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Introduction

Whether it is a cooperative or an IOF, the effectiveness of management determines the success or failure of any firm (Cobia 1989). A successful manager of a cooperative, besides the skills of an investor oriented firm (IOF) business leader, needs to possess four additional qualifications (Cook 1994). First, managers need to be comfortable with vagueness, complexity, and conflict. Second, managers need to concentrate more planning efforts on developing entrepreneurial and operating abilities rather than portfolio-related objectives. Third, communication and leadership skills are important, and becoming a professional spokesperson for members is an imperative. Finally, the cooperative leader must be comfortable with building coalitions, consensus, and inter-member loyalty--key components in developing group cohesiveness (Cook 1994).

Cooperative management needs broader interpersonal relation skills than IOF management because cooperative patrons are also cooperative stockholders (Cobia 1989). The general managers must understand patron needs and desires and must communicate with patrons on a personal basis frequently by maintaining high degree of visibility.

Decision-making responsibilities vary from one cooperative to another and often the board and the manager make decisions jointly. Board decisions often require input from managers, and in turn, managers in many circumstances request board input before making a management decision (Cobia 1989). The essence of cooperative management is to pursue goals and determine the best way to achieve them. Management problems can arise from a lack of teamwork, cooperation, or communication among directors and managers (Cobia 1989).

Managers need to keep everyone adequately informed about cooperative plans, policies, and strategies because sharing information and its effective use may enhance productivity of the firm as well its performance.

Although the main objective of cooperatives is not necessarily to generate profit, one of the purposes that all members wish to achieve is the performance of the firm, which is affected by the relationship between the stakeholders. In cooperatives, this relationship depends on how well the board exerts control, how well a manager executes plans, how plans are communicated from the members-owners to the managers, how the objectives of members, directors and managers are harmonized, and how often the board and managers are engaged in joint planning. Given the unique role of the manager in cooperatives and their large role in agriculture, understanding managerial effectiveness and performance is vital.

The primary objective of this research is to evaluate the impact of managerial behavior on financial performance of agricultural cooperatives. A better understanding of managers' conduct and behavior may assist cooperatives in creating more effective management.

Literature Review

Literature on agricultural cooperatives mostly tends to focus on management of the cooperatives, the structure and challenges of the cooperatives, key factors for success, board of directors, and to some extent factors of cooperatives that affect cooperative performance. A myriad of studies has provided insights into roles of management in corporations, including cooperatives. Furthermore, research has explored the board size and financial performance and board-management responsibilities and authorities. However, little empirical research is available on the impact of managerial behavior on financial performance in agricultural cooperatives.

Cook (1994) explores the role of management behavior in the economic performance of agricultural cooperatives and observes the degree of difficulty in

managing an agricultural cooperative relative to an IOF. The results of this non-empirical essay suggest that in the roles of conflict resolution, resource allocation, information spokesperson, and leadership roles, the challenges of a user-oriented manager are meaningfully different and often more difficult.

Numerous researchers and executives find that strategic planning is a critical variable that affects a corporation's performance. Miller and Cardinal (1994) suggest that strategic planning positively influences firm performance. Boland, Hogeland, and McKee (2011) explain the importance of strategy in director and management leadership development programs and indicate that additional talent and education on this topic are crucial for director and manager leadership development. Katz (1998) examines the role owners and managers play in affecting the strategic choices and performance of agricultural cooperatives. The results of a nationwide survey indicate that firm performance is affected by the influence owners have over the strategies available to the firm. Our study examines if the frequency of managers' engagement in strategic planning affects the financial performance.

Social networking and continuing education provide specific skill development necessary for employee professional growth (Hopkins 1995), which is an investment into both employees' future as well as a company's future. By attending education workshops and conferences, employee will improve their knowledge base and ultimately their work performance. They will obtain knowledge about current trends and issues affecting their work and will be better prepared to take on the new responsibilities associated with these trends. Through skill development, employee will become more self-confident and aware of their abilities, thus they will become more motivated about their work and responsibilities (Hopkins 1995). For numerous executives, quality is their number one strategy in influencing the competitive performance and success of their organization (Barrie and Cooper 1994). To develop their own personal understanding of the subject, managers are required to attend conferences and get involved in networks and talk to as many people as possible (Barrie and Cooper

1994). Our study examines if the managers' participation in educational conferences positively impacts financial performance.

There are likely to be strong feedback effects between member commitment and cooperatives' performance, thus a decline in member commitment is one reason for the decreasing market share and poor financial performance of many cooperatives (Fulton and Giannakas 2001). Furthermore, Verschoor (1998) show a statistically significant link between a management commitment to strong controls that emphasize ethical and socially responsible behavior on one hand and favorable corporate financial performance on the other. Cechin et al. (2013) state that in cooperative studies, a common concept for commitment is loyalty, which refers to retention and the member's willingness to patronize the cooperatives. Moreover, Dessler (1999) finds that frequent meetings enhance a sense of community, which is necessary to foster employees' commitment. Committed employees tend to have better attendance records and longer job tenure than less committed employees. Employees are more committed to organizations that support their long-term career development (Dessler 1999). Our study examines if the more committed managers have enhanced performance, which will ultimately improve the cooperative's financial performance.

A good working relationship between the board of directors and managers is vital for cooperatives as the board and the manager make decision jointly (Baarda 2003). Board decisions often require input from managers, and in turn, managers in many circumstances request board input before making a management decision (Cobia 1989). The success of a cooperative depends heavily on a good board-manager relationship, which requires respect and an understanding of each other's responsibilities and authorities (Cobia 1989). Delarue et al. (2007) show that teamwork has a positive impact on organizational performance. In a separate study Devaro (2006) confirms the popular belief in management circles that team production enhanced financial performance. Montes, Moreno, and Morales (2005) confirm that when management creates working conditions based on support and teamwork cohesion, the organization's performance is improved. Furthermore, job satisfaction has been found to

influence both the behavior of workers and the productivity of firms (Freeman 1978). Managers need to eliminate barriers from their organization that cause job dissatisfaction. Aspects such as company politics, unproductive meetings, withholding information, and unfairness lower morale and lead to overall job dissatisfaction (Robbins and Coulter 1996). Our study explores whether more satisfied managers with the business relationship they have with the board of directors have improved performance, which would positively affect financial performance of their cooperative.

The sole purpose of cooperatives is not necessarily to generate and maximize profit (Bond 2009). Cooperatives are owned by and controlled for the benefit of their members, thus the objective of cooperatives is to maximize services to their members, subject to a profit constraint (Gentzoglani 1997). Sexton and Iskow (1993) claim that ratio analysis may be biased and it fails to consider non-market benefits. As Bond (2009) elucidates, many researchers have employed ratio analysis as they have experienced challenges in measuring cooperatives performance due to data limitations. Consequently, our study measures the cooperative financial performance using two available and accepted financial ratios, return on assets and return on equity.

Methods

Design of the Survey and Pretesting

This research primarily focuses on managers' perception and behavior in agricultural cooperatives; therefore, the survey is administered to the general managers of the cooperatives.

In collaboration with the Texas Agricultural Cooperative Council (TACC), we attended the Managers Conference held July 9-11, 2014 in Ruidoso, New Mexico. The purpose was to enhance the awareness of this study and thus increase the number of participants, as well as interact with them and audit discussions about their topics of interest and concern. Additionally, managers were individually asked if there were any particular topics they were interested in. Their feedback was very beneficial as it helped us developing questions which

answers would provide additional information on these topics of interest. Lastly, the fifty-four-question survey was finalized and administered to the general managers of the cooperatives who were members of the TACC. After the conference, questionnaires for the general managers were sent via mail to 148 agricultural cooperatives. To show appreciation for managers taking the time to complete the survey, all participants' names were entered into a drawing for one \$100 "Cabela's Gift Card".

Model-testing Approach

This study includes analysis of managers' perceptions of their conduct and relationship with the board of directors. The study is designed to evaluate the impact of *frequency of meetings, frequency of engagement in strategic planning, number of conferences attended, organizational commitment, and relationship between managers and the board of directors* on financial performance of agricultural cooperatives. Two models, with two different dependent variables, are utilized while independent variables remain the same in both models.

The linear regression models are as follows:

Model 1:

$$\begin{aligned} \text{Return on assets (ROA)} = & a_0 + a_1\text{meet} + a_2\text{stplan} + a_3\text{conf} + a_4\text{committ} \\ & + a_5\text{relat} + a_6\text{cottgin} + a_7\text{memb} + \varepsilon \end{aligned} \quad (1)$$

Model 2:

$$\begin{aligned} \text{Return on equity (ROE)} = & a_0 + a_1\text{meet} + a_2\text{stplan} + a_3\text{conf} + a_4\text{committ} \\ & + a_5\text{relat} + a_6\text{cottgin} + a_7\text{memb} + \varepsilon \end{aligned} \quad (2)$$

Return on assets and return on equity represent the dependent variables in model 1 and model 2, respectively. Averages of the audited annual reports for each year during the period from 2011 to 2013 provide information to calculate financial ratios for all cooperatives.

$$\text{Returns on assets (ROA)} = \frac{\text{Net Margins}}{\text{Total Assets}} \quad (3)$$

$$\text{Returns on equity (ROE)} = \frac{\text{Net Margins}}{\text{Total Equity}} \quad (4)$$

Both financial ratios are derived as the mean for this three-year period.

Independent variables are the same in both models:

meet = frequency of official meetings with the board; to obtain the answer to the question relative to the frequency of meetings, the managers are asked the following question: “How often do you meet officially with the board?”

stplan = frequency of engagement in strategic planning; to obtain the answer to the question relative to strategic planning, the managers are asked the following question: “How often do you and your board engage in strategic planning?”

conf = number of conferences attended per year. To obtain the answer to the question relative to social networking and continuing education, the managers answer the following question: “On average, how many managers’ conferences do you attend per year?”

committ = belief that a manager will spend the rest of his/her career with the cooperative. This variable measures manager’s commitment. The managers answered the following prompt: “I plan to spend the rest of my career as an employee of this cooperative.”

relat = satisfaction with the relationship with the board; to examine the relationship between the manager and the board of directors, the managers answer the following prompt: “Overall (considering everything), indicate the extent to which you are satisfied with the business relationship between you and the board.” The managers are asked to report the extent to which they are satisfied with the relationship with their board of directors on a scale from 0 to 10 (0 being least satisfied, 10 being most satisfied).

cottgin = dummy variable for a *cotton gin* cooperative differentiates cotton gin (processing service) cooperatives from marketing and supply (purchasing) cooperatives.

memb = dummy variable if a manager is a member of the cooperative distinguishes the *member manager* from the non-member manager of the cooperative, and

ϵ = error term.

Results and Discussion

The survey was sent to 148 agricultural cooperatives in Texas; thus, 148 managers received the survey. In total, 47 (43 males and 4 females) managers completed the survey; therefore, the managers' response rate was 31.76%. More than half of the cooperatives (60%) are processing service (cotton gin) cooperatives, while the remaining 40% includes marketing and supply (purchasing) cooperatives.

The age distribution (Table 1) indicates a majority (67%) of general managers are over 50 years old.

In a separate question, managers are asked about the number of years in the general manager position. More than one third of the managers, 37% report that they have been in this position for at least 21 years. Additionally, 4% have spent their careers as general managers between 16 and 20 years; 15% have been in this position between 11 and 15 years; 22% have been general managers between 6 and 10 years; 22% report that the number of years they spend in this position is less than 5 years.

In terms of education, 20% of managers completed high school, 28% attended some college, while the remaining 52% earned at least an undergraduate degree (Table 2), indicating high education of more than a half of cooperative managers.

Managers meet with the board unofficially (informal frequent meetings that may occur daily) more frequently compared to official (formal, scheduled, well-planned and regulated meeting) meetings (Table 3). One may argue that more frequent unofficial meetings could create less distance between the manager and the board, which would positively affect the relationship between them as the managers would feel more open for communication and cooperation, and would feel less fear from expressing their own opinions and preferences. This cooperation would translate into greater effectiveness and productivity of both the manager and the board, and thus, better performance of a cooperative. On the other hand, frequent meetings may imply micromanagement of managers and lack of trust, which would further lower performance as the board and managers would spend less time on strategy and planning.

The managers' interest in social networking and continuing education are examined by asking the managers how many conferences they attend per year. The results (Table 4) indicate that 46% of managers attend one or two conferences per year, while 47% attend at least three conferences per year. The assumption is that managers who attend conferences will obtain beneficial information about their industry which may have a direct effect on financial performance.

The results from the part of the survey related to strategic planning (Table 5) indicate that 50% of managers engage in strategic planning with the board at least once every two years, while the remaining 28% engage less frequently. However, 22% of managers have never been engaged in strategic planning with their board. Given that previous researchers show a strong positive relation between strategy and performance of a firm, this relatively large portion never engaging in strategic planning could indicate lower performance for these cooperatives.

Finally, in a separate question managers are asked what characteristics they value the most about their board. The managers report the following characteristics (in order of importance): 1) trustworthiness; 2) understanding and respecting the board-manager relationship; 3) a board's total commitment and

dedication to the cooperative; 4) good communication, and 5) very active and experienced chairman. However, many managers agree that their chairman needs to spend more time in strategic planning. The managers also perceive a need for their chairman to attend the conferences and encourage other board members to obtain training. Finally, the managers report high importance of their chairman determining direction and long-term goals for the cooperative.

Regression Analysis

Two econometric models estimate the effects of the independent variables on financial ratios as dependent variables. The models are estimated in Statistical Analysis System 9.4 (SAS) Software by employing feasible generalized least squares. Initially, ordinary least squares is employed to estimate the parameters; however, the results show that the variances of the observations are unequal (heteroscedasticity). In order to correct for heteroscedasticity, feasible generalized least squares is employed. The parameter estimates for model 1, in which the dependent variable is *return on assets*, are shown in Table 6, while the parameter estimates for model 2, in which *return on equity* represents the dependent variable, are presented in Table 8. Descriptive statistics for return on assets and return on equity models are reported in Tables 7 and 9, respectively.

Results for both models indicate that three same variables are statistically significant at the 5% level and the parameter estimates for these three variables have expected positive signs.

The dummy variable *frequency of meetings with the board* (1 if managers meet officially once a month with the board and 0 if they meet less frequently), is not statistically significant in either model. There is a possible ambiguity of this variable and a question of causality and expected sign. Do more frequent meetings between the manager and the board lead to improved performance or do poorly performing cooperatives schedule additional meetings to address their issues? Almost 40% of the managers report meeting informally once a week and 50% once a month, thus there appears to be significant communication outside of

official board meetings. Therefore, further research is required to determine the effect of informal meetings on financial performance.

Unexpectedly, dummy variable for *strategic planning* (1 if managers engage in strategic planning at least once a year; 0 otherwise), is not statistically significant in either model. Although the substantial literature confirms a strong positive relationship between strategy and financial performance, the results of this study do not support this argument. Given the lack of significance of this variable, further investigation is necessary and definition of strategic planning should be clarified to respondents to avoid the possibility of multiple interpretations.

The variable *number of conferences attended* is not statistically significant in either of the two models, thus this study cannot confirm previous findings that attending conferences and getting involved in networks would positively affect financial ratios.

The parameter estimates for the dummy variable *spending the rest of career with the co-op* indicate that commitment positively affects both return on assets and return on equity. Committed managers are motivated and tend to successfully perform challenging work to gain recognition from the board. Moreover, managers may identify themselves with the cooperative and even when a course of action is unrewarding for managers personally, they might nevertheless execute it because of their commitment.

As anticipated, the variable *relationship with the board* has a positive effect on profitability. The findings of this study imply that the greater the extent to which managers are satisfied with their relationship with the board, the higher the return on assets and return on equity. A good relationship between the manager and the board creates a strong bond, union and cohesiveness among them and they feel more open to talk about their goals, interests and concerns; thus, it is more possible to reach the optimal solution. A good relationship between the manager and the board is critical, as it results in better organization

and coordination of activities, more communication, greater cooperation and productivity, which yields higher returns to members and higher profitability.

Finally, the two last variables in both models are *dummy variables*, one to differentiate *cotton gin cooperatives* and another one to distinguish the *member manager* from the non-member manager of the cooperative. The results for cotton gin cooperatives are statistically significant in both models indicating that, on average, this category of cooperatives tend to have higher profitability. The dummy variable for *member manager* is not statistically significant in either model, thus arguing that member manager would positively affect financial performance would not be supported by our findings. Among all respondents, there are 29 member managers, 14 of which are members of cotton gin cooperatives. There are no indications that member managers are more prevalent in the more profitable cotton gin category. Furthermore, there is not sufficient information to determine whether the member managers were former producer members who accepted management positions. Obtaining supplementary information from member managers would be beneficial for future research to determine whether multiple roles (member and employee) in the cooperative provides the manager better insights.

Conclusions

The primary objective of this study is to evaluate the impact of managerial behavior on financial performance of agricultural cooperatives. Given the unique roles of the managers in cooperatives, a better understanding of their conduct and behavior is important in creating more effective management. In this study, managerial behavior is observed through frequency of meetings and engagement in strategic planning, interest for social networking, commitment, and satisfaction level with the board relationship.

In cooperatives, the ultimate purpose that all members strive to achieve is not necessarily to generate profit. However, enhanced performance is essential for successful operation of the business. The results of the study indicate that

organizational commitment and satisfaction with the relationship between the managers and the board positively affect financial performance of a cooperative. Furthermore, cotton gin cooperatives tend to have higher profitability compared to marketing and supply cooperatives.

The findings from previous literature confirm that there are strong feedback effects between employees' commitment and firm performance, thus an increase in commitment is one reason for the improved financial performance of many firms. Committed cooperative managers tend to feel more engaged, motivated and vital which translates into better performance. They are willing to put in the considerable effort and take ownership over the success and failure of their cooperative. They are the most valuable asset that deliver long-lasting productivity and success of a cooperative.

If cooperatives are to be successful in their performance, the relationship between managers and the board of directors is crucial as they act together as a team in making important decisions about distribution of cost and benefits, defining the cooperative strategy, setting objectives, determining actions to achieve the objectives, and making decisions on allocating available resources to pursue the strategy. A good relationship between the manager and the board creates a strong bond among them and they feel more open to discuss their goals and interests. With a high level of communication and cooperation, they are more likely to respect each other and understand their objectives, and if any issue arises in the cooperative, they have a better chance to overcome them and reach an optimal solution. Moreover, if they trust each other, they will engage in productive collaboration characterized by low transaction costs. Furthermore, if managers and the board are satisfied with their relationship, they are more effective and productive because they have better organization and coordination of activities. Therefore, union, harmony, and cohesiveness between the board and the managers enhance their productivity and effectiveness by creating higher returns for members, which further results in higher financial performance of a cooperative.

This study argues that committed managers and good relationship between managers and the board are perceived as important determinants of cooperative performance. The board and the managers must be able to overcome all discrepancies they experience in their relationship to increase the performance and success of their cooperative. An effectively managed and well-controlled cooperative with committed managers has the best chance of developing into a viable business that is able to generate the expected benefits for all members.

Limitations to this study are to some extent ambiguous results with respect to return on assets and return on equity due to the failure to confirm the significance of factors expected to impact financial performance. Another limitation is the difficulty in measuring some of the aspects which are expected to affect managerial effectiveness such as communication, trust, skills; therefore, further research could explore alternative methods to measuring these factors. Furthermore, the survey is conducted among agricultural cooperatives in Texas. Future research should extend the sample size by including cooperatives in other states of the country. To collect more extensive data, more specialized survey instruments can be employed and additional and more complete data may be collected.

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Table 1. Ages of the Managers Who Participated in the Survey

Age	25-30	31-35	36-40	41-45	46-50	51-55	≥56
Managers	4%	7%	4%	11%	7%	30%	37%

Table 2. Education of Managers Who Participated in the Survey

Education	High school	Some college	Undergraduate	Graduate
Managers	20%	28%	37%	15%

Table 3. The Frequency of Official and Unofficial Meetings With the Board of Directors

Frequency of meetings	Once a week	Once a month	Once every few months	Once a year	Once every few years	Never
Official	0%	85%	15%	0%	0%	0%
Unofficial	39%	50%	9%	0%	0%	2%

Table 4. The Number of Conferences Attended per Year

Number of conferences attended per year	None	1-2	3-4	≥5
Managers	7%	46%	17%	30%

Table 5. The Frequency of Managers' and the Bard's Engagement in Strategic Planning

Frequency of engagement in strategic planning	Once a year	Once every two years	Once every three years	Once every five years	Never
Managers	43%	7%	9%	19%	22%

Table 6. Results for Model 1 - Return on Assets

Independent variable	Parameter estimate	Standard error	P value
Frequency of meetings with the board	-0.0071	0.0290	0.8079
Frequency of strategic planning	-0.0229	0.0310	0.4639
Number of conferences attended	0.0105	0.0141	0.4597
Spending the rest of career with co-op	0.1024	0.0295	0.0013
Relationships with the board	0.0188	0.0060	0.0030
Cotton gin cooperative	0.0819	0.0249	0.0021
Member of the cooperative	0.0275	0.0281	0.3336

Table 7. Descriptive Statistics for Return on Assets Model

Independent variable	Mean	Standard deviation	Minimum	Maximum
ROA	0.1519	0.1098	-0.0112	0.3838
Frequency of meetings with the board	0.8511	0.3599	0	1
Frequency of strategic planning	0.4255	0.4998	0	1
Number of conferences attended	2.7021	0.9761	1	4
Spending the rest of career with co-op	0.8936	0.3117	0	1
Relationships with the board	9.0574	1.2176	3.6	10
Cotton gin cooperative	0.5532	0.5025	0	1
Member of the cooperative	0.6170	0.4914	0	1

Table 8. Results for Model 2 - Return on Equity

Independent variable	Parameter estimate	Standard error	P value
Frequency of meetings with the board	-0.0879	0.0810	0.2849
Frequency of strategic planning	-0.0969	0.0641	0.1385
Number of conferences attended	0.0015	0.0300	0.9607
Spending the rest of career with co-op	0.4501	0.2132	0.0412
Relationships with the board	0.0352	0.0120	0.0056
Cotton gin cooperative	0.1361	0.0536	0.0152
Member of the cooperative	0.0600	0.0547	0.2795

Table 9. Descriptive Statistics for Return on Equity Model

Independent variable	Mean	Standard deviation	Minimum	Maximum
ROE	0.2253	0.3017	-1.3698	0.6598
Frequency of meetings with the board	0.8511	0.3599	0	1
Frequency of strategic planning	0.4255	0.4998	0	1
Number of conferences attended	2.7021	0.9761	1	4
Spending the rest of career with coop	0.8936	0.3117	0	1
Relationships with the board	9.0574	1.2176	3.6	10
Cotton gin cooperative	0.5532	0.5025	0	1
Member of the cooperative	0.6170	0.4914	0	1