Determining Factors of Support for Co-operatives in South Africa

B. Nkonki-Mandleni[1] and F. D. K. Anim[2]

**[1]University of South Africa, Department of Agriculture and Animal Health, Private Bag X 6,
Johannesburg, 1701, South Africa
Telephone: 011 471 2252; Cell: +27 836994375; Fax: 0865904563;
E-mail: mandlb@unisa.ac.za
[2]University of Venda, Department of Agricultural Economics and Agribusiness,
Private Bag X 5050, Thohoyandou 0950, Limpopo, South Africa
Cell: +27 82 295 8417; E-mail: francis.anim@univen.ac.za**

ABSTRACT This study examined the level of support that co-operatives received in all the nine provinces of South Africa. Information was used from 266 co-operatives across the country. Logistic regression was used to determine the level of support received by co-operatives from various support organizations such as the provincial and municipal development agencies. The results of the study indicated that support for co-operatives was lacking during the period of study. Support that was lacking was in terms of funding of service providers, marketing of agricultural products and support in terms of internal dispute resolution in the co-operatives. The study therefore recommended that when support to co-operatives is considered such significant factors determined, must be considered.

INTRODUCTION

The existence and role of co-operatives in both developed and developing countries towards poverty alleviation continue to grow to counteract the economic and social exclusions (Bruce and Zvi 2006). Co-operatives have played a significant role in mobilizing household savings, housing development, agricultural and food production, energy generation, water supply, road development, group insurance, transportation and group product marketing supply (Filipsz and Szabo 2001). In South Africa some of the existing opportunities have not yet been developed to fast track development, particularly in rural areas where many co-operatives exist. Since 1994 (the year that marks the new democracy in South Africa), the government has been supporting the growth of co-operatives as a job-creation and poverty-alleviation strategy (Co-operatives Act No.14 of 2005).

In South Africa co-operatives started in the agricultural sector. Primary agricultural co-operatives are still the most essential in the country. Agricultural co-operatives in South Africa were established following the enactment of the Co-operatives Society's Act of 1922 and 1939 that was aimed at supporting White commercial farmers. More specifically, they served to secure input supply and output market services as well as agents for the Land Bank in the provision of short-term and medium-term credit at subsidized interest rates for designated groups of farmers. Following market firms' deregulation in the 1990s, several of the apartheid era co-operatives have converted into private companies or investor-oriented firms (Ortman and King 2007).

A new Co-operatives Act (No.14 of 2005), which replaced the old Co-operatives Act No. 91 of 1981, under which a variety of co-operatives could register, came into force in August 2005 (Chibanda et al. 2009). Support mechanisms and institutions for primary co-operatives are currently wide. Institutions such as provincial and national departments with their public entities, municipalities and development agencies have products offering for primary cooperatives, yet the real empowerment of ordinary co-operative remains unresolved.

When compared with other countries, South Africa is relatively at the initial stage of providing appropriate support services to co-operatives. Those that have been well supported by the government in the former regime have since converted from co-operatives to public or private companies between 1990 and 2005. These are the cooperatives that lead companies in Johannesburg Stock Exchange and the global market. The latter attests to the fact that, given appropriate and targeted support, co-operatives

can grow from just survival/subsistence programmes to global economic players.

To date some co-operatives in South Africa are dysfunctional despite the support provided by government. Failures usually are related to clashing of opinions among the members, conflict of interests, lack of members' commitment and difficulty in managing members. Furthermore, constraints such as lack of access to land, poor provision of extension services, lack of resources and poor infrastructure have contributed to the failure of agricultural co-operatives. The objective of the study was to determine the level of support and other roles provided by various support organizations to co-operatives in all the nine provinces of South Africa.

METHODOLOGY

Data Collection

Questionnaires were tools used to collect data from 266 randomly selected active and inactive cooperatives across the nine provinces of South Africa. Questions focused on issues around the levels of support, market access information, governance and capacity building. Suitable interview times were arranged with members of the co-operatives. Questionnaires were completed by researchers telephonically. This was due to the widespread co-operatives in the country.

Empirical Model

Logistic Regression

Logistic regression was used to determine the level of support received by co-operatives from various support organizations such as the provincial and municipal development agencies. Logistic regression is one of the widely used methods for analysing binary data. It is used to examine and describe the relationship between a binary response variable (Greene 2003). According to Hosmer and Lemeshow (2000) when given the dependent variable to be binary in nature, the logistic regression can be used to estimate its response to the explanatory variables. In this paper the binary of the dependent variable which is that of receiving support or not was employed.

The model for logistic regression analysis assumes that the outcome variable, Y, is categorical (for example, dichotomous), taking on values of 1 (that is, yes) and 0 (that is, no). Hypothetically, population proportion of cases for which $Y = 1$ is defined as $p = P(Y = 1)$. Then, the proportion of cases for which $Y = 0$ is $1 - p = P(Y = 0)$. In the absence of other information, we can estimate p by the sample proportion of cases for which $Y = 1$. However, in the regression context, it is assumed that there is a set of predictor variables, $X_1,...,X_k$, that are related to Y and, therefore, provide additional information for predicting Y (Greene 2003).

Logit $(P_i) = \ln (P_i / 1-P_i) = \beta + \beta_1 X_1 + ... + \beta_n X_n + {}^U t$
Where:

$\ln (P_i / 1-P_i) =$ logit for farmers receiving support choices (Yes or No)

$P_i =$ Yes; $1 - P_i =$ No; $\beta =$ coefficient; $X_i =$ covariates; ${}^U t =$ error term.

When the variables are fitted into the model, the model is presented as:

$ln (P_i / 1-P_i) = \beta + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 ..... + {}^U t.$

Before the regression model could be applied factor analysis was conducted (Hayton et al. 2004). Factor analysis was used to transform the given set of variables into a new set of composite variables that were used in the regression model as independent variables.

RESULTS AND DISCUSSION

Table 1 summarizes the different types of support that co-operatives received in the areas studied. In Table 1 descriptive statistics of the variables with means and standard deviation are provided. Table 2 presents results of the logistic regression analysis. The estimated model indi-

Table 1: Means and standard deviations

Variables	Mean	Std. dev.
Dependant Variable		
Do you receive support (financial and non-financial) from any organisation? (Y)	1.54	0.499
*Independent Variables**		
Funding service provider (X_1)	4.35	1.817
Funding level of importance (X_2)	4.94	0.410
Marketing level of support (X_3)	2.23	1.334
Internal dispute resolution (X_4)	5.52	1.209
Internal dispute level of support (X_5)	2.62	1.528
Availability of services (X_6)	4.96	1.596

*Variables from factor analysis; N=266

cated classification rates of 74.5% for support and 87.0% for no support and an overall classification rate of 81.3%. The results indicated the degree of accuracy of the model and therefore the reliability of the resulting estimated coefficients with their accompanying statistics. The results of the analysis indicated that the significant variables that determined support received by co-operatives were funding service providers (X_1), marketing level of support (X_3) and internal dispute resolution structures level of support (X_5). Funding service providers had positive and significant effect on support to co-operatives. Funding level of importance (X_2), did not show any significance in the study. However, marketing level of support showed negative but significant effect on the support to co-operatives. Internal dispute resolution level of support also showed a positive and significant effect on support to co-operatives. Yet, internal dispute resolution (X_4) together with availability of services (X_6) did not have any significant effect on co-operatives.

Logistic regression results indicated that funding service provider positively and significantly affected support for the co-operatives in the study areas. Although the variable (funding service provider) did not have high factor loadings it proved to be an important contributor to the factors that influenced level support for co-operatives (Bruynis et al. 2000). This is confirmed by Department of Agriculture Forestry and Fisheries report (2012) whereby agricultural co-operatives were reported to have no funding due to a lack of credit worthiness.

The high positive factor loadings pertaining to support in terms of marketing including exports implied that support that was important for the co-operatives in the nine provinces. Logistic regression results confirmed lack of support in terms of marketing. This is in agreement with the study conducted by Chibanda et al. (2009) who discovered that weak marketing arrangements negatively affected the performance of smallholder agricultural co-operatives in the KwaZulu-Natal province of South Africa.

The high positive factor loading on internal dispute resolution implied that it was the most important support that was needed by the co-operatives in the nine provinces. Logistic regression results confirmed the lack of support on internal dispute resolution as it positively and significantly affected co-operatives. These findings concur with the studies conducted by Chibanda et al. (2009) who discovered that performance of smallholder cooperatives in KwaZulu-Natal were negatively influenced by governance problems. Governance problems were linked to lack of production and management skills training.

Support for co-operatives in the nine provinces studied was an all-encompassing factor that affected the co-operatives. Co-operatives have a potential to contribute enormously South Africa's economy, and the lack of support paralyses it's potential to contribute to economic growth. Although the Department of Trade and Industry contributed immensely to the development of co-operatives, the results of this study display lack of support. Similar results were observed in the study by Pur et al. (2003) in Yobe State, whereby inadequate government support was the major constraint that affected the co-operatives.

Table 2: Logistic regression results

Variable	B	SE	Wald	df	Significance	Exp (β)
X1	0.325***	0.122	7.117	1	0.008	1.384
X2	0.324	0.365	0.789	1	0.374	1.384
X3	-0.380**	0.166	5.262	1	0.022	0.684
X4	0.160	0.125	1.625	1	0.199	1.174
X5	0.820*	0.406	4.082	1	0.043	2.271
X6	0.186	0.182	1.048	1	0.306	1.205
Constant	-6.851	2.745	6.229	1	0.013	0.001

Diagnostics:			Classification:		Goodness of fit:	
2 Log likelihood	=	204.259	Support	= 74.5%		
Cox and Snell R square =		0.375	No support	= 87.0%	df	= 1
Nagelkerke R Square	=	0.501	Overall	= 81.3%	Sig.	= 0.162

P- values are for slopes; ***$P<0.01$; ** $P<0.05$ *and* *$P<0.10$= Significant at 1%, 5% and 10% probability level respectively

CONCLUSION

This study examined level of support that co-operatives received in the nine provinces of South Africa. The results of the study indicated that support was lacking in the co-operatives of South Africa. Support that was lacking was in terms of funding of service provider, marketing of agricultural products and internal dispute resolution structures. Lack of support implied that intervention was lacking in the provinces during the time of the study and that was negatively affecting the performance of the cooperatives in South Africa.

RECOMMENDATIONS

This study therefore recommends strong support to co-operatives in the study area. Significant factors that determined support must be considered when co-operatives are supported.

ACKNOWLEDGEMENTS

REFERENCES

Bruce G, Zvi L 2006. Agricultural cooperative enterprise in the transition from socialist collective farming. *Journal of Rural Cooperation*, 34: 1-18.

Bruynis C, Goldsmith P, Hahn D, Taylor W 2000. Key success factors for emerging agricultural marketing cooperatives. *Journal of Cooperatives* 16: 14-24.

Chibanda M, Ortmann GF, Lyne MC 2009. Institutional and governance factors influencing the performance of selected smallholder agricultural cooperatives in KwaZulu-Natal. A*grekon,* 48 (3): 293 - 306.

Department of Agriculture Forestry and Fisheries 2012. *A Report on the National Agricultural Co-operatives Indaba: "Towards the Creation of a Model to Enable Smallholder Farmers to Play a Critical Role in the Establishment of Sustainable Co-operative Enterprises"*. July 2012, Directorate of Co-operative and Enterprise Development, South Africa.

Filipsz L, Szabo Z 2001. "Hungary", in *Proceedings of Workshop Promotion of Rural Development through Agricultural Cooperatives*, ICAO-ICA Europe, Budapest.

Greene WH 2003. *Econometric Analysis*. 5th Edition. Upper Saddle River, New Jersey: Prentice Hall.

Hayton JC, Allen DG, Scarpello V 2004. Factor retention decisions in exploratory factor analysis: A tutorial on parallel analysis. *Organizational Research Methods*, 7: 191-205.

Hosmer DW, Lemeshow SL 2000. *Applied Logistic Regression*. 2nd Edition. New York: John Wileyand Sons Inc.

Ortman GF, King RP 2007. Agricultural co-operatives: History, theory and problem. *Agrekon,* 46(1): 18-46.

Pur JT, Gwary MM, Gaya I 2003. *Constraints to Effective Performance of Cooperatives in Rural Economic Activities in Yobe State.* Department of Agricultural Economics and Extension. Maiduguri, Nigeria: University of Maiduguri.

South Africa 2005. *Co-operatives Act No.14 of 2005.* Pretoria: Government Printers.