

# **THE EFFECT OF ECONOMIC DETERMINANTS ON PERFORMANCE OF DAIRY COOPERATIVE SOCIETIES IN KERICHO COUNTY, KENYA**

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## **Abstract**

*This study sought to determine the effect of economic determinants on the performance of dairy cooperative societies in Kericho County, Kenya. The economic determinants examined were; capital formation, competition, volatility of prices of milk, capacity utilisation, adoption of technology and entrepreneurship. The study adopted descriptive research design. A census was conducted among 50 respondents comprising 36 members of management committees, 4 managers and 10 employees of 5 active dairy cooperative societies. Data was analysed using descriptive statistics. The findings indicated that the performance of dairy cooperative societies in Kericho County was on decline and were affected by economic determinants. Overall, the dominant economic determinant is capital formation which was considered by 85.7% of respondents to affect performance to a high extent; followed by entrepreneurship (67.4%), capacity utilisation (67.3%), adoption of technology (63.3%), and competition (53.1%). 38.8% of the respondents considered volatility of milk prices affected performance to a low extent, 40.8% were neutral and 20.4% believed the effect was to a high extent. This study recommends the transformation of dairy cooperative societies in Kericho County from traditional agricultural producer marketing organisations to New Generation Cooperatives, which while preserving the cooperative principles such as one member one vote on policy issues and distribution of earnings according to patronage, focus on value added processing activities. It is further*

*recommended that dairy cooperative societies should prepare and implement strategic and business plans to guide growth and performance in a dynamic economic environment faced with industrialization, globalisation and technological changes affecting the modern business organizations.*

*Keywords: Capital formation, economic determinants, performance, Cooperative Societies*

## INTRODUCTION

After Kenya's independence in 1963 the Government promoted the development of cooperatives with the overall aim of using the movement as a tool to facilitate commercialization of smallholder agricultural sector. According to Wanyama (2007), the promotion was formalized by the introduction of a single legal framework for all types of cooperatives in 1966 via The Cooperative Societies Act, Cap 490 and the Cooperative Societies Rules of 1969 which provided the operational procedures for all cooperatives. The main feature of the legal framework was strict supervision of cooperatives by Government.

The Government supported the cooperatives by provision of privileges and advantages, tending to give them monopoly in economic activities, especially in the marketing of agricultural produce. The Government also facilitated donor support, training and development of personnel and rectification of capital deficits by assistance from World Bank, Department for International Development (DFID), Germany, Canada, United States of America (USA) and Nordic countries as observed by Wanyama (2007).

The main purpose for the formation of dairy cooperative societies in Kericho County was to provide assistance and support to small scale farmers in the collection and delivery of milk to Kenya Cooperative Creameries (KCC) processing plants in Sotik and Molo. The cooperatives offered other services to farmers, mainly procurement of inputs such as cattle feeds, alcaricides and dairy equipment at competitive prices for resale to members on credit against milk deliveries.

Until 1992, KCC was the only licensed milk processor and distributor of pasteurised milk and milk products in the country. During the period, the cooperative movement was vibrant and dairy cooperative societies in Kericho County were significant in the collection of milk from framers and delivery to KCC. Sessional Paper No. 6 of 1997 provided a new policy framework on "cooperatives in a liberalised economic environment" and redefined the role of government from control to regulatory and facilitative. The 1966 Cooperative Societies Act was repealed and replaced by the new Cooperative Societies Act, No 12 of 1997 which reduced the involvement of government in day to day management of cooperatives. KCC's poor financial performance in

late 1980's and early 1990's forced it to pay cooperatives, and eventually the producers, low milk prices and led farmers to shift more sales to the informal raw milk market, Staal, Delgado and Nicholson. (1997).

In a research study, Limo and Popoi (2011) found that liberalisation affected dairy cooperatives adversely in Western Province, Kenya where between 1992 and 2008 all the sampled cooperatives indicated that at one time the cooperative had ceased operating, registered drop in milk volumes, as well as membership and turnover. Karanja (2002) observed that Kenya's dairy industry faced a number of technical, economic and institutional problems in milk production, processing and marketing. Ministry of Cooperative Development (2011) annual reports show that there were 19 registered dairy cooperative societies in Kericho of which, only four (21%) were active. Of the four cooperatives, one resumed operations in 2012 after being dormant for 10 years. The cooperatives were under performing, with decline in turnover and lack of growth in membership, share capital, retained earnings and number of employees.

Annual turnover for each of two active dairy cooperatives in Kericho declined over the past five years. The third cooperative society started operations in 2009 and achieved low turnover over two years and ceased dairy activity in 2012. The fourth dairy cooperative society was dormant since 2002 and resumed operations in 2012. The trends are shown in Table 1.

Table 1: Turnover trends in dairy cooperatives in Kericho (Kshs'm)

Cooperative code	2005	2006	2007	2008	2009
1	4.2	3.8	2.3	2.2	1.6
2	13.9	11.1	10.	10,1	4.5
3*					0.36
<b>Total</b>	<b>18.1</b>	<b>14.9</b>	<b>12.3</b>	<b>12.3</b>	<b>6.46</b>

\*The cooperative society was formed in 2008 and started operations in 2009

Source: Ministry of Cooperative Development (MOCD) (2011)

### Cooperative societies in Kericho County

Kericho County lies to the south west of Kenya within the highlands of the Great Rift Valley. It occupies 2,479 square kilometers. It is bounded by Baringo and Uasin Gishu counties to the North, Nandi to the North West, and Kisumu to the West, Bomet to the South, and the South West and Nakuru to the East. As in other regions of Kenya, the number of producer marketing cooperatives in the county increased rapidly after independence, from 5 in 1963 to 87 in 1992 when the sector was liberalised. Producer cooperatives in Kericho County are in coffee, sugar cane and dairy sectors, involved in collection, storage and further transportation of produce to the buyers or their agents on behalf of the members. The cooperatives developed market

opportunities for the produce and aimed to improve margins by negotiation of better prices for the produce.

Liberalisation led to mergers and splits of cooperatives and some become small uneconomic units. The participation of agricultural producer cooperatives in economic activities declined after liberalisation and many societies progressively became dormant with many closing. In the dairy sector, of the 19 registered cooperatives, 5 were active but with low share capital and turnover as shown in Table 2.

Table 2: Agricultural marketing cooperative societies in Kericho

Type	Active	Dormant	Members	Employees	Share capital Ksh)
Dairy	4	15	3,826	17	577,714
Coffee	27	0	12,345	75	16,031,371
Sugarcane	20	3	6,675	42	4,378,623
Multipurpose	4	14	1,164	6	1,190,195
<b>Total</b>	<b>54</b>	<b>32</b>	<b>24,110</b>	<b>140</b>	<b>22,177,903</b>

Source: MOCD (2011)

Table 2 shows that four (21%) dairy cooperative societies were active and fifteen (79%) were dormant. The active dairy cooperatives had a low cumulative share capital of Kshs 577,714.

## THEORETICAL FRAMEWORK

Helmberger and Hoss (1962) used the neoclassical theory of the firm to develop short term and long term models for a cooperative and members using traditional marginal analysis with the cooperative's optimisation objective being maximisation of benefits to members by maximising "the per unit value or average price by distribution of all earnings back to members in proportion to their patronage volume or use". Sexton (1995) observed that the analysis of cooperative and member behaviour is based on clear set of assumptions and supported a model which distinguished between short term and long term behaviour of a cooperative.

According to neoclassical theory, a firm maximises its profits subject to its cost structure, product demand constraints, assumes transaction costs to be zero and that resources are fully allocated purely in response to financial incentives. Royer (1999) observes that in addition to mergers, consolidations and acquisitions (horizontal and vertical restructuring), cooperatives were increasingly involved in fundamental institutional changes raising the question, whether there are fundamental features intrinsic to the cooperatives organisational form that restrict cooperatives from ability to compete effectively in an increasingly complex economy that

ultimately threaten their long term survival. Agency theory applies in situations where an individual or an organisation acts on behalf of another individual or organisation, creating, an agency relationship. The individual or organisation acting on behalf of the other (principal) is the agent. Principal – agent problems will arise if the objectives of the agent are not the same as those of the principal, and the agent may not always best represent the interests of the principal, Alchian and Demsetz (1972). Agency theory applies to institutional structure of cooperative societies where elected members of management committees and employed managers (agents) may not act in the best interests of the owner-members (principal).

Richards, Klein & Walburger (1998) refers to various studies which argue that cooperatives experience greater principal-agent problems than other proprietary enterprises due to lack of; capital market discipline, clear profit motive and the nature of ownership as “autonomous association of persons united voluntarily to meet their common economic, social, cultural needs and aspirations through jointly-owned and democratically controlled enterprise” ICA (2005). Cooperatives do not have markets for their equity and as such, there is less incentive for members to monitor actions of their managers and have greater difficulty of designing incentive schemes for the managers to align their personal objectives with those of the cooperative.

Richards, Klein & Walburger (1998), using data from a survey of cooperative members in Alberta, Canada, found that members felt that managers focused too much on social role of cooperatives and not enough on profit issues such as higher prices, return on equity, and quality of service and were least satisfied with their cooperatives’(managers’) performance.

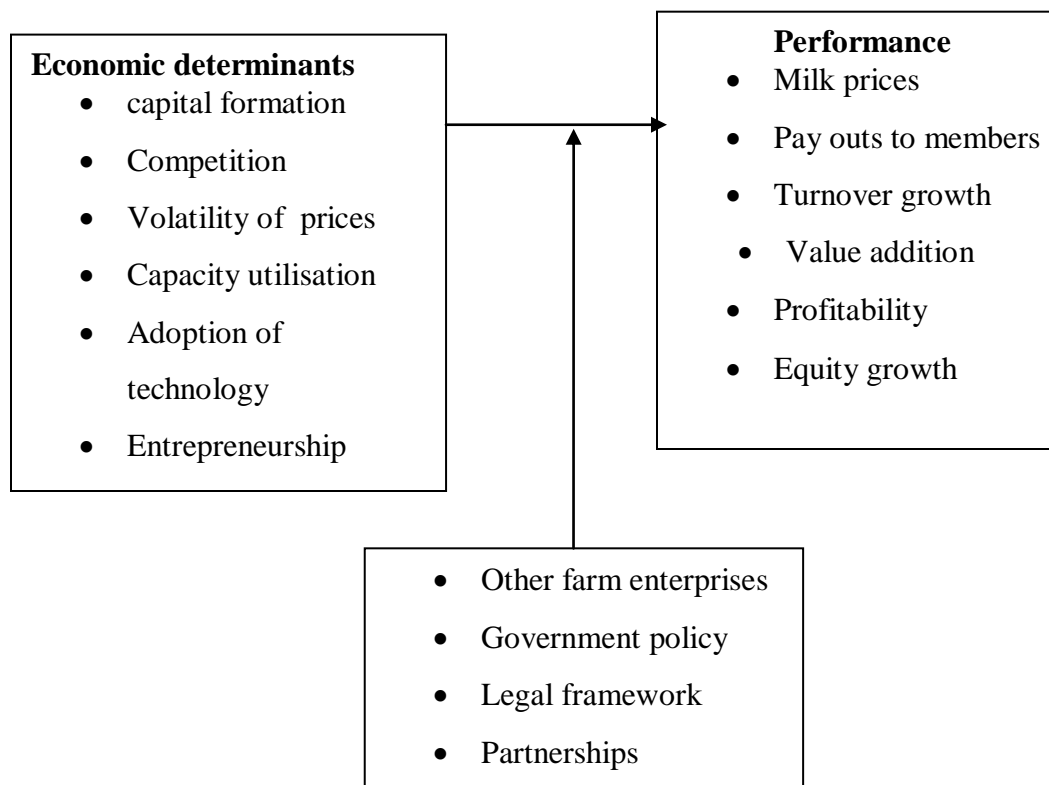
Application of economic theories to cooperative practice is challenging with respect to determining the conditions under which farmers benefit from forming and being members of a cooperative. Staatz (1994) observes that many of the benefits which farmers receive from establishing cooperatives originate from the holdup problem and the opportunistic behaviour associated with asset fixity.

### **Conceptual Framework**

In the study, performance of cooperatives was the dependent variable while the economic determinants comprised the independent variables. Capital formation, competition, volatility of milk prices, capacity utilisation, adoption of technology and entrepreneurship were considered economic determinants of performance of dairy cooperatives in Kericho County. Intervening determinants of performance were; other farm enterprises, legal framework, Government policy and partnerships.

The conceptualisation was based on the traditional economic theories of production and the institution economic models which have been adopted by new generation cooperatives. The study was; determine the performance trends of dairy cooperative societies in Kericho County and to determine the extent to which economic determinants affect performance.

Figure 1: The conceptual framework



### Statement of the Problem

Of the nineteen registered dairy cooperative societies in Kericho County, four were active, MOCD (2011). Turnover declined over the years and payouts for produce were below those which prevailed in other market channels. The societies were not able to procure and supply inputs to the members at competitive prices. Furthermore the cooperatives had not registered any growth over the past five years. The Ministry of Cooperative Development (2012) Annual report shows that turnover recorded by the dairy cooperatives in Kericho county in 2011 was kshs 4,194 million, compared to kshs 5,535 million in 2010 and Kshs 13,953 million in 2005, ( a 70% decrease from 2005)

The dairy cooperatives in Kericho County were at the lower end of value chain, collecting, bulking, chilling and selling of raw milk to processors while peer cooperative

societies, Githunguri Dairy Farmers Cooperative Society and Ndumberi Dairy Cooperative Society in Kiambu had moved higher up the chain, processing and marketing added value milk products (pasteurized milk, yoghurt, cheese and ghee) offered to market under “FRESHA” and “WINNERS” brands respectively. Therefore; the study, sought to determine the performance trends and the effect of economic determinants on the performance of dairy cooperative societies in Kericho County.

The specific objectives of this study is to determine the extent to which economic determinants affect performance of dairy cooperatives in Kericho County

## RESEARCH METHODOLOGY

This study adopted descriptive survey design. Orodho (2003) observed that “descriptive design is a method of collecting information by interviewing or administering questionnaires to a sample of individuals. Since the number of respondents were few no sampling was done therefore a census method was adopted.

A self designed questionnaire was administered to the respondents. Census of active dairy cooperative societies from which respondents were drawn and data collected by use of closed ended questionnaires and data collection schedules. A 98% rate of response to questionnaires was achieved from the survey. Data thus collected was analyzed using descriptive statistics.

## ANALYSIS AND RESULTS

### Extent of Effect of Economic Determinants on Performance

The second specific objective was to determine the extent to which economic determinants affect performance of dairy cooperatives in Kericho County, Kenya. The economic determinants which were considered in the research study were competition, volatility in the prices of milk, capital formation, capacity utilisation of resources, adoption of technology and entrepreneurship. The assessment was based on the research question “to what extent do economic determinants affect performance”.

Table 3: Extent of effect of competition on performance of cooperatives

Extent	Frequency	Percent	Cumulative %
Very high extent	2	4.1	4.1
High extent	24	49.0	53.1
Neutral	1	2.0	55.1
Low extent	15	30.6	85.7
Very low extent	7	14.3	100.0
<b>Total</b>	<b>49</b>	<b>100.0</b>	

The summary of results in Table 3 shows that 53.1% of the respondents perceived that competition affected performance of their dairy cooperatives to high and very high extent. 44.9% of the respondent considered that the effect of competition on performance was to low and very low extent while 2% of the respondents had a neutral view on the effect of competition.

Table 4: Extent of effect of volatility of prices of milk on performance

Extent	Frequency	Percent	Cumulative %
Very high extent	1	2.0	2.0
High extent	9	18.4	20.4
Neutral	20	40.8	61.2
Low extent	14	28.6	89.8
Very low extent	5	10.2	100.0
<b>Total</b>	<b>49</b>	<b>100.0</b>	

The summarised results in Table 4 show that 40.8% of the respondents were neutral on volatility of prices of milk on the effect on performance of dairy cooperatives. 38.8% of the respondents considered volatility of prices of milk to affect performance to low and very low extent, while 20.4% agreed that volatility of prices affected performance to high and very high extent.

Table 5: Extent of effect of capital formation on performance

Extent	Frequency	Percent	Cumulative %
Very high extent	35	71.4	71.4
High extent	7	14.3	85.7
Neutral	1	2.0	87.8
Low extent	6	12.2	100.0
Very low extent	0	0	100.0
<b>Total</b>	<b>49</b>	<b>100.0</b>	

Table 5 indicates that 85.7% respondents considered that capital formation affected performance of their dairy cooperative to high and very high extent. 12.2% considered the effect of capital formation to be to a low extent. 2% of the respondents maintained a neutral view on the effect of capital formation on performance of their dairy cooperatives.



Table 6: Extent of effect of capacity utilisation on performance

Extent	Frequency	Percent	Cumulative %
Very high extent	15	30.6	30.6
High extent	18	36.7	67.3
Neutral	9	18.4	85.7
Low extent	7	14.3	100.0
Very low extent	0	0	0
<b>Total</b>	<b>49</b>	<b>100.0</b>	

The results in Table 6 show that 67.3% of the respondents were of the view that capacity utilisation affected performance of their dairy cooperative to high and a very high extent. 18.4% held a neutral view while 14.3% thought capacity utilisation affected performance to a low extent.

Table 7: Extent of effect of adoption of technology on performance

Extent	Frequency	Percent	Cumulative %
Very high extent	12	24.5	24.5
High extent	19	38.8	63.3
Neutral	5	10.2	73.5
Low extent	5	10.2	83.7
Very low extent	8	16.3	100.0
<b>Total</b>	<b>49</b>	<b>100.0</b>	

The summary of results in Table 7, show that 63.3% of the respondents believed that adoption of technology in their dairy cooperatives affected performance to high and very high extent. 10.2% of the respondents held a neutral while 26.8% of the respondents believed the effect of adoption of technology on performance of their dairy cooperatives was to low and very low extent.

Adoption of technology in dairy cooperative societies in Kericho was low. None of the societies had computerised accounting and payment systems. One cooperative society had e-mail communication and digital weighing scales while another had an old chilling plant which was underutilised.

The low extent of adoption of technology affects performance of the cooperatives because they cannot realise the benefits of improved efficiency, productivity improvements and the associated cost savings.

Table 8: Extent of effect of entrepreneurship on performance

Extent	Frequency	Percent	Cumulative %
Very high extent	26	53.1	54.2
High extent	7	14.3	68.8
Neutral	4	8.2	77.1
Low extent	3	6.1	83.3
Very low extent	9	18.3	100.0
<b>Total</b>	<b>49</b>	<b>100.0</b>	

The results in Table 8 show that 68.8% of respondents considered the effect of entrepreneurship on the performance of their dairy cooperative to be high and very high extent. 8.3% of the respondents were neutral while 23% of the respondents considered the effect of entrepreneurship on performance of dairy cooperative to be low and very low extent.

Entrepreneurship competencies affected performance and the manner in which the resources were harnessed to maximise earnings and benefits to the members.

Table 9: Matrix of agreement on extent of effect of determinants

Determinant/Extent	Very high	High	Neutral	Low	Very low
Competition	4.1	49	2	30.6	14.3
Volatility of prices	2.0	18.4	40.8	28.6	10.2
Capacity utilization	30.6	36.7	18.4	14.3	0
Capacity formation	71.4	14.3	2	12.2	0
Adoption of technology	24.5	38.8	10.2	10.2	16.3
Entrepreneurship	53.1	14.3	8.2	6.1	18.3

Table 9 shows that four economic determinants affected performance of dairy cooperatives to high and very high extent. Overall, capital formation was indicated as the most important determinant of performance (85.7% of respondents) followed by entrepreneurship (67.4% of respondents) which was at par with capacity utilisation (67.3% of respondents) and ahead of adoption of technology (63.3% of respondents) and competition (53.1% of respondents). The effect of volatility of prices of milk was largely neutral to low and very low extent.

All the active dairy cooperative societies were involved in collecting from members, bulking and marketing of raw milk and faced competition from processors and informal milk traders.

## CONCLUSIONS AND RECOMMENDATIONS

The study determined the extent to which economic determinants affect performance of dairy cooperatives societies in Kericho County. Overall the most important economic determinant of

performance is capital formation which was considered by 85.7% of respondents to affect performance to a high extent; followed by entrepreneurship (67.4%), capacity utilisation (67.3%), adoption of technology (63.3%), and competition (53.1%). 38.8% of the respondents considered volatility of milk prices affected performance to a low extent, 40.8% were neutral and 20.4% considered volatility of prices to affect performance to a high extent.

In order to improve the performance of dairy cooperative societies in Kericho County, this study recommends the transformation of dairy cooperatives in Kericho from traditional agricultural marketing cooperative societies to new generation cooperatives, which, while preserving the cooperative character, with the principle of one-member one-vote on important policy issues and distribution of earnings according to patronage, focus on added value activities with member capital contributions linked to product delivery rights which attain value and can be transferred within restricted or closed membership.

It is further recommended that the cooperatives prepare and implement strategic plans to promote structured and focused decisions and actions to achieve development, growth and enhanced performance in dynamic economic environment characterized by technological changes, industrialization, liberalisation and globalisation affecting business enterprises. The key strategic thrusts should include capital formation which is the most important economic determinant of performance. Other critical strategic thrusts required for the cooperatives are; development of entrepreneurship, capacity utilisation, adoption of technology and competition.

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