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Do Students in Cooperative Class Exhibit Greater Behavioral Cooperation?

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Abstracts

This study investigated whether students in an agricultural cooperative class demonstrated greater altruistic behavior relative to similar students in an agricultural finance class. The results indicated higher altruistic behavior among the agricultural cooperative class students and closely mirrored the results of previous research involving shoppers at a food cooperative and conventional grocery store. It can be hypothesized that students with more group-related values self-selected into the agricultural cooperative class and the course material may have also their altruistic thought processes. Both of those factors could be important to cooperative industry participants who support cooperative related education at the university level.

Key words: agricultural cooperative, agricultural students, altruism

Introduction

Cooperative businesses operate under a unique business model. Cooperative businesses are owned and democratically controlled by the members who do business with the cooperative. Cooperatives distribute profits to the member-owners in proportion to the volume of business transacted with the cooperative. That structure contrasts systems used by most other firms that distribute profits in proportion to investment. Many cooperatives, including most agricultural cooperatives, distribute a portion of patronage in the form of equity that is eventually redeemed into cash by the cooperative. In the U.S., Subchapter T of the IRS code provides cooperative businesses with unique taxation structures

which allows the tax burden to be retained by the cooperative firm or passed on to the patron. Those systems for governance, profit distribution, equity management and taxation contribute to a unique business model. In addition, cooperatives are guided by a set of principles which first emerged in Rochdale, England in 1844 (Fairbairn, 1994). These principles have been modified over time with the most recent version provided by the International Cooperative Alliance (ICA 2015).

While cooperatives are an important part of the U.S. economic system and particularly important in agriculture, many individuals have little knowledge about the cooperative business model. Kenkel (2024, page 1) in a discussion of why more businesses are not organized as cooperatives stated: “A student could graduate with a business degree and go on to get an MBA while never hearing the word cooperative.” Because of this general lack of awareness, the cooperative industry has historically promoted cooperative education at the youth, high school and university level. As a group of organizations, cooperatives are thought to be the largest contributor of endowments in agricultural economics’ departments with more than \$19 million in at least 12 universities that is used to fund faculty endowed chairs, graduate student fellowships, undergraduate student scholarships, classroom naming rights, and other similar activities (Boland and Barton, 2013). Boland et. al. (2020) indicated that those contributions has grown with more recent investments at Iowa State University, Kansas State University, North Dakota State University, The Ohio State University, and the University of Missouri.

Currently, a minority of U.S. universities offer classes focusing on the cooperatives. Because of their investments in cooperative education, industry participants are likely interested in whether the students participating in those classes gain a better understanding of the cooperative business model. An even

more interesting question is whether those students exhibit different behavior relative to similar students in more typical agribusiness classes. There is evidence to suggest that a student's educational focus can impact their behavior. Siddiqi, Mishra and Shafiq (2015) studied the altruistic behavior of Behavior Science and Engineering students and found that Behavior Science students scored higher on altruism and inter-personal trust. Another study, Jones, Carden and Carden (2013) compared narcissism and altruism between undergraduate business and religion majors. The study found that business students scored higher on narcissism (self-centered behavior) relative to religion majors. The authors commented that it would be interesting to see research on whether business programs attract those with narcissistic traits or whether those traits result from the business curricula.

Other research has investigated whether individuals patronizing a cooperative exhibit different behavior relative to similar customers in investor-owned firms. Tremblay, Hupper and Waring (2019) investigated whether patrons at a consumer food cooperative demonstrated greater altruistic behavior relative to customers in a similar sized investor-owned grocery in the same town. The authors used a simple economic experiment called the Dictator Game (Kahneman, Knetsch, & Thaler, 1986) to measure altruistic behavior. The game operates by giving the participant an endowment that they can allocate between themselves and another anonymous player. In the research experiment a random sample of shoppers in each store were given a \$10 endowment and allowed to give away any portion of it to the next player. After their choice they were informed if they had received any endowment from the previous player. The results indicated that the cooperative shoppers, on average, passed forward \$6.80 while the shoppers at the investor-owned grocery passed forward \$4.40. Furthermore, the cooperative shoppers passed forward their full endowment 18% more often than did the

grocery shoppers while the grocery shoppers contributed nothing to the future participant 15% more often than the cooperative shopper. The authors concluded that cooperative shoppers were more altruistic. The authors also noted that it was not possible to determine whether more altruistic individuals choose to shop at the cooperative or whether participation in the cooperative promoted altruistic behavior.

Alves et. al. (2019) conducted similar research on the altruistic behavior of managers of worker cooperatives and a similar group of managers from investor-owned companies. The research used the previously described Dictator Game. Their results indicated that the cooperative managers were more altruistic, transferring 44% of their initial endowment, relative to 38% for the comparison group of managers. Only 5% of the cooperative managers retained the entire endowment, compared to 18% for the investor-owned firm managers.

Our study combines these two interesting lines of research by investigating whether university students participating in a cooperative class exhibit different behavior relative to similar students in an agribusiness finance class. We hypothesize that students in the cooperative class who have studied cooperative principles and member benefit might be more altruistic relative to agribusiness students who have been focusing on profit maximization and return on investment. Cooperative industry participants should be interested in this research as it could indicate that cooperative classes are attracting students with attitudes that align with cooperative principles and/or are impacting those attitudes through the course material.

Methods and Procedures

As in Tremblay, Hupper and Waring (2019) the research used the Dictator Game experiment to measure altruistic behavior. Students in both the cooperative

and agribusiness class were asked to participate in a hypothetical scenario. In the scenario the students were asked to imagine that they were shopping at a student-owned grocery store and that they were selected to receive a \$10 credit which they could keep or pass on, in part or in full, to the next shopper. The description “student owned grocery” was included to suggest that any passed on endowment would go to another student while not suggesting a particular business model for the hypothetical grocery. Unlike the food cooperative and grocery experiment where the participants received the retained amount of their endowment in cash, the class experiment involved hypothetical payoffs.

The surveys were conducted anonymously near the end of the semester in both a 3000 level (Junior/Senior) Agricultural Cooperatives class and a 3000 level Agricultural Finance class at Oklahoma State University. The classes had similar demographics. The cooperative class had an enrollment of 59 students, 26 male and 33 female while the agricultural finance class had an enrollment of 62 students, 27 male and 35 female. None of the participants were currently enrolled in both classes. The students were not polled to determine if they had previously taken the other course. Nearly all of the students in both classes had either a major or minor in agribusiness. Among the students with the agribusiness minors, their majors included animal science, agricultural communications and agricultural systems technology (a major within Biosystems and Agricultural Engineering). All of the students were in the OSU Ferguson College of Agriculture. Completed surveys were obtained from 47 Agricultural Cooperative students and 51 Agricultural Finance students reflecting the attendance on the day the survey was administered in each class.

Results

The results were remarkably similar to the results from the experiment with shoppers in the food cooperative and non-cooperative grocery store (Tremblay, Hupper and Waring, 2019). On average, the Agricultural Cooperative students passed on \$6.45 of their \$10 endowment while the Agricultural Finance students passed on \$4.25. Forty-four percent of the Agricultural Cooperative class students passed on the entire \$10 endowment while only 14% of the agribusiness class students made that choice. Only 6% of the Agricultural Cooperative students retained the entire endowment while 16% of the Agricultural Finance students retained the entire amount. A two-tailed t-test for the difference between means indicated that the means were statistically different at a p value of .001 (Table 1).

Discussion

The results of the simple “Dictator Game” indicated that the students in the Agricultural Cooperative class exhibited higher altruistic behavior relative to a set of very similar students in the Agricultural Finance class. As discussed in our hypothesis, it is logical to expect that the cooperative class curriculum could have influenced the student’s behavior. The agricultural cooperative class concentrated on the cooperative business model and not on cooperative behavior per se. A major part of the class was centered on measuring and understanding financial returns in a cooperative business. With that being said, the class material did include topics relating to group benefit and altruistic behavior.

While the ICA Cooperative Principles do not directly mention altruism they do include “concern for the community”, “cooperation among cooperatives” and “education, training and information”. These are obviously group related concepts and could impact student perspectives. There were also numerous guest

speakers in the cooperative class. The cooperative board member speaker discussed a desire to serve the farming community by volunteering to run for the board. Several of the cooperative manager speakers discussed the rewards of working for farmer members and the support network with other managers. The cooperative class members also had a team project where they designed a hypothetical cooperative, conducted a feasibility analysis and prepared a report and presentation. There was a class vote for the “best cooperative” with points on the final exam awarded to the winning team. In their reports and presentations, the group members described both the financial and non-financial benefits of their cooperative. That activity encouraged the students to consider the group benefits of a cooperative.

As in the previous study of grocery shoppers, the element of self-selection of the survey participants must be acknowledged. While the two student groups were very similar in terms of class status, major and male/female ratio, students obviously made the course selection choice. The students who enrolled in agricultural cooperatives could have been, and likely were, more interested in group benefit and the “people element” of business organizations relative to the students enrolled in agricultural finance. While the feasibility analysis of the agricultural cooperative class is actually quite quantitative, most students likely perceive the agricultural finance class to be quantitative and the agricultural cooperative class to be descriptive. In general terms, students interested in building a specific skill set might be more likely to enroll in agricultural finance while students interested in learning about how businesses operate might be more likely to enroll in agricultural cooperatives.

This research also has important implications for teaching. Mintz (2021) described the true purpose of a college education which included (1) Exploring

and experimenting with various life possibilities and (2) Developing competencies, which encompass not only skills development and knowledge acquisition but obtaining technical or professional expertise and creating a supporting network. In terms of that framework, it is not important whether the difference in the observed behavior of the agricultural cooperative students was due to self-selection toward the cooperative business topic or from the material discussed in class. It appears that the agricultural class was successful in attracting students with interests and values that align with the cooperative business model and in encouraging thought processes involving group benefit. It therefore allowed a subset of students to explore a career opportunity that might align with their interests and values and expanded their competency toward that opportunity. The same could obviously be said of the agricultural finance class in terms of a different interest and different skill set,

Building on that observation, our results suggest that university courses can improve student perceptions of real-world concepts such as the cooperative business model. The fact that our survey results so closely mirrored the results from actual grocery shoppers indicated that participation in the cooperative class had similar impacts on altruistic behavior as did participation in the actual food cooperative. That result should be comforting to cooperative industry participants who have invested in Agricultural Economics departments to support education about the cooperative business model. Our results suggest that specialized courses such as agricultural cooperatives can have value both to students and the agricultural industries hoping to recruit those young professionals into their business sectors and business forms.

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Table 1 . Comparison of Amount of \$10 Endowment Passed On

	<i>Coop Class</i>	<i>Ag Finance Class</i>
Mean	6.456383	4.215
Variance	13.29702	9.183699
Observations	47	50
Pooled Variance	11.17541	
Hypothesized Mean		
Difference	0	za
df	95	
t Stat	3.30014	
P(T<=t) one-tail	0.000681	
t Critical one-tail	1.661052	
P(T<=t) two-tail	0.001362	
t Critical two-tail	1.985251	