MODERATING EFFECT OF GROSS DOMESTIC PRODUCT ON THE RELATIONSHIP BETWEEN CAMEL RATING MODEL AND FINANCIAL PERFORMANCE OF DEPOSIT TAKING SAVINGS AND CREDIT COOPERATIVE SOCIETIES IN KENYA

ABSTRACT

The study sought to establish the moderating effect of gross domestic product on the relationship between CAMEL rating model and financial performance of Deposit Taking SACCOs in Kenya. The study originates from the Doctoral dissertation of the first author in which the co-authors served as supervisors. Capital buffer theory and stewardship theories were utilized in supporting the nexus between the variables of the study. Secondary data was collected for the period 2013 to 2022 and panel regression analysis was applied. The study established that the nexus between CAMEL rating model and financial performance in the context of deposit taking SACCOs in Kenya is significantly predicted by gross domestic product. It was consequently concluded that the aggregate of economic growth as reflected by gross domestic product plays a significant role on CAMEL rating model and financial performance nexus with respect to deposit taking SACCOs in Kenya. The study recommends that the Government of Kenya should ensure economic growth in the country. The Government should stimulate economic activities through government policies and activities (of patronizing different sectors). Profits generated by SACCOs during economic expansion should be adequate reinvested into financial intermediation activities as well as other investment opportunities for purposes of diversification.

Keywords: CAMEL Rating Model, Capital Buffer Theory, Stewardship Theory, Gross Domestic Product and Financial Performance

1.1 Introduction

It was estimated that SACCOs in Kenya contributed 45 percent of Gross Domestic Product (GDP) of the country. As of 2017, sub-sector had effectively mobilized resources worth over Ksh. 600 billion in deposits with an asset base amounting to Ksh, 870 billion (Ministry of Industry, Trade and Cooperatives, 2017). This huge resource base can significantly assist in the country's economic development if the risks related to their core activities are effectively mitigated through prudent management.

Kenya Cooperative policy document (2019) noted that despite notable success in the sector, SACCOs are unable to accumulate savings and deposits effectively to satisfy the demand for credit from members. As a result, many now rely heavily on loans from commercial banks to satisfy their members' desire which in turn defeats the very purpose of setting up a cooperative.

The paper notes that the problem is further compounded by the emergence of e-platforms offering access to quick loans, therefore moving away from developing a savings culture to cultivating a borrowing culture. This underlines the need for developing specific measures to build trust of members in their SACCOs and encourage them to save.

The policy paper (2019) is concerned that many SACCOs have now resorted to introduction of financial products that they are not adequately equipped to manage in order to pay high interest rates to members. Many SACCOs, taking their members as a captive market are charging unsustainable interest on loans and have enslaved members. This necessitates examining SACCOs' dividend and interest policies. A poor performance of the sector will be evidenced by their inability to sustain an acceptable delivery of financial services including financial products and advisory services. Ochieng (2018) observed that these institutions are not investing sufficiently for better returns and most of them make uninformed decisions, leading to loss of members' money.

SACCOs' provision of credit and savings options is a fundamental component of Kenya's financial services industry. SACCOs are clustered as such together with other financial intermediating cooperatives like investments and housing cooperatives (SASRA, 2019). They are legally constituted corporate organizations and unlike in other jurisdictions, the sector is separated into two parts both legally and in practical application. The type of deposits and savings that they get from their membership is what primarily defines or distinguishes them (SASRA, 2019). According to SACCO Societies Act (SSA), 2008, Sacco Regulatory Authority (SASRA) oversees and regulates deposit-taking SACCOs (DT-SACCOs) segment. Ministry of Industrialization, Trade and Enterprise Development's department of cooperatives is in charge of overseeing non-deposit-taking Sacco's segment.

DT-SACCOs operate Front Office Service Activities (FOSA) products, diversifying from the usual Back Office Activities (BOSA) products (Ng'eno, 2019). Therefore, deposit taking SACCOs in Kenya act more like commercial banks while non-deposit taking SACCOs receive money from the public through contributions and lend out to members in form of credit, loans or advances. All non-deposit taking SACCOs operate on the system of back-office activities (BOSA) comprising long-term and short-term loans. This emphasizes the notion that lending to members is SACCOs' principal purpose.

Kenya has more than 200 SACCOs that accept deposits (SASRA, 2019). As of December 31, 2018, there were 265 SACCOs accepting deposits overall, 174 of which held licenses. The remaining ninety-one SACCOs complied with the law to varying degrees and 2 had been sent to the CCD for liquidation. The 174 licensed deposits taking SACCOs operate across the country, with the majority of SACCOs in the country operating as non-deposit taking intermediaries and actively participating in lending activities as well (SASRA, 2019). The report informs that the registered head offices of DT-SACCOs form the central nucleus of their general operations and activities, notwithstanding the cross-county geographical operations and networks of DT-SACCOs in the form of membership, branch networks, and business operations or activities. Majority of the deposit taking SACCOs in Kenya are situated in Nairobi County because it is the financial center of the nation. At year's end, Nairobi County had 39 licensed Deposit Taking SACCOs (DTSs) (SASRA, 2019). The CSA by which DT-SACCOs are incorporated as co-operative enterprises requires every co-operative enterprise to specifically state in its By-Laws the location of its registered head-office.

Sacco Societies Regulatory Authority (SASRA) currently licenses, regulates, and promotes savings and credit cooperatives, including DT-SACCOS under the Sacco Societies Act (SSA), 2008 (SASRA, 2017). The Authority also has the power to intervene in the management of any SACCO society deemed to be mismanaged. Further, the Act provides for the establishment of the Deposit Guarantee Fund which secures each SACCO society members' deposits (excluding shares). The Act intends to provide a framework for sound management of SACCOs as financial institutions and make them effective competitors in the financial sector.

1.2 Statement of the Problem

Despite SASRA (2016/2017) report documenting average SACCO institutions' liquidity at 34.95% above prescribed minimum ratio of 15%, majority of institutions have been facing challenges in meeting their financial obligations. Furthermore, assets for Kenyan DT-SACCO segment grew from Kshs.342.84 billion in 2015 (SASRA, SACCO Supervision Report, 2015) to Kshs.393.49 billion in 2016 (SASRA, SACCO Supervision Report, 2016). This represented an annual growth rate of 14.8%, primarily supported by member deposits, which increased to Kshs. 272.57 billion in 2016 (SASRA, SACCO Supervision Report, 2016) from Kshs 237.44 billion

(SASRA, SACCO Supervision Report, 2015) recorded in the previous year. In that year, credits and advances established tremendous segment of aggregate DT-SACCO resources, representing 73.42 percent of aggregate resources and which increased to Kshs 288.92 billion at end of 2016 (SASRA, SACCO Supervision Report, 2016) , up from Kshs 251.08 billion in 2015 (SASRA, SACCO Supervision Report, 2015). This represented a year to year growth rate of 15.07 percent. The gross advances were reported at Kshs 297.6 billion at the close of 2016, up from Kshs 258.18 billion at the close of 2015, representing a 15.3 percent year-to-year growth rate. Further, DT-SACCOs recorded a 4.71 percent profitability before the application of regulatory dividend policy and recorded a slight change on implementation of dividend policy as SACCOs under SASRA they recorded a 5.2 percent profitability (SASRA, 2018).

In 2016 a total of 168 SACCOs were fully compliant with minimum core capital (SASRA, SACCO Supervision Report, 2016) as opposed to 173 SACCOs that maintained compliance level in 2015 (SASRA, SACCO Supervision Report, 2015). This reflects a decrease in the level of compliance by five (5) SACCOs in terms of the stipulated core capital requirements. Furthermore, non-performing loans (NPLs) ratio to total gross loans increased in aggregate from 5.12 percent in 2015 (SASRA, SACCO Supervision Report, 2015) to 5.23 percent in 2016 (SASRA, SACCO Supervision Report, 2016). This demonstrates marginal worsening of loan recovery methodologies employed by SACCOs. Furthermore, interest from investments remained minimal at 3.48 percent. This raises questions on viability of a majority of other clusters of investments which SACCOs engage in. Finally, although a total of 165 SACCOs reported full compliance with the prescribed liquidity ratio of 15 percent and above in 2016, ten (10) other SACCOs failed to achieve the prescribed ratio, and thus evidence of potential inability to meet short term obligations. Furthermore, according to SASRA, SACCO Supervision Report, 2017, only 69 of 175 deposit-taking SACCOs satisfied and upheld minimum required institutional capital adequacy (ICA) ratio of 8% during the period ending December 31, 2016. This means that over half of lenders are operating illegally. If defaulting DT-SACCOs don't comply, the regulator may suspend and eventually revoke their licenses.

Only 175 DT-SACCOs in the country were licensed at the close of 2019 out of which 3 of the licenses were revoked. These were spread across the various counties and operated across all sectors of the economy (SASRA, SACCO Supervision Report, 2020). The report indicated that

SACCOs' total assets portfolio crossed the half-trillion mark to reach Kshs 556.71 billion, representing a 12.41 percent increase from Kshs 495.25 billion recorded in 2018. Total gross loans were 419.55 billion, 12.09 percent above the 2018 figures. In 2018, total SACCO assets reached Kshs 495.25 billion, an increase of 11.97 percent from Kshs 442.27 billion in 2017. These total assets were mainly composed of loans and other credit advances which grew by 13 percent to increase from Kshs 331.21 recorded to Kshs 374.28 billion in 2017. Rate of growth of total loans at 13 percent slightly exceeded the rate of growth of the total deposits, which suggests that there is a higher demand for loans in SACCOs than the rate of mobilization of deposits (SASRA, SACCO Supervision Report, 2020). In that year the return on assets (ROA) was 2.60 percent, an increase from 2018. This was a dropped to 2.40 percent from 2.69 percent in 2017 (SASRA, SACCO Supervision Report, 2018). The number of SACCOs in Kenya is 5,000 with only 176 Deposit taking registered by SASRA, indicating that the rest 4,824 are Non-Deposit taking.

The financial performance of DT-SACCOs in terms of loan to deposit ratio declined from 9.70 percent in 2016 to 6.95 percent in 2017 (SASRA, SACCO Supervision Report, 2016). In 2018 (SASRA, SACCO Supervision Report, 2019), the loan-to-deposit ratio increased marginally to 7.10 percent. Rates of growth in total deposits and gross loans may be indicative of difficulties encountered by DT-SACCOs during this period. On the other hand, the dividend payout ratio increased during the period 2014 to 2018. The DT-SACCO societies on average paid dividend on members share capital at the rate of 9.40 percent in 2018 (SASRA, SACCO Supervision Report, 2019) compared to 8.34 percent in 2017 (SASRA, SACCO Supervision Report, 2016). The dividend rate on DT-SACCOs members share capital in 2016 (SASRA, SACCO Supervision Report, 2017) was 7.1 percent compared to 3.97 percent in 2015 (SASRA, SACCO Supervision Report, 2016) and 5.04 percent in 2014 (SASRA, SACCO Supervision Report, 2015) respectively.

The average return to SACCO members (ROS) in 2018 was 8.25% (SASRA, SACCO Supervision Report, 2019), an increase from the 7.48% in 2017 (SASRA, SACCO Supervision Report, 2018) compared to 8.4% in 2016 (SASRA, SACCO Supervision Report, 2017), and 6.60% in 2015 (SASRA, SACCO Supervision Report, 2016) and 8.08% in 2014 (SASRA, SACCO Supervision Report, 2015). Contrary to popular belief, trends in loan-to-deposit ratios

should at least mirror those in dividend payout ratios. Because DT SACCOs mobilize financial services for their members, their financial performance is important for the stability of the financial sector (SASRA, SACCO Supervision Report, 2017).

Most of DT-SACCOs in Kenya face huge loan backlogs which may lead to default and eventually to SACCO members losing their capital despite the potentials displayed. Similarly, when loans remain outstanding for long, DT-SACCOs stand to lose earnings due to fluctuation in interest rates, hence the exposure to interest rate risk. Since DT-SACCOs also borrow money to advance loans to their customers they are inherently faced with the risk of changing interest rates which may adversely affect their value (SASRA, 2019). As a result, most DT-SACCOs resort to less risky short-term lending which is less profitable as opposed to long term lending (World Bank, 2016).

2.1 Theoretical Review

Capital buffer theory was introduced by Calem and Rob (1996). In the context of this study, capital buffer theory explains the need for SACCOs to regulate their minimum capital ratio in order to promote their performance and reduce the risk associated with regulatory measures. SACCOs may therefore try to risk more in lending, with anticipation for higher returns and consequently increase their capital base. The capital buffer theory can be used to explain capital adequacy requirements in the SACCO subsector in Kenya. SACCOs may therefore desire to keep an excess capital "buffer" in order to reduce likelihood of going below the stipulated capital level. Normally, SACCOs would need more capital for its business operations if the deposits from the public are not fully mobilized. Adequate capital helps the SACCOs to be more reliable, dependable, and facilitate carrying out of proper long-term planning, and strengthen the ability to raise sufficient cash deposits to prevent their capital base from depletion. The theory is relevant in evaluating the risk in the SACCO management practices and in avoiding losses to increase credibility to their regulation and provide a positive signal to the various stakeholders. Extra capital buffer enables the SACCO to comply with SASRA regulations and provide more solvencies.

Stewardship theory replaces the absence of trust in agency theory regarding the authority and fondness to ethical behaviors aimed at boosting performance (Clarke, 2004). Stewardship theory posits that when left alone to run the affairs of an organization, managers will act as responsible

stewards of the assets under their control. The theory looks at the relationship between the business owners and managers as stewards from a behavioral and structural perspectives. The behavior depends on the value and superiority of the association existing between the principal, steward, the atmosphere, and epitomes of the organization. The theory avers that stewards will behave in the best interests of the organization and that of the principal who is the owner of the business. When the organizational objectives are achieved the steward is satisfied and motivated (Olando, Jagongo & Mbewa, 2013; Abdulla & Valentine, 2009; Donaldson & Davis, 1991). According to Davis, Schoorma and Donaldson (1997), stewards are motivated and satisfied when organizational goals are met, when their need for intrinsic fulfillment from successfully completing difficult tasks is satisfied, and when they are able to exercise their authority and responsibility in a way that garners them respect from superiors and peers. The firm's executive is viewed as the steward who most likely will optimize and maximize the shareholders' wealth. Therefore, managers would spearhead firm operations to maximize financial performance and shareholders returns. The goal of financial stewardship is to meet member needs while also increasing and maintaining value of SACCOs (Olando *et al*., 2013). SACCO board handles all duties during registration. A manager is only hired afterwards to assume responsibility for more involved tasks. When SACCO's goals of accepting deposits and making loans to members are fulfilled, success is attained under managers, stewards. The theory supports the mediating variable (SACCO size) in this study testing its impacts on financial performances.

2.2 Empirical Review

Gikombo and Mbugua (2018) investigated how certain economic factors affected the profitability of commercial banks in Kenya. While the longitudinal approach assisted in tracking changes over time, the study employed descriptive research methodology to gather information that depicts what exists with respect to the variables tested. The 44 licensed commercial banks in Kenya as of December 2016 were the subject of the study. There was a census because all 44 commercial banks were covered by the study. In order to gather data, the study used secondary sources and a data collection form that had been used in other studies. Using SPSS version 23.0, descriptive and inferential statistics were performed, and tables were used to present the results. According to the study, the GDP significantly impacted on the profitability of commercial banks. In order to assist all economic sectors and increase the GDP of each, the research advises

regulatory organizations such as the Central Bank of Kenya to collaborate closely with the National Treasury in putting appropriate policies and measures into place.

Tora (2018) conducted a study to ascertain how macroeconomic factors affected Kenya's commercial banking industry's financial performance. Using data from all of Kenya's commercial banks between January 2008 and December 2017, the investigator conducted both a descriptive and correlational study. SPSS software version 22 was used to analyze the data, which was then shown using graphs and frequency tables. The Central Bank of Kenya and the Kenya National Bureau of Statistics provided the secondary data on bank performance, which was then analyzed using both descriptive and inferential statistics. The Central Bank of Kenya provided the data on macroeconomic variables. While quarterly GDP growth rate, quarterly interest rates, quarterly exchange rates (USD/KSH), and quarterly inflation rates were used to measure interest rates, exchange rates, economic growth, and inflation rates, respectively, return on assets was used to measure financial performance. The study's findings demonstrated a substantial correlation (R=0.656) between macroeconomic factors and the financial health of commercial banks. The study also found no evidence of a substantial relationship between GDP and financial performance.

Njenga (2019) evaluated the effect of gross domestic product on financial performance of microfinance institutions in Kenya. Using panel data spanning seven years, the study employed a longitudinal and descriptive research methodology. In Kenya, there were thirteen microfinance banks for the people. Therefore, it was a census approach was used for the research. Secondary data derived from yearly CBK reports on supervision of financial institutions, from 2012 to 2018 were used. Three tests were duly run on the data to analyze its normality, autocorrelation and multicollinearity. The Shapiro-Wilk test was used to diagnose normality, and the Durbin-Watson test was employed to determine autocorrelation. The degree of multicollinearity was ascertained by the VIF value. The data was then put through additional processing to produce descriptive statistics, such as variances and averages. Furthermore, a correlation matrix encompassing all variable connections was produced. ANOVA, model coefficient tables, and a summary of the regression analysis model were produced. The study found that gross domestic product had positive and insignificant effect on return on assets. The regulatory body was advised to examine

the macroeconomic variables' fluctuation because of their 53.7% total impact on performance. This would protect the returns from the MFBs.

Chemutai (2019) examined the impact of macro-variables on Kenya's profitable banking sector's fiscal performance. As the study's strategic underlying ideas, the efficient market hypothesis, current portfolio theory, and behavioral finance theory were examined. Descriptive and correlational research approaches are combined in this study's mixed research design. Secondary statistics derived from macroeconomic variables were used in the study. The statistics that were used were gathered over a ten-year period, from 2009 to 2018. The findings indicated that there is a strong and positive correlation between real GDP and the financial performance of commercial banks. There is also a large and reliable association between real GDP and return on assets. The study suggested that as the banking industry is a crucial one that improves financial intermediation, the government should make sure that the economy is growing continuously in order to increase the profitability of the banking industry.

Mirieri (2020) investigated the effects of particular macroeconomic variables on the financial performance of Kenyan DT-SACCOs. Three theories: the international fisher effect theory, the modern portfolio theory, and the arbitrage pricing theory were used to underpin the relationships between the variables of the study. Secondary data in quarterly form was collected and the study focused on a time scope of ten years (2010–2019). In order to ascertain the relationships between the variables that were chosen, a descriptive design was adopted, and the multiple linear regression model was used for analysis. The findings demonstrated that each GDP-measured economic growth is a statistically significant factor influencing the financial performance of DT-SACCOs. The study suggested that policymakers pay greater attention to economic growth since it has a substantial impact on DT-SACCOs' financial success.

Nyangor (2020) investigated how gross domestic product affected the financial performance of collective investment plans in Kenya. The agency cost theory, current portfolio theory, financial inclusion and development theories, and financial intermediation theory served as the foundation for the research. The population of the study, which used a casual research approach, consisted of Kenya's nineteen licensed CIS. For ten years, from 2010 to 2019, the Capital Market Authority, Central Bank of Kenya, and Kenya National Bureau of Statistics provided quarterly secondary data for the study. First, descriptive statistics were utilized to compile the gathered data into an

excel sheet. After that, a regression technique was used with STATA software version 14.2, and the findings were interpreted in accordance with the goals of the study. Based on particular unit trusts, the study was conducted at four levels: money market funds, balanced funds, equity funds, and fixed income funds. The findings showed a substantial and positive correlation between GDP and money market fund performance. Additionally, the study discovered a favorable correlation between GDP and interest rates and the returns on balanced funds. The study also discovered weak positive correlation between GDP and the returns on equity funds. The study concluded that GDP significantly impacts on money market fund performance.

Nyabakora, Mng'ang and Ngomaitara (2021) evaluated the effect of macroeconomic factors, as represented by the exchange rate, inflation rate, interest rate, money supply, amount of public debt, and GDP growth rate, on the performance of the banking industry in Tanzania between 2011 and 2019. Secondary data from Tanzania's monetary authority, the country's Bureau of Statistics, and the World Bank's databases were used in the study. The study used the Pooled Ordinary Least Square Regression Model for multiple regression analysis and correlation data analysis. The findings indicated that there is a negligible positive correlation between GDP growth rate and bank performance. The findings of the study suggested that policymakers and economic regulators focus on modifying external factors such as GDP, government debt, inflation, exchange rates, and interest rates as these have been shown to affect the performance of banks.

Purwohandoko and Iriani (2021) examined the impact of GDP, liquidity, firm size, CAR and inflation on the financial performance of private-equity banks listed on IDX during the 2012–2017 timeframe. The Gross Domestic Product (GDP) research was measured using a baseline price that was obtained from BPS between 2012 and 2017. All banks listed on the Stock Exchange comprised the population of this investigation, and the sample consisted of private banks that published their complete financial reports and were listed on the Stock Exchange between 2012 and 2017. Multiple linear regression was used in this research. The results of the research demonstrated that the size, growth, and gross domestic product all significantly improved financial performance.

Mutonga (2022) investigated how macroeconomic factors affected the performance of the banking industry in Kenya. Based on Fisher's theory, the analysis was bolstered by contemporary

portfolio theory and arbitrage pricing theory. The data covered a ten-year period, and a quarterly report (January 2012 to December 2021). The study employed a descriptive research methodology, utilizing a multivariate regression model to investigate the relationship between the research variables. The study found an R-square of 0.557, which indicates that the independent variables chosen could explain 55.7% of the variance in Kenya's banking sector's financial performance; Furthermore, the results showed that a greater GDP growth rate results in a notable improvement in the banking industry's performance. The study suggested that since the money supply and GDP growth rate have a significant influence on the performance of the banking industry, they should be managed.

Cheluget, Bonareri and Sile (2023) established the impact of macroeconomic indicators on financial institution performance with focus on Co. Bank of Kenya Limited. The study employed the theories of liquidity preference, efficient market, and current portfolio. Descriptive research design and the correlation between the dependent variable, bank performance, and the independent variables, interest rates and gross domestic product, was investigated. A total of 120 Cooperative Bank of Kenya Limited employees, comprising branch managers, credit managers, financial officials, accountants, employees, and customers, participated in the investigation. Both primary and secondary data were used in the study's conclusion-making on the research question. Both primary and secondary data were gathered for the study using data collection forms and questionnaires. The Co-operative Bank of Kenya's annual financial reports for the year 2016 through the first quarter of 2022, CBK, Kenya Bureau of Statistics, and World Bank report provided secondary data. In order to calculate trend analysis for each of the independent variables, create a multiple regression equation, and determine regression coefficients, the research also used secondary data. The analysis indicated that there is a causal relationship between gross domestic product and bank performance.

3.1 Methodology

The population of this study comprise of all 176 deposit taking SACCOs in SASRA's directory as at 31 December 2022. This study adopted multistage sampling technique to select suitable sample. The first stage was selecting active DT-SACCOs in the directory and leave out the inactive ones. The second stage was subjecting the active SACCOs to a sampling formula to

determine the representative sample size. The third stage was the random selection of the specific active SACCOs within the sample size considered in the study.

Out of the DT-SACCOs enlisted in the directory maintained by SASRA as of 31 December 2021, 81 DT-SACCOs were found to be active. The study applied Yamane sampling formula with an error of 0.1 as shown below.

Yamane Sampling Formula $n = \dfrac{N}{1+Ne^2}$ where n= sample size, N= Population of the active SACCOs, and e=error term. In this equation N= 81 and e= 0.1. Therefore, the sample size was be

$n = \dfrac{81}{1+81(0.1)^2}$ = 45

This study therefore had a sample size of 45 active DT-SACCOs. The panel regression analysis was conducted based on the two-step approach by Whisman and MacClelland (2005) as indicated below:

Step One

The first step models GDP as a predictor variable together with the composite of CAMEL rating model:

$$FP= \beta_0+\beta_1 CAMEL_{it}+\beta_2 GDP_t +\epsilon\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 1$$

Step Two

The second step captured composite of CAMEL raing model, GDP and interaction between GDP and CAMEL rating model predicting finncial performance:

$$FNP= \beta_0+\beta_1 CAMEL_{it}+\beta_2 GDP_t+\beta_3 GDP*CAMEL_{it} +\epsilon\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 2$$

Where:

FP= Financial Performance: Return on Asset

CAMEL= CAMEL Rating Model: capital adequacy, asset quality, management efficiency, earning ability and liquidity

GDP= Gross Domestic Product

$\beta_{0 \text{ to }} \beta_2$= Regression Coefficients

i= Firm (1 to 45)

Whisman and McChelland (2005) approach which was based on a two-step procedure. analysis is presented in Table 1.

Table 1: Moderating Effect Result, Step-One

Financial Performance	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
CAMEL	.0214198	.0004656	46.01	0.000	.0205044	.0223351
GDP	.0007211	.006849	0.11	0.916	-.0127439	.0141861
_cons	-.1387475	.6117617	-0.23	0.821	-1.341454	1.063959
F(2,396)	1061.76					
Prob > F	0.0000					
R-Square	0.8527					

Source: Study Data (2023)

The outcome of the first step of the moderating effect model describes that when the moderator is added in the model, the p-value which explains the significance of the model was very high as demonstrated by a p-value of 0.0000 compared to the 0.05 used as the significance level in the study. With both CAMEL rating model and GDP included in the model, financial performance had a variation of 85.27%. The resulting effect of this is that, the 14.3% unaccounted for in the model is attributed to the other factors not included in the model.

The output recorded under the first step of the moderating effect showed that CAMEL rating variables had significant and positive effect on financial performance of SACCOs. A unit increase in CAMEL rating model leads to a 0.02141 increase in the financial performance of SACCOs. Notably, GDP has insignificant effect on financial performance of SACCOs. Importantly, the insignificance of GDP in predicting financial performance satisfies the requirement of the first model for moderation effect analysis based on Whisman and McChelland (2005) approach. In view of this, the second step of the moderation effect analysis was conducted.

Table 2: Moderating Effect Result, Step-Two

Financial Performance	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
CAMEL	-.1042632	.0049085	-21.24	0.000	-.1139132	-.0946132
GDP	-.0127405	.0042331	-3.01	0.003	-.0210627	-.0044184
CAMEL*GDP	.0015628	.0000609	25.65	0.000	.001443	.0016826
_cons	1.15574	.3785632	3.05	0.002	.411489	1.89999
F(3,395)	2101.26					
Prob > F	0.0000					
R-Square	0.9441					

Source: Study Data (2023)

The output in Table 2 revealed that the statistical model significance which is measured by the Chi-square p-value is 0.0000 less when compared to the asymptotic level of 0.05 significance threshold. CAMEL variables, GDP and the interactions between CAMEL variables and GDP explain 94.41% variation in financial performance of SACCOs.

The outcome emanating from the second step of the moderating effect illustrated that CAMEL variables inversely and significantly affected financial performance. A unit increase in the composite of CAMEL rating model leads to 0.10426 decrease in financial performance. Also, the outcome of GDP as recorded indicated a significant and negative effect on financial performance. Hence, a unit increase in GDP leads to a 0.01274 decrease in financial performance. The interaction of CAMEL variables and GDP has a significant positive effect on financial performance. Therefore, a joint increase in CAMEL rating model and GDP leads to a corresponding 0.00156 increase in the financial performance of SACCOs.

In analyzing the moderation effect of GDP on CAMEL rating model and financial performance nexus regarding deposit taking SACCOs in Kenya, a null hypothesis was formulated and subsequently tested. The analysis was based on the null hypothesis stating that gross domestic product has no significant moderation effect on the relationship between CAMEL rating model and financial performance of deposit taking SACCOs in Kenya. From the statistics in Table 2, p-value of 0.000 was established for the interaction between gross domestic product and CAMEL rating model. The nexus between CAMEL rating model and financial performance in the context of deposit taking SACCOs in Kenya is significantly predicted by GDP. Gross domestic product is considered to be important due to the fact that it provides information relating to the size of a country's economy as well as its level of performance, hence growing GDP signifies growing

level of economic activities. In periods of economic expansion, firms experience increase in profits and conversely during recession profitability decreases. Growth in GDP therefore leads to increases in deposits and loans, improvements in interest income and decreases in loan losses. As such GDP growth implies increased income while decreasing loan defaults of customers.

The findings therefore can be attributed to the fact that growing economic activities provide enablement for businesses to thrive, hence the positive joint effect of GDP and CAMEL rating model on financial performance of deposit taking SACCOs in Kenya. The findings of the study are similar to those of previous empirical researches. Gikombo and Mbugua (2018) found that GDP significantly impacted on the profitability of commercial banks in Kenya. Similarly, Chemutai (2019) reported a strong and positive correlation between real GDP and financial performance of commercial banks. Additionally, Mirieri (2020) established that gross domestic product is a statistically significant factor influencing the financial performance of DT-SACCOs. Also, Purwohandoko and Iriani (2021) found that gross domestic product significantly improved financial performance. Furthermore, Mutonga (2022) reported that GDP growth rate has significant influence on the performance of the banking industry of Kenya.

5.1 Conclusion and Policy Recommendations

The study established that the nexus between CAMEL rating model and financial performance in the context of deposit taking SACCOs in Kenya is significantly predicted by GDP. In response to this outcome, it was concluded that the aggregate of economic growth as reflected by gross domestic product plays a significant role on CAMEL rating model and financial performance nexus with respect to deposit taking SACCOs in Kenya. The financial performance of SACCOs is enhanced by periods of economic expansion through increase in interest income. As economic activities increase, so do intermediation activities of SACCOs, hence improvements in their financial performance. The market value of the total production of a country is therefore important in determining the financial performance of deposit taking SACCOs in Kenya.

It is therefore recommended that the Government of Kenya should ensure economic growth in the country. The Government should stimulate economic activities through government policies and activities (of patronizing different sectors). Profits generated by SACCOs during economic expansion should be adequate reinvested into financial intermediation activities as well as other investment opportunities for purposes of diversification.

REFERENCES

Abdullah, H., & Valentine, B., (2009). Fundamental and ethics theories of corporate governance. Journal of Middle Eastern finance and economics, 4, 88 – 96.

Cheluget, D.J., Bonareri, E.M., & Sile, I.C. (2023). Effect of Gross Domestic Product and Interest Rate Changes on the Financial Performance of Banks in Kenyan: A Case of Co. Bank Limited. *International Journal of Research Publication and Reviews*.

Chemutai, A. (2019). The Effect of Macro-economic Variables on Financial Performance of Commercial Banking Sector in Kenya (Doctoral dissertation, University of Nairobi).

Clarke, T. (2004). Theories of corporate governance: the philosophical foundations of corporate governance. Manitoba: Routledge.

Davis, J. H., Schoorma, F. D., & Donaldson, L. (1997). Toward a stewardship theory of management. Academy of Management review, 22(1), 20-47.

Donaldson, L., & Davis, J. H. (1991). Stewardship theory or agency theory: CEO governance and shareholder returns. Australian Journal of management, 16(1), 49-64.

Gikombo, E. M. & Mbugua, D. (2018). Effect of select macro economic variables on performance of listed commercial banks in Kenya. *International Academic Journal of Economics and Finance*, 3(1), 80-109.

Mirieri, C. K. (2020). Effect of Selected Macro-economic Variables on the Financial Performance of Deposit-taking Savings and Cooperative Societies Sector in Kenya (Doctoral dissertation, University of Nairobi).

Mutonga, C. W. (2022). *Effect of Macroeconomic Variables on the Financial Performance of Banking Sector* (Doctoral dissertation, University of Nairobi).

Ng'eno, J. C., (2019). Capital Adequacy Framework, Funds Allocation Strategy and Financial Performance of Deposit taking SACCOs in Kenya. [Unpublished PhD Thesis, Kenya Methodist University]

Njenga, G. K. (2019). Effect Of Macroeconomic Variables On Financial Performance Of Microfinance Banks In Kenya (Doctoral dissertation, University Of Nairobi).

Nyabakora, W., Mng'ang, J. & Ngomaitara, H. (2021). Nyabakora, Mng'ang'a, Ngomaitara- July 2020. *International Journal of Current Research*. 12. 12404-12409.

Nyangor, M. (2020). Effect of gross domestic product on financial performance of collective investment schemes in Kenya (Doctoral dissertation, UoN).

Ochieng, O. S. P. (2018). Determinants of Financial Performance of Savings and Credit Cooperative Societies in Nakuru Town, Kenya. IOSR Journal of Business and Management (IOSR-JBM) e-ISSN: 2278-487X, p-ISSN: 2319-7668. Volume 20, Issue 8. Ver. VI (August. 2018), PP 36-45 www.iosrjournals.org DOI: 10.9790/487X-2008063645 *www.iosrjournals.org*

Purwohandoko, P., & Iriani, S. S. (2021). Effect of gross domestic product, liquidity, size, growth, capital adequacy ratio, and inflation on financial performance. *Equilibrium: Journal of Economics-Management-Accounting*, *17*(1), 46-53.

SASRA (2020). *The SACCO Supervision Annual Report, 2019*. Nairobi, Kenya. Available from http://www.sasra.go.ke.

SASRA (2019). *The SACCO Supervision Annual Report, 2018*. Nairobi, Kenya. Available from http://www.sasra.go.ke.

SASRA, (2018). *The SACCO Supervision Annual Report, 2017*. Nairobi, Kenya. Available from http://www.sasra.go.ke/

Tora, J. (2018). The Effect of Selected Macro-economic Variables on Financial Performance of the Banking Sector in Kenya (Doctoral dissertation, University of Nairobi).

Whisman, M. A., & McClelland, G. H. (2005). Designing, Testing, and Interpreting Interactions and Moderator Effects in Family Research. Journal of Family Psychology, 19 (1), 111-120.

World Bank Group. (2016). *World development report 2016: digital dividends*. World Bank Publications.