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ABSTRACT

The intention of forming cooperative societies is to empower members through savings and borrowings. In doing so, SACCOs ensure long-term sustainability through sensible financial practices. The value and contribution SACCOs are making to their members as well as to the country's GDP is enormous. Recently, there has been continued growth and development in SACCOs which has been so beneficial but also costly. Many changes are taking place at ago which is proving a challenge to the SACCOs. New developments are requiring diverse resources to continue supporting growth. New legislations are being passed to regulate and supervise SACCOs in a bid to safeguard members' interests. The big question is whether these changes are sustainable financially. Among the core objectives, all financial institutions have to meet their business expenses and make a return on the investment. Preferably, the financial institution must be in a position to attain financial sustainability and remain a going concern. Despite of all, these SACCO's have to adhere to clearly stipulated operational criterion. It is against this backdrop that the current study examined the effect of firm characteristics on SACCO financial performance in Kenya. Specifically, the study sought to determine the effect capital adequacy, asset quality, operational efficiency and liquidity on SACCO financial performance. The study was based on signaling hypotheses, liquidity preference theory and profitability theory. The study adopted descriptive research design and a census of the population for a period of 3 years ranging from 2013 to 2015 was carried out. Descriptive statistics like mean and standard deviation were used to summarize the data. Also, the panel regression analysis was used to show the nature of the relationship between firm characteristic and financial performance of SACCO's in Kenya. Results of the study revealed that capital adequacy, asset quality, operational efficiency and liquidity had positive and significant effect on financial performance of SACCO's in Kenya.

Key Words: Capital Adequacy, Asset Structure, Operational Efficiency, Liquidity & Financial Performance

INTRODUCTION

Millions of people have been able to access formal financial services from saving and credit cooperative societies (SACCOs) in Kenya and in other developing nations. Even so, the demand for the service continues to exceed the supply by far owing to the myriad of potential clients who have remained unattended. When comparing the unlimited needs of their financial clients and the limited resources, SACCOs can be said to be constrained in terms of capital. This further impedes expansion of the SACCO programs thus forming a formidable challenge (Rai & Rai, 2012). In provision of financial services, SACCOs play an intermediation role. These roles sometime become hard to execute especially when quantitative increase in surplus fund does not correspond with quantitative increase in deficit requiring financing. Just like at local and national level, these challenges are also observable at international level.

According to World Council of Credit Unions (WOCCU), unions faced similar plights which have led to tougher regulations to avoid future financial crisis. Voinea (2014) posits that credit unions over the world need to regulate their staff for prudent reports and minimized operations costs. Further rapid changes in technology have seen most SACCOs losing their business while those that have survived are forced to invest heavily on technology development. As Voinea (2014) reports, most customers want credit unions that have adopted both the online access and mobile platforms. In addition, operators of credit unions are now required to put extra efforts to reach out to all persons of all ages since worldwide most savers and borrowers are found to be aged over 48. There is also need for credit unions to change the perceived notion that unions are poor man's bank which can be realized by expanding their pool of products and services offered.

In Africa, it is estimated that well above 60 million people depend on SACCOs. Challenges faced by SACCOs in Africa are not anything different from those experienced in other part of the world. Uniquely, is the economy under which SACCOs operate in being characterized by weak systems of governance and unfavorable legislation? In particular, the challenges that threaten SACCO's survivals financially can be classified as internal and external. Internal challenges include inadequate resources, leadership issues, insufficient technology, ethics and integrity and increased demand for quality services. Externally SACCOs do face increased competition for resources prices and liberalization, frequent changes in cooperative legislation, the desire to keep up to date with technology and globalization to meet the complex market demand.

Closer home, SACCOs in Sub Saharan Africa (SSA) are faced with the needs to adopt new technology and intensify their competition capabilities with large financial institutions that offer similar products and services. In SSA, SACCOs are characterized of loan delinquency, loan loss, non-earning assets, charging small interest rate, and increased level of illiquid assets, high operating costs and supporting non-financial operations for the small business (Meyer, 2015). In Tanzania, Churk (2015) reports that credit unions are challenged by poor loan repayment since most savers depend on unpredictable agriculture sector. Churk recommended that sustainable strategies to address root causes to financial problems that would lead to poverty alleviation.

In the recent times SACCOs have undergone a series of rapid expansion in Kenya making them popular to common man. SACCOs are generally formed in line with members sharing the same environment conditions such as work, place of origin and/or facing similar needs, and in Kenya it is not any different (Onyango, 2016). These members come together in group called societies so as to save and also to get credit from the same societies. Sacco's

services may be considered to be deeper and more extensive than the rest of financial institutions since they consist of members who share common success and difficulties. In terms of the cost structure, SACCOs experience the lowest cost source of funding and administrative cost due to the small savings (Onyango, 2016). The major goals of the SACCOs are to serve the welfare of their members through disbursement of credit facilities that have been acquired in a specified duration of savings.

SACCOs services have also been extended to include more members. Record shows that SACCOs have been in position to mobilize more than 200 billion shillings in savings, making a 30% of the total National Domestic savings (Government of Kenya, 2009). More reports by Ondieki, Okioga, Okwena and Onsas (2011) shows that SACCOs contribute 45% to the Kenya Gross Domestic Product and that they hold well over 210 billion shillings worth of assets. In fact, some of the SACCOs like Unaitas, Kenya Women Trust Fund have attained banking status. This growth has given SACCOs in Kenya a chance to compete in liberalized market.

Studies have shown that SACCOs are being faced with severe liquidity problems, rapid growth in demand to their cheap loans and withdrawals of savings which are posing a great threat to collapse of the SACCOs (Ondieki, *et al.*, 2011). Another observation indicates that slowly SACCOs are losing loyalty of their members due to questions about their survival in the future which has been fronted by unmet demand for their clients. Integration issues and changes are inevitable for the SACCOs thus further intensifying the problem. Will SACCOs financial performance be stable in the long term? Do firm characteristics have anything to do with Sacco's financial performance? These are the kind of the question that the current study endeavors to find.

Statement of the Problem

Recently, there has been continued growth and development in SACCOs which are so beneficial but also costly. The intention of forming cooperative societies is to empower members through savings and borrowings (Mudibo, 2005). In doing so, SACCOs ensure long term sustainability through sensible financial practices. The value and contribution SACCOs are making to their members as well as to the country's GDP is enormous. Many changes are taking place at ago which is proving a challenge to the SACCOs. New developments are requiring diverse resources to continue supporting growth. New legislations are being passed to regulate and supervise SACCOs in a bid to safeguard members' interests. The big question is whether these changes are sustainable financially.

Fact on the ground show that SACCOs are still faced with several challenges such as insufficient capital funding, loan delinquency, assessment and management of risks (Onyango, 2016), poor governance, loss of member's confidence (Ademba, 2010), management inefficiency, poor investment decisions (Ndung'u, 2010), poor financial stewardship and delayed member payments (Thabo & Gichira, 2003). All these challenges are emanating from the handling of firm characteristics in the SACCOs. Evidently, funds provided by members are insufficient to meet the rapid growth and expansion as expected. To resolve this, SACCOs are undertaking greater risk by borrowing far and wide. For instance, Urithi Housing Cooperative Society has borrowed to a tune of 2 billion shillings to finance its operation and expansion plan from the local market (Waitathu, 2015). Again, this leaves questions on whether this culture is financially sustainable for SACCOs.

Locally, past studies have attempted to find factors influencing financial sustainability in different organizations set ups; like Non-Governmental Organizations (Omweri, 2015), Microfinance

institutions (Wambugu & Ngugi, 2012; Kimando *et al.,* 2012). In all these studies, none has tried to relate the microeconomic characteristics and financial sustainability in SACCO despite the many changes in the sectors, not to mention that they are all case studies. Ondieki *et al.,* (2011) study assessed the impact of external financing on SACCO's performance in Kisii Central; however, they did not feature in financial sustainability aspects of the borrowing made. A close study by Olando, Jagongo and Mbewa (2013) investigated the contribution of SACCO's financial stewardship to growth of SACCOs in Kenya. Even so they did not predict how the various areas of stewardship can lead to SACCO's growth.

Many of the factors contributing to the challenges that threaten performance of SACCOs are firm-specific and therefore there is need to analyze these firm characteristics. Again, based on the issues highlighted and the comparison of the studies above, there is clear knowledge gap that ought to be filled. Therefore, the study proposes to relate the firm characteristics to the SACCOs' financial performance.

Research Objectives

The main objective of this study was to examine the effect of firm characteristics on financial performance among SACCOs in Kenya. The specific objectives were:-

- To examine the effect of capital adequacy on financial performance among SACCOs in Kenya
- To find out the effect of asset quality on financial performance among SACCOs in Kenya
- To determine the effect of operational efficiency on financial performance among SACCOs in Kenya
- To find out the effect of liquidity on financial performance on SACCOs in Kenya

Theoretical and Empirical Review
Theoretical Review
Shiftability Theory

Shiftability theory was developed by Moulton in 1915. The theory argues that financial institution can minimize the chances of bank panic or bank runs by managing its deposits on short term marketable securities which can be traded in securities exchanges market. These short term market securities could include commercial paper, prime banker's deposit and treasury bills. These instruments can mitigate against the level of liquidity exposure and ultimately improve the sustainability of financial institutions since there nature of trading allows themselves to be easily converted into cash and cash equivalents. The adoption of this theory is faced by the challenge that the effectiveness of these instruments during financial crisis vanishes due to lack of market (Casu, *et al.*, 2006). Though, these can be mitigated by the adoption of central bank as the lender of last resort. Moreover, the soundness of the credit system is more reliant with the prevailing state of the economy which impacts business environment positively or negatively and will ultimately influence the payment of loans. When the environment is very hostile there are high chances of loan default which will impact negatively the loan book and ultimately trigger inverse financial sustainability. The theory is relevant for the study since the survival of SACCO's is reliant on the amount of loan borrowed and the servicing trends.

Efficiency Structure Theory

Efficiency structure theory assumes that an organization performance is largely influenced by internal efficiencies. The theory is grouped into X efficiency and scale efficiency hypotheses. Athanasoglou et al., (2006) argued that those institutions which has attained X efficiency are argued to attain superior performance due to lower operational costs. Moreover, they tend to

cannibalize larger market shares which are characterized by increased presence in different regions. On the other hand scale approach has laid more emphasis on economies of scale rather than adoption of efficient technological productions systems. Through, the economies of scale SACCOs are better placed to recruit more members, increase their capital base and increase their loan books. Olweny and Shipho (2011) argued that financial institutions which have consistently registered positive superior performance are more efficient compared to others. Through increased loan books there are high chances of increasing liquidity exposure of the specific institution. Moreover, all SACCOs ought to strive to adhere to the minimum capital adequacy ratios as such to remain as a going concern.

Empirical Review

Capital Adequacy and Financial Performance

 The implementation of the capital adequacy ratio has met several hurdles which include; "reduced pay-out on members' funds, recruitment of new members, restricted avenues for investment, and reduced lending capacity". To mitigate these barriers Saccos have developed strategies which include; SACCOs found issuing new capital, increasing membership base, diversifying product base, adjusting dividend pay-out ratio, stricter credit rating, matching share contributions to loan amounts guaranteed and reduced payment periods to be most effective".

Umoru and Osemwegie (2016) examined the relationship between capital adequacy and financial performance of commercial banks in Nigeria. The study adopted panel research design, and collected secondary data from 2007 to 2015 among selected Nigerian commercial banks. Data was analyzed using fixed generalized least squares, results of the study revealed a positive and significant relationship between capital adequacy and firm performance. Moreover, the study revealed capital

adequacy on commercial banks was less than 30%, which depicted that the amount of deposit received by commercial banks is rarely enough to meet the risk exposure and meet all liabilities on time. Therefore, there is no surety of investors' confidence in the financial institutions. Although, the study drew panel secondary data the study did not test the data for stationarity, panel data diagnostic tests were also excluded.

A Nigerian study by Agbeja, Adelakun and Olufemi (2015) examined the relationship between capital adequacy and bank profitability through linearity approach. The study adopted panel research design, collected five secondary data from selected commercial banks financial statements. Results of the study revealed a positive and significant relationship between capital adequacy and bank profitability. The results revealed that the higher the equity levels the better the prospects for superior performance. It was concluded to maintain investor confidence there is need to continuously ensure that commercial banks adhere to minimum capital requirement ratios and consequently increase the level of credit creation and safeguard customers deposit. Although, the study drew panel secondary data the study did not test the data for stationarity, panel data diagnostic tests were also excluded.

Barus, Muturi and Kibati (2017) examined the relationship between capital adequacy and performance of savings and credit cooperative societies in Kenya. The study adopted exploratory research design. The study adopted census sampling of all SACCOs which had been in operation from 2011 to 2015. Primary data was used in the study. Results of the study revealed a positive and significant relationship between capital adequacy and firm performance. The study recommended that SASRA ought to examine the adherence with capital adequacy requirements among Saccos in Kenya. Since the data was cross sectional it was not appropriate to analyze the data using regression

analysis. Moreover, the measurement of capital adequacy using Likert scale was not appropriate and it would have been appropriate to use secondary data and adopt panel research design in the study.

Kahuthu, Muturi and Kiweu (2015) examined the joint significant contribution of core capital and membership growth on financial performance on deposit taking credit and cooperative societies in Kenya. The study adopted descriptive research design, target population constituted of 124 Saccos which were registered as at 31/12/2012. Primary data was collected through use of closed ended questionnaires. Data was analyzed using descriptive statistics, correlation and regression analysis. Results of the study revealed that there was a positive and significant relationship between capital adequacy and firm performance. The study concluded that there was need to sensitize on Sacco members on the need to adhere to acceptable requisite ratio so as to boost shareholders' confidence. Though, the findings were appropriate for the particular study it was not appropriate to use regression analysis on cross sectional data, moreover, the analysis approach contrasted the research design adopted in the study.

Kioko (2016) examined the effect of capital adequacy regulations on savings and credit cooperative in Kenya. The study adopted descriptive research design; census approach was used to select 35 Saccos which were operating in Nairobi County. Primary data was collected using both questionnaires and interview guide. Data was analyzed using both descriptive and inferential statistics.

Asset Quality and Financial Performance

Okumu and Oyugi (2016) examined factors influencing performance of Saccos in Kisumu county. The study adopted survey research design, and collected primary data among managers in 31 Saccos and 22 finance managers operating in Kisumu county. Primary data was collected using semi structured questionnaires. Quantitative data was analyzed using descriptive and inferential statistics while qualitative data was analyzed using content and thematic analysis. Results of the study revealed a positive and significant relationship between asset quality and Sacco performance. The study concluded that there is need to enhance the asset base of Sacco as such to foster superior firm performance. It was not appropriate to carry out regression analysis on cross sectional data, thus the most appropriate design was descriptive research design.

Kariuki, Muturi and Ngugi (2016), examined the link between asset quality and intermediation efficiency among Saccos in Kenya. The study adopted panel research design. Census sampling technique was used to select 103 Saccos during transition period of SASRA regulations. Data envelopment analysis was used to generate efficiency score. Bias corrected efficiency scores were regressed against asset quality while firm size, profitability and diversification were controlled. Results of the study revealed a negative and significant relationship between asset quality and efficiency of Saccos in Kenya. From the findings it was concluded that there is need for continued monitoring of loan portfolio so as to improve Sacco efficiency.

Kariuki and Wafula (2016) examined the effect of capital adequacy on financial performance of Saccos in Kenya. The study adopted panel research design, and secondary data was drawn from annual financial statements of Saccos for period ranging from 2011 to 2014, firm performance was operationalized as net interest margin, return on equity and return on assets. Though the study sought to examine the effect of capital adequacy, it also controlled asset quality, operational efficiency and liquidity. Data was analyzed using descriptive, regression and correlation analysis. Results of the study revealed a negative and significant relationship between firm performance and asset quality. In contrast there was a positive and

significant relationship between capital adequacy and firm performance. Although, the study adopted panel research design, diagnostic tests such as stationarity, normality, multicollinearity, auto correlation were excluded from the study and their importance cannot be ignored in statistical analysis. Wanjiru and Muturi (2016) examined factors influencing financial performance of Saccos in Kiambu County. The study hypothesesed that Sacco performance is dependent on loan default, membership size and dividend policy. The study adopted descriptive research design; secondary data was collected from annual audited financial statements in a five year period ranging from 2010 to 2014. Both descriptive and inferential statistics were used to analyse the data. Results of the study revealed that there was an inverse and significant between loan default and Sacco performance. From the findings it was concluded there is need for Saccos to join credit reference bureaus so as to minimize the risks associated with loan default. Although, the study used panel data it did not adopt the use panel research design which was the most appropriate. Moreover, the study did not report panel data diagnostic tests for normality, stationarity, multicollinearity and autocorrelation, these tests would have tested the most appropriate model to fit the data among pooled effects, random effects and fixed effects on the panel data.

Wangai, Bosire and Gathogo (2012), examined the impact of non-performing loans on performance of micro finance institutions in Kenya. The study adopted descriptive research design. Census approach was used to select 66 credit management staffs of micro finance banks in Nakuru. Primary data was collected through the use structured questionnaires. Data was analyzed using both descriptive and inferential statistics. Results of the study revealed a negative and significant relationship between non-performing loans and financial performance. It was deduced that micro finance banks had a sole responsibility of

developing measures aimed at curbing the rates of loan default, potential borrowers ought to be critically analyzed so as to examine their real credit worthiness and similar examination to be done amongst members of SACCOs.

Yuvaraj and Wondem (2013) analysed the financial performance of savings and credit cooperative society in Bure Ethiopia. The study adopted descriptive analysis design; secondary data was collected from annual audited financial statements for a four year period ranging from 1998 to 2001. Descriptive analysis was used to analyse the data and the results revealed that most of the Saccos were un-healthy which was precipitated by the levels of loan default rates which were escalating.

Operational Efficiency and Financial Performance

Barus *et al*., (2017) examined the effect of operational efficiency on Sacco financial performance in Kenya. The study adopted descriptive research design; census sampling was used to select 83 SACCOs which were operating in Kenya in 2011 to 2015. The study combined both primary and secondary data with the former being collected using semi structured questionnaires. Data was analyzed using both descriptive and inferential statistics. Results of the study revealed an inverse and non significant relationship between operational efficiency and financial performance of SACCOs in Kenya. Although, the study relied heavily on primary data, it contrasted analysis procedure with the research design, it would have been important to use descriptive analysis only.

Fujo and Ali (2016) analyzed factors influencing financial performance of Saccos in Kilifi County. The study adopted descriptive research design, simple random sampling was used to draw 397 respondents who were members of Imarika Sacco, who were further stratified into four stratums as per sub counties. Primary data was collected through use close ended questionnaire. The study hypothesesed management to be efficient on

financial innovation, credit management and working capital management. Data was analyzed using descriptive statistics, correlation and regression analysis. Results of the study revealed positive and significant relationship between financial innovation, credit management, working capital management and financial performance among Saccos in Kilifi. It was concluded that the management ought to be aggressive so as to create an environment for innovation; geared towards minimization of loan default and effective working capital management and this will ultimately maximize financial performance among SACCOs in Kilifi. The choice of regression analysis to examine causal relationship on primary data was not appropriate, it would have wiser to adopt structural equation modelling though it would have been inhibited by the current sample size.

Muthoni (2016) examined the effect of financial management practices on Saccos in the hospitality industry in Kenya. The study specifically sought to examine the effect of cash management, credit management and dividend policy on performance of Saccos. The study adopted descriptive research design; the target population constituted of 169 management committees. Stratified sampling was used to select 119 respondents. Structured closed ended questionnaire was used to collect the data. Data was analyzed using both descriptive and inferential statistics. Correlation analysis revealed a positive and significant relationship between cash management, credit management, dividend policy and Sacco financial performance. Although, the findings contrasted Modigillian and Miller dividend irrelevance theory, there were in agreement constant and residual dividend policies signaled superior performance among Saccos in hospitality sector. From the study both management and policy makers in the government authorities were called upon to ensure that prudent financial management are in place to safeguard the wealth of the stakeholders.

Hesborn, Onditi and Nyagol (2016) examined the effect of credit risk management on Sacco performance in Kisii. The study adopted descriptive research design; used purposive sampling to select a sample of 106 Saccos with 424 executive committees. A sample of 32 Saccos was selected, from which both purposive and proportionate stratified sampling technique was used to select the respondents. Primary data was collected through the use of structured questionnaires. Data was analyzed using both descriptive and inferential statistics. Results of the study revealed a positive and significant relationship between credit policy, credit appraisal, credit substitutes, credit monitoring and financial performance. This implies that Saccos in Kisii have developed and adopted credit evaluation procedures which can eliminate the possibilities of making losses.

Marwa and Aziakpono (2016) examined the link between efficiency and profitability amongst Saccos in Tanzania. The study adopted correlational design. Secondary data was collected from annual audited financial statements. Data envelopment was used to develop technical efficiency. Results of the study revealed some of the Saccos were suffering while majority were on a superior performance trajectory. The study concluded that to have a viable performance in the sector there is need for development of a complete turnaround strategy geared towards enhancing Sacco performance.

Liquidity and Financial performance

Most of the financial institutions have gone underground because they are unable to sustain their operations because of liquidity issues. Ferrouhi (2014) examined the effect of bank liquidity on financial performance of commercial banks in Morocco. The study adopted panel research design; secondary data was collected from annual financial statements from 2001- 2012. Data was analysed using regression analysis. Results of the study revealed a positive and significant relationship

between liquidity and commercial bank performance. Although, the data was panel, the study did not report diagnostic tests such stationarity tests, Hausman tests, Breusch Pagan test among others. It would have been appropriate to carry out these tests.

Salim and Bilal (2016) examined the impact of liquidity management on commercial banks performance in Omani. The study adopted correlation research design; purposive sampling was used to select four commercial banks whose data was retrieved from financial statements for period ranging from 2010 to 2014. Data was analysed using multi regression analysis. Results of the study revealed a positive and significant relationship between bank loans to total assets ratio, illiquid assets to liquid liabilities, liquid assets to deposits, liquid assets to short terms liabilities to performance. Although, the data was panel none of the panel data diagnostic test was carried out which call for their examination so to improve the reliability of conclusions drawn from the study.

Shafana (2015) examined the link between liquidity and financial performance of financial institutions in Sri Lanka. The study adopted panel research design covering 2009 to 2013. The study collected secondary data from annual financial statements of 16 listed commercial banks. Liquidity position was operationalized to be measured by cash position indicator, capacity ratio and total deposits. Both correlation and regression analysis were used to analyse the data. Results of the study revealed a positive and significant relationship between cash position indicator, total deposit and firm performance while capacity ratio had negative and significant influence on firm performance. Since the data was panel in nature it was appropriate to carry out panel data diagnostic tests such as stationarity, Breusch Pagan tests and test whether the data satisfied regression assumptions prior to regression analysis; such as linearity and serial autocorrelation.

Lukorito, Muturi, Nyang'au and Nyamasege (2014) assessed the effect of liquidity on profitability of commercial banks in Kenya. The study employed descriptive research design. Secondary panel data was collected amongst 43 commercial banks in period ranging from 2009 to 2013. Data was analysed using both descriptive and inferential statistics. Regression analysis revealed a positive and significant relationship between liquidity and commercial banks performance in Kenya. Although, the study concluded that liquidity is determinants of commercial banks performance and deserves regular monitoring there was need to carry out panel data diagnostic tests such as stationarity, collinearity and serial correlation.

Conceptual Framework
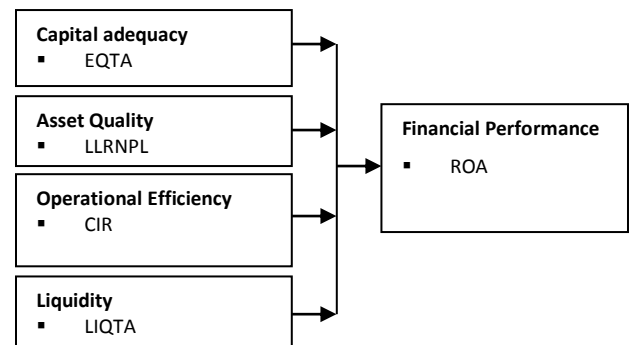
Independent Variables   Dependent Variable

Figure 1: Conceptual Framework

Research Methodology

The current study adopted descriptive research design. Sekaran and Bougie (2010) argued that descriptive design seeks to give a detailed explanation of the link between the various items under examination. The target population was 164 Saccos licensed by Sacco and Societies Registration Authority (SASRA). Although, there were 176 Saccos licensed only 164 was considered since 12 Saccos had their licenses restricted. Sampling frame composed of all SACCOs which were licensed and to operate till December 2016. DCI was used to assist in retrieving information from annual financial statements of selected SACCOs. Data collected was entered and

transformed through calculation of the expected ratios after which it was cleaned, coded and analyzed using STATA version 12.

A multiple regression model followed this basic structural representation:

$$Y_{i,t} = \alpha + \beta_1 X_{1i,t} + \beta_2 X_{2i,t} + \beta_3 X_{3i,t} + \beta_4 X_{4i,t} + \acute{\varepsilon}_{i,t}$$

Y = Return On Assets
X_1 = Capital Adequacy
X_2 = Asset quality
X_3 = Operational Efficieny
X_4 = Liquidity
$\acute{\varepsilon}_{i,t}$ = error term.

Table 1: Operationalization of Variables

Variable	Variable	Variable Definition
Financial Sustainability (Y)	ROA	Return on Assets (ROA)
Capital adequacy (X_1)	EQTA	Equity / total assets
Asset quality (X_2)	LLPNPL	Loan loss provisions to Non performing loans
Operational Efficiency (X_3)	CIR	Cost to income ratio
Liquidity (X_4)		
	LIQTA	Liquidity /total assets

FINDINGS AND DISCUSSIONS

Descriptive Analysis

Descriptive analysis such as minimum, maximum, mean and standard deviation were used to analyse the data as summarized in Table 2. The average financial performance of Saccos in Kenya was 2% with a minimum of -10% and a maximum of 10%. The average capital adequacy was 29% with maximum of 0.97 units and minimum of 0.04 units. The average asset quality was 5% with a minimum of 2% and a maximum of 50%. The average operating efficiency was 50% with an average standard deviation of 18% and finally on average Sacco's liquidity was 14% with an average deviation of 11%.

Table 2: Descriptive Analysis

	N	Minimum	Maximum	Mean	Std. Deviation
Financial Performance	492	-0.1	0.1	0.02	0.03
Capital Adequacy	492	0.04	0.97	0.29	0.21
Asset quality	492	0.02	0.5	0.05	0.09
Operating efficiency	492	0.09	0.78	0.50	0.18
Liquidity	492	0.02	0.47	0.14	0.11

Panel Diagnostic Tests

In order to choose the appropriate model to fit between pooled ordinary least squares and random effects regression model, LM test was used to test the null hypotheses which states that there is uniform variance across entities under consideration against the alternative which argues that there is no uniform variance across entities. Since the p value in the current study was less than 0.05 there was no enough evidence to warrant rejection of the null hypotheses therefore the most appropriate model to fit the data was random effects regression model. Test-parm test was carried out to examine the fixed effects across the entities. The test assumed that all dummies in the model were zero. Results of the study revealed that there was no need to introduce dummy variables or use two analysis since the p value was greater than 0.05.

Since both heteroskedasticity and serial correlation had p values greater than 0.05, then there was no enough evidence to support rejection of the null hypotheses and we conclude that there was uniform variance across the error terms and there was no serial correlation amongst the variables.

Table 3: Panel Diagnostic Tests

Breusch –Pagan LM Test	χ^2-value	p-value
	2.541	0.004
Test Results for Time Fixed Effects	F-value	p-value
	0.85	0.683
Heteroskedasticity test	χ^2-value	p-value
	20.64	0.071
Serial correlation	F-value	p-value
	2.235	0.692

Pearson correlation was carried out to examine the effect of firm characteristics and financial performance. Results in Table 4 revealed a positive and significant relationship between financial performance and capital adequacy (rho= 0.288). These results were in agreement with Umoru and Osemwegie (2016) who found positive and significant relationship between capital adequacy and financial performance. There was need to improve the level of capital adequacy among Saccos in Kenya since it is currently less than 30% for most Saccos.

Secondly, there was a positive and significant relationship between asset quality and financial performance (rho = 0.153). These results of the study were in agreement with Kariuki and Wafula (2016) who found that there was a positive and significant relationship between asset quality and

Sacco efficiency. Thirdly, there was a positive and significant relationship between operating efficiency and financial performance among Saccos in Kenya (rho= 0.482). These results mirror Barus et al., (2017) who reported positive and significant relationship between operating efficiency and Sacco performance.

Finally, there was a positive and significant relationship between liquidity and financial performance among Sacco's in Kenya (rho =0.453). These results were in contrast with Shafana (2015) who reported an inverse relationship between liquidity and financial performance among Sacco's. There is need to maintain reliable liquidity levels within a Sacco so as to foster superior financial performance and ultimately promote financial deepening.

Table 4: Correlation Analysis

	Financial Performance	Capital Adequacy	Asset quality	Operating efficiency	Liquidity
Financial Performance	1				
Capital Adequacy	.288*	1			
Asset quality	0.153**	-0.019	1		
Operating Efficiency	.482**	0.086	0.103	1	
Liquidity	.453**	.153**	0.051	0.026	1

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Since, there was a mutually exclusive choice to be made between random effects and fixed effects model, Hausman test was applied. Results in Table 5

revealed that the most appropriate model to fit was fixed effect since the p value < 0.05.

Table 5: Hausman Test

Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Hausman Test		15.87	4	0.009
Variable	**Fixed**	**Random**	**Var (Diff.)**	**Prob.**
Capital Adequacy	0.018	0.033	0.000	0.037
Asset Quality	0.037	0.007	0.000	0.058
Operating Efficiency	0.083	0.082	0.000	0.874
Liquidity	0.062	0.015	0.001	0.126

Regression Analysis

Regression analysis in Table 6 revealed that capital adequacy, asset quality, operating efficiency and liquidity had joint significant effect on financial performance since (F= 32.857, P value = 0.000). Moreover, an R squared of 0.447 revealed that 44.7% of the variation in financial performance can be explained by capital adequacy, asset quality, operating efficiency and liquidity while the remaining percentage can be accounted for by other factors which were excluded in the model.

First, there was a positive and significant relationship between capital adequacy and financial performance among SACCO's in Kenya (β =0.018, p value <0.05). This implies that a unit change in capital adequacy while holding asset quality, operational efficiency and liquidity constant increases financial performance by 0.018. These results are in agreement with (Agbeja et al., 2015; Barus et al., 2015) whose studies reported positive and significant relationship between capital adequacy and financial performance.

Secondly, there was a positive and significant relationship between asset quality and financial performance (β= 0.037, t= 2.912, p value <0.05). This implies that a unit change in asset quality while holding capital adequacy, operational efficiency and liquidity constant increases financial performance by 0.037 units. These results mirrored (Kairuki et al.,

2016; Wanjiru & Muturi, 2016), who reported positive influence of asset quality on financial performance and operational efficiency. This calls for thorough examination and screening of borrowers to eliminate the possibilities of moral hazard and adverse selection and general levels of information asymmetry.

Thirdly, there was a positive and significant relationship between operating efficiency and financial performance (β=0.083, t = 0.023, p value <0.05). This implies that a unit change in operating efficiency while holding capital adequacy, asset quality and liquidity constant increases financial performance by 0.083. The results were in support of (Fujo & Ali, 2016; Hesbon et al., 2016) whose studies reported positive and significant relationship between operating efficiency and financial performance. There is need for management to be continuously evaluated as such to minimize agency costs as well as maximize returns associated with investment made by SACCO members.

Finally, there was a positive and significant relationship between liquidity and financial performance among SACCO's in Kenya (β=0.062, t= 2.292, p value <0.05). This implied that a unit change in liquidity while holding capital adequacy, asset quality and operating efficiency constant increases financial performance by 0.062.

Table 6: Fixed Effects Regression Analysis on the effect of firm characteristics and Performance of SACCOs

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Capital Adequacy	0.018	0.006	2.897	0.003

Asset Quality	0.037	0.013	2.912	0.004
Operating Efficiency	0.083	0.023	3.671	0.001
Liquidity	0.062	0.027	2.292	0.003
C	-0.035	0.013	-2.752	0.008
R-squared	0.447	Mean dependent variable		0.022
Adjusted R-squared	0.290	S.D. dependent variable		0.031
S.E. of regression	0.026	Akaike info criterion		-4.251
Sum squared residuals	0.031	Schwarz criterion		-3.762
Log likelihood	141.525	Hannan-Quinn criterion.		-4.060
F-statistic	32.857	Durbin-Watson stat		1.731
Prob (F-statistic)	0.004			

Conclusion and Recommendations

Based on the study findings it can be concluded that there is need to maintain capital adequacy levels as indicated in the regulatory requirements so as to enhance financial performance and disperse the possibilities of financial misfortunes such financial shocks and bank runs and panics. Continued maintainenace of capital adequacy ratios will ensure that there are no extra costs which are incurred by SACCO's to meet the minimum capital adequacy requirements.

All SACCO's should partner with credit reference bureaus so as to support their credit evaluation process and ultimately attain financial performance. Through credit evaluation process the levels of information asymmetry will be breached and asset quality improved which will ultimately enhance financial performance.

Thirdly, all SACCO's need to continuously evaluate their existing management procedures and mitigate possibilities of resources under utilization and pilferage. Through this process there are more prospects of minimizing operational costs and ultimately attain superior financial performance.

Finally, there is need to maintain liquidity requirements and ensure that those SACCO's struggling to achieve the set liquidity requirements attains them. Through this there are prospects for superior performance as well as engagement on investment opportunities which increase shareholders returns.

Recommendations

Based on the study findings the study recommended that all SACCO's should continuously monitor adherence on capital adequacy ratios and any departure from the acceptable levels should be adequately adjusted. Adoption of this management practice will ensure performance of SACCO's and improve investor's confidence since all will be assured of SACCO's going concern status.

Secondly, all SACCO's should continuously develop customized loan products which will diversify their sources of income and minimize operational costs. Further, there is need for increased customer screening prior to loan allocation, through this the levels of information asymmetry will be minimized. Innovative products development and departure from traditional SACCO products will increase amount of revenue and ultimately achieve superior levels of financial performance.

Thirdly, the management should enhance operational efficiency by adoption of various strategic capabilities for example use of alternative marketing platforms to catch new market segments, use of alternative methods of making deposits and withdrawals so as to increase levels of financial deepening and inclusion. Moreover, there is need to sensitize all employees on the desire to embrace high standards of customer relationship management and this will minimize chances of customer's attrition and enhance loyalty.

Finally, there is need to maintain and foster to achieve optimal liquidity standards which are set by SACCO regulators. Through attainment of these standards investors confidence will be increased and eliminate chances of bank panic, bank runs and capital flight. Due to this SACCO's will be in a position to provide financial services as stipulated in their vision and mission policies.

Suggestions for Further Studies

The current study examined the effect of firm characteristics on financial performance of SACCO's in Kenya. There is need for a similar study to be carried out to examine firm characteristic effect on performance of all SACCO's and for a long period of time more so to examine both short run and long run relationship between study variables. Secondly, there is need to evaluate the effect of sensitivity on financial performance amongst SACCO's in Kenya. Further, survival analysis ought to be employed to examine the chances of a SACCO collapsing given the prevailing conditions in the market. SACCO's performance can be attributed to other factors in addition to the current firm characteristics they may include financial pattern adopted, income diversification strategies adopted, innovative approaches incorporated to enhance deposit and withdrawals, macroeconomic characteristics and prevailing political temperatures.

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