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Analysis of the Impact of Changes in Management Practices on the Growth of Credit Unions in Kenya

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Abstract

Management of an organization can be a complex exercise requiring relevant resources including human and monetary. The operationalization of these resources needs proper structures anchored in well documented formats thus the necessitation of policy frameworks. Management of Co-operative Unions in Kenya has experienced several modifications over the years. Currently as per the Co-operative Societies Act Chapter 490 2012 section 27; the duties of the Committee (1) indicates that the Committee of a co-operative society shall be the governing authority of the society and subject to any direction from a general meeting of the society and the by-laws of the society, it shall direct the affairs of the society with powers. The Kenya Subsidiary Legislation, 2004 (2) facilitated the Co-operative Societies rules, which came into effect in Nov 2004. These Rules provided for the election of Board of directors, the supervisory committee and the appointment of managers for Co-operatives. Before 1997 the government was heavily involved in the management of Co-operatives but due to the

introduction of the free-market economy Cap 490 Co-operative Societies rules was replaced by the 1997 Act which minimized the governments influence and allowed for autonomy in the Co-operative movement free from the government's involvement in its day-to-day life. This paper analyses the impact of management practices on co-operative Unions growth since 1988 in Kenya. In particular it compares this growth in their financial positions, member enrolment and Co-operative Unions registration for three periods with distinct management styles using a weighted multivariate cost of return model. The cost of return financial indicator/detector is applicable to the shares and savings per period since the Credit Unions pay dividends on them as a cost while the risk measure is applicable since the loan portfolio is a risky venture. The research determines that there has been a general upward trend in the member enrolment and registration of Co-operative unions irrespective of the management style and not a major difference in their weighted trend in financial growth.

Keywords: Management, Credit Unions, Growth, SACCOs

1. Introduction

Management of an organization can be a complex exercise requiring relevant resources including human, functional and monetary. The operationalization of these resources needs proper structures anchored in well documented formats thus the necessitation of policy frameworks. Management as a science was developed in the early 20th century and focused on increasing productivity and efficiency through standardization, division of labor, centralization and hierarchy. A very "top down" management with strict control over people and processes dominated across industries. Due to growing and more complex organizations, the nineteen fifties and nineteen sixties saw the emergence of functional organizations and the Human Resource (HR) movement. In the nineteen seventies focus changed from measuring function to resource allocation and tools such as Strategic Planning (GE), Growth Share Matrix (BCG) and Strengths Weaknesses Opportunities and Threats (SWOT) were used to formalize strategic planning processes. As the business environment grew increasingly competitive and connected, and with a blooming management consultancy industry, Competitive Advantage became a priority for organizations in the nineteen eighties. (Kinal, 2013). The nineteen nineties, and two thousand onwards has seen the fast race in technology and the advent of the generations x, y and z that has influenced to a great extent the management styles.

Schulze-Delitzsch the founder of Credit Unions 19th century's administration was conducted by the members, who elected various committees to oversee its actual management. Raiffeisen 1864 Heddesdorf Credit Union elected a management committee to approve loans and conduct the routine business of the society. Raiffeisen stressed volunteer work in all his unions, allowing compensation only to full-time treasurers. Promotion of Credit Unions to Africa was made by Credit Union National Association (CUNA) of United States of America after receiving many requests in the nineteen fifties. In 1970, the

World Council of Credit Unions (WOCCU) was formed. WOCCU policy decisions are made by its Membership Council, comprised of representatives from its voting members (Mahon, 2001)^[5].

Management of Co-operative Unions in Kenya has experienced several modifications over the years. Currently as per the Co-operative Societies Act Chapter 490, 2012, section 27, the duties of the Committee (1), indicates that The Committee of a co-operative society shall be the governing authority of the society and subject to any direction from a general meeting of the society and the by-laws of the society, it shall direct the affairs of the society with powers. The Kenya Subsidiary Legislation, 2004 (2) facilitated The Co-operative Societies Rules, which came into effect in Nov 2004. These rules provided for the election of Board of directors, the supervisory committee and the appointment of managers for Co-operatives.

Before 1997 the government was heavily involved in the management of Co-operatives but due to the introduction of the free-market economy CAP 490 was replaced by the 1997 Act which minimized the governments influence and allowed for autonomy in the Co-operative movement free from the government's involvement in its day-to-day life. This paper analyses the impact of management practices on co-operative Unions growth since 1988. In particular it compares this growth in their financial positions, member enrolment and Credit unions' registration.

1.1 Statement of the problem

Management of organizations maybe an individual person or persons ingenuity leading to their great success as seen in the example of the founder member of the Credit Unions Schulze-Delitzsch or in other organizations such as Microsoft co-founder Bill Gates, Face book co-founder, Mark Zuckerberg, Amazon founder Jeff Bezos, Alibaba co-founder Jack Ma, Safaricom founder, Michael Joseph, Equity Bank co- founder John Mwangi etc. It may also be as a result of well-structured policy frameworks by governments or otherwise amicably crafted and implemented. Either way many organizations tend to copy successful management models just like the Co-operative/credit union model, computer model, search link model, the online business model as well as the Mpesa model with great success while others fail in their tracks albeit after spending lots of resources in copying or adopting winning management models. The Credit Unions in Kenya commonly known as SACCOs are not different having experienced many policy changes in their management structures and their implementations albeit with massive resources used to actualize the same. This research purported to evaluate the impact of these different management styles on the performance of SACCOs in Kenya, the results of the study may guide current and future management styles particularly in discerning whether their successful implementations rely largely on individual leadership, their successful implementation or both.

1.2 General objective

The general objective of the study was to assess the impact of management styles on the growth of credit unions (SACCOs) in Kenya

1.3 Specific objectives

The Specific Objectives were:

1. To examine the effect of changes in management practices on member enrolment in Kenyan SACCOs
2. To determine the effect of changes in management practices on credit Unions registration in Kenyan SACCOs
3. To evaluate the effect of changes in management practices on financial performance in Kenyan SACCOs

1.4 Research questions

1. What are the effects of changes in management practices on member enrolment in Kenyan SACCOs?
2. What are the effects of changes in management practices on credit Unions registration in Kenyan SACCOs?
3. What are the effects of changes in management practices on financial performance in Kenyan SACCOs?

1.5 Significance of the study

Policy changes on management are practices that impact heavily on the functioning of an organization in this case the Credit Unions in Kenya. A lot of resources are spent on the formulation and implementation of the changes. The policy changes tend to be long term and thus impact heavily on those affected. Many of these changes are prompted by need assessments while others might be borne out of routine change. It is important to assess the impact of these changes over a certain period of time in order to determine whether they had a positive, negative or no impact at all. This will enable the adoption of the best practices, harmonization of relevant practices as well as elimination of negative practices.

1.6 Limitations of the study

The limitation of the study was sourcing for authentic data. This was overcome by using Google search to access the authentic sites.

2. Literature review

2.1 Theoretical framework

In this study we theorize as follows:

Theorem

Performance cost of return P_r is the weighted periodic average costs of returns p_i per period i

Proof:

$$\text{Let } P_r = \frac{\sum_{i=1}^n p_i r_i}{\sum_{i=1}^n p_i} \tag{1}$$

$$\text{Then, } P_r = \frac{\sum_{i=1}^n p_i r_i}{\sum_{i=1}^n p_i} = \frac{p_1 r_1 + p_2 r_2 + p_3 r_3 + \dots + p_n r_n}{p_1 + p_2 + p_3 + \dots + p_n} \tag{2}$$

Taking Expectation gives,

$$= \frac{p_1 E(r_1) + p_2 E(r_2) + p_3 E(r_3) + \dots + p_n E(r_n)}{p_1 + p_2 + p_3 + \dots + p_n} \tag{3}$$

$$= \frac{\frac{1}{n} p_1 P_r + \frac{1}{n} p_2 P_r + \frac{1}{n} p_3 P_r + \dots + \frac{1}{n} p_n P_r}{p_1 + p_2 + p_3 + \dots + p_n} \tag{4}$$

Simplifying equation 4 above results in

$$= \frac{\frac{n}{n} P_r (p_1 + p_2 + p_3 + \dots + p_n)}{p_1 + p_2 + p_3 + \dots + p_n} \tag{5}$$

And finally, P_r (6)

Thus, Global cost of returns GR is weighted average of global costs of different sectors. The study thus implores this theory in modeling global costs and risks below.

2.2 Empirical framework

Credit Unions mainly make their returns by offering savings and shares products as well as loan portfolio products. There are various costs associated with maintaining the savings and shares products as well as risks involved in offering the loan portfolio product. Thus, this research adopts a model for measuring impact in changes in management practices that weighs the cost of returns against risks involved. Currently we have quite a number of models that can determine costs of returns as well as risks. These include: Markowitz (1952) ^[6] which establishes a quantitative paradigm, leading to the first ever mean risk models to incorporate different classes of assets into a portfolio. Markowitz’s model suggests variance as a measure of risk which is criticized most commonly for its deliberate nature and for the irregularity with aphoristic models for decision (semi variance, mean absolute deviation and stochastic predominance). The conditional Value at Risk (VaR) model (also identifies as a mean excess loss, tail VaR) was proposed by Rockafellar and Uryasev (2000) ^[7]. It can be described as the conditional loss estimation over that sum α at a predefined likelihood level β (Lim *et al.* 2011) ^[4]. Value at Risk can be misleading i.e., it can give a false sense of security and does not measure worst case loss. For example, 99% percent VAR really means that in 1% of cases (that would be 2-3 trading days in a year with daily VAR) the loss is expected to be greater than the VAR amount. The worst-case loss might be only a few percent higher than the VaR, but it could also be high enough to liquidate your company. Some of those “2-3 trading days per year” could be those with terrorist attacks, big bank bankruptcy, and similar extraordinary high impact events. Thus, one may simply not know the maximum possible loss by looking only at VaR.

Due to the limitations in the portfolio risk models assessed above Anyika *et al* (2012) developed a method for determining total risks of single shares in a stock exchange and compared the risks among other stocks. This paper further develops a multivariate model with the risk measures not assuming unitary situations which are very often unrealistic. This paper has thus investigated multivariates for different periods of performance indicators for Credit Unions with different management styles. This makes comparability easy since there is a reference portfolio indicator for the whole period that is used to gauge the performance of all the other segregated periods.

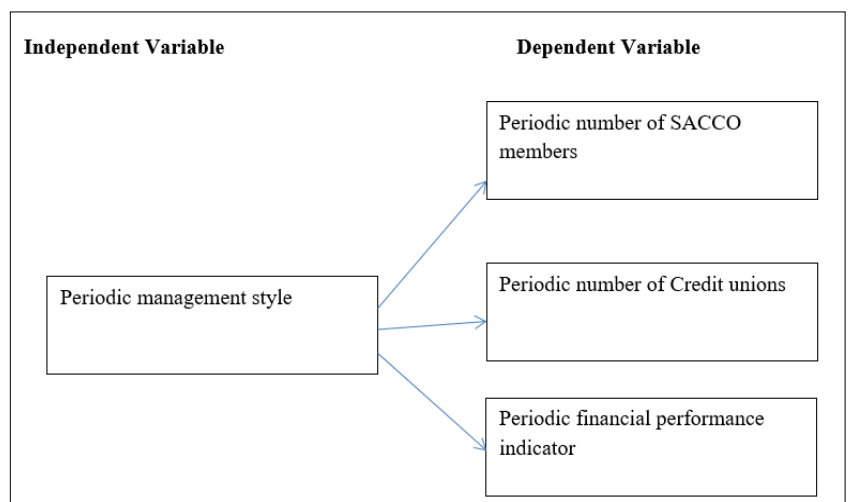
2.3 Conceptual framework

The independent variable is the periodic management style in the Credit Unions while the dependent variables are the periodic number of SACCO members, the periodic number of Credit Unions and Periodic financial performance indicators.

3. Methodology

3.1 Research method

The methodology in this study was mathematical modeling. This in many cases is done through computer programming or otherwise. These models serve many of the same purposes as physical models, but are determined entirely by mathematical relationships between variables that are



defined numerically (Carpi *et al.*, 2011). In this case, the building blocks are fundamental concepts and theories which can be assembled into a wide variety of models.

3.2 Sampling and data processing

The population of this study was the yearly shares, savings and loans of Kenyan credit unions. For comparative analysis purposes a sample was made from the year 1988 to 2019 during which we have had three changes in the management styles.

3.3 Comparative analysis model

Let P_i be the periodic performance indicator of credit unions in Kenya. This also represents the periodic expected cost of return $E(r)$ of a portfolio of given periods of comparative study., V_i represent the various random variables (detectors) affecting the performances of the co-operatives (credit unions) for example share savings or loans and w_i the weight attributed to every random variable.

The multivariate model of performance will be represented by the following basic model

$$E(r_w) = p_w + q_w E(r_i) \tag{7}$$

$E(r_i)$, being the expected returns of a portfolio of interrelated periodic returns,

Where, $p_w = \sum_{i=1}^n w_i p_i$, $q_w = \sum_{i=1}^n w_i q_i$, w_i is the weight of security i , p is the constant return unique to security i , q_i is a measure of the sensitivity of the return in the portfolio

$$\text{and } F_i = E(r) - K_w - S_w \tag{8}$$

and $v_{(r)}$ the total risk of a period represented as:

$$v_{(r)} = v_p + v_m \tag{9}$$

v_p being the weighted portfolio risk $K_w + S_w$,

and v_m the weighted credit risk, $K_w + e_r$

Where $K_w = \sum_{i=1}^{\infty} w_i^2 v_i^2$ $S_w = 2w_i w_j v_{ij}$ $e_r = \sum_{i=1}^{\infty} v_{e_i}^2 v_j^2$ is the variance of security j , v_i^2 variance of security i , $v_{e_i}^2$ variance of random error of security i .

4. Determination of weight

The value of the weight that maximizes the Credit Union periodic portfolio returns and minimizes total risk is determined as follows:

$$\frac{\partial F_i}{\partial w_i} = 0$$

That is

$$p_i + q_i E(R_i) - 2w_i v_i^2 - 2w_j v_{ij} = 0 \tag{10}$$

and That is

$$\frac{\partial v_r}{\partial w_i} = 0$$

$$4w_i v_i^2 + 2w_i v_{ij} = 0 \tag{11}$$

Equating equation 10 and 11 and expanding results in the following expression

$$\begin{aligned} p_1 + q_1 E(r_1) - 6w_1 v_1^2 - 4w_2 v_{12} - 4w_3 v_{13} - 4w_4 v_{14} - 4w_5 v_{15}, \dots, -4w_n v_{1n} &= 0 \\ p_2 + q_2 E(r_2) - 6w_2 v_2^2 - 4w_1 v_{12} - 4w_3 v_{23} - 4w_4 v_{24} - 4w_5 v_{25}, \dots, -4w_n v_{2n} &= 0 \\ p_3 + q_3 E(r_3) - 6w_3 v_3^2 - 4w_1 v_{31} - 4w_2 v_{32} - 4w_4 v_{34} - 4w_5 v_{35}, \dots, -4w_n v_{3n} &= 0 \\ p_4 + q_4 E(r_4) - 6w_4 v_4^2 - 4w_1 v_{41} - 4w_2 v_{42} - 4w_3 v_{43} - 4w_5 v_{45}, \dots, -4w_n v_{4n} &= 0 \\ p_5 + q_5 E(r_5) - 6w_5 v_5^2 - 4w_2 v_{51} - 4w_3 v_{52} - 4w_3 v_{53} - 4w_5 v_{54}, \dots, -4w_n v_{5n} &= 0 \end{aligned}$$

∴∴

$$p_n + q_n E(r_n) - 6w_n v_n^2 - 4w_n v_{n1} - 4w_n v_{n2} - 4w_n v_{n3} - 4w_n v_{n4}, \dots, -4w_n v_{nn} = 0$$

and rearranged to give

$$\begin{aligned}
 p_1 + q_1E(r_1) - 6w_1v_1^2 - 4w_2v_{12} - 4w_3v_{13} - 4w_4v_{14} - 4w_5v_{15}, \dots, -4w_nv_{1n} &= 0 \\
 p_2 + q_2E(r_2) - 4w_1v_{12} - 6w_2v_2^2 - 4w_3v_{23} - 4w_4v_{24} - 4w_5v_{25}, \dots, -4w_nv_{2n} &= 0 \\
 p_3 + q_3E(r_3) - 4w_1v_{31} - 4w_2v_{32} - 6w_3v_3^2 - 4w_4v_{34} - 4w_5v_{35}, \dots, -4w_nv_{3n} &= 0 \\
 p_4 + q_4E(r_4) - 4w_1v_{41} - 4w_2v_{42} - 4w_3v_{43} - 6w_4v_4^2 - 4w_5v_{45}, \dots, -4w_nv_{4n} &= 0 \\
 p_5 + q_5E(r_5) - 4w_2v_{51} - 4w_3v_{52} - 4w_3v_{53} - 4w_5v_{54} - 6w_5v_5^2, \dots, -4w_nv_{5n} &= 0
 \end{aligned}$$

∴∴

$$p_n + q_nE(r_n) - 4w_nv_{n1} - 4w_nv_{n2} - 4w_nv_{n3} - 4w_nv_{n4} - 4w_nv_{n5}, \dots, -6w_nv_n^2 = 0$$

Then

$$\begin{aligned}
 6w_1v_1^2 + 4w_2v_{12} + 4w_3v_{13} + 4w_4v_{14} + 4w_5v_{15}, \dots, +4w_nv_{1n} &= p_1 + q_1E(r_1) \\
 4w_1v_{12} + 6w_2v_2^2 + 4w_3v_{23} + 4w_4v_{24} + 4w_5v_{25}, \dots, +4w_nv_{2n} &= p_2 + q_2E(r_2) \\
 4w_1v_{31} + 4w_2v_{32} + 6w_3v_3^2 + 4w_4v_{34} + 4w_5v_{35}, \dots, +4w_nv_{3n} &= p_3 + q_3E(r_3) \\
 4w_1v_{41} + 4w_2v_{42} + 4w_3v_{43} + 6w_4v_4^2 + 4w_5v_{45}, \dots, +4w_nv_{4n} &= p_4 + q_4E(r_4) \\
 4w_2v_{51} + 4w_3v_{52} + 4w_3v_{53} + 4w_5v_{54} + 6w_5v_5^2, \dots, +4w_nv_{5n} &= p_5 + q_5E(r_5)
 \end{aligned}$$

∴∴

$$4w_nv_{n1} + 4w_nv_{n2} + 4w_nv_{n3} + 4w_nv_{n4} + 4w_nv_{n5}, \dots, +6w_nv_n^2 = p_n + q_nE(r_n)$$

And then simplified to

$$\begin{pmatrix}
 6v_1^2 + 4v_{12} + 4v_{13} + 4v_{14} + 4v_{15}, \dots, +4v_{1n} \\
 4v_{21} + 6v_2^2 + 4v_{23} + 4v_{24} + 4v_{25}, \dots, +4v_{2n} \\
 4v_{31} + 4v_{32} + 6v_3^2 + 4v_{34} + 4v_{35}, \dots, +4v_{3n} \\
 4v_{41} + 4v_{42} + 4v_{43} + 6v_4^2 + 4v_{45}, \dots, +4v_{4n} \\
 4v_{51} + 4v_{52} + 4v_{53} + 4v_{54} + 6v_5^2, \dots, +4v_{5n} \\
 \vdots \\
 4v_{n1} + 4v_{n2} + 4v_{n3} + 4v_{n4} + 4v_{n5}, \dots, +6v_n^2
 \end{pmatrix}
 \begin{bmatrix}
 w_1 \\
 w_2 \\
 w_3 \\
 w_4 \\
 w_5 \\
 \vdots \\
 w_n
 \end{bmatrix}
 =
 \begin{pmatrix}
 p_1 + q_1E(r_1) \\
 p_2 + q_2E(r_2) \\
 p_3 + q_3E(r_3) \\
 p_4 + q_4E(r_4) \\
 p_5 + q_5E(r_5) \\
 \vdots \\
 p_n + q_nE(r_n)
 \end{pmatrix} \tag{12}$$

$$\begin{pmatrix}
 6v_1^2 + 4v_{12} + 4v_{13} \\
 4v_{21} + 6v_2^2 + 4v_{23} \\
 4v_{31} + 4v_{32} + 6v_3^2
 \end{pmatrix}
 \begin{bmatrix}
 w_1 \\
 w_2 \\
 w_3
 \end{bmatrix}
 =
 \begin{pmatrix}
 p_1 + q_1E(r_1) \\
 p_2 + q_2E(r_2) \\
 p_3 + q_3E(r_3)
 \end{pmatrix} \tag{13}$$

The weights are then calculated by substituting the unknowns from data of returns of shares savings and loans of the portfolio of the periods 1988-1997, 1998-2012, 2013-2019 and then solving using Cramers algebra.

4.0 Results

Table 1: A table of an extract from secondary Raw Data

Year	Members	Credit Unions	Savings & Shares	Loans	Reserves	Assets
2019	8,033	8,551,540	6,728,335,534	7,988,540,435	875,938,666	10,048,671,112
2018	7,301	7,773,434	5,791,794,980	6,740,344,121	740,344,121	8,332,212,787
2017	7,035	6,804,463	4,600,052,723	5,669,332,227	599,208,989	6,978,078,590
2016	6,468	6,272,077	4,200,055,451	5,177,292,286	548,520,106	6,324,267,668
2015	5,769	5,432,009	3,549,729,585	4,511,784,482	427,969,231	5,355,916,302
2014	4,965	5,103,231	3,266,230,227	4,287,967,019	390,913,619	5,069,054,967
2013	5,000	4,722,127	2,659,761,058	3,732,814,994	323,646,493	4,466,313,096
2012	5,000	4,722,126	2,972,704,029	3,397,826,904	273,998,961	4,180,986,255
2011	4,638	4,183,220	2,534,612,350	2,678,325,980	228,141,275	3,797,713,946
2010	4,020	3,918,490	2,794,431,047	3,245,333,881	215,194,040	3,703,506,074
2009	3,996	3,835,250	2,750,754,034	2,517,445,869	179,328,367	3,289,351,841
2008	3,990	3,682,272	2,269,620,502	1,978,861,572	123,257,319	2,474,039,494

Author: World Council of Credit Union (WOCCU) and Agriculture and Rural Development (ARD)

Table 2: A table of sampled and organized data for analysis for the period 2013-2019

Year	Members	Savings & Shares	Savings Per Member	Average Loan Portfolio Per Member	Loans
2019	8,551,540	6,728,335,534	787	934	7,988,540,435
2018	7,773,434	5,791,794,980	745	867	6,740,344,121
2017	6,804,463	4,600,052,723	676	833	5,669,332,227
2016	6,272,077	4,200,055,451	670	825	5,177,292,286
2015	5,432,009	3,549,729,585	653	831	4,511,784,482
2014	5,103,231	3,266,230,227	640	840	4,287,967,019
2013	4,722,127	2,659,761,058	563	790	3,732,814,994

Similar tables for periods 1998-2012 and 1900-1997 are prepared. Savings shares and loans are in dollars. The data in table 2 and other periodic tables is processed and the expected periodic costs of returns, variances and covariances determined and filled in the matrix below for evaluation of weights.

$$\begin{pmatrix} 12156212126560 \\ 2121214316024444.08 \\ 656024444.0811106 \end{pmatrix} \begin{pmatrix} w_1 \\ w_2 \\ w_3 \end{pmatrix} = \begin{pmatrix} 929.75 \\ 486.83 \\ 117.34 \end{pmatrix} \tag{14}$$

The actual weights are determined as:

$$\begin{pmatrix} W_1 \\ W_2 \\ W_3 \end{pmatrix} = \begin{pmatrix} 0.10864 \\ -0.005669 \\ -0.041067 \end{pmatrix} \tag{15}$$

The cost of returns performance indicator is determined by substituting the weights in equation 15 above into equation 7 resulting into an overall portfolio cost of return of 85.41 dollars per member. This is represented in the table below in comparison with the periodic indicators.

Table 2: A table of periodic and portfolio performance indicators

Performance indicators	Cost of returns	Risks
Portfolio	85.41	14.205
2013-2019	92.975	45.0111
1998-2012	-2.7598	154.272
1988-1997	-4.804834	43.02

The performance indicators are compared among the different periods and with the overall portfolio

5. Conclusion

The periodic performance indicators in section four indicate that the period between 1988 and 1997 witnessed very low costs of returns as well as low risks of -4.804834 and 43.02 respectively. This was the period of no liberalization and government involvement in the management of SACCOS which led to the policy changes of liberalization. Interestingly the period between 1998 and 2012 witnessed the lowest costs of returns in other words some profit being made similar to the previous period but the risks were the highest. This was the period when SACCOS were managed by boards of governors and a lot of SACCOS particularly Agricultural had many issues. Results of the current period between 2013 and 2019 (the 2020 results have not yet been published) when credit unions are being owned and managed by members are showing very high costs of returns as well as high risks. There may not be a major cause for this since the overall portfolio cost of return does not vary from the same significantly. This is also an indication that policy changes may not be the cause of performance changes in respective co-operatives.

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