

Texas Tech University
Department of Agriculture and Applied Economics

Don Lim
Landon Woods
Steven Rios
(806)
Email:

Memorandum

March 24, 2022

TO: Ms. Jayci Bishop
FROM: Don Lim
Landon Woods
Steven Rios
SUBJECT: Summary of Understanding and Background Information for the PCCA Case

This report seeks to use information gathered by questionnaire survey data to address future development of PCCA. During a meeting with the PCCA staff, concerns were expressed over the changing preferences of existing members. Additionally, newer members, who may be part of the younger generation, may have different preferences and valuations regarding cooperatives. By adding new members, PCCA provides a greater range and volume of quality products to buyers which strengthens its market position. We aim to evaluate how members feel about PCCA's communication and customer service, evaluate how members value being part of the cooperative, determine member knowledge of PCCA marketing options, and inquire how members receive information related to farming and the cotton industry.

The questionnaire is directed at PCCA members and will be asked to PCCA members online. The main goal, then, is to answer the following questions:

1. Are the PCCA members satisfied with the overall customer support and information that PCCA provides?
2. Where do PCCA members get their information related to farming and cotton growing, and how can PCCA provide better information?
3. How effective is PCCA at communicating with its members through social media, their website, and their app?

In order to retain existing members and attract new ones, the value, information, and customer service PCCA provides must be more attractive than the alternative cooperatives and the option of selling individually on the market. The questionnaire and the following analysis should give a better understanding of how satisfied existing members are with the services PCCA provides, and formulate a strategic plan going forward.

1 Problem statement

Since farming is largely a generational industry, more of the older farmers are retiring and the newer generation has different attitudes and opinions about the cooperatives. We want to determine if those individuals value the cooperative differently than their parent's generation. Since younger farmers are more technologically adept, we need to determine how the sources of information differ from generation to generation and how that becomes a determinant of membership.

In order to retain existing members and attract new ones, the value, information, and customer service PCCA provides must be better than the alternative cooperatives and the option of selling individually on the market. The survey and the following analysis should give a better understanding of how satisfied existing members are with the services PCCA provides.

The questionnaire is directed at PCCA members and will be asked online. The goal, then, is to answer the following questions:

1. Are the PCCA members satisfied with the overall customer support and information that PCCA provides?
2. Where do PCCA members get their information related to farming and cotton growing, and how can PCCA provide better information?
3. How effective is PCCA at communicating with its members through social media, their website, and their app?

2 Objectives

This report seeks to use information gathered by survey data in order to address the future development of PCCA. During a meeting with the PCCA staff, concerns were expressed over the changing preferences of existing and potentially new members. In order to make recommendations, the following information must be acquired:

1. Evaluate how members feel about PCCA's communication and customer service
2. Evaluate how members value being part of the cooperative
3. Determine member knowledge of PCCA marketing options
4. Inquire how members receive information related to farming and the cotton industry

3 Literature review

The cooperative form of business was formed initially in New York. The cooperative dairy association began in the mid-1800s in order to combat the monopsony power of privately held milk-processing

plants (Erdman & Larsen, 1965; Porter & Scully, 1987). One definition of a cooperative, as Koller (1947) puts it, can be “a form of business organization—an economic entity—owned and controlled by its member patrons for the rendering of services for their mutual benefit as patrons.” However, while cooperatives depend on organizational growth, member heterogeneity may cause a decline in market position, if agricultural cooperatives do not adapt quickly and successfully (Cook & Burrell, 2009). In other words, if the preferences of the cooperative’s members are too heterogeneous, this increases the probability of organizational degeneration (Chaddad & Cook, 2004; Hansmann, 2000; Iliopoulos & Hendrikse, 2009). Applying the literature to PCCA, the organization recognizes that with the newer generation, there could be substantial member heterogeneity, that is, differences in interests, needs, and preferences, of members.

Höhler and Kühl (2018) conceptualize member heterogeneity into three categories:

1. Farm-level heterogeneity

- Size-related: differences in farm size
- Spatial: different geographical locations of cooperative’s members. This may include different production conditions as well as different cultures

2. Member-level heterogeneity

- Personal: age, experience, education, income, decision-making behavior
- Temporal: variance in the planned and duration of memberships
- Risk references: differences in investment constraints
- Contractual: differences in relationships between members and cooperatives
- Participatory: differences in members’ commitment to participate in a cooperative’s governance
- Motivational: differences in members’ valuation of the benefits of membership

3. Product-related heterogeneity: differences in the kind, quality, or amount of products delivered to the cooperative

For the purposes of our investigation into PCCA, we are primarily concerned with member-level heterogeneity, particularly related to personal, participatory, and motivational heterogeneity. We aim to find the causes for the differences in preferences, customer satisfaction, and cooperative valuation between members. This is to develop a strategic plan to foster continued PCCA growth. As Nilsson et al. (2012) note, there is a “multiplier effect” – the sense that members are able to provide the cooperative with financial support that, in turn, builds social capital, and this builds further human capital (a build-up of mutual trust with increased interactions and communication). The model Munch et al. (2021) provide suggest that members value cooperative ownership proportionally with more years of education and farming experience. Klein et al. (1997) finds older farmers tend to patronize cooperatives

and large farms tend to patronize cooperatives. Larger firms also do a greater share of their business with cooperatives than do smaller firms. It would be interesting to note if this is true for PCCA members. Additionally, farmers that believe cooperatives offer innovative products and services are more likely to patronize them.

One possible mechanism to foster human capital is social media. Culnan et al. (2010) examine how large U.S. companies can use Twitter and other social media to communicate with their customers. They found that simply creating an online presence is insufficient to gain business value from social media. Instead, successful implementation requires three elements: mindful adoption, community building, and absorptive capacity. Likewise, regarding cooperatives, Ciruela-Lorenzo et al. (2020) write,

Maintaining inertia and concentrating on traditional activity can no longer be considered a viable option. It is necessary to diversify the activity, innovate and collaborate with others, incorporating talent and using new technologies in order to better compete in a sustainable way.

Indeed, cooperatives can adopt the same guidelines in order to extract similar business value as firms from social media. One of the reasons for using social media is to retain existing members and to attract new ones.

Member responses from the questionnaire would also help us evaluate their preferences and desires regarding PCCA. Pinsonneault and Kraemer (1993) defined a survey as a "means for gathering information about the characteristics, actions, or opinions of a large group of people" (p. 77). Additionally, Groves (2009) notes, "surveys are ubiquitous tools of management to improve the performance of their organizations" (p. 5). Poor data quality is very common when constructing surveys. Matters such as irrelevant questions, questions with an overwhelming bias, and a small sample size result in inaccurate data for the surveys. Constructing a survey that limits these errors will provide better data. Irrelevant questions will waste the survey taker's time and not result in data that pertains to the study, questions with an overwhelming bias will result in data that is altered to fit a certain narrative that could be inaccurate, and a small sample size would not represent all potentially diverse opinions. Data analysis is crucial when deciding what decisions need to be made that work in the best interests of the company. Close-ended questions help determine what the population's exact opinions are on certain topics with multiple options whereas open-ended questions allow for better insight on specific matters that the population has thoughts on. Filtering results by cross-tabulating subgroups and analyzing the data from different groups is also beneficial and will help in having the data be easier to interpret.

4 Data

The data used for this research study was provided through an online questionnaire. The sample group is PCCA members. The questionnaire included a mix of multiple-choice, yes-no questions, and open-ended questions; it asked members to rank on a 6-point scale the satisfaction with PCCA communication, information services, customer service, and marketing options. More open-ended questions were on topics related to the value of joining a cooperative, why they joined PCCA, and concerns they have regarding PCCA. The sample size will be determined once volunteers respond.

5 Analytical methods and plan

The analytical methods used in this project are not yet able to be determined. We will have to wait for the data from the questionnaire to come in. However, a few potential methods immediately come to mind. We could perform a simple regression in order to ascertain the relationship between answers to the questionnaire (independent variables) with the predicted member's satisfaction with PCCA. Using this method, we could see which variables are more important to the average PCCA member. This method would be more causal, though we should be wary of extrapolation, omission bias, and the functional fit of the model.

If we wish to investigate if there are preferential and valuations differences between the older and younger members of PCCA, we could use matching then OLS. The independent variables would be the same as the method outlined above. The dependent variable would be the satisfaction or valuation of PCCA. By matching first, it allows us to "pre-treat" the data. We would be controlling for covariates in order to perform OLS. Because there is implicit weighting in OLS, matching can be used as a nonparametric preprocessing for reducing model dependence in parametric causal inference (Ho et al., 2007). This would allow us to isolate the effects of age on the satisfaction and valuation of PCCA.

Another useful method would be descriptions and data visualization of the PCCA members. We could visualize the demographics of the PCCA members by age, region, occupation, education, social media usage, and duration of their farming career. This information could provide initial information on which areas PCCA should focus on developing. This method would be more qualitative and descriptive.

6 Results

We will use various tables, pie charts, and bar graphs to visualize the data using grouped between demographics such as age, region, occupation, education, social media use, software, and duration of their farming career.

	Mean	Standard deviation	Number of obs	Min	Max
Age					
Education					
Satisfaction					
Familiarity with PCCA market options					
Importance of doing business with co-op					
Knowledge of the co-op structure					

Satisfaction	Computer-based platform	Mobile application	Grand total
1			
2			
3			
4			
5			
6			
Grand total			

References

- Chaddad, F. R., & Cook, M. L. (2004). Understanding New Cooperative Models: An Ownership-Control Rights Typology. *Review of Agricultural Economics*, 26(3), 348–360.
- Ciruela-Lorenzo, A. M., Del-Aguila-Obra, A. R., Padilla-Meléndez, A., & Plaza-Angulo, J. J. (2020). Digitalization of Agri-Cooperatives in the Smart Agriculture Context. Proposal of a Digital Diagnosis Tool. *Sustainability*, 12(4), 1325.
- Cook, M. L., & Burrell, M. J. (2009). A Cooperative Life Cycle Framework.
- Culnan, M., McHugh, P., & Zubillaga, J. (2010). How Large U.S. Companies Can Use Twitter and Other Social Media to Gain Business Value. *MIS Quarterly Executive*, 9, 243–259.
- Erdman, H. E., & Larsen, G. H. (1965). *Revolving Finance in Agricultural Co-Operatives*. Mimir Publishers.
- Groves, R. M. (Ed.). (2009). *Survey Methodology* (2nd ed). Wiley.
- Hansmann, H. (2000). *The Ownership of Enterprise* (Harvard Univ. Press Paperback Ed). Belknap Press of Harvard Univ. Press.
- Ho, D. E., Imai, K., King, G., & Stuart, E. A. (2007). Matching as Nonparametric Preprocessing for Reducing Model Dependence in Parametric Causal Inference. *Political Analysis*, 15(3), 199–236.

- Höhler, J., & Kühl, R. (2018). Dimensions of Member Heterogeneity in Cooperatives and Their Impact on Organization – a Literature Review. *Annals of Public and Cooperative Economics*, 89(4), 697–712.
- Iliopoulos, C., & Hendrikse, G. (2009). Influence Costs in Agribusiness Cooperatives: Evidence from Case Studies. *International Studies of Management and Organization*, 39, 60–80.
- Klein, K. K., Richards, T. J., & Walburger, A. (1997). Determinants of Co-operative Patronage in Alberta. *Canadian Journal of Agricultural Economics*, 45, 93–110.
- Koller, E. F. (1947). Cooperatives in a Capitalistic Economy. *Journal of Farm Economics*, 29(4), 1133–1144.
- Munch, D. M., Schmit, T. M., & Severson, R. M. (2021). Assessing the Value of Cooperative Membership: A Case of Dairy Marketing in the United States. *Journal of Co-operative Organization and Management*, 9(1), 100129.
- Nilsson, J., Svendsen, G. L., & Svendsen, G. T. (2012). Are Large and Complex Agricultural Cooperatives Losing Their Social Capital? *Agribusiness*, 28(2), 187–204.
- Pinsonneault, A., & Kraemer, K. (1993). Survey Research Methodology in Management Information Systems: An Assessment. *Journal of Management Information Systems*, 10(2), 75–105.
- Porter, P. K., & Scully, G. W. (1987). Economic Efficiency in Cooperatives. *The Journal of Law and Economics*, 30(2), 489–512.