Evaluating the Impact of Income-Generating Strategies on Interest Payments in Non-Withdrawable Deposit Taking Saccos in Kenya

Samwel Ngugi[1], Dr. Anita Wachira[2]

PhD Candidate
Email: *samngugi47[at]gmail.com*

[2]School of Business Management and Economics, Dedan Kimathi University of Technology
Email: *anita.wachira[at]dkut.ac.ke*

Abstract: *Non-Withdrawable Deposit Taking Sacco's (NWDT's) play a vital role in promoting financial inclusion and socio-economic development in a Country. This study examines the effect of income generating practices on interest payment among NWDT Saccos in Kenya. Utilizing a cross-sectional descriptive research design and targeting 280 managers from 56 SACCOs, data was collected using a structured questionnaire and secondary records. The data was tested for Gaussian distribution, linearity and autocorrelation. Ordinary Least Squares was used for testing hypothesis. The study found that 17.7% of the variations in interest payment could be explained by income generating practices and that therefore concluded that there is a statistically significant influence of these practices on interest payment among NWDT Saccos. As such, the study further infers that measures of income generating practices of could be deemed as one of the strategic determinants on interest payment among these Saccos in Kenya. Despite the challenges within the Sacco sector and the wider external environment influencing its performance, a policy on income generating practices should emphasize focused attention and effective management and the Board should sustain best practices among NWDT Saccos in Kenya.*

Keywords: interest payment, NWDT SACCOs, income generating strategies, financial performance,

1. Introduction

1.1 Background of the Study

For a Sacco to run their functions smoothly and pay interest on members' deposits, it has to consider all the stakes and comply with the mandated supervisory authorities within their scope of operation (Barrales, 2019). Despite the gains achieved through compliance and interest payments on members' deposits, by the SACCOs, there is still a notable concern on the capability of the non-withdrawable deposit taking SACCOs (NWDT) that are faced with reduced income for the interest payments on the members' deposits and in particular this sub-category of financial co-operatives are facing significant difficulties on compliance with the legal and regulatory prudential standards that are the benchmarks for approval to conduct deposit taking activities in Kenya by Sacco Societies Regulatory Authority(SASRA). Interest payments on members' deposits is an operational activity that calls for the utilization of myriads of compliance strategies both statutory and non-statutory that helps in the realization of an accurate and unbiased view of the financial performance of financial co-operatives (SASRA. 2021). In Africa, cooperatives play a crucial role in offering financial services to underrepresented groups and should be utilized to effectively reduce poverty. SACCOs, similar to other commercial enterprises in Africa, encounter obstacles in their pursuit of sustainability and expansion, hence necessitating regulation. In most African nations, the regulation and supervision of SACCOs are carried out by the Central Bank's Supervisory Authority. However, South Africa and Kenya have separate regulatory frameworks expressly designed for SACCOs (SASRA, 2017). Cooperatives also facilitate the fulfilment of the financial and social requirements of numerous workers in both urban and rural regions. Additionally, they serve as a platform that unites countless small-scale producers and customers.

According to SASRA (2018), the main difference between deposit-taking SACCOS and non-deposit-taking SACCOS is the fact that Deposit-taking SACCOs (D-T SACCOs) offer withdrawable savings account services through front office savings activities (FOSA) where members' can access their savings from the teller 's counter while Non-deposit taking SACCOs members are not allowed to withdraw their deposits over the counter but are eligible for credit facilities hence referred to as non-withdrawable deposit taking SACCOs (NWDT SACCOs). Members can only withdraw money held in the Sacco back-office savings activity (BOSA) when exiting the Sacco. Consequently, the non-deposit taking SACCOs are not authorized to offer Front Office Savings Activity services hence members do not hold accounts where they can deposit or withdraw money from the counter unlike their counterparts in D-T SACCOs. Kenya had 185 NWDT SACCOS as at at 31st December 2022 with membership of 475,270. These entities are reported to be low capitalised, which is also attributed to low retention of surplus fund as a result of uncontrolled distribution of the surplus in form of payment of interest on members' deposits held by the said NWDT Saccos.

1.2 Problem Statement

The development trajectory in social economic transformation of Kenya by 2027 depends largely on the financial inclusion and growth of the Micro Small and Medium Enterprises (MSME's) in Kenya. The Sacco sector is considered to enhance financial sector deepening for

Volume 14 Issue 8, August 2025
Fully Refereed | Open Access | Double Blind Peer Reviewed Journal
www.ijsr.net

Paper ID: SR25823112915　　　　DOI: https://dx.doi.org/10.21275/SR25823112915　　　　1413

achievement of Kenya Vision 2030 "transforming the County in key Social, economic and Political spheres". Across the globe the SACCOS attracts more investors who keep track of entity practices that foster better interest payment on members deposits (Kiprotich & Zipporah, 2021). Interest payments is a dynamic process (Bailey, 2017). NWDT Saccos develop strategies that favor members investment interests. The rate of interest payments on members deposit has often been used as a yardstick to measure the performance of SACCOS through the eyes of the members, amid being cited as a hindrance to compliance with the legal and prudential regulatory standards for the sustainability of the NWDT SACCOS (Ntoiti & Jagongo, 2021). NWDT Saccos developed strategies that could determine the interest payments on members deposits, Income generating strategy, operational costs, loan provisioning strategy and retention strategy. However, it is not clear as to whether income generating strategies are strategic determinant of interest payment. Most studies in Kenya focus on the mature and stable sectors like the banking sector and the listed firms in Nairobi Security exchange and have away from the NWDT. The study analyzed the effect of income generating on interest payments among NWDT Saccos in Kenya. The purpose was to inform whether practices on income generating practices (investment income practices, transaction income practices and interest income practices as strategic determinants of ultimate interest payment among these Saccos. The outcome would inform management and members on the influence of these practices on interest paid by these financial sector players. This study contributes to the limited empirical knowledge on NWDT SACCOs by highlighting the strategic role income-generating practices play in determining interest payments. The insights generated aim to inform policy, enhance managerial decision-making, and promote sustainable financial performance among SACCOs in Kenya.

1.3 Literature Review

1.3.1 Agency Theory
The agency theory, proposed by Jensen and Meckling in 1976, advocates for a distinct division of duties between principals and agents. Top managers enhance the worth of the firms by making decisions, as they frequently possess shares in the firm they are employed by. In addition, the managers are recruited and retained by the board of directors, who are elected by the stockholders/members. This theory posits that managers may choose to rank and prioritize their personal interests over those of the owners, and hence not always act in the owners' best interest. This selfish approach by managers might imply that they do not focus on income generating policies and strategies that might ultimately benefit the members. This management behaviour might lead to sub-optimal earning on members deposits, based on the overall investment environment. The consequences this is erratic incomes of these NWDT Saccos and the subsequent fluctuation on the interest paid by these firms. This theory supported the objective that analyzed the influence of income generating practices on interest payment among non-withdrawable deposit taking Saccos in Kenya.

1.4 Empirical Literature

Empirical literature reported that most studies carried out in Kenya focused in a number of areas. For example, Ademba (2018), Olando (2019), Owino (2017), Langat (2016) and Wanzetse (2018) carried out a study that evaluated financial practices. Other studies focused on saccos regulatory environment (Kilonzi, 2018; Kahuthu, 2016 while additionally others analysed either saccos financial reporting; Kinyenze (2022), financial sustainability; Melessse, 2019) or sacco's financial performance and sustainability; Sangmi and Nazir (2018; Otwoko, 2023) Naceur and Kandil, 2016; Okwee, 2017; Mmari and Thinyane, 2019; Vesperman, 2019; Ndonga,2016 Dang ,2017; Lakew, Meniga, and Gebru, 2018;Wanjiru,2016).The empirical literature research reveals the deficiencies identified by different studies having omitted determinants of interest payment s among NWDT Saccos in Kenya, and therefore, this study aims to address this gap. While it is largely known that interest payment and performance of Saccos is critical for their sustainability, strategic determinants of interest payment among NWDT Saccos remain largely unknown in Kenya. Agency theory however point that the determinants son interest rate could be influenced by varied interest of stakeholders within the business model of NWDT Saccos. This study evaluated the effect of income generation practices on interest payments among non-withdrawable deposit taking savings and credit co-operatives in Kenya.

1.5 Conceptual Framework of the Study

Income generating practices among the NWDT Saccos was conceptualized as the predictor for weighted interest payment. Interest payment was measured using secondary data (average interest payments) and also primary data (customer perspective, internal business process, learning and growth practices) for triangulation purposes.
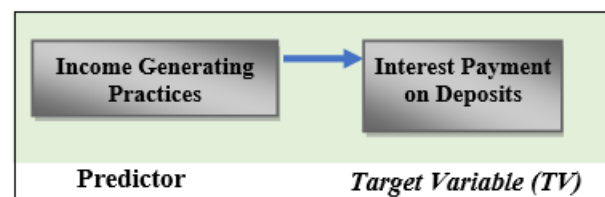

Figure 1: Conceptual Framework for Income Generating Strategy on Interest Payment among NWDT Saccos

1.6 General Objective

The general objective of the study was to examine the effect of income generating practices on interest payment among NWDT Saccos in Kenya

1.7 Research Hypothesis

This study tested the hypothesis that H_01: Income generating strategy does not have a statistically significant influence on interest payment among NWDT Saccos in Kenya.

1.8 Research Gaps

Most of the studies carried out in Kenya focused on County-wise approach and largely focused on Performance of Saccos. While this is useful, studies focusing on a narrow region present a narrow view of the sector's issues and may not be generalized in the Country. This study used a machine learning model using python libraries to train and test the integration of the study variables using stats models and Ordinary Least Squares (OLS). This study sought to assess the effect of income generating strategy interest payment among NWDT Saccos in Kenya.

2. Method

2.1 Philosophy, Design and Instrumentation and Data collection

This research used a theory testing approach and cross-sectional research design. The unit of response was five senior officers from chief executive, finance, compliance, internal auditor and credit officers. The population of the study was 185 Saccos registered NWDT Saccos I Kenya (SASRA, 2022). A proportionate sample of 56 saccos was selected from 55 community-based Saccos, 36 from Public-founded Saccos and 94 Privates founded Saccos (Bryman, 2012, Cooper & Schindler, 2011). Primary data was collected using a structured questionnaire and a secondary data collection sheet in the case of secondary data. The measurement of primary data was based on opinion, belief and attitude of the respondents. As such a five-point ordinal scaled tool was used with the equivalences of strongly disagree, disagree, neutral, agree and strongly agree (Charandrakandan, Venkatapirabu, Sekar & Anandakumar 2011). Interest payment by NWDT Saccos was measured using a secondary measure in addition to a primary measure. The study utilized the Statistical Package for Social Sciences (SPSS) version 26 and Python Libraries, that is pandas, statsmodels.api, statesmodels.formula.api, statsmodel.api and statsmodel. stats. Anova. This study applied a 20 to 80 percent proportions for the test and training respectively using the algorithm (X_train, X_test, y_train, y_test = train_test_split (X, y, test size=0.2, random state=42). Ordinary Least Squares (OLS) simple linear output was generated for each null hypothesis.

2.2 Internal Consistency and Validity of Instrumentation

Internal consistency was assessed using Cronbach Alpha Coefficient and the results are presented in Table 1. The results indicate that reliability of the measures had a Cronbach alpha coefficient of 0.771 Mertens, (2010). Kaiser-Meyer-Olkin (KMO) coefficient of 0.742, Chi-Square of 2606.001, 66 degrees of freedom and associated p-value of .000 was generated indicating a satisfactory level validity and sampling adequacy for factor analysis. Confirmatory Factor Analysis (CFA), varimax rotation generated four components with Rotations Sums of Squared Loadings (RSSL) out of which four (4) were retained with a threshold of 0.4 (Tabachnik & Fidell, 2014).

Table 1: Reliability and Validity Test Results

Variable	Before CFA	After CFA	KMO	Chi-Square & P-value	P-value	Cronbach Alpha Coefficient
	Number of Items					
Income Generating Practices	12	10	0.742	2606.001	0.000	0.784

2.3 Data Analysis and Presentation of Results

Descriptive analysis (means and standard deviation), Confirmatory Factor Analysis (CFA), test of regression assumptions and inferential analysis were carried out. The twelve (12) parameters' mean of 3.719 and standard deviation of 1.341 were generated for preliminary evaluation. Hypothesis testing was done using simple OLS linear model variate. OLS were extracted and interpreted. The equation used in this study was in the form; $IP = \alpha + \beta_1 X_1 + \epsilon$; where Interest Payment (IP (IP) is (predictor) and β_1 is income generating strategy practices (target variable). This equation is supported by Montgomery, Peck, & Vining, 2001).

3. Results and Discussions

3.1 Response Rate

Table 2: Response Rate

Category of NWDT SACCO	No. of NWDT SACCO	Questionnaires Distributed	No. of NWDT Responding	Questionnaires Received	% Response
Community-Based [17]	17	85	16	76	89.40
Private Based [28]	28	140	24	121	86.43
Government Based [11]	11	55	10	50	90.91
Total	56	280	50	247	88.21

Out of the 280 questionnaires distributed to the 56 NWDT Saccos, 247 questionnaires were totally filled and returned giving a satisfactory composite response rate of 88. 21%. The three categories of the Saccos had adequate response rates of 89.4%, 86.43% and 90.91% for the community based saccos, private based saccos and government saccos respectively. This response rate was regarded good for this study. This high response rate was attributed to anonymity and self-administration of the instrument (Charandrakandan, Venkatapirabu, Sekar & Anandakumar, 2011).

3.2 Test of Regression Assumptions

Miles and Shevlin (2010) & Chatterjee & Simonoff (2013) point that before testing hypothesis for ratio- scaled data, it is important that statistical assumptions should be evaluated.

Test of Gaussian Distribution, test of independence and test of linearity were carried out.

3.2.1 Test of Gaussian Distribution for Interest Payment
Interest Payment was assessed using both primary data and also secondary data for the years 2021-2023. The primary data was weighted for the seven sub-constructs used to measure them. Average interest Payment measures were computed for the three (3) years and termed as "Interest payment-secondary measures". The weighted scores of the interest payment were also weighted. Finally, a composite measure incorporating the primary measures and the secondary measures was computed and labeled interest payment -weighted measure. The Kolmogorov-Smirnov and Shapiro-Wilk statistics for numerical tests of normality for SOE are presented in Table 3.

Table 3: Gaussian Distribution test for Interest Payment Measures

Measure	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Interest Payment: Primary Measures	.155	49	.200*	.964	39	.135
Interest Payment: Secondary Data Measures	.064	49	.200*	.988	39	.903
Interest Payment: Weighted Measures	.062	49	.200*	.983	41	.677

Table 3 shows that the statistics are not significant with p-values of Kolmogorov – Smirnov coefficients of .200* for all the three (3) measures of interest payment, that is, primary data measures, secondary data measures and the weighted scores, respectively. Similarly, the Table shows that the coefficient of Shapiro –Wilk statistics were .964 for the case of primary data measures, .988 in the case of secondary data measures and .983 in the case of weighted scores for interest payment. These three statistics indicate that the three measures of interest payment were normally distributed in general, implying that the data was adequate for a Structured Equation Modeling (SEM)using OLS. (Garson, 2012; Shapiro & Wilk, 1965)

3.2.2 Test of Autocorrelation for Income Generating Practices
The test of independence for income generating practices was carried out using Durbin-Watson d statistics. A Durbin-Watson d statistics of 1.778 was extracted and was within the range of 1.5 and 2.5 for an acceptable level of no autocorrelation in a variable measure. Based on this statistic, the assumption of absence of autocorrelation in the parameters measuring the study variables was achieved (Argyrous, 2011).

3.2.3 Test of Linearity for Income Generating Practices
Income generating practices and interest payment were subjected to a pair-wise linearity test using Pearson's correlation coefficient (r). A correlation coefficient of 0.556** was generated at p-value of .000. This statistic implied existence of linear relationship between income generating practices and interest payment. As such OLS simple linear model was deemed appropriate for testing the study hypothesis.

3.3 Inferential Results

This study tested the null hypothesis *H_01: Income Generating Practices do not have a statistically significantly effect interest payment among NWDT Saccos in Kenya*. The weighted measures income generating practices were processed using that is, pandas, statsmodels.api, statesmodels.formula.api, statsmodel.api and statsmodel. stats. Anova. This study applied a .20 to 0.80 proportions for the train and test respectively using the algorithm (X_train, X_test, y_train, y_test = train_test_split (X, y, test_size=0.2, random state=42) and the OLS output generated. The results overall configuration of the OLS linear regression output, overall model performance metrics and statistical significance of the coefficients of the model are presented in Table 4.

The R-Squared coefficient of 0.177 mean that approximately 17.7% of the variability in interest payment of NWDT Saccos can be explained by income generating practices. An assessment of the trade -off between model complexity and predictive power shows that the Adj. R-Squared is 0.334, meaning that addition of other random variables would not significantly improve the predictive power of income generating practices. The Table further shows that the F-statistics of 7.935 and an associated Prob (F-statistic) of 0.00773. This means that the simple linear measures in the restricted model of income generating practices and weighted interest payment is not a random occurrence. Based on these statistics, this study rejects the null hypothesis that income generating *practices do not have a statistically significant effect on interest payment among NWDT Saccos in Kenya*

The Table shows that coefficient (β) for income generating practices was 0.2162 and an associated, p>|t| value of 0.008 which was less than a p-value of 0.05. This implies that income generating practices are significant in the OLS model. These OLS regression model coefficients show that a 0.2162 change in income generating practices is associated with a unit change increase in interest payment among NWDT Saccos in Kenya. The results further shows that while the estimated beta coefficient is 0.2162, we have 95% confidence that the true value will always be in the confidence interval (0.061, 0.372). Based on these statistical features of the bivariate model, the reviewed model for income generating practices and interest payment is;

$$Int\_Payment = 2.0867 + 0.2162 (Income\_ Generating \_Strategy) \pm (0.1555) \ldots\ldots$$

Table 4: OLS Regression Summary for Income Generating Practices

```
                        OLS Regression Results
==============================================================================
Dep. Variable:     IntPay_Weighted_Measure   R-squared:                 0.177
Model:                               OLS      Adj. R-squared:            0.154
Method:                    Least Squares      F-statistic:               7.935
Date:                 Tue, 26 Nov 2024        Prob (F-statistic):      0.00773
Time:                          12:31:03       Log-Likelihood:         -0.59746
No. Observations:                    39       AIC:                       5.195
Df Residuals:                        37       BIC:                       8.522
Df Model:                             1
Covariance Type:              nonrobust
==============================================================================
                        coef     std err          t      P>|t|    [0.025    0.975]
------------------------------------------------------------------------------
const                 2.0867       0.264      7.908      0.000     1.552     2.621
Income_Gen_Strategy   0.2162       0.077      2.817      0.008     0.061     0.372
==============================================================================
Omnibus:                        5.301   Durbin-Watson:                 2.000
Prob(Omnibus):                  0.071   Jarque-Bera (JB):              4.589
Skew:                          -0.840   Prob(JB):                      0.101
Kurtosis:                       3.063   Cond. No.                       24.3
==============================================================================
```

These results appear to confirm that consistent with the findings by Olando (2019) who found that certain practices among the Savings and credit cooperatives were attributable to their variations in performance. The results of this study confirm that, as expected of a financial sector business model, practices that build a strong base and platforms for income generation do have a direct effect on the income generated and consequently the interest payments on non-withdrawable deposits. Similarly, these findings agreed to the findings by Ademba (2018) who also found that building a strong portfolio for capital to invest and also create a better capacity for Sacco to perform and hence better interest payments capacity. These findings do provide consistently with the prudential guidelines of SASRA which require that Saccos to maintain sufficient (at least 15%) of their cash in liquid form to provide for transactional business. One of the incomes generating strategy involve the raising capital that is adequate for negotiating investments that are profitable and are long term in nature. Long term investment provides a stability in Sacco earnings and consequently interest payment. Kahuthi (2016) also reached similar findings in his study that applied simple linear regression between core capital and performance of saccos. These study results indicate that it might be the case for financial sector business model because Sangmi and Nazir (2018) also found that there was a positive correlation between income generating capacity of a bank and its performance. Based on a string capital base, a Sacco can be able to develop and differentiate products that provide a portfolio of income sources. To this extent, this study findings agree to those of Naceur and Kandil (2016) and also for Mmari and Thiyane(2019) who found that income generating strategy have a positive effect on performance of Saccos and consequent interest payment.

4. Conclusions and Recommendations

4.1 Conclusions

The associated F statistic of 7.935 and associated Prob (F-statistic) p-value of 0.00773, that is, ≈ 0. Based on these two statistics, this study therefore concluded on the hypothesis (H01); income generating practices do not have a statistically significant influence on interest payment among NWDT Saccos in Kenya was rejected, and the study confirmed that indeed, there is a positive and statistically significant influence of income generating practices on interest payment among NWDT Saccos in Kenya. As such, the study further infers that measures of income generating practices could be deemed as one of the strategic determinants on interest payment among these Saccos in Kenya.

4.2 Recommendations

Income generating practices were found to be elastic to changes in interest payment and hence should be accorded more focus before a variation of any of the practices. These best practices should be sustained and improved where necessary. Despite the challenges within the Sacco sector and the wider external environment influencing its performance, a policy on income generating practices should call for a focused attention and management and the Board should sustain best practices among NWDT Saccos in Kenya.

References

[1] Ademba, G. (2018). Stakeholder Management Strategies and Deposit Taking SACCOs' Bottom Line in Kenya. Journal of Business and Management, 16(3), 336-352.

[2] Argyrous, G. (2011). Statistics for Research: With guide to SPSS. New Delhi: Sage Publications.

[3] Bailey, T. (2017). Applying International Best Practices to South Africa's SACCOs: Published Dissertation, South Africa: De Mont Fort University.

[4] Barrales R. J. (2019), A Best Practices Approach to Risk Management, TMA Journal, Jan/Feb, 30-34.

[5] Bryman, R. (2012). Social Research Methods (4rd Edit.). New York, USA: Oxford University Press Inc.

[6] Charandrakandan, K., Venkatapirabu, J., Sekar, V., & Anandakumar, V. (2011). Tests and Measurements in Social Research. New-Delhi: S. B. Nangia. A. P. H, Darya Ganj.

[7] Chatterjee S. & Simonoff J.S., (2013). Handbook of Regression Analysis, John Wiley & Sons, Hoboken, New Jersey.

[8] Cooper, D., & Schindler, P. (2011). Business Research Methods. New York: McGraw Publishers.

[9] Dang, P. (2017). Concentration and Other Determinants of Bank Profitability in Europe, North America and Australia, Journal of Banking and Finance 13, 65-79.

[10] Garson, D. (2012). Testing statistical assumptions. Statistical Associates Publishing.

[11] Jensen, C. (1976). Agency costs of free cash flow, corporate finance and takeovers. American Economic Review, 76(2), 323-329.

[12] Jensen, M., & Meckling, W. (1988). Theory of the Firm: Managerial Behavior KNBS (2021) Kenya National Bearue of statistics. Economic Survey 2021

[13] Kiprotich, C., & Zipporah, O. (2021). Financial Engineering and financial performance of Deposit Taking saving and Credit Cooperative Societies in Kenya. Journal of Finance and Investment Analysis, 10(1).

[14] Kahuthu, D. G. (2016). Impact of Prudential Regulation on Financial Performance of Deposit Taking Savings and Credit Cooperative Societies in Kenya (Doctoral dissertation, COHRED, JKUAT).

[15] Kinyenze, G. (2022). Factors influencing quality of financial reporting of deposit taking SACCO's in Kenya. Master's thesis, Kenyatta University, Nairobi, Kenya.

[16] Kilonzi, B.K. (2018). The impact of SASRA regulations on the financial performance of SACCOs in Kenya. Unpublished MBA project, Nairobi: University of Nairobi.

[17] Lakew,K., Meniga, Y. & Gebru, F. (2018). Financial performance of multipurpose co-operative unions in Tigray Region, Ethiopia. Journal of Finance and Investment Analysis, 9(2).

[18] Langat, F. (2016). Effects of SACCO investment programs on Imarisha members' livelihoods in Kericho branch Kenya. European Journal of Business Management, 5(19), 93-105.

[19] Melessse, E. (2019). Effects of Financial sustainability and outreach performance of savings and credit cooperative societies in Eastern Ethiopia. Addis Ababa University Dissertation Addis Ababa.

[20] Mertens, D. M. (2010). Research & Evaluation in Education and Psychology. Integrating Diversity with Quantitative, Qualitative & Mixed Methods. London, UK: Sage Publications

[21] Mmari, B. and Thinyane, G. (2019) Factors influencing financial performance of savings and credit co-operative societies in Lesotho: Evidence from Maseru District. International Journal of Business and Social Science, Vol. 36: 47-60.

[22] Montgomery, D. C., Peck, E. A., & Vining, G. G. (2001). Introduction to Linear Regression Analysis (3rd edit.). New York: John Wiley and Sons.

[23] Naceur, A. L., & Kandil, K. (2016) Impact of capital requirement on the profitability of commercial banks in Egypt. African Journal of Economic and Management Studies, 8(2), 238-248.

[24] Ndonga, P. N. (2016). The Effect of Interest Rate Spread on Financial Performance of Savings and Credit Co-operative Societies in Kenya, (Doctoral dissertation, University of Nairobi).

[25] Ntoiti,R. & Jagongo, A. (2021). Non-Performing Loans and Financial Sustainability deposit taking SACCOs regulated SASRA. International Journal of Finance and Accounting. 6(2), 29 – 39.

[26] Okwee, A. (2011). Corporate governance and financial performance of SACCO's in Lango sub region (Unpublished master's thesis). Makerere University, Uganda.

[27] Olando, C. O. (2019). An Assessment of Financial Practice as a Determinant of Growth of Savings and Credit Co-operative Societies Wealth in Kenya: The Case of Meru County (Doctoral Dissertation, Doctoral Thesis, Kenyatta University, Kenya).

[28] Otwoko, J. (2023). The relationship between Interest rate drivers and financial performance of deposit taking Savings and credit Co-operatives societies licensed by SACCO Societies Regulatory Authority in Nairobi County. Unpublished Phd Thesis, Nairobi: University of Nairobi.

[29] Owino E. (2017). Moderating Role of Firm size on the relationship between Micro Factors and Financial Performance of SACCOs in Mombasa County in Kenya. Journal of Finance and Accounting, 1(1), 14 - 27.

[30] Sangmi, A. and Nazir, G. (2018). The Relationship between capital adequacy and bank profitability through linearity approach. International Journal of Financial Services, 1(4): 89-111.

[31] SASRA. (2017). SACCO Supervision Annual Report: Deposit Taking SACCO's. Retrieved from SASRA website: http://www.sasra.go.ke (accessed on 14/09/2023)

[32] SASRA. (2018). SACCO Supervision Annual Report: Deposit Taking SACCO's. Retrieved from SASRA website: http://www.sasra.go.ke (accessed on 14/09/2023)

[33] SASRA. (2020). SACCO Supervision Annual Report: Deposit Taking SACCO's. Retrieved from SASRA website: http://www.sasra.go.ke (accessed on 14/09/2023)

[34] SASRA. (2021). SACCO Supervision Annual Report: Deposit Taking SACCO's. Retrieved from SASRA website: http://www.sasra.go.ke (accessed on 14/09/2023)

[35] SASRA. (2022). SACCO Supervision Annual Report: Deposit Taking SACCO's. Retrieved from SASRA website: http://www.sasra.go.ke (accessed on 14/09/2023)

[36] Shapiro, S., & Wilk, M. (1965). Analysis of variance test of normality. Biometrica, (52 (3), 591-599

[37] Shevlin, M., & Miles, J. (2010). Applying Regression and Correlation. A Guide for Students and Researchers. New Delhi: Sage Publication Inc.

[38] Tabachnick, B. & Fidell, L. (2014) Using multivariate Analysis. Boston, Pearson Education Inc.

Volume 14 Issue 8, August 2025
Fully Refereed | Open Access | Double Blind Peer Reviewed Journal
www.ijsr.net

Paper ID: SR25823112915   DOI: https://dx.doi.org/10.21275/SR25823112915   1418

[39] Vesperman, M. (2019) on a study on prudential management and capital adequacy in SACCO's in Pakistan. International Journal of Finance and Accounting, 6(2), 1-10

[40] Wanjiru, P. (2016). Liquidity Risk and Financial Performance of Deposit Taking Savings and Credit Cooperative Societies in Kenya. International Journal of Finance and Accounting, 7(1), 1-14.

[41] Wanzetse, H. (2018). The factors influencing the choice of loan packages by SACCO members in Kakamega Central Sub County, Kenya. (Unpublished master's thesis). University of Nairobi, Nairobi, Kenya.

Volume 14 Issue 8, August 2025
Fully Refereed | Open Access | Double Blind Peer Reviewed Journal
www.ijsr.net

Paper ID: SR25823112915   DOI: https://dx.doi.org/10.21275/SR25823112915   1419