Influence of Selected Macro-Economic Factors on Liquidity of Deposit Taking SACCOs in Nairobi County.

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ABSTRACT

The study’s general objective was to investigate the influence of macro-economic variables on liquidity of deposit taking SACCOs. The specific objectives of the research were to establish the influence of gross domestic product on liquidity of deposit taking SACCOs in Nairobi County, influence of inflation rates, exchange rate and interest rates on liquidity of deposit taking SACCOs in Nairobi County. Descriptive research design was used in the study. The researcher targeted a population of all the 42-deposit taking SACCOs in Nairobi County. The study considered use of census technique and secondary data covering a five-year period from 2018 to 2022. The researcher collected data from audited financial reports which were collected from each of the deposit taking SACCOs, SASRA, Kenya National Bureau of Statistics and the central bank of Kenya. Analysis of data was done using both descriptive and inferential statistics and Microsoft Excel to calculate the mean score as a measure of central tendency, frequency percentages and standard deviation as a measure of data dispersion. Data was analyzed using a multiple regression analysis model using SPSS version 26.0 as the data analysis tool. The results of this study demonstrated that, throughout the years examined, there is a negative correlation between the inflation rate and the liquidity of deposit-taking SACCOs. This indicates that, over the years examined, a spike in inflation led to a decline in the liquidity of deposit-taking SACCOs. In each of the years examined, there was a correlation between the gross domestic product and the deposit-taking SACCOs’ liquidity. This indicates that over the years examined, an increase in the gross domestic product led to an increase in the liquidity of deposit-taking SACCOs. In each of the years examined, there was a favorable correlation between interest rates and deposit-taking SACCOs. This indicates that an increase in interest rates led to an increase in the liquidity of deposit-taking SACCOs during all the years under consideration. Additionally, there was a negative correlation between exchange rates and the liquidity of deposit-taking SACCOs during all the years under consideration. This indicates that during all years of investigation, an increase in exchange rates resulted in a drop in the liquidity of deposit-taking SACCOs. The report makes the following recommendations in order to increase liquidity in deposit-taking SACCOs in Kenya: The Government should carefully monitor and sensibly regulate the macroeconomic variables. Inflation should be under government control as well because it negatively affects deposit-taking SACCOs’ ability to maintain liquidity. Finally, the government should work to raise the nation’s GDP because it will help with liquidity.

Key Words: Inflation Rates, Exchange Rate, Interest Rates, Liquidity

I.0 INTRODUCTION

1.1 Background of the Study

With For any business enterprise to be successful, liquidity is a fundamental component. Liquidity is applied in different business fields such as economics, finance, accounting and investments thus there is no universally accepted definition for the term. However, various scholars have suggested different definitions. From a finance perspective, Ibbotson, Chen, Kim, & Hu (2013) describes liquidity as the ability of investors to convert securities into cash at a price that is similar to the price of the previous trade, assuming that no new information has arrived since the previous trade. Parlatore, (2019) describe liquidity from an economics perspective as “when an asset can be converted into spending power without significant loss of face value or interest income. Liquidity of an organization is a domain of management, which has remained and will continue to be the focus of management executives and scholars for a long time to come because of its centrality in the life of an organization (Muturi, & Njeru, 2019). Because of the importance attached to financial performance, great attempts have been made to understand it over time in terms of factors that contributes to its realization or none realization (Abata, Osamor, & Elluh, 2023). The relationship existing between macroeconomic factors and firms liquidity is a subject that has interested many scholars and practitioners. Often times, it is proved that a firm’s
liquidity is dictated by some basic macroeconomic variables like rate of interest, GDP, exchange rate and inflation (Gan, Lee & Zhang, 2006). Macroeconomic variables include interest rates, economic output, employment, unemployment, inflation, government budget balances, National saving rate and finance, international trade balances, finance and productivity. This study considered four macroeconomic factors: gross domestic product (GDP), Inflation rate, exchange rate and default and interest rates. Picardo (2016) defines GDP as the total value of goods and services produced within a country’s boarders in a specific time. GDP per capita is often considered as an indicator of a country’s growth rate. GDP per capita is obtained by dividing the GDP by the total population of a country GDP per capita has a close relation with the trend in living standards over time. GDP fluctuates due to the business circle, rising when the economy is booming.

According to Konadu (2016), for commercial banks in Ghana to survive, they must have the ability to maximize their returns on the resources they employ. Nonetheless the ability of these banks to yield profit is reliant on macroeconomic variables, which are essential in shaping productivity and profitability of banks. Osamwonyi and Michael (2014) states that it is significant to understand the significance of macroeconomic variables in the growth of any country and the profitability of the banks. The higher the risk associated with the macroeconomic variables such as interest rates, gross domestic product and inflation the lower the return on banks productivity. Sheefeni (2015) looked at the macroeconomic factors of profitability among commercial banks in Namibia. The study shows dominance of financial sector in a few large commercial banks any failure of the sector will have a huge potential effect on the economy. This is due to the fact that any bankruptcy in the sector has a prospective contagion effect that leads to crises, bank runs and the overall financial crunch. Marobhe and Pastory (2015) carried a study in Tanzania on the determinants of the commercial banks profitability. The results confirmed that liquidity, asset quality capital adequacy, and macro-economic factors are critical components in influencing profitability of the commercial banks.

Owoputi, Kayode and Adeyefa (2014) studied the influence of variables (industry specific, macroeconomic and bank-specific) on Nigerian bank performance. Out of the three macroeconomic variables investigated in this study, the empirical results showed a substantial negative impact of interest rate and inflation rate on bank profitability whereas GDP growth has no significant relationship. Osamwonyi and Chijuka (2014) carried a study on influence of macroeconomic variables on banks’ profitability. The study finds significant and positive relation amongst GDP and ROA, significant and negative relation amongst ROA and interest rate, and finally insignificant and inverse relation involving inflation rate. Although these studies are related to the current study, they have mostly focused on banks leaving a gap on deposit taking SACCOs.

Locally, Mwaniki (2017) conducted a study on the effect of macroeconomic variables on average performance of DT SACCOs in Kenya and the findings of the study showed that only money supply had a significant influence on performance. According to a study done by Tora (2018) on examining influence of macroeconomic factors on commercial banking sector financial performance in Kenya and revealed that interest rates are positively associated to performance of banking industry while the rest of the selected macro-economic variables had no significant effect. Gross Domestic Product (GDP) is the market value of all finished goods and services in a country within a specified period, mostly one year. GDP is the most commonly used macroeconomic indicator used to measure economic activity within an economy (Mwangi, 2013). Most studies have looked at commercial banks; the current study will focus on macroeconomic variables and their effect on liquidity of deposit taking SACCOs. Nderitu (2019) aimed on examining the influence of macro-economic factors on performance of banks and concluded that interest rates and economic growth affect financial performance positively while exchange rates and inflation has a negative substantial effect.

SACCOs provide credit facilities, by law they are required to comply with prudential guidelines as outlined by the SASRA (Ndambiri & Wanjoji, 2019). SACCOs are important in pulling and accessing credit at prevailing interest rate(s) (Auka & Mwangi, 2013). SACCOs’ undesirable performance has been witnessed recently; deposit-taking SACCOs are continually experiencing high competition emanating from other deposit-taking institutions in Kenya, especially commercial banks (Mugo, Muathe & Waithaka, 2019; Odhiambo, 2019). Banks have gone to an extent of issuing unsecured loans to their clients and non-clients; this non-price competitive tool has posed a challenge on SACCOs’ performance (Munene, Ndambiri & Wanjoji, 2019).

1.1.1 Deposit taking SACCOs

The most visible and important cooperative societies in Kenya are the Savings and Credit Cooperative Societies (SACCOs). They are distinct and have unique traits as compared to other cooperatives. Their purpose is mobilization of savings and issuing credit facilities to their members. SACCOs are grouped together with financial intermediating cooperatives which are housing cooperatives and investments (SASRA, 2018). The SACCO subsector in Kenya is divided into two; SACCOs that are distinguished by the nature of deposits and
savings that the SACCOs mobilize from their membership and SACCOs that are principally defined. The first segment consists of non-deposit taking SACCOs and the second one consists of deposit taking SACCOs. In Kenya, there are 176 DT SACCOs. There are 43 deposit taking SACCOs in operation in Nairobi County (SASRA, 2018).

1.2 Statement Of The Problem

Macroeconomic aggregate has been a significant contributing factor of banks’ liquidity behavior. As such, volatility in macroeconomic conditions normally affects manager’s determination of the appropriate level of liquid assets to hold. According to Gibson (1992) decreasing trend in current ratios maybe as an outcome of some macroeconomic influence and not necessarily those firms are facing liquidity problems. Financial sector has faced a challenging macro-economic environment including interest rate variation, money supply, exchange rates and gross domestic product that were effected on August 2016. Other macro-economic challenges that have affected the sector include; rising levels of prices, interest rates unpredictability and variability of exchange rates. These unfavorable macroeconomic developments may result to great problems in financial performance of the sector. Deposit-taking SACCOs being players in the financial industry have not been left behind as they have faced numerous challenges mostly because of increased competition from the commercial banks (Munene et al., 2019). This dismal performance might also be justified through the volatility of macro-economic variables and this informed the current study. Several research studies have been done within this field in international arena.

A financial institution needs to hold liquid assets to meet the cash requirements of its customers. Inability to meet its customers' demands leaves financial institutions exposed to a run and more importantly a systemic lack of confidence (Moore, 2009). Some researchers Alfred (2011), Allen & Maghimbi (2009) have observed that there are challenges in managing liquidity in SACCOs thus many are unable to meet customers’ needs. Liquidity challenges and other management issues have hindered the growth of SACCO’s where 2 out of 3 formed are not operational as Alfred (2011) found in his research. Although there are previous studies done before in this area, (Mwangi, 2017; Osamwonyi and Chijuka, 2014; Woputi et al. 2014; Shefeeni, 2015) there exist contextual, conceptual as well as methodological gaps. Contextually, many of the previous studies have been done in developed economies while those conducted locally have mostly focused on commercial banks, which are different from DT-SACCOs. Conceptually, previous researchers have considered different macro-economic variables and they have also operationalized both financial performance and macro-economic variables differently. The previous studies have concentrated on financial performance. Little has been done to explore the influence of these macroeconomic variables on the liquidity of deposit taking SACCOs. This might explain the differences in previous studies, as the findings have been inconsistent. In addition, most studies have focused on banks, which are not the same as DT-SACCOs. Methodologically, majority of previous studies on macro-economic variables and financial performance have been time series in nature with a few adopting the panel approach. This study will seek to contribute to this debate by responding the research question: What is the influence of macroeconomic variables on the liquidity of deposit taking SACCOs in Nairobi County?

1.3 Objectives of the study

The study was guided by the following objectives:

1.3.1 General objectives

The general objective of this study was to investigate the influence of selected macro-economic variables on liquidity of deposit taking SACCOs in Nairobi County.

1.3.2 Specific objectives

The specific objectives of the study were:

i. To investigate the influence of gross domestic product on liquidity of deposits taking SACCOs in Nairobi County.

ii. To explore the influence of inflation rates on the liquidity of deposit taking SACCOs in Nairobi County.

iii. To explore the influence of foreign exchange rate on liquidity of deposit taking SACCOs in Nairobi City County.

iv. To determine the influence of interest rates on liquidity of deposit taking SACCOs in Nairobi City County

1.4 Research questions

i. How does gross domestic product (GDP) influence liquidity of deposits taking SACCOs in Nairobi County?

ii. Does inflation rates influence liquidity of deposit taking SACCOs in Nairobi County?
iii. To what extent does foreign exchange rate influence liquidity of deposit taking SACCOs in Nairobi City County?
iv. What is the influence of interest rates on liquidity of deposit taking SACCOs in Nairobi City County?

1.5 Scope of Study
The study covered the period between 2018 and 2022, this period was considered the most recent and would provide relevant data. This study was carried out mainly to investigate the influence of macroeconomic variables on liquidity of deposit taking SACCOs in Nairobi County. The study aimed at understanding the relationship between the various macroeconomic factors such as GDP, inflation rate, exchange rate and interest rates. The study considered these macroeconomic variables because they are the one mostly affected organizations especially during COVID 19 period. The study used secondary source of data collected between the years 2018 and 2022. This study was carried out on deposit taking SACCOs in Nairobi County. This region was considered since most head offices of SACCOs are domiciled in Nairobi County.

LITERATURE REVIEW

2.1 Theoretical Framework
The study was anchored on the following theories: Anticipated income theory and Liquidity preference theory, pecking order theory and market timing theory

2.1.1 Anticipated Income Theory
This theory focuses on the relationship between liquidity and income. It suggests that liquidity needs can be anticipated and met by structuring loan repayments based on the borrower's income rather than relying solely on collateral. It emphasizes the importance of aligning repayment schedules with the expected cash flow of borrowers. The theory also acknowledges the impact of economic conditions on liquidity and emphasizes the role of credit commitments in the banking system.

2.1.2 Liquidity Preference Theory
This theory, proposed by Keynes, centers on the idea that interest rates reflect the price individuals pay for holding onto liquidity (cash) rather than investing it. It distinguishes between three motives for holding cash: transactional, precautionary, and speculative. Transactional motives relate to day-to-day expenses, precautionary motives involve saving for unexpected needs, and speculative motives involve holding cash in anticipation of investment opportunities. The theory explores how central banks' management of the money supply can influence interest rates and inflation.

2.1.3 Pecking Order Theory
The Pecking Order Theory, formulated by Myers, pertains to capital structure decisions in corporate finance. It posits that firms prioritize internal sources of funding, such as retained earnings, over external financing, like debt or equity issuance. The theory suggests that firms prefer retaining earnings due to lower information asymmetry and costs compared to external financing. Debt is typically preferred over equity due to its tax advantages and the reduction of tax liability. Profitable firms tend to rely more on retained earnings, aligning their financing choices with their financial performance.

2.1.4 Market Timing Theory
This theory, introduced by Baker and Wurgler, argues that companies make financing decisions based on prevailing market conditions. It suggests that firms issue equity when their share prices are high, as this minimizes the cost of equity capital. Conversely, when interest rates are low, companies prefer issuing debt. The theory also highlights that firms may consider future interest rate expectations, especially when issuing debt securities. This means that if they anticipate higher future inflation, they may issue debt at present.
2.2 Conceptual Framework

**Figure 2.1 conceptual framework**

Source, Researcher, (2023)

2.3 Research Gap

Audo (2017) study sought to establish the relationship between the inflation rates and the liquidity of commercial banks in Kenya. This study is narrow in the sense that there are various variables that might affect liquidity hence the need to expand the variables as per proposed study in order to have concrete findings. Hong and Razak, (2015) looked at impact of GDP and inflation rates on financial performance of Islamic banks in Malaysia, there is need to look at SACCOs in local context. Although several studies have been done as discussed above on liquidity of commercial banks in Kenya, little has been done to determine the influence of macroeconomic variables (GDP, inflation rate, exchange rates and interest rates) in Kenya. This covered 42 DTS as per SASRA report of 2021 for a span of 5 years commencing from year 2018 through year 2022.

3.0 Research Methodology

The research design employed in this study, as per Cooper and Schindler (2006), was exploratory research design, aimed at investigating the impact of macroeconomic variables on deposit-taking SACCOs' liquidity in Nairobi County. This choice aligns with the study’s goal of assessing these variables’ influence on liquidity.
(Charles, & Benson, 2023). The population included all 42 licensed deposit-taking SACCOs in Nairobi County as of December 31, 2021. Secondary data from financial statements of these SACCOs were collected and analyzed using SPSS (Momanyi, Nyangau, & Charles, 2023). Data collection was preceded by obtaining necessary permissions from relevant authorities. A pilot study involving four SACCOs in Kajiado County ensured the instrument’s validity and reliability. Data analysis included log-linear regression to establish relationships between variables, with liquidity measured using the current ratio.

4.1 Descriptive Analysis

Descriptive statistics shows the maximum, mean and minimum values of variants which are used with their standard deviations for this work. The illustration below is the presentation of the statistics for the study variables. Analysis of the variants under study was produced by the SPSS software within five years (2018 to 2022).

Table 4. 1 Descriptive statistics

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquidity</td>
<td>210</td>
<td>-9.21</td>
<td>1.47</td>
<td>-6.7987</td>
<td>2.00473</td>
</tr>
<tr>
<td>GDP</td>
<td>210</td>
<td>.83</td>
<td>2.01</td>
<td>1.5809</td>
<td>.39734</td>
</tr>
<tr>
<td>Inflation</td>
<td>210</td>
<td>1.55</td>
<td>2.00</td>
<td>1.7394</td>
<td>.15502</td>
</tr>
<tr>
<td>Interest rate</td>
<td>210</td>
<td>1.95</td>
<td>2.20</td>
<td>2.0488</td>
<td>.10289</td>
</tr>
<tr>
<td>Exchange rate</td>
<td>210</td>
<td>1.53</td>
<td>1.56</td>
<td>1.5423</td>
<td>.01185</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>210</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The overall mean of GDP as log of GDP change in GDP was 1.5809. The minimum and the maximum of GDP change was 0.83 and 2.01 respectively. Its standard deviation was 0.39734 which is very low indicated that GDP minimally varied throughout the measurement period. The overall mean of inflation rate was 1.7394 measured in terms of inflation rates. The minimum and the maximum of log inflation between the year 2018 and 2022 were 1.55 and 2.00 respectively. Its standard deviation was 0.15502 an indication that inflation varied minimally throughout the measurement period. The overall mean of exchange rates as USD/KSH was 4.6756. The minimum and the maximum of exchange rate in terms of natural logarithms are 1.53 and 1.56 respectively. Its standard deviation was 0.1185 which is low an indication that exchange rate insignificantly varied throughout the measurement period. The overall mean of interest rates was 2.0488. The minimum and the maximum of interest rate in terms of natural logarithms are 1.95 and 2.20 respectively. Its standard deviation was 0.10289 which is low an indication that interest rate is minimally varied throughout the measurement period. Finally, the overall mean of liquidity measured as cash and cash equivalent divide by total assets was -6.7987. The minimum and the maximum of liquidity between the year 2018 and 2022 were -9.21 and 1.47 respectively. Its standard deviation was 2.00473 which is high an indication that liquidity highly varied throughout the measurement period.

4.2 Inferential statistics

The researcher conducted inferential analysis which included coefficient of correlation, coefficient of determination and multiple regression to establish the relationship between the independent and dependent variables.

4.2.1 Coefficient of correlation

Correlation analysis was done to establish the level of association between the liquidity of DT- SACCOs and the independent variables (GDP, inflation rates, interest rates and exchange rates). The findings showed a weak positive correlation between GDP and liquidity of DT- SACCOs (r = .131, p = .007), inflation showed a weak
negative significant association with liquidity as shown by \( p<0.05, r = -0.183 \). Interest rate had a positive weak significant relationship with liquidity of SACCOs \( (r =.271, r< 0.05) \). Finally exchange rate showed a negative weak correlation with liquidity of deposit taking SACCOs in Nairobi County\( (r =-.169, p=0.014) \)

### Table 4. 2 Correlation Analysis Results

<table>
<thead>
<tr>
<th></th>
<th>Liquidity</th>
<th>GDP</th>
<th>Inflation</th>
<th>Interest rate</th>
<th>Exchange rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Liquidity</strong></td>
<td>Pearson Correlation</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>210</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GDP</strong></td>
<td>Pearson Correlation</td>
<td>.131**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.007</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>210</td>
<td>210</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Inflation</strong></td>
<td>Pearson Correlation</td>
<td>-.183**</td>
<td>.231**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.008</td>
<td>.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>210</td>
<td>210</td>
<td>210</td>
<td></td>
</tr>
<tr>
<td><strong>Interest rate</strong></td>
<td>Pearson Correlation</td>
<td>.271**</td>
<td>.263**</td>
<td>-.592**</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>210</td>
<td>210</td>
<td>210</td>
<td>210</td>
</tr>
<tr>
<td><strong>Exchange rate</strong></td>
<td>Pearson Correlation</td>
<td>-.169*</td>
<td>.146*</td>
<td>.976**</td>
<td>-.631** 1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.014</td>
<td>.034</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>210</td>
<td>210</td>
<td>210</td>
<td>210</td>
</tr>
</tbody>
</table>

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

### 4.2.2 Coefficient of Determination of Research Variables

The researcher conducted coefficient of determination to assess the suitability of statistical model in forecasting future results. Adjusted R squared is coefficient of assurance which shows the changes in the dependent variable as a result of variations in independent variables. Results in Table 4.6 show that the value of R squared was 0.102 which shows that there was change of 10.2% on Sacco’s liquidity due to changes in GDP, inflation interest rate and exchange rate at 95% confidence level. R is the correlation coefficient which represents the connection between the investigation factors, findings in Table 4.5 show a moderate positive connection between the examination factors as appeared by 0.320.

### Table 4. 3 Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.320*</td>
<td>.102</td>
<td>.085</td>
<td>1.91806</td>
<td>1.115</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Exchange rate, GDP, interest rate, inflation
b. Dependent Variable: Liquidity

### 4.2.3 Analysis of variance (ANOVA)

An analysis of variance was carried out on the relationship between GDP, inflation rate, interest rates and exchange rates on liquidity of deposit taking SACCOs in Nairobi County. From Table 4.7 below, the model was significant \( (p-value = 0.000) \) at 0.05 level in explaining the linear relationship between the study variables. Additionally, the F calculated at 5% level of significance was 5.829 Since F calculated is greater than 1 this shows that the overall model was significant. This means that the model is appropriate for use in running a factor analysis.
Research Bridge Publisher, International Journal of Social Science and Humanities Research, Vol. 1, Issue 1, pp: (291-302), Month: June - December 2023, Available at: https://researchbridgepublisher.com/

### Table 4. 4 ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>85.774</td>
<td>4</td>
<td>21.444</td>
<td>5.829</td>
<td>.000⁹</td>
</tr>
<tr>
<td>Residual</td>
<td>754.182</td>
<td>205</td>
<td>3.679</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>839.956</td>
<td>209</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Liquidity

b. Predictors: (Constant), Exchange rate, GDP, interest rate, inflation

### 4.2.4 Multiple Regression

Further the researcher carried out a multiple regression analysis to understand better the relationship between various study variables. The researcher used SPSS to enter and code responses from the respondent to assist in computing the extent to which a unit changes in a given independent variable cause a change to dependent variable. As per the SPSS generated Table 4.8 below was obtained

### Table 4. 5 model coefficient results

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant) -184.982</td>
<td>80.672</td>
<td>-2.293</td>
<td>.023</td>
</tr>
<tr>
<td>GDP</td>
<td>771</td>
<td>.414</td>
<td>.153</td>
<td>1.860</td>
</tr>
<tr>
<td>inflation</td>
<td>-10.198</td>
<td>4.352</td>
<td>-.789</td>
<td>-2.343</td>
</tr>
<tr>
<td>Interest rate</td>
<td>4.178</td>
<td>1.878</td>
<td>.214</td>
<td>2.224</td>
</tr>
<tr>
<td>Exchange rate</td>
<td>120.691</td>
<td>56.441</td>
<td>.714</td>
<td>2.138</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Liquidity

The results show that holding GDP, inflation interest rates and exchange rates constant at zero, deposit taking SACCOs liquidity would be at -184.982. The researcher found out that a unit change in GDP would cause a change in liquidity by a factor of 0.771, unit variation in inflation would contribute to variation in deposit taking SACCOs liquidity by a factor of –10.198, a unit variation in interest rates would contribute to variation in Sacco’s liquidity by a factor of 4.178 and a unit variation in exchange rate would lead to variation in liquidity of deposit taking SACCOs by a factor of120.691.

The information from table 4.5 generated the following equation:

\[ Y = -184.982 + 0.771X_1 - 10.198X_2 + 4.178X_3 + 120.691X_4 + \varepsilon \]

### 4.6 Discussion and Interpretation of Research Findings

This section discusses the findings obtained in the study in light of other studies conducted beforehand. It aims to reveal consistencies and inconsistencies between the current study and those carried out in the past. The researcher intended to establish the influence of selected macro-economic variables on liquidity of DT-SACCOs. The independent variables were GDP, inflation interest rates and exchange rates. Liquidity was the dependent variable. The main scope of the study was given by cash and cash equivalents to total assets ratio among DT-SACCOs. The effect of every predictor variable on the response variable was analyzed based on strength and direction. It is organized according to the objectives of the study

#### 4.6.1 Influence of GDP growth on liquidity of deposit taking SACCOs in Nairobi County
The correlation coefficients showed a weak positive and statistically substantial correlation ($r = .131$, $p = .007$) between GDP and liquidity. These findings were consistent with Mwai (2013) carried out a study to examine the relationship between macroeconomic variables and share prices of companies listed in Nairobi Securities Exchange as measured by NSE 20 share index, for the period covering 2002 to 2012 which showed that GDP had a positive correlation with price index. Similarly Hong and Razak (2015) study used log linear regression between nominal GDP and inflation rate as the dependent variables and showed that nominal GDP has a significant role in financial performance of commercial banks

This study is also in agreement with Chimkono (2017) who studied the impact of micro and macroeconomic variables on the performance of banks in Malawi. Secondary data was gathered from audited financial reports and covered a fifteen-year period from 2000 to 2014. The population of study constituted banks licensed in Malawi. Publications prepared by the World Bank and reserved bank of Malawi were also used as sources of data. The study established that interest rate has significant influence on the finance performance of commercial banks. Moderating variables (economic growth) has a significant effect on the independent variables. The findings further confirmed the findings by Ayele (2012) which explored the determinants of commercial banks profitability in Ethiopia. The study showed that bank specific factors; capital adequacy, managerial efficiency, bank size and macro-economic factors; level of GDP, and regulation had a strong influence on the profitability of private commercial banks in Ethiopia.

4.6.2 Influence of inflation on liquidity of deposit taking SACCOs in Nairobi County

Inflation showed a weak and negative significant association with liquidity as shown by $p<0.05$, $r = -0.183$. The study contrasted the findings of Hasanov (2010) which investigated the effect of inflation on economic growth which findings showed that Inflation rate lower than 13 percent reflected statistically significant positive effect on GDP growth. The study confirmed the findings of Deepali (2019) which explored the effect of Macroeconomic Variables on the Financial Performance of the Banks Listed on the Nairobi Securities Exchange, the study concluded that there was a positive and significant relationship between inflation and bank performance. The study on contrasted with Chioma, Adanna and Clementina (2014) which empirically examined the relationship between inflation and banks’ performance and how the outcome influences the lending decision of such banks. The result revealed that there is positive but not significant relationship between inflation, banks’ performance and the investment decision of commercial banks operating in Nigeria. However, the study concurred with Jepkemei (2017) on the impact of inflation on stock market liquidity in Kenya from 2002 to 2011 using pane least squares. It was reported that inflation negatively influenced stock market liquidity.

4.6.3 Influence of interest rate on liquidity of deposit taking SACCOs in Nairobi County

The descriptive statistics together with diagnostic tests indicated that interest rate was suitable for regressing with liquidity of DTS. From the regressed results, interest rate had significant effect on liquidity. The beta coefficients in each case was positive showing that increase in interest rate significantly improves liquidity of DTS (Olweny, & Shipho, 2011). Similar findings were sought by Irungu (2013) looked at the effect of interest rate spread on financial performance of commercial banks in Kenya and revealed that a strong positive relationship between financial performances of commercial banks with interest rate spread.

This findings agreed with Kader and Leong (2009) who asserts that rising market interest rates would increase the cost of conventional loans hence inducing new customers to opt for the relatively cheaper BBA financing. The reverse occurs when interest rates are falling. Such substitution effect implies that Islamic banks are exposed to interest rate risks even though operating on interest-free principles. It is important to understand this phenomenon because a negative consequence if not mitigated, would jeopardize the growth of Islamic banks which are the new comers in the dual banking system.
4.6.4 Influence of exchange rate on liquidity of deposit taking SACCOs in Nairobi County

It was also established that there was a negative significant relationship between exchange rate and liquidity of deposit-taking SACCOs in Nairobi County and that a unit increase in exchange rates would cause a decrease in liquidity of deposit-taking SACCOs by a factor of 120.691. These results contravened Muriithi (2011) who did a study whose objective was to establish the relationship between foreign exchange rate and market performance for manufacturing companies. The study used a descriptive research design. His study showed that exchange rates had a positive influence on market performance. In addition, Mongeri, (2011) did a study on the impact of foreign exchange rates and foreign exchange reserves on the performance of NSE share index whose objective was to determine the impact of foreign exchange rates and foreign exchange reserves on the performance of NSE index. The study established that the foreign exchange rates positively influenced the performance of NSE index (Olweny & Omondi, 2011).

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions from the study
The study aimed at finding influence of macroeconomic variables on liquidity of deposit taking SACCOs in Nairobi County. This research was triggered by the contradictory results given by different researchers on the influence of macroeconomic variables on liquidity of DTS. In conclusion the four objectives established in the beginning were all achieved.

5.1.1 Influence of GDP on liquidity of deposit taking SACCOs in Nairobi County.
The first objective was to explore the influence of Gross Domestic Product growth rate on liquidity of DTS in Nairobi County. It was found that there was a positive relationship between gross domestic product and liquidity of DTS in all the years studied. This means that an increase in gross domestic product caused an increase in liquidity of deposit-taking SACCOs.

5.1.2 Influence of inflation on liquidity of deposit taking SACCOs in Nairobi County.
The study sought to determine the influence of inflation on liquidity of deposit taking SACCOs in Nairobi County. Based on the findings of the study there was a negative relationship between inflation rate and liquidity of deposit-taking SACCOs in all the years studied. This means that an increase in inflation causes a decrease in liquidity of deposit-taking SACCOs.

5.1.3 Influence of interest rate on liquidity of deposit taking SACCOs in Nairobi County.
The study sought to answer the question how does interest rate influence the liquidity of DTS in Nairobi County? The study found out that there was a positive relationship between interest rate and liquidity of DTS in all the years studied. This means that an increase in interest rates causes an increase in liquidity of DTS.

5.1.4 Influence of exchange rate on liquidity of deposit taking SACCOs in Nairobi County.
Finally it sought to assess in what ways exchange rate influence the liquidity of DTS in Nairobi County. The findings concluded that there was a positive relationship between exchange rate and liquidity of DTS in all the years studied. This means that an increase in exchange rate led to an increase in liquidity of DTS.

5.2 Recommendations
The following are evidence-based suggestions that could facilitate the attainment of good liquidity in DTS. Recommendations were done according to study objectives

5.2.1 Influence of GDP on liquidity of deposit taking SACCOs in Nairobi County.
It was discovered that GDP has a positive substantial impact on liquidity of DT-SACCOs. The study recommends that there is a need to come up with measures that can boost economic growth to increase GDP as this will have an effect on the liquidity of the DT-SACCOs.

5.2.2 Influence of inflation rate on liquidity of deposit taking SACCOs in Nairobi County.
A recommendation of the study to policy makers is that focus should be placed on current rates of inflation as it can negatively affect deposit taking SACCOs and in essence have an impact on the level of liquidity in the country.

5.2.3 Influence of interest rate on liquidity of deposit taking SACCOs in Nairobi County.
It was established that interest rate has a positive significant influence on liquidity though to a low extent. The study recommends that the government through central bank to regulate interest rates as they have impact on economic growth which in turn affect liquidity of DTS.

5.2.4 Influence of exchange rate on liquidity of deposit taking SACCOs in Nairobi County.
It was found out that there was a negative correlation between exchange rate and liquidity of DTS. The study recommended that the government to come up with policies to strengthen the Kenyan shilling to reduce the pressure against the hard currencies. It also recommended that the organizations such as DTS to invoice their foreign customers on local currency.

5.3 Recommendations for Further Studies

Further research should be undertaken in this area to determine whether the non-deposit taking SACCOs are affected by the macroeconomic factors in the same way as deposit taking SACCOs. Also further research should be undertaken to determine how macroeconomic factors would affect SACCOs EBIT when using both deposit taking and non-deposit taking SACCOs.

References


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