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Investment in other Financial Institutions and Financial Performance of Deposit Taking Savings and Credit Cooperatives in Kenya

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Abstract: *The diversification of deposit-taking savings and credit cooperatives in Kenya through investment in other financial institutions has emerged as an important strategy among financial institutions, although its effect on financial performance has not been adequately addressed in empirical literature. This study investigated the influence of investment in other financial institutions on the financial performance of deposit-taking savings and credit cooperatives in Kenya. Financial performance was measured using return on assets, while investment in other financial institutions was proxied by the proportion of funds invested in other financial institutions. The study adopted a longitudinal research design using panel data obtained from the Savings and Credit Cooperatives Societies Regulatory Authority covering 182 licensed deposit-taking savings and credit cooperatives for the period 2015–2023. A fixed-effects panel regression model was applied in the analysis. The results revealed that investment in other financial institutions had a positive and statistically significant effect on financial performance ($\beta = 0.174083$, $p < 0.001$). The findings indicate that increased investment in other financial institutions enhances profitability with a relatively stronger effect compared to traditional lending activities. The study contributes to the existing literature on savings and credit cooperatives investment diversification by providing empirical evidence from a developing economy context. The study recommends that deposit-taking savings and credit cooperatives should diversify their investment portfolios through regulated financial institutions while maintaining prudent risk management practices.*

Keywords: Financial institutions, financial performance, Deposit Taking Savings and Credit Cooperatives, Investment, SACCOs, Kenya

1. Introduction

The cooperative movement is associated with the informal forms of traditional co-operations where members of the community came together in various communities for a common objective that would include planting, weeding hunting or any other community objective. Available old records also point to cooperative farming in Babylon and also point to the establishment of the loans and savings associations in China similar to the contemporary ones. In addition, there is evidence of people coming together to clear lands in preparation for planting crops similar to current Savings and Credit Cooperatives (SACCOs) movement in North America. SACCOs play important roles in society and are indispensable development tools. In the current dispensation, co-operatives provide employment opportunities to hundreds of million people with individual membership standing at eight hundred million internationally (Ogum & Jagongo, 2022).

Globally, the co-operative movement is doing better in countries like USA, Brazil, Ireland, Mexico, Austria, Canada, Caribbean, Poland and Costa Rica (Ogum & Jagongo, 2022). In kenya, the co-operative movement was ranked seventh globally, with the SACCO sector taking the tenth position globally. The co-operative societies sector is a key pillar for Kenya's economic growth. It contributes to about 43 percent of the country`s GDP. In addition, the sector provided more than 300,000 job opportunities Sacco Societies Regulatory Authority [SASRA], (2021). However, from the Sacco supervision annual report (2022) return on assets (ROA) as a measure of financial performance for DT-SACCOs has not been steady over the years. The sector saw its Return on Asset decrease from 2.69 percent in 2017 to 2.61 percent in 2022. If this trend is not reversed, there is possibility that access to funds by many people in the country will be a mirage, and this will impact negatively on the economy, leading to job losses thus reversing the gains made in reducing poverty in Kenya.

Besides lending, deposit-taking SACCOs also invest part of their surplus funds in other financial institutions, such as commercial banks, government securities, fixed deposits, and money markets. These investments are usually meant to complement loan income, maintain liquidity, and spread risk (Orichom & Omeke, 2021).

1.2 Statement of the Problem

As critical drivers of financial inclusion and economic empowerment, deposit taking SACCOs, have made investments in other financial institutions in form of fixed deposits and placements, which are intended to generate extra income and diversify risk beyond the traditional lending activities of giving loans to members. Reports by SASRA (2022) indicate volatile financial performance as measured by ROA.). According to Muriithi et al. (2022) in 2021, deposit taking SACCOs generated KES 8.1 billion in investment income. This later increased to KES 9.6 billion in 2022 translating to growth of approximately 18.5 percent. Despite the low financial performance, the deposit taking SACCOs realized a growth in returns from their investment in other financial institutions. However,

the empirical investigation of the effect of investment in other financial institutions on financial performance of deposit taking SACCOs is inadequate. Earlier studies put much emphasis on loan portfolio quality indicators for example non-performing loan ratios while neglecting investment in other financial institutions decisions (Orichom & Omeke, 2021; Sifrain, 2022). It is based on this drawback that this study investigates the influence of investment in other financial institutions on financial performance of deposit taking SACCOs in Kenya.

1.3 Objective of the Study

To establish the influence of investment in other financial institutions on financial performance of deposit taking SACCOs in Kenya.

1.4 Research Hypothesis

H_{01}: Investment in other financial institutions have no significant influence on financial performance of deposit taking SACCOs in Kenya

2. Literature Review

The literature review herein delves into extant research on investment in other financial institutions and financial performance of DT-SACCOs in Kenya. The aim of this review is the provision of a wider understanding of the relationship that exist in investment in other financial institutions and financial performance, focusing on deposit taking SACCOs.

2.1 Theoretical Framework

This study is grounded in the internal funds' theory of investment (Tinbergen, 1939), which posits that firms prefer to finance investments internally and that additional investment is undertaken when internal funds increase through higher profits (Edgmand, 1987). For deposit taking SACCOs, investing in fixed deposits and placements in other financial institutions, ensures liquidity as funds can be availed at a short notice.

2.2 Empirical Review

In relation to investment in other financial institutions, several studies have been conducted to examine the performance of financial institutions. The current study focused on fixed deposits and placements. In an Indian study on banking preferences, Ray and Shantnu (2021) compared bank fixed deposits and company fixed deposits. This study was carried out in Mumbai and Lucknow cities for low-risk investments. Setting out with the hypothesis that Bank Fixed Deposits and Company Fixed Deposits provided a safe investment avenue, the study collected both primary and secondary data from 20 respondents investing in Fixed Deposits. Specifically, a convenience sampling approach was used on individual investors/ non-parametric test - Mann Whitney U Test was applied for testing the hypothesis of this study. Study findings indicated that low risk investments are still a popular choice among investors. However, there was a difference in the awareness about investment in Fixed Deposits and Company Fixed Deposits, thus providing an observation on the investment preferences of investors. This study was based on main commercial banks as opposed to the current study which focused on the Deposit Taking SACCOs thus filling a gap on contextual application of the fixed deposits and placements.

As one of the independent factors that influenced the financial success of DT-SACCOs in Nairobi City County, Kenya, Morwabe's (2019) research discovered that SACCOs' choices to invest in fixed deposit accounts. The level of investment in fixed deposits was evaluated based on the cumulative amount that was placed in fixed deposits throughout each of the five years. ROA served as a metric for evaluating the company's success. The census method was used with a descriptive study approach for the quantitative time series data. According to Pearson's coefficient, the correlation between fixed deposits and the DT-SACCOs' financial performance was very small, suggesting that fixed deposits had little to no effect on the DT-SACCOs' financial performance.

Asuma (2022) sought to establish the effect of non-core business investments on the financial performance of deposit-taking SACCOs in Kenya. The study was guided by agency theory, resource-based theory, pecking order theory, neoclassical investment theory, and Q theory of investment. Targeting 174 deposit-taking SACCOs in Kenya, the study used secondary data analyzed through correlation analysis, descriptive statistics, and panel data regression analysis. The findings established that investments in FOSA products, treasury bills, shares, real estate, and fixed deposits had a significant effect on the financial performance of deposit-taking SACCOs in Kenya. The study concluded that investing in stocks provides attractive long-term returns and that fixed deposits offer competitive interest rates that may offset inflation. In addition, deposit-taking SACCOs can invest in rental properties to generate regular income and capital appreciation while maximizing leverage. Finally, Asuma (2022) recommended that SACCOs should invest in short-term fixed deposits and gradually increase the duration of such investments as interest rates rise.

3. Methodology

Longitudinal research design was adopted in this study, which involved keeping tabs on individuals or population across time by the use of continuous or repeated assessments (Cooper and Schindler, 2019). To establishment the influence of investment in other financial institutions on financial performance of deposit taking SACCOs in Kenya, secondary data was sourced from SASRA for a period of nine years, starting 2015 to 2023. Census was conducted on the entire population of 182 deposit taking SACCOs, since the population of 182 entities was manageable and the data would be obtained from SASRA's published reports. Quantitative analysis of the data acquired for research was performed using a statistical program called E-Views and a spreadsheet prepared in Microsoft Excel. Linear panel regression model was used to estimate the data, while Hausman specification test was carried to inform the choice between fixed effects and random effects model.
Return on Assets (ROA) was calculated as ratio of profit after tax divided by total assets.

$$Return\ on\ Assets = \frac{Profit\ after\ tax}{Total\ assets} \times 100$$

Investment in other financial institutions (IFI) was calculated as a proportion of total investment in other financial institutions to total investment in line with a related study by Hailu and Tassew's (2018).

$$Investment\ in\ other\ Financial\ \text{Institutions} = \frac{Fixed\ deposits + Placements}{Total\ Investment}$$

In order to estimate the effect of investment in other financial institutions on financial performance the following regression model was specified:

$LN\_ROA_{it} = \beta_0 + \beta_1 \text{LN\_IFI}_{it} + \varepsilon_{it}$ 1

Where LN_ROA represents natural logarithm of return on assets, a measure of financial performance of a deposit taking SACCOs and LN_IFI representing the natural logarithm of investment in other financial institutions. The β_0 to β_1 represents the estimated coefficients while ε represented the error term.

3.1 Model Diagnostic Tests

The results of research are likely to provide skewed estimations of the parameters if the model assumptions are not satisfied (Saunders et al., 2019). On the model specification to adopt, a battery of tests was done to determine whether pooling, fixed effects, or random effects models was to be adopted. Model diagnostic tests were run in addition to model specification tests to see whether the conditions of normality, serial correlation, and homoscedasticity of the model residuals and non-multicollinearity of the model predictors are satisfied by the panel data models.

3.1.1 Normality of the Model Data

The standard normality check for model residuals is ascertained using the Jacque Bera test. When P is more than 0.05, it suggests that everything is as it should be. Bootstrapping is used to provide reliable coefficient estimates and standard errors in the absence of normalcy

3.1.2 Correlation Analysis

To ensure that there were no highly correlated variables in the model, correlation analysis was conducted. Highly correlated variables would lead to serial correlation rendering the regression to be spurious from the presence of multicollinearity of the variables.

3.1.3 Unit Root Test

The Levin-Lin-Chu Unit test for icfs/ Harris-Tzavalis test for icfs was used to test for stationarity. If the probability of a unit root is less than 0.05, choose the stationary alternative; if the test statistic is more than the critical value, the null hypothesis of a unit root is rejected in favor of the stationary alternative. Data is differentiated or detrended to test for non-stationarity and the presence of a unit root before any further analysis is conducted.

3.1.4 Serial Correlation

Durbin Watson test was done to test the data for serial correlation. If the significance level of the test is more than 0.05, then the research cannot reject the null hypothesis that the data lacks first-order autocorrelation. The coefficient of first order autocorrelation is calculated and included into the model in the event of serially correlated residuals

3.1.5 Hausman Test

Hausman test was applied for testing random or fixed effect. The fixed model is selected as the best fit for the data when the chi-square test's p-value is less than 0.05, while the random effects model must be used if the significance level is greater than 0.05.

4. Data Analysis and Discussion

In carrying quantitative analysis of the data acquired from SASRA, the analysis was performed using E-Views and a spreadsheet prepared in Microsoft Excel. Several statistical methods that included descriptive and inferential were used.

4.1 Descriptive Statistics

Return on assets had a mean of 0.641 and a standard deviation of 1.005 meaning that ROA was relatively volatile during the period of study with a higher nominal standard deviation from the mean. Investment in other financial institutions had a mean of 18.445 and a standard deviation of 1.768 meaning it was stable during the period of study. The Jarque- Bera statistic for both Return on Assets and Investment in other financial institutions had significant P-values meaning that none of them was normally distributed during the period of study, however, the normality or non-normality condition does not bias the results of panel linear regressions (Jarque & Bera, 1987; Greene, 2018).

Table 4.1: Data Variable Descriptive Results

	LN_ROA	LN_IFI
Mean	0.641276	18.44578
Median	0.816147	18.48506
Maximum	2.598992	22.76254
Minimum	-6.977039	7.912789
Std. Dev.	1.005142	1.768891
Skewness	-1.861887	-0.304361
Kurtosis	9.676487	3.455040
Jarque-Bera	3411.550	33.71765
Probability	0.000000	0.000000
Sum	898.4282	25842.54
Sum Sq. Dev.	1414.436	4380.564
Observations	1401	1401

4.2 Correlation Analysis

Investment in other financial institutions had a correlation coefficient of 0.13 with Return on assets signifying a weak positive correlation hence no risk of multicollinearity or serial correlation in the model.

Table 4.2: Correlation for variables

Covariance Analysis: Ordinary
Sample: 2015 2023
Included observations: 1401
Balanced sample (listwise missing value deletion)

Correlation Probability	LN_ROA	LN_IFI
LN_ROA	1.000000 -----	
LN_IFI	0.133014 0.0000	1.000000 -----

4.3 Unit Root Tests

4.3.1 Return on Assets

The null hypothesis that Returns on assets had a unit root was rejected since the Levin, Lin and Chu t* statistic had a p value of 0.0000 which was significant at 5 percent level of significance.

Table 4.3: Unit root test for Return on Assets

Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-89.5980	0.0000	169	1207
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-25.8996	0.0000	162	1186
ADF - Fisher Chi-square	976.573	0.0000	169	1207
PP - Fisher Chi-square	946.821	0.0000	169	1246

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

4.3.2 Investment in other financial institutions

Investment in other financial institutions was found to be stationary at Level and Intercept I (0) because the Levin, Lin and Chu t* statistic had a p value of 0.0000 which was significant at 5 percent level of significance. The null hypothesis that it had a unit root was rejected.

Table 4.4: Unit root test for Investment in other financial institutions

Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-48.0473	0.0000	174	1184
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-20.5315	0.0000	168	1166
ADF - Fisher Chi-square	928.065	0.0000	174	1184
PP - Fisher Chi-square	613.296	0.0000	174	1238

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

4.4 Panel Regression Equation

The Chi-square test statistic was 14.186785 with a significant probability value of 0.0002 which was significant at 5 percent level of significance. This therefore meant that the null hypothesis was rejected in favor of the fixed effects model. Therefore, we accepted the fixed effects model as suitable for the study.

Table 4.5: Hausman test

Correlated Random Effects - Hausman Test Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	14.186785	1	0.0002
Cross-section random effects test comparisons:			
Variable	Fixed	Random	Var (Diff.)	Prob.
LN_IFI	0.174083	0.117462	0.000226	0.0002

4.5 Fixed Effects Model

Investment in other financial institutions had a coefficient of 0.174 and a significant probability value of 0.0000 which was significant at 1 percent level of significance. The results showed that an increase in investment in other financial institutions by 1 percent leads to an increase in Return on asset by 0.17 percent during the period of study.

The R-squared was 0.33 meaning that Investment in other financial institutions explained 33 percent of variations in Return on Assets during the period of study. The probability F statistic had a p value of 0.0000 which was significant at 5 percent level of significance meaning the model fitted well and was stable. The Durbin-Watson statistic was 1.91 which is closer to 2 meaning that there was no serial correlation in the model hence the results were reliable.

Table 4.6 Regression results

Dependent Variable: LN_ROA
Method: Panel Least Squares
Sample: 2015 2023
Periods included: 9
Cross-sections included: 180
Total panel (unbalanced) observations: 1401

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LN_IFI	0.174083	0.023439	7.427079	0.0000
C	-2.569814	0.432989	-5.935055	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.330670	Mean dependent var	0.641276
Adjusted R-squared	0.231916	S.D. dependent var	1.005142
S.E. of regression	0.880911	Akaike info criterion	2.704331
Sum squared resid	946.7250	Schwarz criterion	3.381943
Log likelihood	-1713.384	Hannan-Quinn criter.	2.957629
F-statistic	3.348428	Durbin-Watson stat	1.909005
Prob(F-statistic)	0.000000		

4.6 Hypothesis Testing

The null hypothesis was that investment in other financial institutions has no significant influence on financial performance of deposit taking SACCOs in Kenya. Results in table 4.6 above show that the P-value was 0.000<0.005. This indicated that the null hypothesis was rejected hence investment in other financial institutions has a significant influence on financial performance of deposit taking SACCOs in Kenya.

5. Conclusions

The study examined the effect of investment in other financial institutions on the financial performance of deposit-taking SACCOs in Kenya, using return on assets as the performance indicator. The regression results revealed a positive and statistically significant relationship. This finding implies that an increase in investment in other financial institutions is associated with an increase in ROA, highlighting the critical role of investments in other financial institutions enhancing SACCO profitability. These results suggest that while lending remains the core business, strategic diversification into investments with other financial institutions has become an increasingly important avenue for boosting returns and ensuring financial stability.

Based on these findings, it is recommended that deposit-taking SACCOs adopt prudent investments in other financial institutions. Given the strong positive impact on ROA, SACCOs should strengthen their investment policies to maximize returns. Furthermore, regulators such as SASRA should provide clear guidelines and oversight to safeguard members' funds while allowing SACCOs to innovate and diversify.

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