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FIRM CHARACTERISTICS AND LOAN PERFORMANCE OF DEPOSIT TAKING SAVINGS AND CREDIT COOPERATIVE SOCIETIES IN NAIROBI CITY COUNTY, KENYA

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Abstract: **The study sought to examine the effect of firm characteristics on loan performance of deposit-taking SACCOs in Kenyan Nairobi City County. Particularly, the study analyzed firm size, liquidity, and capital adequacy effects on loan performance of deposit-taking SACCOs in Nairobi City County. The research was predicated upon credit default theory, information asymmetry theory as well as capital-buffer theory. Panel regression analysis alongside descriptive techniques was adopted. The survey covered 40 Deposit Taking SACCOs that were operational within the period 2015 and 2020 where a census approach was applied. Data were sourced using a data collection guide with such information retrieved from audited statements of accounts of the DT-SACCOs. The result found that firm size has a significant positive effect on loan performance. Capital adequacy has an insignificant positive effect on loan performance. Liquidity has an effect that is not significantly positive on loan performance. Suggestions from the survey noted that the managers of DT-SACCOs should effectively implement capital adequacy regulations to ensure their buffers can meet the loan needs of their customers in Kenya. This would enhance the capital base of the SACCOs thus, improve the DT-SACCOs' loan performance.**

Keywords: **Firm Characteristics, Firm Size, Capital Adeqaucy, Liquidity and Loan Performance.**

1. INTRODUCTION

1.1 Background of the Study

The financial sector is considered the focal point of global economies progress. These industries facilitate the mobilization of resources from excess units to insufficiency units which promote businesses and investments (Farhan, Sattar, Chaudhry & Khalil, 2012). The deployment of reserves, pooling as well as expansion possibilities, and distribution of resources is facilitated by financial institutions (Ozili, 2017). Deposit-taking and savings credit societies (DT-SACCOs) globally comprise more than 1 billion memberships. The co-operative societies are predicted to have 250 million people world over working for them with an approximated turnover of around US$2.2 trillion worldwide while rending services and infrastructures that support the smooth running of the society (Barus, Muturi, Kibati & Koima, 2017). Spreading across one hundred and five countries in the world the six continents have a sum of 57, 000 deposit-taking and savings credit societies as recorded by the Global statistical report (2014). With combined savings of around US$1.5 trillion, a US$1.8 trillion asset base and a loan portfolio of US$1.2 trillion worldwide, the penetration rate of deposit-taking SACCOs amounted to 8.2 percent (World Co-operative Monitor, 2014).

In 1965, the growth of deposit-taking SACCOs has been realized with the emergence of ACCOSSCA in Africa, solely initiated with the motive of rendering SACCO education, and insurance to its members and enhancing SACCO precepts (Ng'ombe & Mikwamba, 2004). Deposit-taking SACCOs are operational in twenty-eight countries in Africa (Saving plus, 2010). With an estimated membership of about sixteen million, representing 8% of the world membership, DT-SACCOs

in Africa have 62% savings and 65% loans, occupying the third position after North and Asia which have 102 million and 36 million respectively. The mobilization rate of Africa DT-SACCOs stood at 0.4 percent of the world's reserves with 1.1 trillion US dollars also 0.4 percent of global loans offered to members' position at 912 billion US dollars WOCCU, 2009). Empirically, Ifeacho and Ngalawa (2014) analyzed the efficiency of DT-SACCOs in South Africa and realized that all the DT-SACCOs specific variables were statistically significant on assets and equity returns. Asset value proxied by an asset-to-capital ratio, liquidity regulation proxied by liquidity ratio, and management efficiency proxied via operating profits per employees' ratio exhibited a direct link with both performances. Contrarily, Leverage Ratio proxied by Capital Adequacy, illustrated a significant inverse link with asset returns while a significantly direct link with equity returns. Also, the performance of local and foreign DT-SACCOs was evaluated in Ghana using the CAMEL Rating System and the outcome of the investigation showed that not all the measuring variables affect DT-SACCOs efficiency (Ansah, 2015).

In Kenya, DT-SACCOs have rapidly extended their services thereby making them more popular in the country. Generally, DT-SACCOs are formed to protect the interest of its members in the areas of difficulties faced by them in Kenya (Kariuki, Muturi & Ngugi, 2016). The members of these societies come together to collectively save and get loanable funds from the co-operative where their resources are saved. In most cases, the services are extensive when compared to formal financial institutions as they are comprised of people who share common interests. Sacco communities are people-founded establishments fixated on gathering the monetary desires of their fellows for both private and creativity expansion. Sacco societies play an essential function in the Kenyan economic division especially when it comes to mobilization of reserves, access as well as creating abundance (KFSSR, 2011). DT-SACCOs have a lower cost structure of administration and funding due to their small savings structure (Ochingo & Muturi, 2018). Majorly, DT-SACCOs goals are for its members' welfare via credit facilities disbursement for a specified duration of time.

DT-SACCOs have witnessed an influx of people recently. However, Ochingo and Muturi (2018) noted that DT-SACCOs are capable of mobilizing 200 billion Ksh in savings constituting 30% of the country's domestic savings, 45% of gross domestic product, and have assets worth over 210 billion Ksh. DT-SACCOs in Kenya have also witnessed an increase in demand for loans but have been cautious about their customers' requests (Nguta & Guyo, 2013). With an estimated capital share and deposit of over US$1.66 billion and credit selection of over US$1.24 billion, the Kenyan SACCO sector is considered the biggest in Africa (Katula & Kiriinya, 2018). The Kenyan DT-SACCOs constitutes significantly to the total financial industry and economic growth and development of Kenya.

Firm characteristics are domestically innate characteristics of businesses that improve how financial operations are conducted to reach specific goals. A firm's performance level is determined by its characteristics' efficiency and effectiveness (Ngungu & Abdul, 2020). Firm performances are domestic factors within DT-SACCOs management control (Kamande, 2017). Distinct from macroeconomic/external factors, DT-SACCO performances are particular to a specific DT-SACCO. DT-SACCO performances include factors such as DT-SACCO size, capital adequacy, liquidity, asset quality, portfolio composition, and efficiency in management among others. Nevertheless, for this research, DT-SACCO capital adequacy, size, and liquidity were employed as DT-SACCOs performances.

1.2 Statement of the Problem

Loan performance is critical in general and important to stakeholders and shareholders because, on one hand, it is a crucial funding mechanism for business operations, thereby assisting in the continuation of the business and increasing its benefit, and then on the other hand, it is the cornerstone for spreading investment returns, which may attract investors (and their funds). Globally, SACCO societies play a significant function in credit and savings mobilization in any economy of the world. A proficient and capable SACCO industry in any economy is anticipated to help curtail the hardship of members and smoothen the cycles of businesses (Azizi & Sarkani, 2014; Obamuyi, 2013). DT-SACCOs institutions over the past years in African emergent countries have witnessed a decline in their loan performance resulting from the mismanagement of firm characteristics by DT-SACCOs. In practice, DT-SACCOs in Kenya face loan performance problems ranging from loan default and other internal factors (Republic of Kenya, 2013).

Although DT-SACCOs growth has been impressive in Kenya, the loan performance of the societies has remained unacceptably low despite significant initiatives of the government to facilitate its loan performance via legislative enactment. However, in spite of the government effort, 3457 representing 51% of DT-SACCOs were non-operational due to low performance of loans (SASRA, 2019). This high rate of DT-SACCOs failure has continually retard vision 2030—as the ratio of non-performing loans to total loans has continually increased annually thus limiting the achievement of the

Sustainable Development Goals (SDGs) goal of increasing financial inclusion (Essendi, 2013). Similarly, the failures of SACCOs are linked to high rates of nonperforming loans. This is because Sacco's like any other financial institution such as banks face default risk which is recognized as one of the major risk factors that banks and other financial institutions face. Alexandra (2006) states that the performance of SACCOs societies depends on the quality of the portfolio it holds. In support, Fredrick, Robert, and Otuya (2013) stated that SACCO's sustainability and level of advancement depend on the resurgence of its loan selection. Therefore, sustaining low-level NPLs among DT-SACCOs institutions is considered important for its continued existence and expansion. The DT-SACCOs in Kenya are characterized by high loan defaults. DT-SACCOs advances and loan advances represent a large share of the total assets, amounting to 73.42 percent of assets aggregate sums up to Kshs 251.08 billion as of 2015 compared to Kshs 288.92 Billion in 2016. The increment constituted 15.1% of the year-on-year rate of growth. They also witnessed gross loans of Kshs 258.18 Billion in 2015 down from Kshs 297.6 Billion in 2016, constituting a 15.3% year-on-year rate of growth (SASRA, 2016). SACCOs in 2018 and 2019 recorded major declines in loan performance of Kshs900 billion and Kshs 800 billion respectively (SASRA, 2019).

Studies such as Sathyamoorthi, Mbekomize, Radikoko, and Wally-Dima (2016) established a significant association between the capital employed ratio and net profit ratio, indicating that the net profit ratio was the primary factor in determining the return on capital employed in Botswana. Shibutse, Kalunda, and Achoki (2019) found that Kenya's Deposit Taking Savings and Credit Cooperative Societies' financial performance was significantly and positively affected by liquidity and dividend payout. Oyango (2018); Ng'eno (2019); Mulinge (2016); and Njeru (2016) have focused on the financial performance of SACCOs and DT-SACCOs in Kenya respectively. The studies on DT-SACCOs' financial performance in Kenya considered the effect of external factors (macroeconomic factors) and not firm characteristics (internal factors) on loan performance. This research sought to address this difference by instituting how firm characteristics impact on loan performance of SACCOs that take deposits in Kenyan Nairobi City County. Other studies have focused on both internal and external factors that affected the financial performance of DT-SACCOs in Kenya; however, the focus of this investigation was on DT-SACCOs located in Nairobi City County which has different performances from other Counties in Kenya. This implies that this location provided unique performances for the concentration of many SACCOs thus, a necessity for the investigation into the effect of firm size, capital adequacy, and asset quality on DT-SACCOs' loan performance in Nairobi City County, Kenya.

1.3 Objectives of the Study

The research objectives were drawn from the problem discussed above thus, giving rise to the emergence of the general and specific objectives which the investigation sought to have achieved.

1.3.1 General Objective

To establish the effects of firm characteristics on the loan performance of Kenyan deposit-taking SACCOs in Nairobi City County.

1.3.2 Specific Objectives

i. To establish the effect of firm size effect on loan performance of Kenyan deposit-taking SACCOs in Nairobi City County.

ii. To evaluate the effect of capital adequacy on loan performance of Kenyan deposit-taking SACCOs in Nairobi City County.

iii. To determine the effect of liquidity on loan performance of deposit-taking SACCOs in Nairobi City County

2. THEORETICAL REVIEW

2.1 Theoretical Review

2.1.1 Credit Default Theory

The proponent of this Credit Default Theory was Sy (2007). The theory states that loan default affects the financial performance of firms. In such a situation, default has an indirect relationship with the financial performance of firms. Having experienced the credit market crisis and current mortgage of the non-payment theories have failed to connect causes straight to default effect and are incapable of evaluating credit risk ever-changing environment of the market. Credit Default Theory describes the systemic lending risk and how such can be dynamically managed to ensure financial system stability. However, credit default is experienced as a result of insolvency and delinquency (Sy, 2007). Credit default rotates on the delinquency concept. The occurrence of delinquency arises from the inability of borrowers to meet

up with loan repayment date when due which is usually caused by failure of liquidity. The negative equity status caused by the termination of the loan and anticipated loss by the lender is triggered by delinquency via solvency assessment.

The risk of default is associated with loan serviceability which arises from that serviceability varies with time due to variations in every condition and variations in the economic milieu. However, a loan that may be seen as easily serviceable may turn out to be a struggling one due to unexpected adverse developments. This theory is important to this research in the sense that, it relates the performance of firms' loans to borrowers' default. Therefore, the ability of an individual to repay his/her loan affects the performance of the DT-SACCOs loans which may in turn affects the DT-SACCOs profitability and hence, its application to the study.

2.1.2 Information Asymmetry Theory

Akerlof (1970) propounded the Asymmetry Information Hypothesis. The theory suggests that information asymmetric happens when one transactional party in a contractual connection possesses more information than the other party. Literature on this considers the differences in the availability of information to both parties (Mishkin, 1992). Credit worthiness of borrowers is questioned as lenders rendering credit facilities to borrowers' are confronted with loan repayment uncertainty thereby making it complex to ascertain the characteristics of the borrowers (Ariccia, 1998). Adverse selection and moral hazard issues are problems associated with information asymmetries as described by Akerlof (1970).

The lenders' inability to differentiate between bad and good borrowers, all pay the same normal interest rate that reveals their combined Enterprises (Evans *et al*., 2000; Catro, 2013). Nevertheless, when the value is high that quality loanees cannot afford, it sends them out of the market thereby pressuring borrowers to levy high interest on the other incompetent loanee (Barron & Staten, 2008). When lower-quality borrowers are displaced by higher-quality borrowers, it leads to an adverse selection problem which leads to a decline in the entire bank loan portfolio quality and accretion of non-performing loans (Bofondi & Ropele, 2011; Makri *et al*., 2014).

The theory was considered significant to the research as it stresses the need for the discrepancy in lenders' and borrowers' information which leads to adverse selection problems and thus, loan performance of DT-SACCOs. Therefore, there is a need for authorities saddled with of DT-SACCOs regulation to make certain stringent measures that would enhance equitable dissemination of information to both parties to boost DT-SACCOs total assets size through loans.

2.1.3 Capital Buffer Theory

The proponent of this theory was Calem and Rob (1996). The theory is of the view that institutions possess the tendency towards raise in capital as soon as one attains the minimum prerequisite of regulating capital which is aimed at saving costs that could result from infringement of the predetermined level of capital. Rob and Calem (1999) asserted that consequences and fines emanate from breaches in regulatory provisions. As a result, financial institutions are expected to grasp up capital which has a surfeit of the bound predetermined, the rationale for which is to lessen the likelihood of never reaching the obligations of capital. Lending institutions experienced a U-shaped link flanked by capital and risk-taking. Bigger risks are shouldered by institutions with lower capitalization propensity due to the fact that bankruptcy anticipation can be passed on to insurance companies. Conversely, higher capitalization lending institutions are tied up to risky investment in view that profitability will be high, aimed at continuous capital utilization (Rime, 2001).

Protective, promotional, operational, and regulatory functions are buffer capital execution Heider and Gropp (2009). Stakeholders' expectations are met via promotional that comes from institutions' undertakings which symbolize a cogged in terms of supporting an extensive capital enlargement. While ensuring that there is reliability and continuity in business, the protective function is demonstrated via the competency to guard against unanticipated losses. The violation requirement is guaranteed via executives who ensure that the capital being held is substantial to shield against costs (Volkov, 2010). This facilitates the intermediation of the funds by the DT-SACCOs towards lowering the risk associated with members' default in the repayment of loans.

DT-SACCOs require a minimum capital amount that would provide sufficient capital for the performance of daily transactional activities to help in the absorption of loss that could arise in the course of the business transaction. Such capital is normally raised from the deposits of the members. An increase in the deposits of the member of the DT-SACCOs would boost the absorptive capacity of the DT-SACCOs thus, curtailing the problem of adverse selection amongst the DT-SACCOs. The relevance of the theory can be seen in the capital adequacy of DT-SACCOs in ensuring that non-performing loans effects are cushioned.

2.2 Empirical Review

2.2.1 Capital Adequacy and Loan Performance

On non-performing loans at Indonesian commercial banks, Ruslim and Bengawan (2019) examined how effective CAR, LDR, and inefficiency perform. Out of the 45 banks, only 41 banks were qualified in the study sample. From 2016 to 2018, a total of 123 data were observed. Using secondary panel data, Eviews 9.0 version was utilized to run multiple linear analyses of panel data. The outcome demonstrated that CAR, LDR, and inefficiency had simultaneous effects on NPL. CAR partially displayed a poor result, although it had an insignificant effect on NPL. Nonetheless, LDR and inefficiency positively affected NPL in a significant manner. Although the study was conducted in Indonesia, firm size was ignored as one of the significant factors that affect NPL. The study was conducted under the context of commercial banks with this centered on DT-SACCOs in Kenya.

Yulianti, Aliamin, and Ibrahim (2018) examined the relationship between bank size and nonperforming loans in Indonesian public banks during the years 2012 to 2016. The financial statements released by Bank Indonesia were the data sources. The final samples for this investigation, which included 81 samples, were collected using a purposeful sampling technique. Tested hypotheses were through multiple linear regression frameworks with panel data. The findings demonstrated that nonperforming loans are influenced by bank size, capital adequacy ratio, and loan-to-deposit ratio at the same time. The ratio of capital adequacy positively affected non-performing loans whereas the ratio of loan to deposit and bank size provided negative effects. DT-SACCOs in Kenya were the study's foundation with public banks in Indonesia as the context for the former study. Moreso, the former isolated the critical role of liquidity in the performance of loans which this study considered.

In Kenya, Oyango (2018) examine the capital adequacy effect on DT- SACCOs in Meru County. This investigation engaged a non-experimental method where the panel date analytical technique had been utilized. Outcomes of the investigation showed that the principal capital ratio to over-all assets and principal capital to overall deposit proportion both have an inverse connection with return on resources with core capital to total deposit ratio being statistically insignificant. On the other hand, institutional capital to over-all assets ratio and size demonstrated a significant positive effect on the assets return of SACCOs taking deposits. The examination centered on Deposit-Taking SACCOs in Meru County while this evaluation focused on DT-SACCOs in Nairobi City County, Kenya.

Ng'eno (2019) recognized the link flanked by adequate capital frame and financial performance of Kenyans DT-SACCOs. An evocative survey plan was engaged on 111 deposit-taking SACCOs. The study adopted correlational and regression techniques of analysis. Empirically, it was established that credit management, internal financing, risk management, managerial capability, and portfolio selection had a direct effect on DT-SACCOs' financial performance in Kenya. Also, it was revealed that external financing showed an inverse effect on SACCOs taking deposits' financial performance. The investigation focused on DT-SACCOs in Kenya whereas this study centered on DT-SACCOs in Kenyan Nairobi City County. Furthermore, variables employed in the study were credit management, internal financing, risk management, managerial capability, and portfolio selection, whereby the parameters employed in this examination included capital adequacy, firm size, and liquidity.

2.2.2 Firm Size and Loan Performance

In Kenya, Oyango (2018) examined the capital adequacy effect on Meru County Deposit-Taking SACCOS. This investigation utilized a non-experimental strategy where a panel date analytical technique had been utilized. The outcome of the investigation showed considering the main capital ratio to over-all assets also the main capital to over-all credit ratio both had an inverse relationship with return on assets with core capital to total deposit ratio being statistically insignificant. On the other hand, institutional capital to total assets ratio and size demonstrated an important positive effect on the assets return of deposit-taking SACCOs. The concentration was on Meru County SACCOs taking deposits in Kenya while this examination focused on SACCOs in Nairobi City County, Kenya.

Under Kenyan banks' non-performing loans, Ngungu & Abdul (2020) considered the connection of firm characteristics with loans. A causal design approach was utilized. Banks operational from 2013 to 2017 amounting to 40 were the target units. Censusly the banks' audited financial statements were used. All diagnostic tests associated with OLS were p performed. Descriptive analysis and panel regression analysis analyzed the data. The results suggest in terms of capital adequacy, noted that capital adequacy positively predicted the commercial banks' non-performing loans. The finding was that the levels of capital adequacy had a notable amount of effect on NPL held by Kenyan commercial banks. It was

disclosed that NPLs were significantly impacted by size. The non-performing loans level at Kenyan commercial banks was shown to be significantly influenced by bank size. The amount of loans that banks distribute increases with their size, which results in higher levels of NPL. The ability of large banks to make many sorts of loans, including government, retail, corporate, and digital lending, results in several types of exposure. Whereas the study was conducted on commercial banks, DT-SACCOs were used for the examination of firm characteristics' effect on loan performance.

The goal of Long, Yen & Long (2020) was to determine what influences the Non-Performing Loans (NPLs) of Vietnamese commercial banks. Data was gathered from 2008 to 2017 to address the research issue. Using a panel of 200 observations, this study employed a fixed-effects model and compared it to a random-effects model. The strongly fixed-effects model's findings showed that interest rate, capital structure, and lag of the prior year all had a positive effect on NPLs. Additionally, it was discovered that returns on assets, the rate of inflation, and credit expansion all had detrimental effects on NPLs. Unfortunately, no consistent patterns in the models for the effects of firm size and GDP were discovered. Although the study was on the determinants of NPL, the study isolated liquidity and firm size which was incorporated in this study.

Shibutse, Kalunda, and Achoki (2019) determined two capital structure determinants effect (firm size and leverage) on Kenyan Deposit-Taking SACCOs' financial performance. The examination adopted a mixed design method making use of 174 Deposit Taking SACCOs. The regression technique and describing method of statistics were utilized in analyzing the information. The outcomes of the research exposed that the size of the firm exhibited a substantial direct impact on financial performance, while leverage demonstrated a momentous inverse impact on the financial performance of Kenyan DT- SACCOs. The research focused on leverage and firm size while this study focused on liquidity, firm size, and capital adequacy of Deposit Taking SACCOs.

2.2.3 Liquidity and Loan Performance

Katula and Kiriinya (2018) assessed the connection flanked by loan repayment and SACCO's financial performance in Embu County, Kenya. The investigation made use of 158 sample sizes where multiple regression techniques were adopted. Findings revealed that a statistically significant positive relationship exists between loan interest rates, loan appraisal, customer characteristics, and loan transcribe dealings and DT-SACCO's financial performances in Kenyan Embu County. While the examination centered on loan repayment of SACCOs, this focused on the loan performance of DT-SACCOs in Kenya.

In Botswana, Sathyamoorthi, Mbekomize, Radikoko, and Wally-Dima (2016) analyzed selected SACCOs' financial performance for the period 2008 and 2012. Descriptive, correlation and regression analysis was employed. Findings emphasized that nine (9) SACCOs selected obtained good financial outcomes and were in a strong financial position. Also, a significant link flanked by Capital Employed Ratio and Net Profit ratio to enlighten that Net Profit Ratio was the fundamental interpreter of Capital Employed Return. Financial status and income growth were witnessed in the analysis by the size analysis of the selected SACCOs. SACCOs Societies' capital structures were characterized by a substantial share of domestic funds. This study was different because it was based on Deposit Taking SACCOs in Kenya, thereby providing results specifically for Kenya. Also, the population size of the study by Sathyamoorthi*et al.* (2016) was 9, while this study used 40 SACCOs.

3. RESEARCH METHODOLOGY

3.1 Research Methodology

3.2 Research Design

In the investigation the design employed was explanatory. This design illustrates the interaction or cause-and-effect relationship that subsists between the explanatory and dependent variables (Kothari, 2003). Additionally, explanatory design studies ascertain the interaction between variables. Saunders *et al.* (2007) stressed the need for studying the condition or issues for the explanation of variables interactions. Therefore, an explanatory research plan had been suitable for this research as it attempted to ascertain firm characteristics' effect on the loan performance of Kenyan DT-SACCOs in Nairobi City County.

3.3 Target Population

It is stated that a populace is the assortment of items, constituents, and persons from which inference is drawn from the study sample (Cooper and Schindler, 2012). Populace target of the research consist of every DT SACCOS operating in Nairobi City County since 2015 and 2020, and they are 40 (SASRA, 2020). The choice of this period is attributed to the influx of DT-SACCOs in the country due to the growing demand of these societies to raise members' standard of living

through loan issuance. Therefore, published financial statements of registered 40 DT SACCOs in Kenya comprise the study unit of analysis and observational unit respectively.

3.4 Sampling Design

The investigation employed a census approach that focused on all the 40 DT SACCOs in Nairobi City County operating from 2015 to 2020. The census technique was employed in studies where the inhabitants are relatively undersized or when it is rational to include the whole study population (Mugenda & Mugenda, 2003). Additionally, Kothari (2011) alluded that census sampling usage eradicates the probability of type I as well as II errors in a study, furthermore, It improves the dependability of documentation obtained.

3.5 Empirical Model

A panel regression model was analyzed in this research since the study employed panel data. The formulation of this model was informed by empirical literature and the study's theoretical frameworks. Therefore, loan performance was specified as a function of capital adequacy, firm size as well as liquidity.

$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_{it}$

Where:

Y_{it} – Loan Performance

β_0 – Constant

X_{1it} – Firm Size

X_{2it} – Capital Adequacy

X_{3it} – Liquidity

B_1, β_2, β_3 = Coefficient of the regression that measures the magnitude of change in Y resulting from changes in X variable

ε_{it} = Stochastic term which represents omitted variables in the model

4. RESEARCH FINDINGS AND DISCUSSIONS

4.1 Research Findings And Discussions

4.2 Descriptive Statistics

The study's data characteristics are presented in a way that emphasizes how measures of central tendency and dispersion were applied to establish the parameters of the data. Table 4.1 provides a summary of the descriptive statistics.

Table 4.1 Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Loan Performance	256	0.93189	6.19301	0	67.22669
Firm Size	256	21.57405	1.70933	-14.14346	24.77998
Capital Adequacy	256	0.14213	0.10913	-0.81738	0.716538
Liquidity	256	0.12313	0.09631	-0.03176	0.534039

Source: Study Data (2022)

Loan performance had a mean of 0.9318 and a standard deviation of 6.1930, according to the descriptive data in Table 4.1. The average score for loan performance is between 0 and 67.2266, with 0 being the minimum and 67.2266 being the maximum value. This signifies that loan performance showed a high discrepancy from one deposit-taking savings and credit cooperative society to the other in Kenya. Consequently, the performance of loans by these deposit-taking savings and credit cooperative societies varies on a standard percentage of 6.19% in Kenya. The deposit-taking savings and credit cooperative societies' average score for firm size were 21.5740, and the corresponding standard deviation was 1.7093. -14.1434 and 24.7799 were the variable's minimum and maximum values. From the outcome, it can be said that the size of the deposit-taking savings and credit cooperative societies does not differ significantly from one another in Kenya as indicated by the standard deviation value 1.70%.

Capital adequacy had a mean value of 0.1421 and a standard deviation of 0.1091, respectively. As a result, the minimum value for capital adequacy was reported to be -0.8173, and the maximum value was reported to be 0.7165. Following the value of the standard deviation, it is worthy of note to imply that deposit-taking savings and credit cooperative societies in Kenya have adequate capital which does not vary significantly from each other. This could be attributed to the

membership of the different deposit-taking savings and credit cooperative societies in Kenya thereby limiting their capital. In accordance with the findings, liquidity had a mean value of 0.1231 and a standard deviation of 0.0963. The outcome indicated that the mean and standard deviation values fall between the range of -0.0317 and 0.5340. This implies that the liquidity of the deposit-taking savings and credit cooperative societies insignificantly vary from each other given the value of the standard deviation of 0.09%.

4.3 Model Specification Test

In a study using panel regression analysis, the test for random and fixed effect models is carried out to determine which model is most suitable for analysis. This is done to choose the best model for estimating the variables' parameters. Therefore, the Hausman Test was conducted to estimate to determine which of the model best fit the data between the fixed and random effect parameters. The test noted that the random effect model is appropriate against the random model as the null and alternative hypotheses respectively. The result of the Hausman test is presented in Table 4.2.

Table 4.2: Model Specification Results

	(b)	(B)	(b-B)	Sqrt (diag(V_b-V_B))
	Fixed	Random	Difference	S.E.
Firm Size	0.6284149	-1.751127	2.379542	1.353526
Capital Adequacy	7.448694	5.490896	1.957798	2.069996
Liquidity	8.614323	8.732801	-0.1184779	3.888155
chi2(3)	4.42			
Prob>chi2	0.2199			

Source: Study Data (2022)

The results of the Hausman test are presented in Table 4.2, which shows that the null hypothesis is supported. In light of this, the random effect model is purportedly preferred over the fixed effect model. The Hausman test produced a prob > chi2 value of 0.2199, which is greater than the p-value, with a 5% (0.05) threshold of significance. It is therefore crucial that the research adopt the robust random effect regression model.

4.4 Regression Analysis

According to the findings of the diagnostic tests, the data set exhibited the following traits: First, the data series did not deviate from the assumptions of the traditional OLS multiple linear regression, and second, all variables were stationary and hence integrated of order *I*(0). The study hypotheses were assessed at a 5% level of significance, and the results are shown in Table 4.3.

Table 4.3: Regression Results

Loan Performance	Coef.	Robust Std. Err.	Z	P>|z|	[95% Conf.	Interval]
Firm Size	-1.751127	0.7603445	-2.30	0.021	-3.241375	-0.2608794
Capital Adequacy	5.490896	5.174175	1.06	0.289	-4.650301	15.63209
Liquidity	8.732801	7.008826	1.25	0.213	-5.004246	22.46985
_cons	36.77008	15.97459	2.30	0.021	5.460458	68.0797
R^2 = 0.2985						
Wald chi2 (3) = 20.22						
Prob> chi2 = 0.0002						

Source: Study Data (2022)

Following the stated regression equation in chapter three, the estimated equation which explained the effect of the explanatory variables on the dependent variable is stated as thus.

$Y_{it} = 36.77008 - 1.751127X_{1it} + 5.490896X_{2it} + 8.732801X_{3it} + \epsilon_{it}$

Where:

Y_{it} – Loan Performance

β_0 - Constant

X_{1it} – Firm Size

X_{2it} – Capital Adequacy

X_{3it} – Liquidity

The overall R-squared of 0.2985 was found from the outcome of the results. This means that firm characteristics (firm size, capital adequacy, and liquidity) explained the performance of loans of DT-SACCOs in Kenya changes to the tune of 29.85%. Because the model's explanatory power (R-squared) is poor, it is possible that the dependent variable is affected significantly by other noisy, highly variable variables or data. In other words, even if the data points vary from the regression line, the regressors still convey information about the response of the dependent variable. The model had an F statistics value of 20.22 and a p-value of 0.0002 implying the significance of the model. This means that the effect of firm characteristics is significant on DT-SACCOs performance of loans in Kenya. Where there is the absence of firm characteristic components used in the study, the value of DT-SACCOS loan performance in Kenya would be positive (36.77008).

4.5 Hypotheses Testing

4.5.1: Effect of Firm Size on Loan Performance of DT-SACCOsin Nairobi City County, Kenya

The study sought to examine the impact of firm size on loan performances of deposit-taking savings and credit cooperative societies in Kenya. In view of this, the null hypothesis which states that firm size has no significant effect on loan performance of deposit-taking savings and credit cooperative societies in Kenya was rejected at 0.05 significance level. A firm's size significantly affects how well deposit-taking savings and credit cooperative societies in Kenya perform when making loans. The results demonstrated that firm size had a negative and significant impact on loan performance. Nevertheless, deposit-taking savings and credit cooperative societies in Kenya were not significantly impacted by firm size. The result may be credited to the stringent steps implemented by deposit-taking savings and credit cooperative societies to recover their loans from clients, consequently improving the performance of loans in Kenya. The research backs up Ngungu and Abdul (2020) observation that the size of the firm had a substantial impact on nonperforming loans.

4.5.2 Effect of Capital Adequacy on Loan Performance of DT-SACCOS in Nairobi City County, Kenya

In Kenya, deposit-taking savings and credit cooperative societies' lending performance was studied in relation to capital adequacy. At the 5% level of significance, the null hypothesis—which claims that capital sufficiency has no appreciable effect on loan performance of deposit-taking savings and credit cooperative societies in Kenya—was accepted. Research suggests that deposit-taking savings and credit cooperative societies in Kenya's loan performance were positively and insignificantly affected by capital adequacy. The findings may be related to the deposit-taking savings and credit cooperative societies in Kenya's absence of strict capital adequacy regulations, which have been found to enhance loan performance rates in the region. The outcomes confirmed what Ruslim and Bengawan (2019) had noted, namely that CAR has a negligible impact on NPL. Malimi (2017) discovered that the impact of capital sufficiency and profitability on non-performing loans was minimal. The capital adequacy ratio was found to have a favorable impact on non-performing loans by Yulianti, Aliamin , and Ibrahim (2018).

4.5.3: Effect of Liquidity on Loan Performance of DT-SACCOS in Nairobi City County, Kenya

The null hypothesis was accepted in keeping with the study's goal, which was to assess the effect of liquidity on loan performance of deposit-taking savings and credit cooperative societies in Kenya. This indicates that, at the 5% level of significance, liquidity has no significant effect on the lending performance of deposit-taking savings and credit cooperative societies in Kenya. The probability values of 0.213 > 0.05 support this. As a result, the performance of loans made by deposit-taking savings and credit cooperative societies in Kenya was positively and marginally affected by liquidity. Hence, the performance of loans made by deposit-taking savings and credit cooperative organizations in Kenya is not predicted by liquidity. The results may be explained by DT-strong SACCOS's liquidity, which encourages their willingness to issue loans and raises their loan performance rate in Kenya. The research's findings are conflicting. At Nigerian deposit money banks, Taiwo and Mike (2021) discovered a negative and significant link between Non-Performing Loans (NPL) and Gross Domestic Product (GDP). The circumstances in which the research was conducted may be responsible for the varied study results. The many study locations each have distinctive characteristics that cause the studies to produce a range of outcomes that are contradictory with the most recent findings.

5. CONCLUSION

5.1 Conclusion

The evaluation of the firm characteristics effects on DT-SACCOs' loan performance in Kenya was accompanied by various conclusions based on the outcomes of the study. The study discovered that the DT-SACCOs' loan performance was significantly affected by firm size. The study concluded that firm size serves as a spring-boat in the determination of

the DT-SACCOs' loan performance. Therefore, the management of the DT-SACCOs size is crucial to loan performance as it makes it easier to effectively recover loans from its customers. The study's findings also revealed that DT-SACCOs' loan performance was not greatly affected by capital adequacy. Conclusively, capital adequacy does not play a notable role in the DT-SACCOs' loan performance. The research findings also indicated that liquidity had no significant effect on DT-SACCOs' loan performance. The study came to the conclusion that the liquidity effect on DT-SACCOs' loan performance is minimal. Thus, changes in liquidity do not affect the DT-SACCOs' loan performance in Kenya.

5.2 Policy Recommendations

The research suggestions were made based on the findings of the study. Firm size had an inverse and significant effect on DT-SACCOs' loan performance in Kenya. Therefore, the research recommends that the management of DT-SACCOs should devise a means of increasing the size of their investment as well as assessing the repayment ability of customers to improve their loan performance in Kenya.

Capital adequacy positively and insignificantly affected the DT-SACCOs' loan performance in Kenya. As such, the managers of DT-SACCOs should effectively implement capital adequacy regulations to ensure their buffers can meet the loan needs of their customers in Kenya. This would enhance the capital base of the SACCOs thus, improve the DT-SACCOs' loan performance.

Findings observed that liquidity positively and insignificantly affected DT-SACCOs' loan performance in Kenya. To this effect, the study recommends that the managers of DT-SACCOs ought to monitor the amount of liquidity used in loaning out to customers to reduce the rate at which loans are being delayed in the event of repayment thus, increasing their performance positively.

5.3 Suggestion for Further Research

The study offered a report on the investigation of how firm characteristics affect DT-SACCOs' loan performance in Kenya. Suggestions for additional research are concentrated on the particular study findings. Firm characteristics were limited to only three; however, more characteristics of the firm can be added to determine their effect on DT-SACCOs' loan performance in Kenya.

The study also revealed that capital adequacy and liquidity had an insignificant impact on the DT-SACCOs' loan performance in Nairobi City County, Kenya. Further investigation can be carried out to determine the significance of these variables using different techniques of analysis. Additional research can be conducted using a wider time frame and different contexts.

REFERENCES

[1] Akerlof, G. A.(1970). The Market for "Lemons": Quality Uncertainty and the Market Mechanism. *The Quarterly Journal of Economics*, 84(3), 488-500

[2] Ariccia, G. D. (1998). Asymmetric Information and the Market Structure of Banking Industry, *IMF Working Papers WP/98/92*, International Monetary Fund, Research Department.

[3] Barron, J. M. & Staten, M. E. (2008). The Emergence of Captive Finance Companies and Risk Segmentation in Loan Markets: Theory and Evidence. *Journal of Money, Credit and Banking, 40*, 173-192.

[4] Bofondi, M. &Ropele, T. (2011). Macroeconomic determinants of bad loans: evidence from Italian banks. Occasional Papers, 89.

[5] Evans, O., Leone, A. M., Gill, M., and Hilbers, P. (2000). Macroprudential Indicators of Financial System Soundness, International Monetary Fund, Washington DC, April, 2000.

[6] Kariuki, P.W., Muturi, W. M., & Ngugi, P.K., (2016). Asset Quality and Intermediation Efficiency: A Study of Deposit Taking Saving and Credit Cooperative Societies in Kenya. *Journal of Emerging Issues in Economics, Finance and Banking*, *5*(2), 1843-1859.

[7] Katula, R. &Kiriinya, S. (2018).Loan Repayment and Financial Performance of Deposit Taking Savings and Credit Cooperative Societies in Embu County, Kenya. *International Journal of Current Aspects in Finance, 4*(2), 102- 118.

[8] Long, V. M., Yen, N. T., & Long, P. D. (2020). Factors affecting Non-Performing Loans (NPLs) of banks: The case of Vietnam. *Ho chi minh city open university journal of science-economics and business administration*, *10*(2), 83-93.

[9] Makri, V., Tsagkanos, A. &Bellas, A. (2014). Determinants of Non-Performing Loans: The Case of Eurozone. *Panoeconomicus*, 2, 193-206.

[10] Malimi, K. (2017). The influence of capital adequacy, profitability, and loan growth on non-performing loans a case of Tanzanian banking sector. *International Journal of Economics, Business and Management Studies*, *4*(1), 38-49.

[11] Mishkin, F. S. (1992). Anatomy of a financial crisis. *Journal of Evolutionary Economics*, 2(2), 115–130

[12] Ngungu, W. N., & Abdul, F. (2020). Firm Characteristics and Non-Performing Loans of Commercial Banks in Kenya. *Journal of Finance and Accounting*, *4*(2).

[13] Nguta, M.H. & Guyo, H.S, (2013). Factors Influencing loan repayment Default in Microfinance Institutions. The experience of Imenti North District, Kenya. *International Journal of Applied Sciences and technology, 4*(2), 2-15

[14] Ochingo, M. A. & Muturi, W. M. (2018). Effect of firm characteristics on financial performance of savings and credit cooperatives society in Kenya. *The Strategic Journal of Business & Change Management*, *5*(1), 769 – 784.

[15] Ozili, P, K. (2017). Non-Performing Loans and Financial Development: New Evidence, University of Essex Working Paper. Available at SSRN

[16] Rime, B., (2001). Capital requirements and bank behaviour: Empirical evidence for Switzerland. *Journal of Banking & Finance*, *25*(5), 789-805.

[17] Ruslim, H., & Bengawan, C. H. (2019). The Effect of Capital Aset and Liability Ratio on Non-Performing Loan. *JurnalAkuntansi*, *23*(3), 433-448.

[18] Shibutse, R. Kalunda, E. &Achoki, G. (2019).Effect of leverage and firm size on financial performance of deposit taking savings and credit cooperatives in Kenya. *International Journal of Research in Business and Social Science*, *8*(5), 182-193.

[19] Yulianti, E., Aliamin, A., & Ibrahim, R. (2018). The effect of capital adequacy and bank size on non-performing loans in Indonesian public banks. *Journal of Accounting Research, Organization and Economics*, *1*(2), 205-214.