A Study of the Socioeconomic Determinants of the Performance of the New Lands Cooperatives

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ABSTRACT

The study examines the socio-economic determinants of the performance of the new land cooperatives, where the main aim of the study is to test the existence of those determinants in Egypt.

The paper starts with an introduction that highlights the economic impact of the cooperative business sector and the importance of the economic performance of the productive cooperatives of new lands.
Then part (I) addresses theoretical background about the agricultural cooperative theory, then part (II) provides a review of the previous literature, while part (III) illustrates the methodological procedures followed in this paper. Part (IV) shows the valuation metrics. Finally, part (V) is the conclusion which summarizes the findings of the paper.

Cooperative businesses are indisputably an important part of the Egyptian economy. The term cooperative means an autonomous association of people united voluntarily to meet their common economic, social and cultural needs and aspirations through jointly owned and democratically controlled enterprise.

Consequently; the impact of cooperatives performance is an indication of the perceived importance of this sector to the national economy through the cooperatives roles on community development, production services, technical support, financial responsibilities and social activities. Accordingly the study aims to identifying the socioeconomic determinants of the performance of the new lands cooperatives.

The study applied is the multidimensional ILO/DANIDA scale of cooperative performance including the equity capital ratio, reserve capital ratio, return on total capital, and return on operating assets, return on equity capital and return on operating capital. Using he socioeconomic variables: goal attainment, self reliant ratio, marketing, annual sales, technical support, finance, training and communication.
The study was carried out on Alexandria and El-Behira governorates, and data were collected by personal interviews using a pre tested questionnaire from 61 cooperatives using a random proportionate stratified sample. The questionnaire was coded and data were statistically analyzed applying the discriminate analysis.

The findings displays the significant positive association ship between the cooperative performance and the communication, self reliance ratio, annual sales and finance of productive projects (including the industrial, agricultural, commercial services), Increasing of marketing opportunities(local market and export) and Cooperative technical support. Finally the 62.3% of the studied cases were correctly classified.

JEL classification: K10, K40, O50

I- Introduction

A measure of the economic impact of the cooperative business sector would be useful for many groups as they justify their investment in cooperative development. The productive cooperatives of new lands are interested in estimates of the business volume and economic impacts of the broad cooperative sector. These associations can use information to underscore the importance of their membership and to justify political support. Leaders of new lands communities are often involved with attracting or developing value-added cooperative businesses. These individuals are interested in forecasting economic impact to justify incentive packages. Finally, economists and other scholars are interested in determining whether cooperatives generate a different level of economic impact relative to alternative forms of business organizations.

The size and economic impact of the cooperative business sector is not fully appreciated because no complete information currently exists about the performance of new lands cooperatives, their savings, investment, credits and economic impact, or a readily identifiable procedure for gathering this information.

Measuring the economic performance of the productive cooperatives of new lands would be an important contribution for several reasons. First, such a measure will provide valuable insight for policy makers and the cooperative community about the magnitude of the sector's impact. By cataloging the population of cooperatives, estimating their economic impact, and comparing it with alternative business models a clear statement of their importance and unique role in the local, regional, and national economy can be made. For example, productive cooperatives of new lands tend to be locally owned and transfer the benefits of that ownership to the local community. This potentially generates a greater economic impact than businesses that are not locally owned and which distribute the benefits of ownership outside the community where business is conducted. Policy makers, therefore, are interested to know if there is a difference in the economic impact of user-owned and investor-owned businesses and how great that difference might be.

Second, given the dedication of multiple resources to the new lands of, such as the local units, community development associations and the bank of development and agriculture credit and other national programs, research is needed to measure the national implications of such programs, specifically through the economic impact of the productive cooperatives, on the new lands. Dedicated efforts to measure the economic impact of cooperatives reinforces the fact that they contribute to the new lands economy.

Third, quantifying the importance of cooperatives in many different sectors, not just the productive cooperatives, will provide specific results that can be used to educate the public and policymakers less familiar with cooperatives about their impact throughout the nation.

Fourth, the measures of economic impact by cooperatives and other types of business models, such as investor-owned companies, can be compared, providing information to policymakers and investors as to the difference in impact between user- and investor-owned businesses.

Finally, by creating an accurate measure of the impact of cooperatives in the economy, analysis could be performed, using these results, to identify additional opportunities for investment and sector growth. Such a measure would provide very valuable analysis in a time of increasing demand for economic and social service solutions to help address society's critical social and economic problems. Providing an accurate empirical analysis of the economic impact of cooperatives could point the way towards adopting future, successful cooperative business strategies. Since the components of the economic impact of cooperatives are complex, generating such a measure, especially at the national level, will be challenging.

Consequently; the purpose of this paper is to discuss the socio-economic determinants of the performance of the new land cooperatives.

II- Theoretical Background:

Strength of the Sapiro and Nourse ideas is in specifying objectives and organizational structures for cooperatives that address the concerns of agricultural

producers in a context of achieving a public interest role. In both schools of thought, cooperatives provide some balancing of market power, whether affecting the terms of trade for an industry-wide commodity, the Sapiro School, or in stimulating competition in specific markets, the Nourse School. In their conceptions, cooperatives capture a larger share of industry earnings for the membership, but additionally, contribute to market or industry efficiency. In other words, their philosophies of cooperation were grounded in a public interest perspective, as legislatively recognized in the Capper-Volstead Act of 1922.

Sapiro and Nourse made major contributions to the practical problems of achieving member commitment and cohesive organizations. Yet, subsequent cooperative thought moved further into examining and modeling key facets of internal organization, developing a more coherent theory of agricultural cooperation. Over the years since Sapiro and Nourse, there has been some shift in emphasis from concern with the external effects of organization to the internal or micro aspects of organizing and sustaining cooperation. The advent of farm price support programs may have placed some of the interest in the public policy role of cooperatives on the back burner. In part, agricultural economists have given their attention to understanding the issues of member commitment and efficient operations, as the cooperative movement matured and organizations confronted major changes in their industries. To some extent, too, the focus on internal aspects of organization in cooperative theory has reflected new directions in economics, and perhaps the influence of that profession's gradual division into macroeconomics for economy-wide coordination issues and a microeconomics that has widely adopted the approach of methodological individualism.

An excellent framework for understanding coordination and the role of cooperatives in macro coordination was developed by James Shaffer, and he noted that this role "... deserves a good deal more attention" (1987).

A major step in understanding the internal economics of cooperatives was made by Emelianoff in the 1940's, with a conception of the cooperative as a form of vertical integration (1948). Emelianoff"s attempt to construct a more comprehensive theory of cooperation is particularly notable for its focus on the structural and

functional relationship of members to their cooperative marketing organization that was latter picked up and refined by Robotaka (1947) and his cadre of students, such as Aresvik (1955). Emelianoff concluded that cooperatives represent an aggregate of economic units (members) and are not themselves acquisitive economic units. In other words, Emelianoff developed a conception of a cooperative as pure agency with members as principals.

Phillips developed a model of output and pricing decisions as logically derived from the Emelianoff-Robotka vertical integration framework. He identified a decision rule for members to produce where their marginal costs equaled the cooperative's marginal revenue. However, several economists have pointed out the flaws in this model (Trifon, 1961; Sexton, 1984; Royer, 1994; and Staatz, 1994). Suboptimal earnings would result whenever a cooperative's operations are subject to either increasing or decreasing marginal costs, unless there were some ways that all members could coordinate their outputs, which Phillips left unspecified.

Emelianoff, Robotka, and Phillips clarified the importance of a principal-agent relationship in understanding cooperatives. Although this relationship is too simplistic by itself to provide a comprehensive explanation of cooperative decision making and governance, effective member control consists of members carrying out their role as principals, represented by directors, with management functioning as their agents. In the Emelianoff, Robotka, and Phillips conception of a cooperative, the answer to the "benefits to whom" question is clear and unambiguous.

Phillips carried the logic of vertical integration into defining all member dealings and relationships in strictly proportional terms. All contributions and benefits are received from and returned to members in an equal ratio or proportion. Governance is likewise based on member voting in proportion to patronage volume or use.

The shortcomings of Phillip's output and pricing decision rules derived from the lack of having some form of a modified theory of the firm for cooperatives. By the 1960's, Helmberger and Hoos filled this void and accomplished a re-working of agricultural cooperative theory. Analogous to the theory of the firm, cooperatives

have an optimization objective, but it is to maximize benefits to members. In their model, a cooperative maximizes the per-unit value or average price by distributing all earnings back to members in proportion to their patronage volume or use.

There are excellent discussions of the Helmberger-Hoos model, its contributions and comparisons with the work of Phillips in several reports and issues of the Journal of Cooperatives (Staatz, 1989; Staatz, 1994; Royer, 1994 and Rhodes, 1995; Sexton, 1995). By providing a modified theory of the firm approach and analyzing short run and long run decisions, the Helmberger-Hoos model identified the incentives that can potentially exist for current members to limit the size of a cooperative's membership. Their model revealed potential conflicts of interest if management wants to expand a cooperative's volume in situations of decreasing returns. When such output expansion is based on new members, it diminishes earnings to the original or current membership. Hence, their model is both consistent with the reality of an independent decision responsibility by management in cooperatives and the existence of complex member control issues, that were missing in the Phillip's model.

Several new directions in economic theory have emerged since the 1960's and some comments on the nature of these approaches are relevant to understanding many of the recent developments in agricultural cooperative theory and practice. Traditional economic analysis locates the existence of profit as primarily a function of market structure. Working with this assumption, economists traditionally tended to neglect the internal structure of incentives in organizations (Shoemaker, 1990). It is interesting to note that at the time Emelianoff was writing, there was a lack of an adequate theory of enterprise. In using an analogue method of reasoning, he needed such a definition and devoted the first part of his essay to developing a concept of enterprise, which provided a point of contrast for conceptualizing a cooperative.

One of the advantages of applying a new institutionalist approach to agricultural cooperatives, or business firms in general, is the understanding it offers of organizational strategy. This method of analysis is applied by Sporleder to understanding recent trends of vertical coordination and strategic alliances in agriculture (Sporleder, 1992).

A strategic aspect of relevance to many agricultural producers is the problem of asset fixity or specificity, that may render them vulnerable to opportunistic behavior by product purchasing firms. Williamson and other economists using a new institutionalist approach, have identified this type of vulnerability as a rationale for vertical integration (Williamson, 1971). It is apparent that some cooperatives provide a response to this type of potential market failure.

Olson worked along similar lines as Buchanan in clarifying how most public goods can only be defined for specific groups of people. In that context, a specific group achieves a cooperative gain from their coordinated or organized actions, with the public goods dimension being that no member can be denied access to the services that generate the joint gains. Of course, Olson's major objective in this work was to examine the problem of individual incentives to form cooperatives.

Both Staatz and Sexton look back to Phillips as a progenitor of coalition modeling for agricultural cooperatives (Staatz, 1994; Sexton, 1986). The proportionality principle in Phillip's work, keeping an equal ratio of burden to benefit sharing across all members, is a stable coalition solution. In other words, no member has an incentive to seek a change in the distribution rules. However, Staatz and Sexton point out the operation of a unanimity rule in coalition solutions, and a Phillip's prescription for proportional voting would not be necessary or justified over a one-member, one-vote procedure in this regard.

Jeffrey S. Royer considers the neoclassical approach in which the value of products and the allocation of resources are determined by the costs of production and the tastes and preferences of consumers. Neoclassical theory relies on marginal analysis, in which the quantity of a product that is purchased or sold is based on the additional utility, revenue, or cost associated with the last unit.

III-   Literature review:

A review of past and recent developments in cooperative literature is an opportunity to gain new perspectives on earlier works and renewed appreciation.

A challenge for the cooperative members is to remain the primary beneficiary of group action for which they originally organized and not become the "residual" claimant in the sense of crumbs left over after all other agent groups receive their due. This is particularly critical in organizations lacking firm board governance control and in instances where management continues to push for sales growth involving non-member related business activity. It becomes even more critical when cooperatives develop large unallocated reserves based on this non-member business as noted by Royer (1992) and Staatz (1989) that represents a form of "collective" equity. Management invariably views this equity as the product of its rather than members' efforts. As noted by Staatz and Royer, there is a great potential for the character of cooperative organizations to change or be compromised in such situations, particularly in larger complex organizations.

Some of these situations have even led to conversions to investor-owned firms(IOFs), or to members losing control through goal inversion in which maintaining the "corporate" values becomes more important than keeping the business oriented to members as primary beneficiaries. Allocation practices therefore become a central feature of effective cooperation just as governance practices are important in organizational control. Especially noteworthy in this respect are the efforts by Ag.First farm credit bank of Columbia, SC to emphasize patronage refunds to member borrowers as a reward for continued cooperative business with the cooperative banking system (Love, 1996).

A primary reason for the organization of cooperatives by farmers has been perceived market failures. A conviction that the local farm supply was exploiting a monopoly position or that the network of livestock business market and dealers was hopelessly inefficient often has been the rationale for establishing a cooperative.

Cooperatives may have increasingly important roles to continue to play in providing agricultural producers' incentive with access to markets and an effective vehicle for capturing value-added.
Cooperatives are necessary to provide farmers with market power and to preserve their access to markets. This suggests that farmer cooperatives are more likely to arise

and convey greater benefits to their members where: (a) Assets on both sides of the market are highly specialized and/or (b) product and factor markets are fragmented, leading to a divergence between the values of the asset in its current use and its value in alternative uses. It also suggests that cooperatives will tend to be more prominent in declining markets than in expanding markets because in declining markets the long-term consequences to farmers' trading partners of acting opportunistically are less severe than in expanding markets, in which the threat of entry of competing firms is higher. John M. Staatz*

Cooperative firms may offer certain advantages over IOFs during the early stages of agricultural specialization. Farmer-stockholders have fewer incentives to act opportunistically toward their own cooperative firm than they do toward an IOF (provided that their return from the cooperative is contingent on their continued patronage); therefore, the cooperative firm has more of an incentive than an IOF to invest in training farmers in new production techniques.

Farmers also may vertically integrate via cooperative firms to internalize externalities imposed on them by their trading partners. On the output side, farmers' trading partners may pay insufficient attention to maintaining the quality of farm products, particularly highly perishable ones, as they move through the marketing system, thereby depressing farm-level demand for these products. On the input side, farmers may have an incentive to integrate backward when they have no simple way of ascertaining the quality of purchased inputs, such as by simple inspection or by relying on the sellers' reputation. Particularly in the early stages of the industrialization of agriculture, when purchased inputs are just becoming important in farming and input suppliers' reputations are not well established, farmers may have a strong incentive to integrate vertically via cooperative firms to assure input quality.

Farmers also may have an incentive to integrate vertically to provide themselves with goods and services that no IOF has an incentive to produce due to their public good nature. This is particularly true of the "competitive yardstick" services of farmer cooperative firms, the benefits of which accrue not to the cooperative firm as such but to the farmer-members as historically there has been much acceptance of E. G. Nourse's dictum that the goal of the cooperative is to serve as a competitive yardstick-

-a goad to investor-owned firm (IOF) competitors to keep their costs and profits in line. (Baumol, Panzar, and Willig).

A contestable market is the one that is easily entered by new competitors. A perfectly contestable market has two characteristics: (1) Entrants have no disadvantages on either the cost or the demand sides as compared to the incumbents and (2) exit can be costless if the entrant were to find the market unprofitable.

The implications are obvious. In markets in which entrants can pounce on above-competitive profits or inefficient cost structures, those types of market failures cannot persist. Degree of market concentration does not matter if the incumbents must operate in fear of being overrun by numerous entrants.

Its market failures arise either from lack of competition or from the inherent uncertainty of future events. Thus, in perfectly contestable markets, there is no special need or opportunity for cooperatives, as it appears that a perfectly contestable market must have virtually no product differentiation, the incumbents must have no cost advantage due to secret or patented processes or sole access to scarce resources.

Without significant sunk costs, the entrant is freer to switch rather than continue to fight. Incumbents find it impossible to defend above-competitive profits from the hit-and-run tactics of the completely mobile entrant. On the other hand, if there will be an important sunk costs, an entrant must assess the risks of taking on incumbents who may choose to fight. Incumbents can likely protect some extra profits from less mobile would-be aggressors, because the latter realize that the post-entry environment might be so inhospitable as to prevent the recovery of their sunk costs.

How well do the markets for agricultural commodities and farm supplies fit the conditions for perfectly contestable markets? Product differentiation does play a rather limited role in many agricultural markets because of the homogeneous nature of farm commodities and some farm inputs. Patents and the high costs of R and D deter entry into the manufacture of many farm chemical pesticides and heavy farm machinery but are not important in many other farm supplies. Fixed costs appear quite pervasive in both manufacture and distribution of supplies and in commodity marketing. However, fixed costs are not necessarily sunk, so generalizations about

sunk costs should be made cautiously. There is likely a continuum within agricultural markets with a few markets that are quite contestable (very low barriers to entry and exit), a few markets that have high barriers to entry and exit, and most markets somewhere in between.

The likely least contestable markets- the manufacture of tractors and complex equipments and pesticides- are markets that cooperatives have not been able to enter. Ironically, the easiest markets for cooperatives to enter are the most contestable ones- in which cooperatives have the least to offer as competitive yardsticks. Historically, the economic accomplishments of cooperatives have been greatest in those markets of moderate barriers—where the rewards have been worth seeking and have not been so protected that cooperatives could not achieve them. Some parts of agriculture are more vulnerable to even short-run exercise of market power than are others.

Producers of highly perishable commodities are especially vulnerable to even temporary exploitation of market power by buyers. Consequently, cooperatives have been important in fluid milk handling for example.

Baumol, Panzar, and Willig also introduce the concept of a "sustainable" industry structure. That is the set of firms that can supply most economically the desired industry output at a competitive price. Included are the requirements that each firm be at equilibrium and that there exist no incentive for entry.

Sustainability is a necessary condition for equilibrium in a perfectly contestable market. However, in markets that are imperfectly contestable, sustainability is not a necessary condition for equilibrium. For example, an efficient set of firms may enjoy higher-than-competitive profits behind an effective barrier to entry. Even an inefficient set of firms may do the same. Obviously, there are limits to the size of the profits and/or the degree of inefficiency that any given entry barrier can protect. While there is no necessity for sustainability in many real-world markets in which cooperatives may operate, the concept is useful in exploring various market possibilities for cooperatives.

Under certain conditions, a cooperative is the most desirable monopoly (monopsony) in this type of agricultural market. By the imperfectly contestable

assumption, the incumbent is not disciplined completely by potential entrants; it has some leeway to be inefficient and/or to enjoy above-competitive profits. If the cooperative monopoly can match the efficiency of the IOF, then it will benefit both consumers and farmers more than would an IOF monopoly. The reasons are argued in another paper (Rhodes 1983).

To summarize the argument: Much of above-competitive earnings of the cooperative go to farmer-members and the latter tend to respond with larger output, benefiting consumers. This view is opposite the pessimistic scenario that a cooperative provides the direction that makes farmers into an effective output-controlling cartel. That scenario assumes that the cooperative can direct farmers and that all farmers are ready to go along with a cartel so that it has no free riders. Neither assumption is likely to be met.

Thus a cooperative monopoly may be socially desirable provided it is as efficient as an IOF counterpart. If the cooperative is substantially less efficient, the IOF may be socially more desirable.

Market failure has been the traditional incentive for the organization of a cooperative. The reasons already have been developed as to why sunk costs give pause to the prudent challenger. These reasons apply more strongly to an IOF than to a cooperative. A challenger fears being met by reduced margins--the farm supply retailers start selling at lower prices and margins or the elevators start paying farmers more for grain and suffering reduced margins. These reactions to an entering IOF may mean substantial operating losses for an entrant and eventually an abandonment of its sunk capital. In contrast, these reactions to a farmer cooperative would help farmers as buyers or sellers even more than they hurt the margins of the cooperative. Farmers can well afford to subsidize the operations of the cooperative that has become such an effective competitive yardstick.

Thus the cooperative challenger logically has less fear about incumbent reactions than does the IOF challenger. Cooperative members' attitude may vary by the commodity produced. Those producers of perishables may count their vulnerability so high that they take the long view.

Suppose that a cooperative has successfully become the only firm in this market. It is easy to visualize some farmers organizing a second cooperative in the name of competition **to keep the cooperative management on its toes." Such an effort would be wasteful of resources because only one firm is sustainable in this market. However, some members may benefit from inter cooperative competition if it can be maintained.

In sum, provided the cooperative suffers no inefficiencies because it is a cooperative, it is socially desirable that it be the firm in natural monopoly markets. If entry barriers are too high, a cooperative may not be able to enter. However, a cooperative has some advantages as an entrant. If the cooperative is one of two or more incumbents in a natural monopoly market, it is a bit more likely to emerge as the sole survivor.

Social Service vs. Economic Philosophy of Cooperation:

From a sociological perspective, there exist some conceptual and practical dilemmas that occur within the theory and practice of the cooperative movement and cooperative organizations that define differing orientations between the social and economic philosophies of cooperation. They include: 1) meaning versus service, 2) efficiency versus democracy, and 3) bureaucratic logic versus cooperative logic. At least three purposes of economic organizations can be identified; respectively, making profits, providing services, and realizing meaning. Their predominance and mix tend to vary both across and within organizations.

Exemplar organizations tend to range along a continuum from investment oriented firms (IOFs) at the profits end, to the Kibbutz at the life meaning end. Cooperative organizations can be found at different locations on the continuum, with a predominance located within the service purpose, i.e. a focus on serving the greatest numbers of people over the longest period of time (Craig , 1993; Nadeau and Thompson, 1996). Most farm input and service cooperatives fall into this spot on the continuum. Agricultural marketing cooperatives tend to be found between the service and profit purpose orientation, with new generation cooperatives attempting to preserve earnings benefits for defined membership over time. The life meaning purpose at the other end of the continuum gives much greater focus to participation

and democratic process. Cooperative organizations typically contain elements of all three of these tendencies.

In short there are several interrelated polemic themes that emerge out of the philosophy and theory of cooperation and the cooperative movement; as well as from the practice of cooperation as realized in organizations functioning to meet internal goals within a socio-economy. Organization for service or meaning/participation is a central dilemma that is found internationally. The predominance of each tendency varies across types of cooperative organizations as well as within organizations. North American agricultural input cooperatives are primarily service cooperatives, while conventional agricultural marketing cooperatives have a service orientation but with an increased emphasis on earnings. Given a competitive market place, efficiency criteria tend to drive organizational form toward bureaucratic models, and paradoxically away from cooperative logic form. When participation declines and organizations tend toward greater centralization of decision making (bureaucratic logic), it becomes increasingly difficult to recognize differences in cooperative behavior from investor oriented firm behavior (IOF) and cooperative character can be lost. However, to act without recognition of market imperatives (need for earnings) can also result in the loss of cooperative presence.

This dilemma explains in large measure the root differences between the social and economic philosophies of cooperation. Social philosophers emphasize democratic control in the form of one-person, one-vote as the cardinal principle of cooperation (Lambert, 1963). Economic philosophers on the other hand emphasize the distribution of benefits in proportion to use as the cardinal principle. These differences have been frequently articulated by cooperative leaders like Bergland and Voorhis (1975), who feel the service and participatory end of the continuum, are lost in cooperatives that strictly advocate a "bottom line" orientation.

IV-Methodological Procedures:

Sampling Design: The study was performed to explore the socio-economic determinants of the performance of the new land cooperatives .The study focuses into two governorates Alexandria and elbehira, whereas Alexandria has 3 main cooperative regions including 21 cooperatives, and elbehira has 7cooperative regions

including 53, thus the population of study contain 74 cooperatives (13 cooperatives were inactivated because of legal and institutional problem) therefore they were excluded accordingly the population of study . Hence; the entire population of study consists of 61 of top new land cooperatives.

Measurements: The study exploited the performance of the new land cooperatives as dependent variable and socio-economic determinants are representing 11 independent variables:

The dependent variable: The performance of the new land cooperatives was measured by using of the scale of ILO and DANIDA is formulating the cooperative performance as follows:

Cooperative performance:

1- Equity capital ratio.
2- Reserve capital ratio.
3- Return on total capital.
4- Return on operating assets.
5- Return on equity capital.
6- Return on operating capital.

The variable of performance of the new land cooperatives was measured by : the evaluation of progress at last three years, and 6 answers were designed as follows ; (no progress) , (the progress was less than 10%), (from 10% to 20 %), (from 20% to 30%) , (from 40% to 50 %) ,(more than 50%) , weighed from 1 to 6 respectively.

Socio- economic determinants:

1- Goal attainment:
A: Community development: clean water, electricity, drainage, housing, food supply.
B: Facilitating the social organization services (local unit, extension center, local community unit, banks, health unit and governmental organizations.)

2- Self reliance ratio

3- Activities of productive investment

4- Increasing of marketing opportunities(local market and export) and Increasing (using) the competitive ability of their members

5- Minimizing the production cost

6- Annual sales

7- Cooperative technical support

8- Development and protecting of cooperatives resources (lands improvement, water rational utilization, modern water irrigation systems, desalination programs and land quality adjustment)

9- Finance of productive projects (industrial, agricultural, commercial, secondary services{ transportation, storage, grading and containing, packaging }sales units and small business projects)

10- Training and skills improvement

11- Logistics and communication

The all items of independent variables were measured by formulated answers; strongly agree, agree neutral, disagree and strongly disagree, weighed from 5 to 1 respectively.

Data collection: The secondary data was collected form the administrative records of governmental authorities. And the questionnaires were pre-tested and collected by personal interviews from January to march 2010.

V- Results

The descriptive analysis for the cooperatives performance is revealing that: the performance of 27 cooperatives (representing 44% from the sample) was low, the performance of 31 productive cooperative (51%) was moderate, and the performance of 3 of studied cooperatives was high (5%). The performance of the majority of studied cooperatives is addressed between the low and moderate performance which is clarifying the need to an integrated action plans to develop the current productivity and to overcome the economic, organizational and social barriers and obstacles.

Table (1) cooperatives performance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	27	44.3	44.3	44.3
	2.00	31	50.8	50.8	95.1
	3.00	3	4.9	4.9	100.0
	Total	61	100.0	100.0	

Discriminant analysis: the discriminant analysis is a technique for classifying a set of observations into predefined classes. The purpose is to determine the class of an observation based on a set of variables known as predictors or input variables. The model is built based on a set of observations for which the classes are known. This set of observations is sometimes referred to as the training set. Based on the training set, the technique constructs a set of linear functions of the predictors, known as discriminant functions, such that

$L = b_1x_1 + b_2x_2 + \ldots + b_nx_n + c$, where the b's are discriminant coefficients, the x's are the input variables or predictors and c is a constant.

The table shown below was generated by the selected Univariate ANOVAs. This indicates whether there is a statistically significant difference among the dependent variable means (studied *group*) for each independent variable. Only *x2,x4,x6,x7,x9 and x11* are statistically significant. The Wilks' Lambda is a statistical criterion that is used to add or remove variables from the analysis.

Table (2) Tests of Equality of Group Means

	'Wilks Lambada	F	Sig
X1	0.975	0.735	0.484
X2	0.685	13.350	0.000
X3	0.990	0.293	0.747
X4	0.760	9.159	0.000

X5	0.971	0.879	0.421
X6	0.676	13.921	0.000
X7	0.852	5.024	0.010
X8	0.996	0.106	0.899
X9	0.692	12.931	0.000
X10	0.999	0.042	0.959
X11	0.664	14.658	0.000

The next two tables shown below gives the percentage of the variance accounted for by the yielded discriminant function. The significant of the function is also shown; whereas the generated wilks, lambda was significant (Chi- square value was 23.728)

Table (3) Eigen value

Function	Eigen value	% of variance	Cumulative%	Canonical Correlation
1	0.505[a]	78.3	78.3	0.579

Table (4) Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig
1	**0.664**	23.728	**2**	.000

Table (5) the standardized Canonical Discriminant analysis

Independent variables	Sig.
X11	0.8112**
X2	0.672**
X6	0.6131**
X9	0.597**

X4	0.415*
X7	0.368*
X10	0.217
X3	0.194
X8	0.131
X5	0.102
X1	0.007

*Correlation is significant at the 0.05 level.

**Correlation is significant at the 0.01 level.

Table (6) Classification Results[a]

			Predicted Group Membership			
		DEP	1.00	2.00	3.00	Total
Original	Count	1.00	11	16	0	27
		2.00	5	26	0	31
		3.00	1	1	1	3
	%	1.00	40.7	59.3	.0	100.0
		2.00	16.1	83.9	.0	100.0
		3.00	33.3	33.3	33.3	100.0

a. 62.3% of original grouped cases correctly classified.

Conclusion

Like those of other nonprofit organizations, agricultural cooperatives in new lands are now confronting new emerging needs and challenges from farmer-members and markets caused by national and global changes in the 21st century. Farmer-members want not only to sell their products as fast as possible but also with high economic returns. Thus, it becomes the responsibility of the cooperatives to assist their members

not only in selling their products but also at good prices. Furthermore, the new market economies in which agricultural cooperatives operate bring about new types of consumers who demand high-quality products at reasonable prices, and prefer healthy and chemical-free food at international standards. They want to know the origin of the foods they buy, and whether they are grown through socially acceptable and environment-friendly methods. These phenomena offer both new opportunities and also threats to agricultural cooperatives.

Although most of agricultural cooperatives in new lands remain confined to their main functions like distribution of credit and fertilizers, and procurement of farm products, some changes and modifications should be designed at agricultural cooperatives to transform themselves and implement new strategies in this new economic environment. The innovative practices as a new direction of agricultural cooperatives in new lands are as follows:

- o Electronic commerce and use of Internet. E-commerce is a new way of commercializing products. It offers marketing of products and services via the Internet. The new lands agricultural cooperatives should be supported to set up their web sites for e-commerce of their products.
- o Responding to the needs of the members thereby encouraging member participation.
- o Providing technical support in areas of marketing and supply.
- o Enhancing higher economic returns to members through value-addition.
- o Delivering adequate and timely credit facilities leading to higher productivity.
- o Offering a high level of market information enabling better business decisions.
- o Provide production and consumption loans to members at reasonable rate of interest.
- o Encourage savings among members by promoting savings deposits.

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