J. King Saud Univ., Vol. **8**, *Agric. Sci.* (1), pp. 21-34, Riyadh (A.H. 1416 / 1996).

Socioeconomic Characteristics of Farmers Belonging to Voluntary Organizations: The Case of Agricultural Cooperatives in the Qassim Region of Saudi Arabia

Muhamed S. Al-Sakran*, Vernon Ryan and A.M. Hasab-Elnaby***

**Department of Agricultural Extension and Rural Sociology, College of Agriculture, King Saud University, Riyadh, Saudi Arabia,* ***Department of Sociology, Iowa State University*

(Received 20/1/1415; accepted for publication 6/8/1415)

Abstract. The main purpose of this study is to identify the main socioeconomic characteristics of farmers belonging to farm cooperatives compared to those of nonmembers. The research was conducted in Qassim, an agricultural area located in the Central Region of Saudi Arabia. The sample includes 83 cooperatives members, besides 136 nonmembers. Belonging or not belonging to the cooperative served as the basis for comparison. Contingency tables and discriminant analysis are used to make the necessary comparisons. Results show that members are middle-aged more often than are nonmembers. Also members are more educated than nonmembers. Finally, members report higher gross farm incomes than do nonmembers. Farm characteristics also distinguish members from nonmembers. More members operate larger farms than do nonmembers. Also cooperative members tend to hire more laborers.

Introduction

Since Saudi Arabia is one of the world's driest countries, efforts are being made to improve its agricultural productivity. These efforts vary from time to time and according to the financial situation of the nation. Since the recent increase in oil revenues, personal changes in eating habits have brought about a greater demand for food products that are not produced domestically. Subsequently, importing food from other nations has become a common practice.

The government serves as the major planner for setting goals and allocating agricultural resources in Saudi Arabia. During the last three decades, significant policies concerning the development of the agricultural sector have been outlined.

To improve agriculture, governmental support became the most critical component of policy for expanding agricultural production. Both financial and technical support were made available. Financial support was available in the form of interest free loans, input and output subsidies, and the distribution of fallow land. Other types of support were available through extension and research services, water resources development, construction of agricultural roads, and mobile veterinary services. Government support was also extended to cooperatives [1-5]. As outlined in the coopoeratives act of 1961, the Ministry of Labor and Social Affairs is responsible for cooperative efforts and activities in the country. Saudi Arabia's General Department of Cooperatives was made responsible for all forms of cooperative activities, including managing and supervising cooperative movements, informing people about cooperatives and helping with their establishment, and providing technical and financial support for the formation of cooperatives [6,7].

As of 1988, 170 cooperatives existed in Saudi Arabia. They included both multiple purpose cooperatives and those limited to a specific purpose, e.g., agriculture, consumers, technical, fishermen, and marketing. Thirty-two of the 170 were agricultural cooperatives [7].

In spite of the efforts by the Department of Cooperatives to expand cooperative activities, several studies have indicated a need for strengthening the role of agricultural cooperatives in the country [8-12]. Recent statistics show that membership in agricultural cooperatives is very low in Saudi Arabia; while 25 per cent of the Kingdom's civil labor force is employed in agriculture, fewer than one per cent of those employed in agriculture are members of agricultural cooperatives. On average, the 32 agricultural cooperatives have less than 300 members per cooperative [3,7].

These statistics, accompanied with the fact that cooperation is both promoted by the country's culture and supported through government policies, represent a problem that need to be addressed and carefully investigated. Therefore, this study is based on the comparison between two groups of farmers. The first group includes those who are members of farm cooperatives, while the second group consists of farmers who are not cooperative members. Identifying the main socioeconomic characteristics of farmers belonging to farm cooperatives, thus, is the primary objective of this study. Based on the result of this comparison, recommendations will be outlined to inform policy makers on strategies to increase membership in agricultural cooperatives.

Socioeconomic Characteristics and Involvement in Farm Cooperatives

Agricultural cooperative is used in this research to have the same meaning of farm cooperative provided by Rogers *et al.* [13] who gave the following definition of a cooperative:

> "A cooperative is a voluntary association of individuals who join together to secure goods and services at cost. Several farmers become associated so that a part of their individual business operations are conducted jointly, thus making these functions more efficient and less costly than if each farmer acted individually." [13, p. 265]

This description of farm cooperatives clearly shows that cooperatives are usually established for the purpose of meeting certain needs of the farmers which cannot be obtained otherwise. Thus need for group efforts in completing certain agricultural operations is the best method for promoting farmers' interest in cooperation.

Membership, which refers to belonging, is seen as the main sign for the involvement of farmers in farm cooperatives. As indicated by Nadarajah [14], membership is considered to be one of the basic elements of participation in cooperatives. In 1953, Folkman [in 14] argued that membership has become an integral part of the organization, thus it continuously gives loyal support which is as necessary to the cooperative's success as are adequate economic returns. Hence, at this time of the cooperative movement in Saudi Arabia, membership is a very crucial element of involvement in farm cooperatives. This means that, presently, participation in farm cooperatives is basically reflected through membership or joining cooperatives.

Generally speaking, there are several factors identified to influence farmers' involvement in farm cooperatives. However, factors related to the socioeconomic characteristics will be part of the following discussion. Such factors include: age, education, years in farming, part-time farming, farm income, and farm size.

Age: Several studies examined the relationship between age and farmers' involvement in farm cooperatives. Most of these studies indicated a positive relationship between these two variables. [14-18].

Education: Formal schooling is another personal characteristic tested by researchers who studied this issue. Such studies produced different results concerning the impact of education on membership in cooperatives. But generally speaking, most of these studies reported a positive correlation between years of education and membership in farm cooperatives [15-20].

Years in farming: Results of the previous studies concerning the relationship between years in farming and belonging to farm cooperatives do not show a highly

significant relationship between the two variables, which may indicate that farming experience is not an important factor in influencing farmers to join agricultural cooperatives [14, 16, 18, 21].

Part-time farming: According to Slamet [18], an occupation influences development of personality as well as social relations. Thus, those who have off-farm occupations are not totally dependent on the farm. As a result they will not be as committed to farming as those who are full-time farmers. This argument is supported by the findings of various studies which reported that full-time farmers are more likely to be members of farm cooperatives and have a higher level of involvement than part-time farmers [18, 22, 23].

Farm income: Level of income obtained from farm sales is an important indicator which influences farmers' decisions in whether to join cooperatives or not. In this regard several previous cooperative studies reported a positive relationship between income and cooperative membership [18, 19, 21, 24].

Farm size: Farm size is another factor affecting membership in agricultural cooperatives. In fact, several cooperative studies reported a positive relationship between farm size and belonging to farm cooperatives. This means that members of farm cooperatives on the average had larger farms than those of nonmembers [16, 18, 20, 21].

While the above mentioned variables represent the main socioeconomic characteristics influencing farmers' involvement in cooperatives, there are some other important factors which affect farmers' decisions to join agricultural cooperatives. Such factors may include the economic benefits of belonging to agricultural cooperatives, diversification of services, the convenient location of the cooperative, and awareness about cooperatives [16, 17, 20, 25-34].

Research Methods

This research was conducted in Qassim, an agricultural area located in the Central Region of Saudi Arabia. The selection of the Central Region was decided primarily because two of the best agricultural cooperatives are located in this Region, while the selection of the Qassim area was decided as a result of the cooperative chosen for study. A questionnaire was designed to address the theoretical concepts identified in this research.

Sampling of farmers was based on information available about membership in farm cooperatives. Since membership was estimated at 250-300, a random sample of

100 members was proposed. Additionally, an equivalent number of nonmembers was to be interviewed. Since an accurate list of all farmers was unavailable, the closest (geographic) neighbor to each selected cooperative member was to be chosen for interview. Bailly [35] calls this convenience sampling. However, the sampling design was modified because of circumstances resulting in the final selection of cooperative to study. Changes were required in order to come up with a representative sample size.

Al-Butain Agricultural Cooperative Association in Buraydah was chosen for the study. Cooperative records list 222 farmers as members [36]. However, 32 members were excluded prior to field work. Cooperative's officials suggested that the remaining 190 members be interviewed. An intensive review of phone numbers and addresses was conducted with the assistance of the cooperative's staff. Of this number, 15 refused to participate and 92 were not located primarily because of incorrect phone number or addresses. Others were either out of the area at the time of data collection or not at their farms at the time chosen to visit them. Altogether, 83 of the 190 were interviewed.

One hundred thirty-six nonmembers were interviewed. They were chosen based on their proximity to farmers who were to be interviewed as members. More nonmembers were interviewed than members since neighbors of members who were not at home or refused to be interviewed were included in the study. Therefore, the total number of farmers interviewed was 136 nonmembers and 83 members, or a total of 219 farmers.

Face-to-face interviews were conducted by trained interviewers during the summer of 1991. On average, interviews lasted between 30-45 min. It took about two months to complete all of the interviews.

Results and Discussion

The main purpose of this section is basically to explain the nature of relationship between cooperative membership and some selected variables related to the socioeconomic characteristics of farmers. Two methods of statistical analysis are used. First a chi-squaire test for contingency tables are used to compare members with nonmembers of the agricultural cooperative. This method is important for understanding the nature of the data and for detecting the relationship between different variables. The second method is discriminant analysis.This tool "allows the researcher to study the differences between two or more groups of objects with respect to several vairables simultaneously" [37, 7]. The purpose of discriminant

analysis is to classify objects by a set of independent variables into one of two or more mutually exclusive and exhaustive categories [38; 39].

Results of the first tool (contingency tables) of analyzing the main socioeconomic characteristics thought to effect membership in farm cooperatives are summarized in Table 1.

Less than one-tenth (7.3%) of all farmers interviewed were under 30 years old. More than twice as many (16.9%) were 60 years old or older. Almost half (46.6%) were between 30-44 years old.

Comparisons by age show important differences by membership in an agricultural cooperative. More members tend to be middle-aged (45-59 years) when compared with nonmembers. On the other hand, nonmembers were more likely to be elderly (20.6% versus 10.8%). The relationship between age and cooperative membership was statistically significant at the .05 level of probability.

Studies reporting findings similar to those of the present study include those of John [15] and Beal *et al.* [16]. Similar results were also reported by recent studies [14; 17; 18] which indicate that the relationship between age and cooperative membership remains unchanged over time.

Three-fourths (75.9%) of the farmers who participated in this study had attended some formal school; more than one-fourth (27.4%) had a college degree. Members were more educated than nonmembers. In fact while only 12% of members had no formal education, one-third of the nonmembers had no formal education. At the other extreme, almost two-fifths (37.4%) of the members but less than one-fifth (16.2%) of the nonmembers achieved a college degree. The difference in educational achievement was statistically significant at the .01 level. This finding is supported by the results of past research which indicates a positive relationship between education and cooperative membership. This past research includes both early cooperative studies [15; 20] and more recent ones [18].

Farming experience is represented by the number of years doing farm work. As shown in Table 1, farmers are almost divided equally in regard to their farming experience. When members and nonmembers were compared no significant differences were found between them on the basis of this variable. This result means that there is no relationship between years in farming and belonging to a farm cooperative. This finding is also supported by those of the previous research [14; 15; 18; 21]. Thus, farming experience continues to be an unimportant factor in influencing farmers' decisions in joining agricultural cooperatives.

Table 1. Socioeconomic characteristics of farmers by cooperative membership

Characteristic	Cooperative membership		
	Yes (n=83)	No (n=136)	Total (n=219)[@]
Age*			
29 or less	4.8%	8.8%	7.3%
30-44	44.6%	47.8%	46.6%
45-59	39.8%	22.8%	29.2%
60 or more	10.8%	20.6%	16.9%
	100.0%	100.0%	100.0%
Educational level**			
No formal education	12.0%	33.0%	25.1%
Primary certificate	12.0%	11.8%	11.9%
Intermediate certificate	4.8%	11.0%	8.7%
Secondary certificate	26.6%	27.3%	26.9%
College degree	37.4%	16.2%	24.2%
Beyond college degree	7.2%	0.7%	3.2%
	100.0%	100.0%	100.0%
Years doing farm work			
Less than 10 years	34.1%	34.1%	34.1%
10-19 years	41.5%	32.6%	35.9%
20 or more	24.4%	33.3%	30.0%
	100.0%	100.0%	100.0%
Gross farm income last year (1990)**			
Less than 100,000 SR[#]	7.5%	55.2%	37.4%
100,000 - 199,999 SR	16.3%	17.2%	16.8%
200,000 SR or more	76.2%	27.6%	45.8%
	100.0%	100.0%	100.0%
Total farm size**			
300 or fewer donums	8.5%	46.3%	31.9%
301-1000 donums	39.0%	37.3%	38.0%
More than 1000 donums	52.5%	16.4%	30.1%
	100.0%	100.0%	100.0%
Part-time farming			
Yes	71.1%	69.6%	70.2%
No	28.9%	30.4%	29.8%
	100.0%	100.0%	100.0%
Number of hired workers**			
2 or fewer	12.3%	56.7%	40.0%
3-4	50.7%	28.4%	36.7%
5 or more	37.0%	14.9%	23.3%
	100.0%	100.0%	100.0%

@ The number of nonrespondents per question was small and never exceeded 3 farmers (or 1.36%).
# Exchange rate: $1.00 = SR 3.75.
* Significant at .05 level of probability.
** Significant at .01 level of probability

Approximately half (45.8%) of the farmers reported gross farm income of 200,000 SR or more for 1990. More than a third (37.4%) had gross farm income of less than 100,000 SR. Gross farm income for members, however, was higher than that for nonmembers. Whereas less than one-tenth (7.5%) of the members earned less than 100,000 SR, more than half (55.2%) of the nonmembers had gross farm incomes below 100,000 SR. But more than three-fourths (76.2%) of the members compared to one-fourth (27.6%) of the nonmembers had gross farm incomes of 200,000 SR or more. The difference in gross farm income is statistically significant at the .01 level.

This positive relationship between membership in agricultural cooperatives and farmers' incomes is consistent with the findings of previous studies that identify income as a major factor influencing farmers' involvement in cooperatives [18; 19; 21; 20]. The findings of this study are explained perhaps by the ability of high income farmers to pay membership fees or shares required for joining cooperatives. Additionally most of the cooperative's services available are designed to benefit wheat growers, who usually have income larger than do growers of other crops.

Farm sizes of the operators varied ranging from 300 or fewer donums (31.9%) to more than 1000 donums (30.1%). Membership, however, was strongly associated with larger operations; in fact, while over half (52.5%) of members operated farms in excess of 1000 donums, only (16.4%) of the nonmembers' farms were this large. On the other extreme, almost half of the nonmembers farmed less than 300 donums. Membership status and size of operation was statistically significant at the .01 level.

The differences by size of operation are consistent with results of previous studies [14; 16; 18; 20; 21]. In fact, the Saudi Arabian Agricultural Bank in 1982 reported that Saudi farmers who were members of farm cooperatives had larger farm sizes.

Less than one-third (29.8%) of the farmers depend upon farming as their primary occupation. In contrast, more than two-thirds (70.2%) reported working in farming as part-time farmers. In fact, part-time farming is typical in the Central Region of Saudi Arabia. In another area of this region, Al-Sakran [10] found that (76.8%) of farmers interviewed were part-time farmers. Occupational differences between members and nonmembers were not significant. However, this finding is not consistent with the findings of previous studies.

Two-fifths of all farmers hired two or fewer workers. More than a third (36.7%) employed three-to-four workers, one-fourth (23.3) employed at least five workers.

Members and nonmembers reported a significantly different number of hired workers. Almost ninety per cent (87.7%) of members but less than half (43.3%) of the nonmembers reported employing three or more workers. This difference no doubt is due to the fact that the larger farms of members require a larger labor force.

Results obtained from the discriminant analysis are represented in Tables 2, 3, 4. The seven listed socioeconomic characteristics in Table 1 are the independent variables used for the discriminant analysis. Based on the stepwise variable selection, two (years doing farm work, and part-time farming) of the original seven variables were eliminated since their tolerance levels were too low (below 0.001) to permit further computation. Altogether, 5 discriminating variables were included in the analysis: Age, educational level, gross farm income, total farm size, and number of hired workers. Multicollinearity was not considered a problem since the correlations between the discriminating variables were relatively small.

Table 2. Discriminant function coefficients for the socioeconomic characteristics of farmers

Significant* variables entered (n = 209)@	**Standardized canonical discriminant coefficients**
Educational level	.502
Gross farm income	.461
Farm size	.337
Number of hired workers	.284
Age	.249

@ Cases with missing data on any of the variables were excluded.
* Significant based on a minimum F-value (1.00) for entry or removal and a minimum tolerance level of 0.001.

Table 3. Canonical Discriminant functions for the socioeconomic characteristics of farmers

Eigenvalue	Pct. of variance	Cum. Pct.	Canonical correlation
.5626	100.0	100.0	.600
Wilks' Lambda	**Chi - Square**	**Df**	**Sig.**
.6399	89.944	5	.001

The standardized coefficients for the five discriminating variables are reported in Table 2. They are listed according to their relative contributions to the overall discriminant function. Educational level is the first best discriminator of all five vari-

ables. The second best discriminator is gross farm income. Farm size is ranked third, and number of hired workers is ranked fourth. Age is the last best variable in terms of its contribution to the overall discriminant function.

Table 4. Classification of cooperative members and nonmembers based on the discriminant function of the socioeconomic characteristics of farmers

Actual group	Number of cases@	Predicted group membership	
		Members	Nonmembers
Members	77	62	15
		80.5%	19.5%
Nonmembers	132	32	100
		24.2%	75.8%
Perscent of all cases correctly classified: 77.51%			

@ 209 cases were used in the analysis because 10 cases had at least one missing discriminating variable.

The eigenvalue (.5626) suggests that the discriminating function successfully distinguishes members from nonmembers of the farm cooperative (Table 3). The canonical correlation produced is .600, or $CC^2 = .36$. Therefore, almost (40%) of the variance in membership is accounted for by these five variables.

The discriminating variables' computed Wilks's Lambda (.6399) is transformed to a chi-square value of 89.944, which has an observed significance below .001 (Table 3). Thus, members and non members have unique means on the discriminant function, suggesting that the independent variables successfully differentiate between the two groups.

Another measure of the analysis is the ability of the discriminant function to correctly classify members of the two groups. Of the 77 cooperative members, 62 (80.5%) were classified correctly (Table 4). Of the 132 nonmembers, 100 (75.8%) were correctly classified. Overall 77.51 per cent of all respondents were correctly classified as members or nonmembers.

The foregoing indicates that members of the cooperative are quite different from non-members. This dissimilarity is made evident by discriminant analysis.

Conclusion

Results of both the contingency tables and discriminant analysis suggest that the decision to join the cooperative is affected by variables related to the socioeconomic characteristics of the farmers who participated in this study. Three main variables made more contribution to the comparison between members and nonmembers of the studied agricultural cooperative. These variables were educational level, gross farm income, and farm size. Other factors found to be important include age and number of hired workers. Members of farm cooperatives were found to be middle-aged, educated, had higher gross farm incomes, operate larger farms, and tend to hire farm workers more often than nonmembers.

Findings of this present study are similar to the results of many other studies concerned with the relationship between the socioeconomic characteristics and belonging to farm cooperatives. These studies include both old and more recent ones which means that the impact of those factors remains unchanged over time. Additionally these results regarding the impact of the above mentioned five variables are almost similar in more than one location. As an evidence of this, the present study is conducted in Saudi Arabia, while most of the reviewed studies were conducted in the United Sates and some other countries.

Finally cooperatives' officials and planners in Saudi Arabia should consider the results of this study in order to improve membership in agricultural cooperatives. Such consideration may enhance the cooperatives' role in agricultural development. An important way of improving membership in farm cooperatives can be done by attracting the more educated farmers to participate and establish new cooperatives in other agricultural areas of the nation. Information about cooperatives must be transfered to all farmers who need such information to consider the importance of belonging to cooperatives. More services should be provided through existing cooperatives. However, these services should not be specialized at providing them for a single crop, but rather diversification of services must be a goal. If considered this policy will encourage more farmers with different production specializations to join cooperatives.

References

[1] Ministry of Planning. *The First Development Plan (1970-1975)*. Riyadh, Saudi Arabia, Ministry of Planning, 1970.

[2] Ministry of Planning. *The Second Development Plan (1975-1980)*. Riyadh, Saudi Arabia: Ministry of Planning, 1975.

[3] Ministry of Planning. *The Third Development Plan (1980-1985).* Riyadh, Saudi Arabia: Ministry of Planning, 1980.

[4] Ministry of Planning. *The Fourth Development Plan (1985-1990.* Riyadh, Saudi Arabia: Ministry of Planning, 1985.

[5] Saudia Arabian Agricultural Bank. *Saudi Arabian Agricultural Bank in Twenty Years.* (In Arabic). Riyadh, Saudi Arabia: Research Department, 1985.

[6] Ministry of Finance and National Economy. *Cooperatives Act.* (In Arabic). Riyadh, Saudi Arabia: The Government Press, 1978.

[7] Ministry of Labor and Social Affairs. *Cooperation in the Kingdom of Saudi Arabia.* Riyadh, Saudi Arabia: Department of Cooperation, 1989.

[8] Saudi Arabian Agricultural Bank. "The Situation of Cooperatives and Their Role in the Development of Agricultural Sector in the Kingdom." (In Arabic). Riyadh, Saudi Arabia: Research Department, 1982.

[9] Al-Humaidi, Ibrahim Abdullah. "Adoption of New Wheat Varieties: A Case Study in the Qassim Area of Saudi Arabia." *Master's Thesis, Iowa State University,* Ames, Iowa (1988).

[10] Al-Sakran, Muhammad S. "Factors Associated with Saudi's Participation in the Agricultural Labor Force in the Al-Zulfi Region of Saudi Arabia." *Master's Thesis, Iowa State University,* Ames, Iowa (1988).

[11] Al-Oablly, Abdullah M. "The Problem of the Cooperatives." *Al-Yamamah Weekly Magazine* 1030. Riyadh, Saudi Arabia (In Arabic). (1988), 47-49.

[12] Al-Oablly, Abdullah M. "Cooperatives Is the Choice for Sound Agricultural Development." *A Paper Presented to the Conference on the Importance of the Agriculture and Its Role in Supporting the National Economy.* The Model Agricultural Institute, Buraydah, Saudi Arabia. (In Arabic). (1989).

[13] Rogers, Everett M.; Rabel, Burdge J.; Peter, Korsching F., and Joseph, Donnermeyer F. *Social Change in Rural Societies: An Introduction to Rural Sociology.* 3rd (ed.), Englewood Cliffs, NJ: Prentice Hall, 1988.

[14] Nadarajah, Selvaraj. "Factors Related to Farmer Participation in Agricultural Cooperatives." *Master's Thesis, Iowa State University,* Ames, Iowa (1982).

[15] John, M.E. "Factors Influencing Farmers' Attitudes Towards a Cooperative Marketing Organization." *Agricultural Experiment Station Bulletin No. 528.* The Pennsylvania State College, School of Agriculture (1943).

[16] Beal, George M.; Fessler, Donald R. and Wakeley, Ray E. "Agricultural Cooperatives in Iowa: Farmers' Opinions and Community Relations." *Iowa Agricultural Experiment Station Bulletin No. 379* (1951).

[17] Utterstorm, Carl Eric; William Heffernan, and Randall E. Torgerson. "Farmers' Attitudes Toward Cooperatives." *Missouri Agricultural Experiment Station Special Report No. 181* (1976).

[18] Slamet, Yulius. "Factors Relating to Farmers' Participation in Farm Cooperatives." *Master's Thesis, Iowa State University,* Ames, Iowa (1984).

[19] Kaufman, Harold F. "Participation in Organized Activities in Selected Kentucky Locations." *Kentucky Agricultural Experiment Station Bulletin No. 528* (1949).

[20] Stern, J.K. and H.F. Doran. "Farmers' Support of Cooperatives." *Agricultural Experiment Station Bulletin No. 505.* The Pennsylvania State College, School of Agriculture (1948).

[21] Beal, George M. "Factors Related to Participation in Farmer Cooperatives in Iowa." *Ph.D. Dissertation, Iowa State University,* Ames, Iowa (1953).

[22] Hay, Donald G. "Social Participation of Individuals in Four Rural Communities of the Northeast." *Rural Sociology,* 16, (1951), 135-140.

[23] Hankel, Ramon E. and Glenn, Fuguitt V. "Nonfarm Work and the Social Relations of Farmers." *Rural Sociology,* 31, (1966), 80-88.

[24] Rogers, David L. "Contrasts Between Behavioral and Effective Involvement in Voluntary Associations: An Exploratory Analysis." *Rural Sociology,* 36, (1971), 340-357.

[25] Fetrow, W.W. "Attitudes of Oklahoma Farmers Toward the Oklahoma Cotton Growers' Association." *Agricultural Experiment Station Bulletin No. 178.* Oklahoma Agricultural and Mechanical Collge (1928).

[26] Korzan, Gerald E. "Member Attitude Toward Cooperatives." *Agricultural Experiment Station Bulletin No. 509,* Oregon State College (1952).

[27] Beal, George M. "Additional Hypothesis in Participation Research." *Rural Sociology,* 21, (1956), 249-256.

[28] Harp, John. "A General Theory of Social Participation." *Rural Sociology,* 24, (1959), 280-284.

[29] Copp, James. "Perceptual Influences on Loyalty in Farmer Cooperative." *Rural Sociology,* 29, (1964), 168-180.

[30] Taji, Koorosh. "Rural Progress Through Rural Cooperatives in Less Developed Countries." *Master's Thesis, Iowa State University,* Ames, Iowa (1977).

[31] Lamming, G.N. "Promotion of Small Farmers Cooperatives in Asia." *FAO Economic and Social Paper No. 14.* Rome: Food and Agricultural Organization of the United Nations (1980).

[32] McBride, Glynn. *Agricultural Cooperatives: Their Why and Their How.* Westport, Connecticut: AVI Publishing Company, INC., 1986.

[33] Krishanaraj, R. and Dubey, V.K. "External Factors Affecting Organizational Efficiency of the Milk Producers's Cooperative Society." *Indian Cooperative Review,* 27, (1990), 345-351.

[34] Sidhu, J.S. and Sidhu, R.S. "Case Studies of Successful and Unsuccessful Primary Co-operative Service Society and Milk Producers' Co-operative Society in Punjab." *Indian Journal of Agricultural Economics,*45, (1990), 367-373.

[35] Bailey, Kenneth D. *Methods of Social Research.* 2nd (ed.). New York: The Free Press, 1982.

[36] Al-Butain Agricultural Cooperative Association. *Al-Butain Agricultural Cooperative's Fourth Annual Report.* Buraydah, Saudi Arabia: Al-Salman Publications. (In Arabic). 1990.

[37] Klecka, William R. *Discriminant Analysis.* Sage University Papers, Series: Quantitative Application in the Social Sciences, Series No: 07-019. Beverly Hills: Sage Publication, Inc., 1986.

[38] Morrison, Donald G. "On the Interpretation of Discriminant Analysis." *Journal of Marketing Research.* 6, (1969), 156-163.

[39] Morrison, "Donald G. Discriminant Analysis." In: Robert Ferber (Ed.), *Handbook of Marketing Research.* New York: McGraw-Hill Book Company, 1974.

الخصائص الاجتماعية الاقتصادية للمزارعين المنتمين للمنظمات التطوعية
دراسة حالة للتعاونيات الزراعية في منطقة القصيم بالمملكة العربية السعودية

محمد سليمان السكران*، فيرنون د. ريان**، وعبدالحميد محمد حسب النبي*
*قسم الإرشاد الزراعي والمجتمع الريفي، كلية الزراعة، جامعة الملك سعود، الرياض، المملكة العربية السعودية، **وقسم الاجتماع، جامعة ولاية أيوا، آمز، أيوا، الولايات المتحدة الأمريكية

(قُدم للنشر في ١٤١٥/١/٢٠هـ؛ وقبل للنشر في ١٤١٥/٨/٦هـ)

ملخص البحث. تهدف هذه الدراسة إلى التوصل لمعرفة أهم الخصائص الاجتماعية الاقتصادية للمزارعين المنتمين للجمعيات التعاونية الزراعية ـ مقارنة بالمزارعين غير الأعضاء. تم إجراء هذه الدراسة بمنطقة القصيم الزراعية في وسط المملكة العربية السعودية، شارك في الدراسة عينة مكونة من ٨٣ عضوًا في الجمعية التعاونية الزراعية بالبطين و١٣٦ مزارعًا من غير الأعضاء في الجمعية. اتضح من نتائج الدراسة أن أعضاء الجمعية يمتازون بأعمارهم المتوسطة وبمستويات تعليمية أعلى إضافة إلى ذلك يمتاز الأعضاء بامتلاكهم مزارع ذات مساحات أكبر وكذلك بتوظيفهم لعدد أكبر من الأيدي العاملة الزراعية.