# Factors Contributing to Effective U.S. Cooperative Member-owner Communications

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*Selected Paper prepared for presentation at the Southern Agricultural Economics Association (SAEA) Annual Meeting, Orlando, Florida, 3-5 February 2013*

## Background

According to Burt (2004), communication between management and members is an essential factor in running a successful cooperative. In part of a national multi-university project, the challenges, critical issues and success factors agricultural cooperatives face were identified on Aug. 4, 2011, through a panel of USDA and academic experts in Washington, D.C. (Kenkel and Park, 2011). Communicating the cooperative value package to member-owners was identified as the most critical communication challenge among U.S. agricultural cooperatives.

In much of the literature on developing and maintaining a successful cooperative, one of the key factors to this equation includes incorporating effective member-owner communications in order "to help develop the capacity of the management and members to listen well and respond appropriately to the genuine concerns of the workers and the community" (Baseman, 2012). Through an online survey, Baseman (2012) found inadequate communications among members, the board of directors, management and community as the primary reason for cooperative failure. Other success factors include active member participation through patronage and decision-making, in addition to the willingness to make capital investments in the business (Burt, 2004). However, the need for these success factors is often not communicated to member-owners. A growing concern among cooperatives, across all sectors, has emerged to effectively communicate the prices provided to members, access to the market, specific and unique services available, counteractive market power and financial return created for member-owners (Kenkel and Park, 2011). This viable relationship between the cooperatives and member-owners is fostered through both formal and informal communications.

Inconsistent and ineffective communication provides opportunity for a disconnect between member-owners and the organization. Members-owners become distant and inactive within the organization when they do not receive the information to fully understand the

cooperative value package (Haigh, 2000). This uncertainty created from the lack of communication, can influence member perception because they make "financial, emotional and intellectual investments in their organizations" (Haigh, 2000).

Tretcher, King and Walsh (2002) concluded the level of member commitment is statistically significant relative to the communication strategies implemented. Therefore, the size of the cooperative should not influence effective, consistent communication between managers and all member-owner audiences of the cooperative.

Often times, limited communication between the cooperatives and member-owners exists due to a small marketing and communications budget, which typically includes a communications professional's salary, printing and online costs, and other associated costs (Haigh, 2000). Therefore, agricultural cooperatives typically use low-cost communication vehicles, such as face-to-face communication, annual meetings and newsletters, to maintain relationships with member-owners (Trechter, King and Walsh, 2002). However, implementing traditional, conservative communication vehicles automatically reduces conversation with the number of people within a membership. Reaching diversified audiences is a function of using diversified communication methods.

Within the past ten years, few studies have determined current communications vehicles incorporated in cooperatives. According to Haigh (2000), rural electrical cooperatives use newsletters as the most common form of communications, coupled with annual meetings and other written materials. Cooperatives rarely use other communication tactics, such as websites, fliers, tradeshow displays, and email (Haigh, 2000).

Trechter, King and Walsh (2002) determined agricultural cooperatives implement an average of five communications tactics annually, including a quarterly newsletter, press releases, a website, focus groups and a member survey. The study identified high value of informal

communications with employees and managers, followed closely by cooperative newsletters, newspaper articles and the annual meeting (Trechter, King and Walsh, 2002). Trechter, King and Walsh (2002) determined simple communication techniques and member commitment are highly correlated, while electronic communications were determined to be unfavorable (Trechter, King and Walsh, 2002). However, the researchers confirmed online communication tactics serve as a "complement in communication plans rather than a substitute for more traditional sources of information" (Trechter, King and Walsh, 2002).

As technology continues to prosper, agricultural entities have begun accompanying traditional communication methods with online or digital tactics to reach an extended target audience. Keeling-Bond and Bhuyan (2011) found cooperatives continue to implement face-to-face meetings, printed newsletters and phone calls, in addition to some digital tactics including, email, texting, websites and electronic newsletters to communicate the value package. However, websites and email contact were the most cited methods of modern member-owner communications. Overall, cooperatives predominately use face-to-face contact, websites and newsletters to correspond with member-owners.

The 2012 Media Channel Study, conducted by AgriCouncil, determined over half of farmers use digital agricultural resources weekly with agricultural websites and E-newsletters drawing the most attention. Over 70% of farmers younger than 45 years old use digital agricultural resources weekly, while almost 60% of farmers between the ages of 45 and 60 years old use digital resources weekly. Sixty-six percent of farmers also agreed they use digital and traditional agricultural media platforms to learn tips, best practices, and to gain valuable agricultural information. However, fewer than half agree that digital media is essential in running their operation, which implies the majority of farmers and ranchers continue to use a

combination of both traditional and digital resources to assist in managing their operations (AgriCouncil, 2012).

Research measuring the effectiveness of communications has also been historically limited. Effective communication refers to the formal and informal distribution of clear, consistent and timely information to a specific audience (Sharma and Patterson, 1999). Effectiveness also encompasses the importance of the topics and messages in those communications to both the cooperative and the member-owners.

In a recent study, Keeling-Bond and Bhuyan's (2011) research identified the effectiveness and satisfaction cooperative leaders believe exists within cooperatives in relation to member-owner communications. Cooperative leaders ranked member meetings among the top-four most effective communication methods (Keeling-Bond and Bhuyan, 2011). Between 75-80% of survey respondents also indicated the cooperative's website, newsletters and email served as somewhat effective to effective communication vehicles (Keeling-Bond and Bhuyan, 2011). Additionally, 60% of cooperative leaders expressed satisfaction with the frequency of current communication with member-owners. Therefore, the study concluded approximately 70% of cooperative leaders indicated satisfaction with the combination of frequency and depth of current cooperative member-owner communications, which combines the use of newsletters, meetings, websites and personal communications (Keeling-Bond and Bhuyan, 2011).

Keeling-Bond and Bhuyan (2011) identify the necessity of diverse communications in reaching multiple audiences within a cooperative membership and examine how cooperatives communicate the "cooperative value package." The researchers determined communication methods are only as diverse as the cooperative by surveying food store cooperatives. This study determined 86.5% of the food cooperatives use a website, 60% use email, 43.3% use an E-newsletter, and 14.7% use texting to reach member-owners more than six times annually

(Keeling-Bond and Bhyuan, 2011). More traditionally speaking, 52.7% food cooperatives use a mailed newsletter, 20.3% have member meetings, and 49.3% call member-owners more than six times per year (Keeling-Bond and Bhyuan, 2011). Each demographic audience finds value in different communication channels; therefore, value is added to providing information in both formal and interpersonal ways (Keeling-Bond and Bhyuan, 2011). Survey respondents indicated reaching multiple audiences is necessary and communication methods should be refined for each of those audiences. This indicates communicating to only one demographic within membership produces ineffective communications due to such a narrow or specific audience.

This recent study, facilitated by the National Cooperative Business Association, also identified websites as the most frequently used method of cooperative to member-owner communications and email communications as the second (Keeling-Bond and Bhuyan, 2011). Additionally, food store cooperatives communicate through an assortment of traditional tactics (informal meetings, printed newsletters and phone calls) and other modern tactics (texting and E-newsletters) (Keeling-Bond and Bhuyan, 2011). This demonstrates the diversity among cooperatives and provides reason for diverse communications relative to the key audiences and messages to channel (Baseman, 2012).

According to Keeling-Bond and Bhuyan (2011), controlling messages can be managed efficiently through robust communications but argues the process demands time and constant attention. Cohesive messages to demonstrate the cooperative value package is essential (Keeling-Bond and Bhuyan, 2011). Smaller cooperatives try to communicate their "sense of community" and "contribution to the local economy" (Keeling-Bond and Bhuyan, 2011). Other cooperatives try to communicate their ability to "generate cost-savings for their members." Although the above messages are intended to reach members, the study confirmed current efforts used do not relay these messages to member-owners. When members receive limited communication and

messages the firm did not intend to communicate, the cooperative-member disconnect begins, and firms have a higher potential to lose members.

For the purposes of this research, we define effective communication as consistent, diverse, timely, aesthetically pleasing (i.e. high-quality graphic and design and correct grammar and sentence structure), and delivers the intended messages to the specified audiences.

**Objectives**

The main objective of this research will determine the effectiveness of communication tactics implemented by rural cooperatives to communicate the organization's value package to their member-owners. The specific objectives of this research include (1) determining the current communication vehicles rural cooperatives use to reach member-owners, (2) identifying the messages cooperatives wish to communicate and (3) the factors influencing cooperative managers' perceptions of effective communications with member-owners.

**Methods and Procedures**

A 15-question online survey was distributed by email to 359 managers of agricultural, farm credit and utility cooperatives to elicit current communication vehicles used to correspond with member-owners and to measure the general managers' perspective on their cooperative's level of effective communications. Additionally, we asked the managers of these cooperatives in Oklahoma, Kansas, North Dakota and Iowa[1] to forward the online survey to their board of directors to measure their perceived level of effectiveness. An additional email was sent, followed by a mailed survey to non-respondents and a postcard to recruit participation.

The board of directors received a six-question survey, which allowed each population to provide their input on the importance and effectiveness of key messages channeled through the

[1] The survey was sent to the Iowa Institute for Cooperatives to include another state in the study. Since only six cooperatives in Iowa completed the survey, the total number of agricultural cooperatives in Iowa was not included in the total population.

cooperative's current communication tactics. The cross-tabulation provided insights into the differences in perceptions of board member and managers in the perceived importance and effectiveness of disseminating three key messages through their current communication plans. Three linear regression analyses were used to analyze the effect of cooperative characteristics and communication methods on the effectiveness cooperative managers perceived of communicating, relative to one of three messages (j): (1) Member-owner responsibilities and benefits; (2) The cooperative's overall goals, purpose and news; and (3) Related-industry news and market trends.

(1) Model$_j$: $EM_j = \beta_o + \beta_1 IM_i + \delta_1 PL + \beta_2 EX + \beta_3 NL + \beta_4 DM + \beta_5 MM + \beta_6 RM + \beta_7 FG + \beta_8 EN + \delta_2 SM + \delta_3 W + \beta_9 WI + \beta_{10} CP + \beta_{11} CE + \beta_{12} CT + \beta_{13} CF + \beta_{14} AM + \beta_{15} AGE + \varepsilon$

where j = key messages communicated to member-owners, $\beta_i$ = continuous variables and $\delta_i$ = indicator variables;

- $EM_j$ = manager's perceived value how effective the cooperative communicates message$_j$;
- $IM_j$ = manager's perceived value of the importance in communicating message$_j$;
- PL = cooperatives with personnel directly responsible for member-owner communications/marketing (yes=1, no=0);
- EX = percentage of total operating expenses allocated to cooperative communications;
- NL = the number of printed newsletters distributed annually;
- DM = the number of direct mailings distributed annually;
- MM = the number of open member meetings held annually;
- RM = the number of regional member meetings held annually;
- FG = the number of focus groups/other targeted meetings held annually;

- EN = the number of E-newsletters distributed annually;
- SM = cooperatives using social media to disseminate information (yes=1, no=0);
- W = cooperatives with a website available to disseminate information (yes=1, no=0);
- WI = amount of information available on the website;
- CP = number of member-owners contacted by phone daily;
- CE = number of member-owners contacted by email daily;
- CT = number of member-owners contacted by text messages daily;
- CF = number of member-owners contacted by direct face-to-face contact daily;
- AM = total number of active members;
- AGE = average age of member-owners;

**Results**

At the conclusion of the study, 123 cooperative managers and 200 cooperative board members completed the survey accounting for a 34.26% usable response rate. Although 200 responses were received from board members, only 18.94% of the cooperatives (68 cooperatives) within the population were represented in the sample.

*Current Communications*

As predicted, cooperatives continue to use newsletters at least quarterly to communicate with member-owners. Agricultural cooperatives publish less than two newsletters (1.93) each year (Table 1). Additionally, E-newsletters have continued to grow in popularity as cooperatives distribute this tactic through email 1.15 times per month (Table 2). Therefore, agricultural cooperatives integrate email to distribute newsletters at least once per month at a lower expense.

On average, cooperatives communicate with 262 member-owners by direct phone calls, email, text messages and direct face-to-face contact channels daily. Cooperatives will contact over 80 member-owners daily through direct face-to-face contact and phone calls separately and

will text half as many members per day. Agricultural cooperatives predominantly use direct face-to-face contact and phone calls on a daily basis (Table 3).

On average, cooperatives will distribute 4.15 direct mailings each year. Agricultural cooperatives send a direct mailing at least once each quarter. Cooperatives hold less than two open member meetings each year, while agricultural cooperatives offer 2.27 open member meetings annually. On average, cooperatives hold regional member meetings once per year, and focus groups or other targeted meetings occur 1.5 times annually (Table 1).

Only 10% of cooperatives do not have websites; however, only 85% of agricultural cooperatives have websites, which receive the most traffic annually. Therefore, agricultural board members have a higher demand for information and data on websites, which could be accredited to the primary interest of commodity markets, weather, cooperative news, and USDA crop and livestock reports.

The majority of agricultural cooperatives have the following information available online: markets (80%); weather (79%); USDA reports (67%); externally-imported industry news articles (61%); cooperative news (64%); and information on the cooperative's services (65%). However, the following information was not offered often on cooperatives' websites: calendar of events (36%); internally-produced industry news articles (33%); related-business directories (43%); information about the cooperative's governance (29%); information targeting youth audiences (16%); and secure member login and account information (45%).

Cooperative social media presence is limited; however, agricultural cooperatives use Facebook 50 times per year and Twitter 33 times (Table 2). Agricultural cooperatives are more conservative about social media tactics, but some do have profiles on major channels, such as Facebook, Twitter, YouTube and blogs. The inconsistent use of these profiles could be directly correlated to a large proportion of the average member-owner age over 51 years old. Over 65%

of member-owners are between the ages of 51 and 70 years old. Since cooperatives are dominated by an older generation, more traditional communication methods will be used to channel the cooperatives' messages to member-owners.

Most cooperatives continue to use newsletters, face-to-face contact and websites as the most common communication vehicles to reach member-owners, while incorporating E-newsletters. Recently, daily email communications has increased, as expected, while cooperatives have decreased sending direct mail pieces to channel information to member-owners. This can be credited to the reduced cost of email communications and the increased number of farmers using digital platforms to obtain information.

Agricultural cooperatives continue to primarily focus on direct face-to-face contact, coupled with E-Newsletters to correspond with member-owners.

*Messages to communicate*

Cooperative managers and board members were asked the importance of three different messages cooperatives communicate to member-owners on a Likert Scale from 1 to 5 (1=very unimportant, 5=very important). Overall, cooperative managers and board members find some importance on communicating member-owner responsibilities and benefits (Message 1), communicating the cooperatives' overall goals and purpose and news (Message 2), and communicating related-industry news and market trends (Message 3) (Table 4).

Cooperative managers and board members were then asked how effective their cooperative communicates the same three different messages listed above, on a Likert Scale from 1 to 5 (1=very inefficient, 5=very efficient). These results were mostly consistent with the value the populations placed on the importance of communicating key messages. However, agricultural cooperative managers were indifferent on whether their cooperative was actually effective in communicating these key messages. The perception of effective communication

between managers and board members was perfectly correlated in the first two messages. It's important to note the correlation between the two populations on the message concerning "communicating related-industry news and market trends" had a perfect negative correlation coefficient of -1.00 (Table 5). This trend is consistent with the results found on the question concerning the importance of communicating key messages, as the correlation coefficient was negative between the two populations in relation to the third key message.

*Factors Influencing Effective Member-owner Communications*

Using SAS 9.2, a PROC REG procedure captured the following R-square values for each of the linear regressions modeled to elicit how effective cooperatives communicate (Table 7): Message 1 (Member-owner responsibilities and benefits) = 0.3759; Message 2 (The cooperative's overall goals, purpose and news) = 0.3117; Message 3(Related-industry news and market trends) = 0.3409. With low explanatory power of the dependent variables in all three models also provided very few key explanatory variables.

Model 1 provided the following significant variables: the importance of communicating member-owner responsibilities and benefits (Message 1); the number of printed newsletters distributed annually; and the number open member meetings held annually resulted as significant factors influencing the effectiveness of communicating Message 1 (Table 7).

The importance of communicating the cooperative's overall goals, purpose and news (Message 2) was the only significant variable in Model 2. However, in Model 3 the importance of communicating related-industry news and market trends (Message 3) and the number of direct mailings distributed annually proved to be the only key explanatory variables. All models were analyzed at 90% confidence level (Table 7).

With consistent results between the managers and board members of communicating key messages, there is also high correlation between the importance and effectiveness of these key

messages. This result was expected since manager and board members had similar perceptions between the importance and effectiveness of communicating the key messages (Table 6).

*Cooperative demographics*

Collectively, over half of U.S. rural cooperatives have personnel directly responsible for member-owner communications and cooperative marketing. However, only 28% of agricultural cooperatives account for communications personnel. The average communications expenses budget among cooperatives is 2.8% of total operating expenses, with agricultural cooperatives with the smallest mean budget of 2.29%.

Agricultural cooperatives average a total membership of 460 member-owners, with 340 members who are active. Over 80% of agricultural cooperatives offer farm supplies and grain marketing services to member-owners with 20% offering some type financial services.

**Summary and Conclusions**

*Overall Conclusions*

Cooperative membership is normally distributed, while having much of their member-owners between the ages of 41 and 70 years old. Given this age group and the nature of individual cooperative sectors, member-owner communications include online or digital platforms. Online presence and digital resources is expected to continue as younger members join cooperatives across the U.S. Although the mean age of cooperative members will increase, the incorporation of formal and informal communications through traditional and digital channels are essential in maintaining and building relationships between the cooperative and its members.

Cooperatives with increased communications and marketing budgets have personnel directly assigned for member-owner correspondence. These two variables do not statistically play an important role in overall effectiveness. However, anecdotal trends indicates having

personnel in a communications capacity increases the probability of producing consistent, diverse, timely and aesthetically pleasing pieces to effectively communicate the cooperative's key messages.

Agricultural cooperatives rely heavily on direct and constant contact. This sector also relies heavily on email by channeling monthly newsletters through this outlet. Given the nature of this sector, agricultural cooperatives are not completely effective in communicating with member-owners, as they could increase the use of more diverse communications to reach all members.

The increased use of E-newsletters, email and social media use indicate cooperatives can be more efficient in communicating key messages to extended audiences as they gain younger members. The increased farm management tools available on smartphones, progressive farmers, regardless of age, is producing an increase in smartphones use among U.S. farmers. Therefore, the need for diversified communications is essential, especially when cooperatives can communicate with member-owners in the field.

Over 90% of cooperatives have websites, which was expected. This is an efficient way to provide information to member-owners. However, when considering overall effective communications, the messages channeled through the websites and supporting formal tactics should be consistent and available for member-owners. Only 29% of agricultural cooperatives had information on their websites about cooperative governance, which includes members' responsibilities and benefits. However, the majority of agricultural cooperative websites have industry news and market trend information, which indicates some type of value placed on this information. This can be attributed to the increased traffic and high demand for this information by member-owners. Since managers and board members were neutral in placing a level of importance in communicating the member-owner responsibilities and benefits, all cooperatives

could be more effective in offering this information to member-owner through current communications.

Overall, cooperatives incorporate communication methods best suited for the characteristics of their membership. However, to be more effective in doing so, their key messages should be transmitted through those current communications on a more consistent basis. Educating current and potential member-owners on the cooperative value package and maintaining cooperative-member relationships will be essential for continued success in the cooperative industry.

These results indicate the need for agricultural cooperatives to incorporate more diverse and effective communication strategies. Cooperative firms appear to be slow in adopting communication tactics appealing to younger members. Additionally, cooperatives do not effectively communicate information on patronage refunds, retained equity and governance. This suggests they miss the opportunity to inform young producers and non-members about the structure of the cooperative's value package and business model, in addition to increasing total cooperative membership. The answer to effective communications for the respective cooperatives does not require an extensive portfolio of communication tactics, but rather tactics to reach multiple audiences, be consistent in key messages, be timely and have a sense of quality and usability. Therefore, agricultural cooperatives need to evaluate their overall goal, the key messages they want to transmit to member-owners, and consider tactics to best channel that information to all groups within their membership.

*Linear Regression Conclusions*

The data results confirm a cooperative will be as effective as communicating a certain message as the value as they place on the importance of communicating that message. This was consistent in all three models.

Since all three models produced low explanatory power in the dependent variable, it is hypothesized other communication mediums actually influence cooperative managers' perceptions effectively communicating three primary messages to member-owners. An error could also be present in the data of the dependent variable since it is difficult to actually quantify effective communications. Although effective communications is defined earlier in this paper, an equation, formula or hard definition does not exist to adequately measure this variable.

Conclusively, newsletters and regional meetings are effective in communicating member-owner responsibilities and benefits and direct mailings are an effective method to communicate related-industry news and market trends, despite these research barriers.

Additional research should be exercised in continuing to collect quantitative data on additional factors contributing to effective communications.

**Table 1.** Frequency of traditional communication methods used to correspond with member-owners annually

| | All Cooperatives | | Agricultural Cooperatives | |
|---|---|---|---|---|
| | Mean | s.d. | Mean | s.d. |
| Newsletter | 4.72 | 5.04 | 1.93 | 2.92 |
| Direct mailings | 4.15 | 6.18 | 6.12 | 13.53 |
| Open member meetings | 1.82 | 2.92 | 2.27 | 3.45 |
| Regional member meetings | 0.78 | 0.78 | 1.07 | 2.45 |
| Focus groups or other targeted meetings | 1.65 | 2.73 | 2.27 | 3.06 |

Notes: All Cooperatives (n=125); Agricultural Cooperatives (n=75).
Outliers omitted from data set:
Focus groups: All Cooperatives (n=124); Agricultural Cooperatives (n=74).

**Table 2.** Frequency of online communication methods used to correspond with member-owners annually

| | All Cooperatives | | Agricultural Cooperatives | |
|---|---|---|---|---|
| | Mean | s.d. | Mean | s.d. |
| E-newsletter | 13.75 | 57.24 | 13.99 | 60.29 |
| Facebook | 52.64 | 118.25 | 24.07 | 83.13 |
| Twitter | 32.57 | 99.68 | 21.61 | 83.13 |
| YouTube | 4.99 | 34.40 | 1.75 | 8.52 |
| LinkedIn | 0.00 | 0.00 | 0.00 | 0.00 |
| Blog | 0.20 | 1.53 | 0.00 | 0.00 |

Notes: All Cooperatives (n=125); Agricultural Cooperatives (n=75).
Outliers omitted from data set:
LinkedIn: All Cooperatives (n=124); Agricultural Cooperatives (n=74).
Blog: All Cooperatives (n=122); Agricultural Cooperatives (n=73).

**Table 3.** Mean member-owners contacted by cooperative personnel daily

| | All Cooperatives | | Agricultural Cooperatives | |
|---|---|---|---|---|
| | Mean | s.d. | Mean | s.d. |
| Direct phone calls | 82.63 | 67.25 | 13.99 | 64.01 |
| Email | 56.33 | 66.17 | 24.07 | 59.44 |
| Text messages | 40.98 | 56.70 | 21.61 | 61.41 |
| Direct face-to-face | 82.35 | 69.18 | 1.75 | 71.73 |
| Total members contacted daily | 262.28 | | 199.79 | |

Note: All Cooperatives (n=125); Agricultural Cooperatives (n=75).

**Table 4.** Mean perception of cooperative managers and board members of importance of communicating key messages to member-owners

| | Communicate member-owner responsibilities and benefits | | To communicate the cooperative's overall goals/purpose and news | | To communicate related-industry news and market trends | |
|---|---|---|---|---|---|---|
| | Managers | Board Members | Managers | Board Members | Managers | Board Members |
| All Cooperatives | 3.9 (1.4) | 4.0 (1.5) | 3.9 (1.4) | 4.0 (1.5) | 3.7 (1.3) | 3.6 (1.3) |
| Agricultural Cooperatives | 3.7 (1.5) | 3.8 (1.5) | 3.8 (1.5) | 3.8 (1.5) | 3.7 (1.4) | 3.4 (1.3) |
| Correlation Coefficient | 1.00 | | 1.00 | | -1.00 | |

Notes: Data measured on Likert Scale 1=very ineffective, 5=very effective.
Managers: All Cooperatives (n=125); Agricultural (n=75).
Board Members: All Board Members (n=211); Agricultural Cooperative Board Members (n=124).

**Table 5.** Mean perception of cooperative managers and board members of effectiveness of communicating key messages to member-owners

| | Communicate member-owner responsibilities and benefits | | To communicate the cooperative's overall goals/purpose and news | | To communicate related-industry news and market trends | |
|---|---|---|---|---|---|---|
| | Managers | Board Members | Managers | Board Members | Managers | Board Members |
| All Cooperatives | 3.5 (1.1) | 3.8 (1.1) | 3.5 (1.1) | 3.8 (1.2) | 3.4 (1.2) | 3.6 (1.1) |
| Agricultural Cooperatives | 3.2 (1.1) | 3.5 (1.1) | 3.5 (1.1) | 3.6 (1.1) | 3.4 (1.2) | 3.4 (1.1) |
| Correlation Coefficient | 1.00 | | 1.00 | | -1.00 | |

Notes: Data measured on Likert Scale 1=very ineffective, 5=very effective.
Managers: All Cooperatives (n=125); Agricultural Cooperatives (n=75).
Board Members: All Board Members (n=211); Agricultural Cooperative Board Members (n=124).

**Table 6.** Correlation between the importance and effectiveness of communicating key messages to member-owners

| | | | |
|---|---|---|---|
| Communicate member-owner responsibilities and benefits | Managers | Importance Effectiveness | 0.96 |
| | Board Members | Importance Effectiveness | 0.92 |
| To communicate the cooperative's overall goals/purpose and news | Managers | Importance Effectiveness | 0.99 |
| | Board Members | Importance Effectiveness | 0.90 |
| To communicate related-industry news and market trends | Managers | Importance Effectiveness | 1.00 |
| | Board Members | Importance Effectiveness | 0.99 |

**Table 7.** Linear regression results eliciting the effectiveness of cooperatives communicating $message_j$

| Variable | Dependent Variable Message 1: To communicate member-owner responsibilities and benefits | | | Dependent Variable Message 2: To communicate cooperative's overall goals/purpose & news | | | Dependent Variable Message 3: To communicate related industry news and market trends | | |
|---|---|---|---|---|---|---|---|---|---|
| | Estimate | t-Value | p-Value | Estimate | t-Value | p-Value | Estimate | t-Value | p-Value |
| Intercept | 1.4353 | 2.49 | 0.0143 | 1.7668 | 2.94 | 0.0040 | 1.2190 | 1.92 | 0.0580 |
| Importance of communicating $Message_j$ | 0.2490[a] | 3.93 | 0.0002 | 0.3546[a] | 5.53 | <.0001 | 0.4783[a] | 6.18 | <.0001 |
| Personnel directly responsible for member-owner communications/marketing (Yes or No) | 0.2232 | 0.97 | 0.3326 | 0.0407 | 0.18 | 0.8610 | -0.1359 | -0.54 | 0.5923 |
| Percentage of total operating expenses allocated to communications | 3.6291 | 0.88 | 0.3834 | 5.3128 | 1.23 | 0.2233 | -0.2478 | -0.05 | 0.9569 |
| Newsletters Distributed Annually | 0.0679[a] | 2.49 | 0.0144 | 0.0322 | 1.19 | 0.2371 | 0.0034 | 0.12 | 0.9084 |
| Direct Mailings Distributed Annually | -0.0061 | -0.74 | 0.4608 | -0.0005 | -0.06 | 0.9542 | -0.0147[a] | -1.66 | 0.0997 |
| Open Member Meetings Held Annually | 0.0541[a] | 1.70 | 0.0916 | 0.0328 | 1.01 | 0.3144 | 0.0292 | 0.86 | 0.3931 |
| Regional Member Meetings Held Annually | 0.0393 | 0.86 | 0.3935 | 0.0048 | 0.10 | 0.9177 | 0.0699 | 1.41 | 0.1626 |
| Focus Groups/Other Targeted Meetings Held Annually | -0.0002 | -0.02 | 0.9834 | -0.0002 | -0.02 | 0.9851 | -0.0062 | -0.63 | 0.5304 |
| E-Newsletters Distributed Annually | -0.0036 | -0.59 | 0.5566 | -0.0067 | -1.08 | 0.2832 | -0.0062 | -0.94 | 0.3492 |
| Social Media (Yes or No) | -0.1093 | -0.52 | 0.6047 | -0.2694 | -1.26 | 0.2108 | -0.0428 | -0.19 | 0.8523 |
| Website (Yes or No) | -0.2763 | -0.71 | 0.4773 | 0.1191 | 0.30 | 0.7631 | -0.3559 | -0.84 | 0.4027 |
| Information Available on Website | 0.0368 | 0.90 | 0.3693 | 0.0361 | 0.86 | 0.3891 | 0.0675 | 1.53 | 0.1290 |

**Table 7 (continued).** Linear regression results eliciting the effectiveness of cooperatives communicating message$_j$

| Variable | Dependent Variable Message 1: To communicate member-owner responsibilities and benefits | | | Dependent Variable Message 2: To communicate cooperative's overall goals/purpose & news | | | Dependent Variable Message 3: To communicate related industry news and market trends | | |
|---|---|---|---|---|---|---|---|---|---|
| | Estimate | t-Value | p-Value | Estimate | t-Value | p-Value | Estimate | t-Value | p-Value |
| Number of members contacted daily by phone | 0.0007 | 0.32 | 0.7482 | -0.0001 | -0.03 | 0.9738 | 0.0004 | 0.18 | 0.8531 |
| Number of members contacted daily by email | -0.0015 | -0.79 | 0.4329 | -0.0006 | -0.28 | 0.7784 | 0.0021 | 1.00 | 0.3211 |
| Number of members contacted daily by text messages | -0.0002 | -0.12 | 0.9053 | -0.0023 | -1.15 | 0.2544 | -0.0003 | -0.16 | 0.8726 |
| Number of members contacted daily by direct face-to-face | 0.0004 | 0.24 | 0.8098 | 0.0006 | 0.32 | 0.7480 | -0.0010 | -0.49 | 0.6248 |
| Total number of active members | 0.0000 | -0.10 | 0.9200 | -0.0001 | -0.69 | 0.4899 | 0.0000 | 0.12 | 0.9030 |
| Average age of members | 0.0098 | 1.33 | 0.1853 | -0.0009 | -0.11 | 0.9156 | 0.0067 | 0.86 | 0.3935 |
| | $R^2$=0.3759 | | | $R^2$=0.3117 | | | $R^2$=0.3409 | | |

[a]Key explanatory variables at 90% confidence level.

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