility of jeopardizing their continued survival. A competent, knowledgeable manager will serve as an integral link in the implementation of business practices designed to make future cooperatives viable and efficient businesses that effectively serve member needs.

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