

**EFFECT OF DIVERSIFICATION STRATEGIES ON FINANCIAL
PERFORMANCE OF DEPOSIT TAKING SAVINGS AND
CREDIT COOPERATIVE SOCIETIES IN NAIROBI COUNTY,
KENYA**

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DECLARATION

I, the undersigned, declare that this is my original work and has not been presented to any institution or university other than the University of Nairobi for examination.

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This research project has been submitted for examination with my approval as the University Supervisor.

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DEDICATION

This research project is dedicated to my family for their support as well as understanding when I had to be out of the house to go and study.

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LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
DT-SACCO	Deposit Taking Savings and Credit Cooperative
FP	Financial Performance
GDP	Gross Domestic Product
HHI	Herfindahl-Hirschman Index
MPT	Modern Portfolio Theory
NIM	Net Interest Margin
NSE	Nairobi Securities Exchange
ROA	Return on Assets
SACCOs	Savings and Credit Cooperative societies
SASRA	Sacco Societies Regulatory Authority
SME	Small and Medium Enterprises
SPSS	Statistical Package for Social Sciences

ABSTRACT

Theories, for example the modern portfolio theory, the agency theory and the resource based theory suggest that diversification has a close relation to the financial performance of the diversifying institution. The modern portfolio theory suggests that diversification improves returns while controlling risk. The agency theory confirms that performance and diversification have a relation which is dependent on the principal-agent relationship in the organization. The intent was to determine how diversification impacts performance of DT-SACCOs in Nairobi County. The population included 43 DT-SACCOs in the County. The predictor variables were diversification given by Herfindahl Hirschman Index (HHI), management efficiency given by the ratio of total revenue to total assets, age of a firm given by the number of years in existence, firm size by natural log of total assets and liquidity given by liquid assets to total assets. Financial performance was the response variable given by ROA. Secondary data for 5 years was obtained annually. A descriptive cross-sectional design and a regression model were used in analysis. SPSS version 23 was utilized for this function. An R-square value of 0.455 which meant that 45.5 percent changes in performance of DT-SACCOs in Nairobi result from the independent variables was found while 54.5 percent variations were the result of additional factors not considered. The independent variables had a substantial correlation with value($R=0.674$). ANOVA showed that F statistic was substantial at 5% with a $p=0.000$, making the model appropriate. The findings also showed that diversification, liquidity and firm size had positive substantial values in the study. Management efficiency and age of the firm was insignificant to performance. The study recommends the need for DT-SACCOs in Nairobi County, Kenya and other SACCOs in general to diversify their revenue streams as this significantly influences their financial performance.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Over a long period of time, researchers have attempted to interrogate why some organizations achieve higher levels of performance than others. Organizational performance is dependent on many factors among them; the strategy of the firm, structure, resources and capabilities of the firm (Marcia, Otgontsetseg & Hassan, 2014). Diversification strategy among other strategy choices can influence the performance of organizations (Purkayastha, 2013). The diversification decisions that a firm makes is vital in firm's efficiency hence making it effective in achieving its goals. For a firm to be competitive and efficient it has to make diversification decisions key to the business administration (Virlics, 2013). Loof and Heshmati (2008) argue that diversification affects Financial Performance (FP) of firms positively and significantly.

This study drew support from a number of theories for example the modern portfolio theory, agency theory and the resource based view theory that have attempted to elaborate the relationships between diversification and FP. The modern portfolio theory by Markowitz (1952) encourages diversification to mitigate the risk from the market as well as those risks that are attributable specifically to one company in regards to expected returns. The agency theory by Jensen and Meckling (1976) recognizes that the benefits of revenue diversification are variant, partly, due to the agency issues within the firms. The managers may diversify out of their own interests and not those of the shareholders. The Resource Based View (RBV) by Wernerfelt (1984) stated that resources aid a firm in being competitive by promoting

diversification and thus firms should find ways of identifying and using resources to develop and maintain competitive advantage that will improve performance.

The deposit-taking SACCOs in Kenya have been practicing diversification strategy in a bid to achieve efficiency in operations and maximizing returns for the members. The deposit-taking SACCOs have mostly invested in real estate, shares, government securities and fixed deposits and therefore the need to conduct an empirical study investigating whether these investments have a significant influence on their efficiency. While undertaking all these investments, managers should ensure safety and good returns for their money (Auka & Mwangi, 2013).

1.1.1 Diversification Strategy

Diversification is the entry of a firm into new business lines either by internal growth and development or merger and acquisition, entailing change of the organization's systems and its administrative structure (Ramanujam & Varadarajan, 1989). The best definition of diversification strategy is a firm entering into a new market or introducing a new product or service that is different from its current activities (Anil & Yigit, 2011). Baele, Jonghe and Vennet (2006) posits that diversification of income involves generating income from a variety of activities which are distinct from each other which essentially involves the shifting of reliance from interest income associated with conventional intermediary activities to more innovative non-interest income earning activities. The innovative non-interest income earning activities helps the firm to diversify their risk and also perform better financially (Doumpos, Gaganis & Pasiouras, 2013).

The benefits of diversification include; greater market power, risk minimization, larger internal capital markets and scope economies (Jangili & Kumar, 2010).

Diversification enables firms to utilize their idle resources in new activities leading to economies of scope. Furthermore, diversification allows firms to create and use large internal capital market such as investing funds generated in one venture to expand the other. The assertion is anchored on the notion that inefficiencies caused by information asymmetric in internal capital markets are higher than those of the external capital markets (Asetto, 2014).

According to Stiroh and Rumble (2006), measurement of diversification is done using the Herfindahl-Hirschman Index (HHI) and the Entropy Index that explain the components of net operating income such as interest and non-interest income. HHI views diversification as measure that gives every income source equal exposure. Furthermore it verifies and estimates the range of diversification and localization of the firm's income sources. The HHI is the measurement of banks' and DT-SACCOs diversified income sources such as interest income and non-interest income generating functions. A low Herfindahl-Hirschman Index (HHI) implies that the firm concentrates on a single income source as opposed to diversifying while a high HHI index implies that the company engages in diversification and focuses on both interest and non-interest income.

1.1.2 Financial Performance

This is defined by Almajali, Alamro and Al-Soub (2012) as a firm's ability to achieve the range of set financial goals such as profitability. FP is a degree of the extent to which a firm's financial benchmarks has been achieved or surpassed. It shows the extent at which financial objectives are being accomplished. As outlined by Baba and Nasieku (2016) FP show how a company utilizes assets in the generation of revenues and thus it gives direction to the stakeholder in their decision making. Nzuve (2016)

asserts that the health of the bank industry largely depends on their FP which is used to indicate the strengths and weaknesses of individual banks. Moreover, the government and regulatory agencies are interested on how banks perform for the regulation purposes.

The focus of FP is majorly on items that directly alter the statements of finance or the firm's reports (Omondi & Muturi, 2013). The firm's performance is the main external parties' tool of appraisal (Bonn, 2000). Hence this explains why firm's performance is used as the gauge. The attainment level of the objectives of the firm describes its performance. The results obtained from achieving objectives of a firm both internal and external, is the FP (Lin, 2008). Several names are given to performance, including growth, competitiveness and survival (Nyamita, 2014).

Measurement of FP can be done using a number of ratios, for instance, Net Interest Margin (NIM) and Return on Assets (ROA). This is a measure that shows the capability of the bank to make use of the available assets to make profits (Milinović, 2014). ROA is given by the quotient of operating profit and total asset ratio which is used for calculating earnings from all company's financial resources. On the other hand, NIM measures the spread of the paid out interest to the lenders of banks, for instance, liability accounts, and the interest income that the banks generates in relation to the value of their assets. Dividing the net interest income by total earnings assets expresses the NIM variable (Crook, 2008).

1.1.3 Diversification Strategy and Financial Performance

Theories, for example the modern portfolio theory, the agency theory and the resource based theory suggest that diversification has a close relation to the FP of the diversifying institution. The modern portfolio theory suggests that diversification

improves returns while controlling risk (Brealey, Myers, & Allen, 2013). The agency theory confirms the existence of a relation between performance and diversification that depends on the principal-agent relationship in the organization (Jensen & Meckling, 1976).

According to Perez (2015), the effect that income diversification has on FP remains theoretical and has varying conclusions thereby resulting in scholarly debate. Perez (2015) infers that those commercial banks which do have higher trading assets proportion have with them higher risks. A similar argument is shared by Lins and Servaes (2002) who assert that firms which have more diversified assets tend to have less profit than focus firms. Muñoz and Sanchez (2011), while studying geographical diversification, assert that a negative link exists between firm profitability and its expansion for a greater geographical reach.

On the other hand, Ishak and Napier (2006) argue that diversification does not reduce firm value, but rather, increases its value. Fama (1992) acknowledge that the incremental revenues as a result of diversification are higher for less-capital stocks compared to other asset forms. This is because small-cap stocks experience volatility in their returns and their risk is easily diversified away, as they have low correlations with other assets. Similar views were echoed by Chakrabarti et al., (2007) who stated that diversification improves performance in an environment that is developing. However, they note that diversification is associated with negative performance in highly developed institutional environments. Matsusaka (2001) argues that businesses can undertake diversification if the benefits of pursuing higher organizational exceed the drawbacks

1.1.4 Deposit Taking Savings and Cooperative Societies in Kenya

The Savings and Credit Cooperative societies (SACCOs) are one of the most visible and important societies in Kenya. They are distinct and have unique traits as compared to other cooperatives. Their purpose is to mobilize savings and give credit facilities of their members. Delivering savings and credit is part of financial services. SACCOs are grouped together with financial intermediating cooperatives which are housing cooperatives and investments (SASRA, 2018). The SACCO subsector in Kenya is legal. They are 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 consist of deposit taking SACCOs. There are 176 deposit taking SACCOs in Kenya. 43 are operational in operating in Nairobi (SASRA, 2018).

Deposit-taking SACCOs' financial performance has been affected recently by high competition from similar 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, to be efficiently sound, SACCOs have opted venturing into other investments (Munene, Ndambiri & Wanjohi, 2019). Some of the investments SACCOs have ventured into include real estate, fixed deposits, shares and government securities. However it is not clear which of these diversification decisions lead to desirable financial performance of these SACCOs hence the study.

1.2 Research Problem

Central in the field of finance is performance. The need to explain how two firms operating within the same environment perform differently is a concern and several research works in finance have been devoted towards understanding this mystery. This led to studies which focus on various internal factors as well as external issues thought to be the cause of differing FP. Diversification out of the traditional interest-based activities is conducted with the aim of improving the profitability of the deposit-taking SACCOs where returns from interest-based activities are shrinking. According to Tregenna (2009) the FP of a firm is dependent on the market structure and how the firm diversifies its portfolio in response to emerging market conditions. Stiroh (2004) noted that diversification helps in lowering firms' dependency on a single of income thereby lowering risk adjusted returns and improving the FP.

Deposit-taking SACCOs' inefficiency has been witnessed recently; deposit-taking SACCOs are continually facing high competition from similar 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' efficiency, to be efficiently sound, SACCOs have opted venturing into other investments (Munene, Ndambiri & Wanjohi, 2019). However it is not clear which of these diversification decisions lead to desirable financial performance of these SACCOs hence the study.

In spite of the many empirical studies done in both finance and strategic management, there has not been a consensus on how income diversification and firm performance relate, that is if firms will do better by having a single focus or diversifying into

different areas. McAllister and McManus (2013) also agree that if banks diversify, they may experience lower risks and experience reduced probability of failure; and more so if the returns of assets have relatively low or negative co-variance. Baele, Jonghe and Vennet (2012); Chiarozza, Milani and Salvini (2013); Smith, Staikouras, and Wood (2013) show evidence from European banks that by diversifying sources of income, banks face increased risk-return trade-off. Shawn (2012) posits that developing nations are characterized by fragile financial sectors, volatility in interest rates, investments with high risks and inefficiencies in intermediary processes. The industry is further differentiated in terms structure of ownership, financial liberalization level and accounting treatment of several income sources.

Locally, Abubakar (2017) sought to assess the impact of diversification of income on FP of NSE-listed commercial banks and his conclusion was that income diversification was significantly negatively related with FP. Kitisya and Ndegwa (2017) investigated how income diversification and the FP of Kenyan banks relate and confirmed the existence of a substantial positive relation between the two variables. Nduati (2019) sought to determine how revenue diversification impacts banks' performance in Kenya and concluded that there exist a substantial positive relation while Kebiro (2019) argued that diversification to fixed deposits does not significantly influence efficiency of DT-SACCOS. The lack of consensus among previous researchers is reason enough to conduct further study. Additionally, very few studies have been done in Kenya before on diversification and FP of deposit-taking SACCOs which is the gap the current study seeks to fill by answering; what is the effect of diversification on financial performance of deposit-taking SACCOs in Nairobi County, Kenya?

1.3 Research Objectives

The objective of this study was to determine how diversification impacts financial performance of DT SACCOs in Nairobi County.

1.4 Value of the Study

Findings are critical to other researchers since they will be a reference. Scholars and researchers will also benefit since they will be able to point out study gaps on additional topics, as well as review empirical literature that will expand into other areas of research.

The stakeholders of the cooperatives sector will benefit as this study will generate vital information in management of the industry. These stakeholders include investors, managers in the sector and the legislative authorities in the sector. The management of deposit-taking SACCOs will derive the most out of this since it illuminates ways in which they can utilize investment decisions as a channel to improve financial performance in their DT-SACCOs.

The study will benefit the government and other policy makers. Inferences made will be useful in policy and guideline formulation that will aid deposit-taking SACCOs and other institutions in the sector to adopt diversification decisions thereby enhancing their FP and improve sector performance

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

A review of theories under which this study is grounded was presented in this section. Additionally, prior research work done on this subject area and similar areas are also discussed. The determinants of FP, framework showing how the study variables relate and a literature summary will be in other sections of this chapter.

2.2 Theoretical Framework

This section reviews relevant theories that explain how diversification and FP relate. The theoretical reviews covered are modern portfolio theory, agency theory and resource based view theory.

2.2.1 Modern Portfolio Theory

Harry Markowitz (1952) formulated the theory during his study on portfolio mixture. The emphasis made by the theory was on how expected returns can be maximised through the establishment of portfolios weighed using risk levels. He concluded that institutions can form portfolios that would generate high returns for various levels of risk. The theory attempts to maximize profits of a specific portfolio or lower the risk to a specific level of expected returns through the selection of proportions of different investments (Fabozzi, Gupta, & Markowitz, 2002).

This theory identified two types of risks which investors need to be conscious of, that is, a systematic risk and unsystematic risks. Systematic risk is inherent in the volatility of the entire market or some part of it, while unsystematic risk is associated with the extent to which an individual investment is volatile. Investors are therefore instructed to combine portfolios by guaranteeing that, specific risk carried by that specific

investment in the portfolio is offset by a lower specific risk in another investment (Omisore, Yusuf & Nwufo, 2012).

The MPT has drawn a lot of criticisms for its unrealistic assumptions such as the normal distribution of risk and return. Further, though relevant, the theory has been found to have simplistic assumptions and its financial markets model does not reflect the real world. More recently, the underlying presuppositions of the MPT have been mainly challenged by behavioural finance (Kahneman & Tversky, 1979). However, the MPT is relevant to this study because it explains the motivation for diversification. DT-SACCOs will diversify to improve their returns while minimizing risk. Alternatively, they will only take on higher risk where there is a higher return. As a result, the position is that diversification should lead to better FP.

2.2.2 Agency Theory

Jensen and Meckling (1976) point that there exists a relation between the principals (shareholders) and agents whose task is managing and executing operations of the entity. Jensen and Meckling (1976) assumptions of the agency theory propose that there should be a separation of ownership and management but it may cause agency problems which is the problem being faced by many modern companies.

The principal, who is responsible for transferring some decision-making power to the agent, incurs costs of agency which arises from the divergent interests of the shareholders' and of company managers. They stated that agency costs is the sum of bonding and monitoring cost, plus residual loss. In addition to the bonding costs incurred, a residual loss is expected since the interests of stakeholders involved are not fully aligned. An alignment of interests takes place when objectives of agents and of the whole entity in an organization are in harmony (Jensen & Meckling, 1976).

Incentives like stock options, bonuses, and profit attached pay can be utilized as the solution for the alignment of interests of the agent and the principal's since they have a direct relation to how useful management decisions are to the shareholders. The theory calls for self-interest by all the staff. It requires the agents to perform duties whilst being mindful of principals' requirements. Agents are directed by policies formulated by principals, which entail the maximization of the shareholders' value.

The benefits of diversification are variant, partly, due to the agency issues within the banks. The managers may diversify out of their own interests and not those of the shareholders. The employees may not effectively manage the diversification strategy since the success of the policy may not be beneficial to them though it may maximize the wealth to the shareholders who are the principals. As a result the relationship between diversification and FP of a DT-SACCO will depend on the manifestation of the agency relationships.

2.2.3 Resource Based View Theory

This approach was introduced by Wernerfelt (1984) and the presuppositions surrounding this theory state that management makes deliberate efforts so as to maintain a competitive edge over their competition in the market. By having an edge over their competitors, firms have the ability to diversify their activities and infiltrate new markets thereby diversifying their sources of revenue resulting in income diversification.

Barney (1991) states that diversification on the basis of resource capabilities results in economies of scope since it enables the sharing of core competences and activities and hence it enables sustainability of competitive advantage. The distinctness of a resource is a key ingredient for a resource bundle in sustaining a competitive edge and

hence diversifying income. The reasoning behind this is that if all firms have the same resources, a strategy useful to one firm would be applicable to all the firms with the same resources in the market hence rendering the resource based theory a key factor in the diversification of income (Cool & Dierickx, 2002).

The resource based theory is crucial because it gives ways of improving a firm's FP and also gives suggestions on how to diversify by expanding resource capability to infiltrate new markets a mechanism called the sequential entry strategy (Wernerfelt, 1984). By diversifying their resource capabilities, firms will be able to diversify their incomes by entering into new markets. Therefore, resource positioning by firms is beneficial in two ways; by erecting barriers to entry of new firms and also aiding in the diversification of associated activities which will be beneficial and minimizing costs incurred by businesses and eventually lead to diversification of the income earned.

2.3 Determinants of Financial Performance

The determination of the FP of a firm can be ascertained by a number of factors; these factors are either internal or external. Internal factors differ from one firm to the next and are within a firm's scope of manipulation. These consist of diversification, labor efficiency of management, asset base, and credit portfolio, policy of interest rate, ownership and liquidity. External factors affecting a firm's performance are mainly inflation, GDP, political stability and the rate of interest (Athanasoglou, Brissimis & Delis, 2005).

2.3.1 Diversification Strategy

Diversification out of the traditional interest-based activities is conducted with the aim of improving the profitability of the banks and SACCOs where returns from interest-based activities are shrinking. According to Tregenna (2009) the FP of a

financial institution is dependent on the market structure and how the institution diversifies its portfolio in response to emerging market conditions. Stiroh (2004) noted that diversification helps in reducing financial institutions' dependency on interest income and lowering risk adjusted returns thereby improving the FP.

Perez (2015) infers that those financial institutions which do have higher trading assets percentage normally have with them higher risks. A similar argument is shared by Lins and Servaes (2002) who assert that firms which have more diversified assets tend to have less profit than focused firms. Muñoz & Sanchez (2011) while examining geographical diversification, state that a negative linkage exists between firm profitability and its geographical reach.

2.3.2 Liquidity

This is the magnitude by which an entity can fulfil outstanding debt obligations that are due in twelve months' time using cash or its equivalents like assets which are short term capable of being converted in the shortest time possible. It arises from the ability of managers to meet commitments falling due without being forced to sell-off financial assets (Adam & Buckle, 2003).

Liargovas & Skandalis (2008) stated that firms can utilize liquid assets to finance their operations and investments in the event that external funding is unavailable. Firms that have higher liquidity have the ability to meet unexpected contingencies and meet obligations falling due. Almajali et al., (2012) stated that liquidity of a firm impacts its efficiency greatly. He therefore recommended that firms should consider increasing current assets while lowering liabilities. However, Jovanovic (1982) stated that high liquidity may cause more harm than good in certain instances.

2.3.3 Firm Size

This factor determines the degree to which legal and financial factors impact the firm. Firm size is closely linked to capital adequacy because it is possible for larger firms to raise massive profits. It is positively related to ROA which is an indicator that large firms have the ability to achieve economies of scales which will lower operational costs hence improving their performance (Amato & Burson, 2007). Magweva & Marime (2016) stated that this factor can be linked to capital ratios stating that the two have a positive relation and suggesting that profitability improves with an increase in size.

According to Amato and Burson (2007), the size of an organization is primarily determined by the amount of assets it owns. An argument can be made that the larger the assets a firm owns, the more its ability to undertake many projects with greater returns in comparison with small firms with a smaller amount of assets. Additionally, the bigger the firm, the larger the amount of collateral that can be pledged in a move to access credit facilities in comparison to smaller competitors (Njoroge, 2014). Lee (2009) concluded that the amount of assets in control of a firm has an influence on the level of profitability of the said firm from one year to the next.

2.3.4 Management Efficiency

This is a crucial internal element that is qualitative in nature and determines a firm's operational efficiency. Management's ability to effectively use firm resources, maximize financing and engage in efficient allocation of such financing are examples of ways in which efficiency in management is ensured (Kusa & Ongore, 2013).

This is a qualitative measurement, it determines operational efficiency and can be measured by staff quality, effectiveness and efficiency of internal controls, the organizational discipline and management systems' effectiveness (Athanasoglou et

al., 2009). The management's quality influences the level of operational expenses which impacts the firm's bottom line hence it substantially affects performance (Kusa & Ongore, 2013).

2.3.5 Firm Age

Firm age is referred to by the total years of operation for a given organization. The age of a company is deemed to open new windows of research opportunity and diversification and firms that are more experienced about the market, with better environmental occurrences knowledge and better performance are the older ones (Susanto, 2016). With greater age, firms experience a financial-expansion procedure and a change in its equity composition. As a firm grows, diversity is raised with advancement in age, committees expand in regards to the urge for control and specialization through its members (Matar & Eneizan, 2018).

A company's age can be used to show the firm's supposed stability and symbolize some features of financial performance. Older companies are better exposed and enjoy the advantages of studying, aren't likely to face new market entrance challenges thus produce remarkable output. They can similarly enjoy the advantages of reputation growth enabling them record more revenue (Deitiana & Habibuw, 2015).

2.4 Empirical Review

Local and international studies supporting the relationship between diversification and FP have been done, however mixed results have been reduced from the studies

2.4.1 Global Studies

Yan, Talavera and Fahretdinova (2016) made an evaluation of product diversification bank profitability in Azerbaijan and used data for six types of loans and four types of deposits. Results from the study showed that a negative association exists between

loan-based portfolio diversification profitability. Additionally, results also showed that deposit-based diversification had a marginal substantial positive relation with bank profitability when bank specific and economic and institutional characteristics were considered.

Elefachew and Hrushikesava (2016) conducted another research on the effect of diversification on Ethiopian banks' revenues generated. Their research investigated the impact of industrial diversification on profitability of some few banks from Ethiopia. The data covered 6 years period from 2008/09-2013/14 for 10 private and 2 government commercial banks. Their findings showed that the banks could be said to have diversified their loan portfolios among different industries in Ethiopia. Fixed model was used to determine the regression and the results revealed that, industrial diversification had a negative significant effect on both ROA and ROE.

Brahmana, Kontesa and Gilbert (2018) studied the diversification impact on performance of banks by the use of financial reports of Malaysian banks for a period of ten years 2005 to 2015. Particularly, non-interest income relationship with risk-adjusted performance was studied. The fixed effect panel regression findings reveal that diversification of income have a positive relationship on performance of bank affirming risk reduction hypothesis and resource-based view theory. In their view, Malaysian banks are advantaged in achieving diversification gains because of the less integrated financial market. Besides, the emerging of Islamic banking might enhance the performance of income diversification.

Omet (2019) examined how income diversification impacts performance of Jordanian banks using profitability and net interest margin. Selected period of study was from 2009 to 2017 thirteen Jordanian commercial banks were examined. Bank performance

was given by ROA and net interest margin. In measuring the income, a variety of measurements were used such as net commission income-total assets, proportion of bank credit to individuals, SME sector, corporate sector to total credit, and the real estate sector. From the statistical analysis conducted, income diversification showed a substantial positive impact on bank profitability. However, the impact came at the expense of expanding net interest margins.

Ferreira, Zanini and Alves (2019) investigated the effect of revenue diversification on the risk and return of Brazilian banks'. By use of dynamic panel data generalized method of moments, a sample was analyzed for the period 2003 to 2014. The findings reveal that diversification into non-interest income plays a big role in the performance of the studied banks.; Financial intermediaries activities analysis in loans operations revealed better results compared to trading operations. This confirmed the hypotheses proposed a general positive impact between noninterest income and return and risk adjusted returns for the banks in the study. However, Contrary to the expectation, noninterest income and risk for the banks studied are positively related (although not statistically significant).

2.4.2 Local Studies

Kitisya and Ndegwa (2017) analyzed the impact diversification on Kenyan commercial banks' financial performance. Mixed research design was used for the survey where quantitative and descriptive research designs were employed. The population was the 42 Kenyan banks. Both primary and secondary data was used. The objective was to analyze the association that exists amongst the given variables. The study established that industry diversification meaningfully affected how the commercial banks performed. The exact effect was however found to be generally

dependent on bank-size. Business diversification suggestively enhanced performance for banks. In the medium sized banks grouping, only location diversification influenced their association to some degree. For big banks, all the four business diversification techniques had no impact on their financial performance. Respondents purported that corporate diversification undeniably affected the commercial banks' financial performance to a moderate extent.

Abubakar (2017) studied NSE listed commercial banks listed during the period 2012 to 2016 to establish how diversified income had impacted the FP of the banks. By use of descriptive research, a statistical analysis of the listed commercial banks at NSE was conducted. Regression model was adopted to analyze the study. Herfindahl-Hirshman index was used to measure income diversification and three control variables were used, namely; capital adequacy size and liquidity. The finding was that there exist a negative relation between income diversification and FP. It also found that, capital adequacy and size had a positive effect which was statistically significant while liquidity had a negative impact on FP and was not statistically significant.

Philita (2018) examined effects of portfolio diversification on FP of commercial banks in Kenya. All the 40 commercial banks registered and licensed under the Banking Act were the target population for the study. To achieve set objective of the study secondary data was used. The conclusion of the study was that portfolio diversification, bank size, interest rate spread and asset quality has influence on the FP of commercial banks in Kenya and a positive correlation exists between these variables and FP.

Nduati (2019) sought to determine how income diversification on influences performance Kenyan banks. 42 banks in operation in Kenya at 31st December 2018

were the population of the study. Secondary data was acquired for 5 years (January 2014 to December 2018) annually. Research design was descriptive cross-sectional design whereas association between variables was determined by multiple linear regression model. Results demonstrated that income diversification, liquidity and bank size were positively and statistically substantial values in the study. It was discovered that capital adequacy, management efficiency and age have a statistically insignificant impact on financial performance of banks.

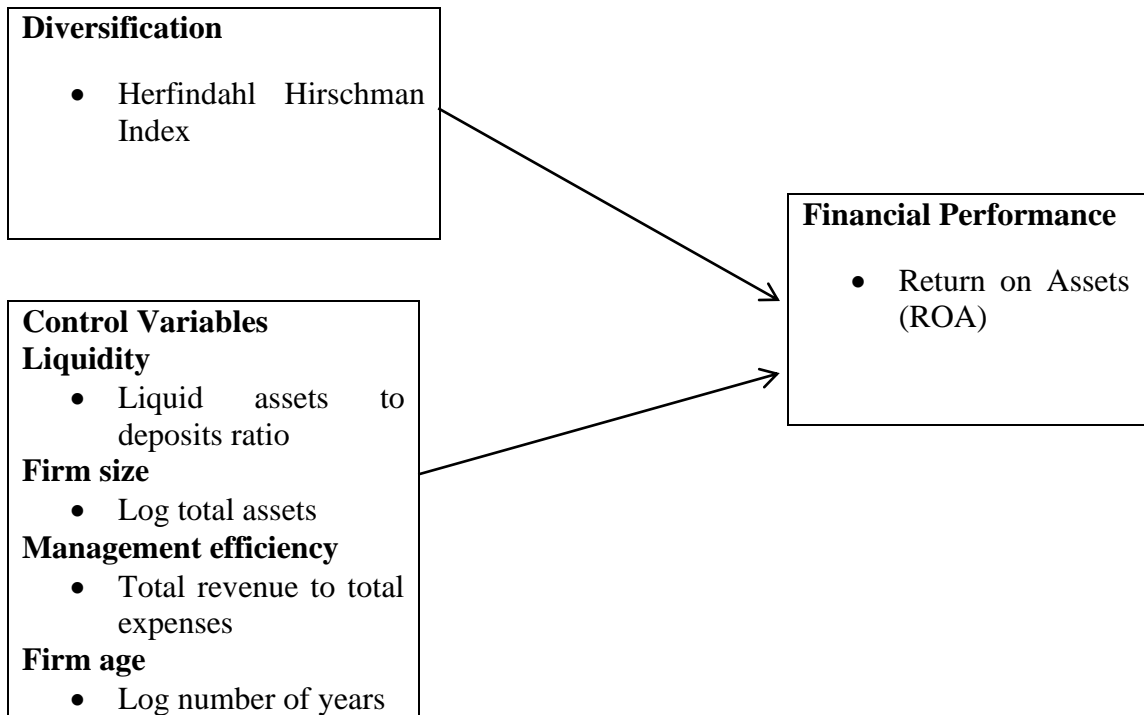
Kebiro (2019) assessed how investment decisions impact the efficiency of deposit taking SACCOs in Nairobi. The population was the 43 DT-SACCOs in Nairobi County. The study utilized secondary data from 2014 to 2018 (5 years) on annual basis. A descriptive cross-sectional design together with the regression model were used for the analysis of the variables. The results showed that investment in real estate, investment in government securities and investment in shares produced positive substantial values while investment in fixed deposits, liquidity, firm size and age were found to be statistically insignificant determiners of efficiency.

2.5 Conceptual Framework

The model below illustrated the foreseen association existing between the variables. The predictor variables was diversification as given by Herfindahl Hirschman Index. The control variables included liquidity given by liquid assets divided by total assets, management efficiency given as the ratio of total revenue to total assets, firm size given as the natural log of total assets and age of the firm measured by years of firm existence. Performance was the response variable given by ROA.

Independent variables

Dependent variable



Source: Author (2020)

Figure 2.1: The Conceptual Model

2.6 Summary of the Literature Review

Several frameworks have elaborated the expected relation existing between diversification and FP of DT-SACCOs. The theories reviewed are; modern portfolio theory, agency theory and resource based view theory. Key influencers of FP have been explained in this section. Several studies have been done on diversification and FP with the findings being presented. The minimal consensus among international and local studies on how diversification affects FP of DT-SACCOs is the reason to conduct additional studies. Additionally, studies done before in Kenya on diversification are few which is the gap the current study was based and sought to answer; what is the effect of diversification on performance of DT SACCOs in Nairobi County?

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

To ascertain how the FP of DT- SACCOs in Nairobi County is affected by diversification, a methodology was required in outlining how the research was done. Sections included in this chapter are; design, data collection, diagnostic tests and analysis.

3.2 Research Design

The research utilized a descriptive cross-sectional design in determining how diversification and FP of deposit-taking SACCOs relate. It was sufficient since the researcher sought to describe the nature of affairs (Khan, 2008). It was also appropriate because the nature of the phenomenon being studied and how they relate is of major interest to the researcher. Additionally, a descriptive research validly and accurately represented the variables that aided in providing a response to the query (Cooper & Schindler, 2008).

3.3 Population

This is the totality of observations of interest from a collection such as persons or events as specified by a research investigator (Burns & Burns, 2008). This study's population comprised of the 43 DT SACCOs in Nairobi County as at 31st December 2019. Since the population was relatively small, a census of the 43 deposit taking SACCOS was performed (see appendix I).

3.4 Data Collection

This study relied on secondary data. The source of the data was the published annual financial reports by the deposit taking SACCOs between 2015 and 2019 and recorded

in a collection schedule. SASRA and individual deposit taking SACCOs annual reports were used to derive the data. This resulted in annual information concerning the predictor and the response variable for the 43 DT SACCOs in Nairobi. The specific data collected included net interest income, non-interest income and total income for diversification, net income and average total assets for financial performance, liquid assets and total assets for liquidity, total revenue and total assets for management efficiency, total assets for firm size and number of years in existence for age of the deposit taking SACCO.

3.5 Diagnostic Tests

To determine the viability of the study model, the researcher carried out several diagnostic tests, which included normality test, stationarity test, test for multicollinearity, test for homogeneity of variances and the autocorrelation test. Normality tests the presumption that the residual of the response variable have a normal distribution around the mean. The test for normality was done by the Shapiro-wilk test or Kolmogorov-Smirnov test. In the case where one of the variables is not normally distributed it was transformed and standardized using the logarithmic transformation method. Stationarity test was used to assess whether statistical properties like mean, variance and autocorrelation structure vary with time and was given by augmented Dickey Fuller test. In case, the data fails the assumption of stationarity, the study used robust standard errors in the model (Khan, 2008).

Autocorrelation measures how similar a certain time series is in comparison to a lagged value of the time series in between successive intervals of time. This was measured by the Durbin-Watson statistic and in case the assumption is violated the study employed robust standard errors in the model. Multicollinearity occurs when an

exact or near exact relation that is linear is observed between two or several predictor variables. Variance Inflation Factors (VIF) and tolerance levels were employed. Any multicollinear variable was dropped from the study and a new measure selected and substituted with the variable which exhibits co-linearity. Heteroskedasticity tests if the variance of the errors from a regression is reliant on the independent variables. The study assessed for heteroskedasticity using the Levene test and in case, the data failed the assumption of homogeneity of variances the study used robust standard errors in the model (Burns & Burns, 2008).

3.6 Data Analysis

The study used SPSS version 23 in performing data analysis. Findings were then quantitatively presented by way of graphs and tables. Descriptive statistics summarized and explained the study variables that were observed among the banks. The findings were then presented using percentages, frequencies, measures of central tendencies and dispersion as illustrated on tables. Inferential statistics were made by Pearson correlation, multiple regressions, ANOVA and coefficient of determination.

3.6.1 Analytical Model

The regression model below was used:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

Where: Y = Financial Performance given by ROA annually.

β_0 = y intercept of the equation.

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = are the coefficient of the independent variables

X_1 = Diversification given by HHI on an annual basis

X_2 = Liquidity as given by total loans to total customer deposits ratio given annually

X_3 = Management efficiency given by total revenue to total expenses given annually

X_4 = Firm size given by the natural log of the total assets

X_5 = Firm age given as the natural log of No. of years the deposit taking SACCO has been in existence

ε =error term

The HHI was calculated as:

$$1 - (SH_{NET}^2 + SH_{NON}^2)$$

Where:

SH_{NET} = Proportion of net interest income to total net income

SH_{NON} = Proportion of net non-interest income to total net income

HHI gives the diversification of banks and DT-SACCOs from interest income to non-interest income earning activities. HHI ranges from 0 to 1 with the highest value of 1 denoting full diversification whereas 0 denotes full concentration. This formula has been used before by Abubakar (2017).

3.6.2 Tests of Significance

Parametric tests were done by the researcher to determine the model's and variables' statistical significance. The F-test assessed the model's significance and was given by ANOVA while a t-test determined the significance of individual variables.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND FINDINGS

4.1 Introduction

This section presents the analysis, findings and interprets the secondary data collected from SASRA and individual deposit taking Sacco's financial reports. The research studied how diversification strategy impacts performance of DT SACCOs in Kenya and specifically those operating in Nairobi County. Independent variables included diversification, liquidity, management efficiency, size and firm age while the performance was the dependent variable given by ROA. Regression was adopted to determine how the variables related in relation to the study's objectives. ANOVA tested the goodness of fit of the analytical model. The results were presented in tables and figures.

4.2 Descriptive Analysis

Descriptive statistics gives the mean, maximum and minimum values with their standard deviations. Table 4.1 illustrates the statistics for the variables selected. Analysis was done using SPSS for five years (2015 to 2019). Financial performance had a mean of .075 and a standard deviation of .120. Diversification had a mean of .887 with a standard deviation of .079. Management efficiency had a mean of 1.798 and a standard deviation of 1.436. Firm size had a mean of 7.773 with a standard deviation of 0.576. Age had a mean of 28.12 with a standard deviation of 18.62. Liquidity had a mean of 1.095 and standard deviation of .551.

Table 4.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	215	-.327	.365	.07535	.120471
Diversification	215	.571	1.000	.88660	.079082
Liquidity	215	.007	3.296	1.09529	.550741
Management efficiency	215	.016	11.384	1.79839	1.435892
Firm size	215	6.072	8.730	7.77254	.576136
Firm age	215	1	100	28.12	18.662
Valid N (listwise)	215				

Source: Research Findings (2020)

4.3 Diagnostic Tests

The data collected was subjected to diagnostic tests. The study presumed a 95% confidence interval or 5% level of significance so as to make variable deductions on the data adopted. Diagnostic tests were useful for ascertaining the falsity or truth of the data. Therefore, the nearer to 100% the confidence interval, the more accurate the data used is presumed to be. In this case, the tests conducted were normality test, Multicollinearity test, heteroskedasticity tests and autocorrelation.

4.3.1 Normality Test

The normality test of the data was done using the Kolmogorov-Smirnov test. The threshold was 0.05. A probability greater than this meant that data had a normal distribution.

Table 4.2: Normality Test

	Kolmogorov-Smirnova		
	Statistic	df	Sig.
ROA	0.486	215	0.234
Diversification	0.326	215	0.112
Liquidity	0.408	215	0.207
Management efficiency	0.394	215	0.179
Firm size	0.272	215	0.063
Age	0.124	215	0.057

Source: Research Findings (2020)

The findings above indicated that data was normality distributed since the p values were greater than 0.05. Therefore, the null hypothesis of normal distribution was accepted meaning the researcher failed to reject the null hypotheses.

4.3.2 Multicollinearity Test

William et al. (2013), defined this property as the existence of correlations among predictor variables. VIF tested this property. Field (2009) noted that VIF values above 10 indicate the presence of this property.

Table 4.3: Multicollinearity Test

Variable	VIF	1/VIF
Diversification	1.30	0.771
Liquidity	1.27	0.785
Management efficiency	1.02	0.978
Firm size	1.20	0.833
Firm age	1.32	0.758

Source: Research Findings (2020)

The results in Table 4.3 illustrates the results of the VIF test which were found to be lower than 10 and therefore according to Field (2009) multicollinearity does not exist.

4.3.3 Heteroskedasticity Test

The error process may be Homoskedastic among cross-sectional units, but have different variances across units: this is called group wise Heteroscedasticity. The hettest command is used in calculating Breuch Pagan for group wise Heteroscedasticity among residuals. The null hypothesis states that $\sigma^2_i = \sigma^2$ for $i = 1 \dots Ng$, where Ng is the number of cross-sectional units.

Table 4.4: Heteroskedasticity Test

Modified Wald test for group wise heteroskedasticity in fixed effect regression model
H0: $\sigma(i)^2 = \sigma^2$ for all i
chi2 (215) = 304.56
Prob>chi2 = 0.0567

Source: Research Findings (2020)

The results in Table 4.4 indicate that the null hypothesis of Homoskedastic error terms is not rejected as supported by a p-value of 0.0567.

4.3.4 Autocorrelation Test

Because of the inefficiencies caused by serial correlation in models which produces biases in standard errors, the Breusch-Godfrey test for autocorrelation was adopted which identifies serial correlation in the idiosyncratic error term in a model. T

Table 4.5: Autocorrelation Test

Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
F(1, 214) = 0.324
Prob>F = 0.5360

Source: Research Findings (2020)

From the Table 4.5 the null hypothesis of no serial correlation is not rejected given that the p-value is significant (p-value = 0.5360).

4.5 Correlation Analysis

This is critical in the establishment of a relation between two variables that lies between a perfect positive and strong negative correlation. Pearson correlation was useful to this end in determining the relation between performance of DT-SACCOs and the independent variables for this study (diversification, age, management efficiency, firm size and liquidity).

A weak positive correlation ($r = .114$, $p = .095$) was found between diversification and performance. The research also found a substantial positive correlation between

liquidity and performance of DT-SACCOs as evidenced by ($r = .654, p = .000$). Firm size had a weak positive relationship with performance as shown by ($r = .249, p = .000$). Management efficiency and age of the firm were found to have an insignificant positive association with performance of DT-SACCOs in Nairobi County, as evidenced by p values greater than 0.05.

Table 4.6: Correlation Analysis

		RO A	Diversificatio n	Liquidit y	Managemen t efficiency	Fir m size	Fir m age
ROA	Pearson Correlation Sig. (2- tailed)	1					
Diversificatio n	Pearson Correlation Sig. (2- tailed)	.11 4	1				
Liquidity	Pearson Correlation Sig. (2- tailed)	.65 4**	.108	1			
Management efficiency	Pearson Correlation Sig. (2- tailed)	.11 2	.088	.011	1		
Firm size	Pearson Correlation Sig. (2- tailed)	.24 9**	.036	.388**	.057	1	
Firm age	Pearson Correlation Sig. (2- tailed)	.04 5	.041	.084	.057	.060	1
		.50 9	.546	.219	.404	.384	

******. Correlation is significant at the 0.01 level (2-tailed).
b. Listwise N=215

4.6 Regression Analysis

Performance was regressed against five variables; diversification, age, management efficiency, firm size and liquidity. The regression was performed at 5% significance.

The summary statistics are illustrated in table 4.7 below.

Table 4.7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.674 ^a	.455	.442	.090024	2.167

a. Predictors: (Constant), Firm age, Diversification, Firm size, Management efficiency, Liquidity
b. Dependent Variable: ROA

Source: Research Findings (2020)

The coefficient of determination which showed deviations in the variable caused by changes in the predictor variables gave a value of 0.455, which meant that 45.5 percent changes in performance of DT-SACCOs, results from changes in diversification, management efficiency, age, firm size and liquidity. Additional variables outside the model justify for 54.5 percent changes in performance of DT-SACCOs. Also, the outcomes show a strong relation between independent variables and performance given by the correlation coefficient (R) equal to 0.674.

ANOVA was conducted to establish significance of the model. The significance value obtained is 0.000 that is lower than $p=0.05$. Implying that it was significant in explaining how diversification, age, firm size and liquidity affect financial performance of DT-SACCOs

Table 4.8: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.412	5	.282	34.846	.000 ^b
	Residual	1.694	209	.008		
	Total	3.106	214			

a. Dependent Variable: ROA
b. Predictors: (Constant), Firm age, Diversification, Firm size, Management efficiency, Liquidity

Source: Research Findings (2020)

The researcher utilized the t-test to determine the significance of each individual variable to predict performance of DT-SACCOs. The p-value under sig. column indicated the relationship significance between the variables that are dependent and the variables which are independent. At 95% confidence, a p-value lower than 0.05 was considered a significant measure. A p-value greater than 0.05 shows that the relation between the dependent and independent variables is substantial. Findings are illustrated in table 4.8

Table 4.9: Model Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.025	.120		-.211	.833
Diversification	.001	.000	.108	2.084	.038
Liquidity	.146	.012	.666	11.855	.000
1 Management efficiency	.002	.012	.010	.173	.863
Firm size	.010	.004	.122	2.373	.019
Firm age	.041	.079	.027	.523	.601

a. Dependent Variable: ROA

Source: Research Findings (2020)

From findings, diversification, liquidity and firm size had positive substantial values (high t-values (2.084, 11.855 and 2.373), $p < 0.05$). Management efficiency and firm age was found to be insignificant determiners of financial performance given by low t-values and p-values higher than 0.05.

The equation can be estimated:

$$Y = -0.025 + 0.001X_1 + 0.146X_2 + 0.010X_3$$

Where,

Y = Financial performance

X₁ = Diversification

X₂ = Liquidity

X₃ = Firm size

From the model, the constant = -0.025 means that if the independent variables had a zero value, performance of DT-SACCOs would be -0.025. An increase in diversification by one unit would increase performance of DT-SACCOs by 0.001 while an increase in firm size by a unit would increase performance of DT-SACCOs in Nairobi by 0.010. Increasing liquidity by 1 unit would increase performance of DT-SACCOs by 0.146.

4.7 Discussion of Research Findings

The research pursued in finding out how diversification impacts performance of DT-SACCOs in Nairobi. Diversification as measured by HHI, management efficiency given by total revenue to total assets, age given by the natural log of the years a firm has existed, size of firm given by natural log of total assets, and liquidity given by current ratio while performance given by ROA was the explained variable. Effect of every independent variable on the dependent was measured in on strength and direction.

The Pearson correlation coefficients showed a weak positive correlation exists between diversification and performance of DT-SACCOs in Nairobi. The study also showed existence of a substantial positive relationship between size of firm and financial performance whereas liquidity was established to have a substantial positive relation with performance which is significant. The association between management efficiency and firm age with performance was weak, insignificant and positive.

The model summary showed that independent variables: diversification, management efficiency, firm age, firm size and liquidity explains 45.5% variations in the dependent

variable shown by the performance of R^2 implying that there exists other factors outside the model are responsible for 54.5% variations in performance of DT-SACCOs. The model was sufficient at 95% confidence with a p-value lower than 0.05. This indicated that the model is significant statistically, and it is appropriate forecast model for enlightening how the independent variables selected impact of performance of DT-SACCOs in Nairobi.

The findings of this research are in resemblance with a study done by Omet (2019) who examined Jordanian banks and studied how diversification of income impacts their performance. The study was done from 2009 to 2017 using thirteen Jordanian banks, in which an estimation of econometric models were made using Seemingly Unrelated Regression (SUR). Performance was given by ROA and net interest margin. For income diversification a number of measures were used like net commission income to total assets, proportion of bank credit to individuals, SME sector, corporate sector to total credit, and the real estate sector. Based on the analyses, the study concludes that income diversification has a positive impact on profitability. However, the impact was at the expense of expanding net interest margins.

The study also agrees with Brahma, Kontesa and Gilbert (2018) who studied the diversification impact on performance of banks by the use of financial reports of Malaysian banks for a period of ten years 2005 to 2015. Particularly, non-interest income relationship with risk-adjusted performance was studied. The fixed effect panel regression findings reveal that diversification of income have a positive relationship on performance of bank affirming risk reduction hypothesis and resource-based view theory. In their view, Malaysian banks are advantaged in achieving diversification gains because of the less integrated financial market. Besides, the emerging of Islamic banking might enhance the performance of income

diversification.

The study also concurs with Omet (2019) who examined how income diversification impacts performance of Jordanian banks. Selected period of study was from 2009 to 2017 thirteen Jordanian commercial banks were examined. Bank performance was given by ROA. In measuring the income, a variety of measurements were used such as net commission income-total assets, proportion of bank credit to individuals, SME sector, corporate sector to total credit, and the real estate sector. From the statistical analysis conducted, income diversification showed a substantial positive impact on bank profitability.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The aim of this section is to provide a summary of the findings from the prior chapter, conclusion, and limitations faced. It also highlights the recommendations in terms of policy that will be useful to policy makers in enhancing financial performance of DT-SACCOs in Nairobi County. Lastly suggestions for additional future studies will be made.

5.2 Summary of Findings

The study investigated the effect of diversification strategy on financial performance of DT-SACCOs. Independent variables included diversification, management efficiency, age, firm size and liquidity. A descriptive cross-sectional design was useful to this end. Secondary data from SASRA was collected and analyzed using SPSS version 23. Annual data for 43 DT-SACCOs in Nairobi for a five year period from January 2015 to December 2019 was used.

From the correlation, a weak positive association exists between diversification and performance of DT-SACCOs in Nairobi County. The study also showed a statistically substantial positive relationship between size of firm and performance whereas liquidity was established to have a strong positive relationship with financial performance that is significant. The association between management efficiency and firm age with financial performance was weak, substantial and positive.

The R-square value was 0.455 which implied that the predictor variables chosen explain 45.5% variations in dependent variable. This meant that other factors outside the model explain 54.5% of changes in financial performance of DT-SACCOs. The

model was appropriate at 95% confidence since the p-value of 0.000 was lower than 0.05. This affirms that the regression model is substantial, since it clarifies how the independent variables selected impacts performance of DT-SACCOs in Nairobi County.

The regression indicates that when all independent variables have zero value, financial performance of DT-SACCOs in Nairobi would be -0.025. An increase in diversification by one unit would increase performance of DT-SACCOs in Nairobi County by 0.001 while an increase in firm size by a unit would increase performance of DT-SACCOs in Nairobi by 0.010. An increase in liquidity by 1 unit would increase performance of DT-SACCOs in Nairobi by 0.146.

5.3 Conclusion

Through the findings, the research concludes that performance of DT-SACCOs in Nairobi County, is impacted upon by diversification, liquidity and size of the firms. Diversification had a positive substantial effect on performance of DT-SACCOs in Nairobi. The research therefore concludes that diversification by DT-SACCOs in Nairobi County, leads to an increase in firm performance. Size of firm had a positive significant effect on financial performance and therefore it is concluded by increasing firm assets, an increase in firm performance is observed. Liquidity had a substantial positive effect on performance and so it can be concluded that an increase in liquidity increases financial performance of a firm. Management efficiency and age of a firm was observed to have a positive but weak effect on performance of DT-SACCOs in Nairobi County and therefore this study concludes that management efficiency and age of a firm does not significantly influence financial performance of DT-SACCOs in Nairobi County.

The conclusion is that independent variables; diversification, management efficiency, age, firm size and liquidity impact performance of DT-SACCOs in Nairobi County. It can hence be concluded that these variables substantially impact performance given by p value in ANOVA summary. Because 45.5% variations in performance are attributed to the independent variables, 54.5% of changes in performance are caused by other factors outside the model.

The findings of the current study agree with Nduati (2019) who sought to determine how income diversification on influences financial performance of banks in Kenya. 42 banks in operation in Kenya as at 31st December 2018 were the population of the study. Secondary data was acquired for 5 years (January 2014 to December 2018) annually. Research design was descriptive cross-sectional design whereas association between variables was determined by multiple linear regression model. Results demonstrated that income diversification, liquidity and bank size were positively and statistically substantial values in the study. The study discovered that capital adequacy, management efficiency and age have a weak impact on performance of banks.

5.4 Recommendations

The study found a positive impact of diversification on financial performance of DT-SACCOs. It is recommended that policy makers should prioritize diversification when crafting policies to enhance FP. It can also be recommended to DT-SACCOs in Nairobi County, Kenya and their boards that investing in non-interest income such as real estate should be considered when carrying out strategic management practices to boost performance.

The study revealed a positive relation between performance of DT-SACCOs in Nairobi County, Kenya and firm size. This study recommends that DT-SACCOs management should increase their asset base by formulating policies that will enlarge the firms' assets as this will directly impact performance of the DT-SACCOs. From findings, firms with a bigger asset base can perform better than smaller ones hence firms should increase their assets.

Liquidity of a DT-SACCO in Nairobi County, Kenya also had a significant positive impact on performance and implying that the more liquid a firm is, the better the financial performance. A thorough assessment of DT-SACCOs' liquidity should be done to ensure the DT-SACCOs operate at appropriate liquidity levels that will improve performance. This is critical since it impacts an entity's current operations.

5.5 Limitations of the Study

The research scope was five years, 2015-2019. This is not proof that similar results will be found with a longer study period. Additionally it is not certain that the same findings will hold beyond 2019. A longer period would be more reliable since it will consider major events not catered for in this study.

One of these study limitations is data quality. It cannot be ascertained from the investigation whether findings show accurate facts from the situation. An assumption is made that the data is accurate. The measurements may change from a year to the next based on current conditions. The research used secondary data, which was in the public domain had already been obtained, unlike the first-hand information associated with primary data. The study considered selected determinants and not every factor that determines performance of DT-SACCOs in Nairobi County, primarily due to unavailable data.

For analyzing the data, the regression model was used. Because of the limitations of the model like erroneous and misleading results when performance changes, it is impossible for the researcher to generalize the findings with certainty. With the addition of more data in the model, the expected relation between the variables may fail to hold.

5.6 Suggestions for Further Research

This study concentrated on diversification and performance of DT-SACCOs in Nairobi and utilized secondary data. A study that takes into account all the DT-SACCOs in Kenya or other non-deposit taking SACCOs using primary data need to be carried out to on firm or disapprove the findings.

The study did not exhaust all the independent variables influencing of performance of DT-SACCOs in Nairobi County, Kenya and a recommendation is given that more variables like capital adequacy, growth opportunities, corporate governance, industry practices, and other macro-economic variables. Establishing how every variable impacts performance of DT-SACCOs in Nairobi County, Kenya will enable policy formulators know the tools that maximize shareholder wealth.

The study only focused on the latest five years because it consisted of only recent data. Additional studies may utilize a wider range which will be useful in confirming or disapproving the results. Finally, because of the limitations of the regression models, alternative models like the Vector Error Correction Model (VECM) can be used in explaining the relation between variables.

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APPENDICES

Appendix I: Deposit-taking SACCOs in Nairobi County, Kenya

1. AFYA SACCO SOCIETY LTD
2. AIRPORTS SACCO SOCIETY LTD
3. ARDHI SACCO SOCIETY LTD
4. ASILI SACCO SOCIETY LTD
5. CHAI SACCO SOCIETY LTD
6. CHUNA SACCO SOCIETY LTD
7. COMOCO SACCO SOCIETY LTD
8. ELIMU SACCO SOCIETY LTD
9. FUNDILIMA SACCO SOCIETY LTD
10. HARAMBEE SACCO SOCIETY LTD
11. HAZINA SACCO SOCIETY LTD
12. JAMII SACCO SOCIETY LTD
13. KENPIPE SACCO SOCIETY LTD
14. KENVERSITY SACCO SOCIETY LTD
15. KENYA BANKERS SACCO SOCIETY LTD
16. KENYA POLICE SACCO SOCIETY LTD
17. KINGDOM SACCO SOCIETY LTD
18. MAGEREZA SACCO SOCIETY LTD
19. MAISHA BORA SACCO SOCIETY LTD
20. METROPOLITAN NATIONAL SACCO SOCIETY LTD
21. MWALIMU NATIONAL SACCO SOCIETY LTD
22. MWITO SACCO SOCIETY LTD
23. NACICO SACCO SOCIETY LTD
24. NAFKA SACCO SOCIETY LTD
25. NATION SACCO SOCIETY LTD
26. NSSF SACCO SOCIETY LTD
27. NYATI SACCO SOCIETY LTD
28. SAFARICOM SACCO SOCIETY LTD
29. SHERIA SACCO SOCIETY LTD
30. SHIRIKA SACCO SOCIETY LTD
31. SHOPPERS SACCO SOCIETY LTD
32. STIMA SACCO SOCIETY LTD
33. TAQWA SACCO SOCIETY LTD
34. TEMBO SACCO SOCIETY LTD
35. UFANISI SACCO SOCIETY LTD
36. UKRISTO NA UFANISI WA ANGLICANA SACCO SOCIETY LTD
37. UKULIMA SACCO SOCIETY LTD
38. UNAITAS SACCO SOCIETY LTD
39. UNITED NATIONS SACCO SOCIETY LTD
40. USHIRIKA SACCO SOCIETY LTD
41. WANA – ANGA SACCO SOCIETY LTD
42. WANANDEGE SACCO SOCIETY LTD
43. WAUMINI SACCO SOCIETY LTD

Source: SASSRA (2020)

Appendix II: Research Data

DT-SACCO	Year	ROA	Diversi fication	Liquidi ty	Managem ent efficiency	Firm size	Firm age
AFYA SACCO SOCIETY LTD	2015	0.0826	0.727	0.753	0.997	8.216	26
	2016	0.1139	0.889	0.779	1.010	8.218	27
	2017	0.1465	0.900	0.900	1.078	8.251	28
	2018	0.1945	0.900	1.219	0.449	8.269	29
	2019	0.1736	0.900	0.781	2.591	8.317	30
AIRPORTS SACCO SOCIETY LTD	2015	0.2410	0.944	1.535	11.384	8.338	3
	2016	0.1590	0.944	1.254	7.477	8.424	4
	2017	0.0644	0.944	1.855	3.995	8.414	5
	2018	0.0604	0.944	1.632	3.394	8.456	6
	2019	0.0310	0.889	3.296	1.694	8.486	7
ARDHI SACCO SOCIETY LTD	2015	0.0279	0.875	0.621	1.521	8.207	15
	2016	0.0248	0.875	0.612	1.521	8.288	16
	2017	-0.0139	0.875	1.114	1.506	8.377	19
	2018	0.0019	0.875	1.036	1.562	8.425	18
	2019	-0.1050	0.875	1.537	3.597	8.452	19
ASILI SACCO SOCIETY LTD	2015	0.0840	0.889	1.493	4.861	7.558	54
	2016	0.1331	0.714	1.101	5.024	7.620	55
	2017	0.1709	0.714	0.751	3.654	7.588	56

DT-SACCO	Year	ROA	Diversi fication	Liquidi ty	Managem ent efficiency	Firm size	Firm age
	2018	0.0574	0.714	0.879	4.945	7.565	57
	2019	0.1230	0.714	1.135	2.781	7.541	58
CHAI SACCO SOCIETY LTD	2015	0.0887	0.714	0.590	3.045	8.058	53
	2016	0.0937	0.818	0.620	3.027	8.124	54
	2017	0.0986	0.818	0.599	2.598	8.166	55
	2018	0.0999	0.818	0.708	2.513	8.229	56
	2019	0.1514	0.833	0.524	1.527	8.329	57
CHUNA SACCO SOCIETY LTD	2015	0.0609	0.833	1.824	1.604	8.577	33
	2016	0.2966	0.833	1.577	1.507	8.628	34
	2017	0.2323	0.833	1.112	1.437	8.651	35
	2018	0.2298	0.833	1.275	1.025	8.699	36
	2019	0.1657	0.833	1.344	0.839	8.730	37
COMOCO SACCO SOCIETY LTD	2015	0.0105	0.833	0.983	0.744	8.002	40
	2016	0.0572	0.857	1.062	0.800	8.051	41
	2017	0.0125	0.857	1.740	0.704	8.049	42
	2018	0.0912	0.857	1.201	0.821	8.143	43
	2019	-0.0185	0.857	0.941	1.147	8.160	44
ELIMU SACCO SOCIETY LTD	2015	0.1863	0.867	1.321	1.152	7.982	18
	2016	0.0950	0.867	0.760	1.249	8.026	18

DT-SACCO	Year	ROA	Diversi fication	Liquidi ty	Managem ent efficiency	Firm size	Firm age
	2017	0.1526	0.867	0.688	1.203	8.077	20
	2018	0.1072	0.875	0.992	1.701	8.189	21
	2019	-0.0096	0.875	1.070	1.715	8.282	22
FUNDILIM A SACCO SOCIETY LTD	2015	0.0175	0.875	0.268	1.642	8.020	21
	2016	0.0041	0.875	0.349	1.700	8.044	22
	2017	0.1415	0.875	0.332	1.744	7.973	23
	2018	0.1548	0.875	0.266	1.185	7.974	24
	2019	0.1681	0.889	0.312	1.129	7.995	25
HARAMBE E SACCO SOCIETY LTD	2015	0.0296	0.889	1.118	1.461	8.188	42
	2016	0.0382	0.889	1.110	3.765	8.236	43
	2017	0.0419	0.889	0.990	2.261	8.271	44
	2018	-0.0275	0.889	0.850	2.311	8.329	45
	2019	0.0570	0.889	1.061	2.047	8.351	46
HAZINA SACCO SOCIETY LTD	2015	-0.0402	0.889	0.853	2.040	8.390	44
	2016	0.0415	0.889	0.936	2.061	8.480	45
	2017	0.2296	0.889	0.141	0.016	8.528	46
	2018	0.2144	0.889	0.104	0.134	8.572	47
	2019	0.1606	0.889	1.153	0.217	8.626	48
JAMII SACCO SOCIETY LTD	2015	0.1440	0.889	0.262	1.031	7.206	62

DT-SACCO	Year	ROA	Diversi fication	Liquidi ty	Managem ent efficiency	Firm size	Firm age
	2016	0.1219	0.889	0.223	0.308	7.199	63
	2017	0.0957	0.889	0.248	0.672	7.224	64
	2018	0.2794	0.889	0.287	1.051	7.319	65
	2019	0.2788	0.899	0.280	1.088	7.355	66
KENPIPE SACCO SOCIETY LTD	2015	0.1096	0.899	0.853	1.808	7.723	25
	2016	0.0593	0.899	0.936	1.827	7.677	26
	2017	0.2438	0.899	1.153	1.937	7.537	27
	2018	0.1236	0.899	0.599	1.976	7.499	28
	2019	0.1261	0.899	0.833	1.890	7.479	29
KENVERSI TY SACCO SOCIETY LTD	2015	0.1169	0.900	0.912	1.456	7.687	2
	2016	0.0870	0.900	1.041	1.076	7.724	3
	2017	0.0850	0.900	0.697	0.825	7.561	4
	2018	0.0769	0.900	1.042	1.066	7.625	5
	2019	0.0621	0.900	0.905	1.214	7.619	6
KENYA BANKERS SACCO SOCIETY LTD	2015	0.0665	0.909	0.593	1.008	8.216	23
	2016	0.0515	0.909	1.153	1.202	8.218	24
	2017	0.0227	0.909	0.694	0.972	8.251	25
	2018	0.0227	0.909	0.715	0.809	8.269	26
	2019	-0.2837	0.909	0.576	1.184	8.317	27
KENYA	2015	0.0015	0.909	1.174		7.392	23

DT-SACCO	Year	ROA	Diversi fication	Liquidi ty	Managem ent efficiency	Firm size	Firm age
POLICE SACCO SOCIETY LTD					1.349		
	2016	0.0337	0.909	0.983	1.423	7.391	24
	2017	-0.1402	0.909	1.327	1.148	7.427	25
	2018	-0.0819	0.909	1.191	1.216	7.495	26
	2019	-0.3061	0.909	1.296	1.364	7.609	27
KINGDOM SACCO SOCIETY LTD	2015	0.1685	0.909	2.606	1.387	7.709	1
	2016	-0.2919	0.909	1.987	1.324	7.793	2
	2017	-0.2136	0.909	1.757	1.388	7.796	3
	2018	-0.0041	0.909	1.574	2.000	7.809	4
	2019	-0.0041	0.909	1.555	2.000	7.739	5
MAGEREZ A SACCO SOCIETY LTD	2015	-0.1179	0.909	1.307	1.623	8.142	21
	2016	-0.2618	0.917	1.222	1.445	8.216	22
	2017	0.1030	0.917	2.680	1.107	8.248	23
	2018	0.1341	0.917	2.262	1.109	8.287	24
	2019	0.0918	0.917	0.631	1.088	8.293	25
MAISHA BORA SACCO SOCIETY LTD	2015	-0.0045	0.917	1.251	2.399	7.027	15
	2016	0.0527	0.923	1.057	2.446	7.000	16
	2017	0.0538	0.923	1.244	1.494	6.977	17
	2018	0.0737	0.923	0.942		6.937	18

DT-SACCO	Year	ROA	Diversi fication	Liquidi ty	Managem ent efficiency	Firm size	Firm age
					1.472		
	2019	0.0201	0.923	1.048	1.672	6.934	19
METROPOL ITAN NATIONAL SACCO SOCIETY LTD	2015	0.0475	0.935	1.013	1.517	6.858	2
	2016	0.0879	1.000	1.156	1.091	6.861	3
	2017	0.1244	1.000	1.596	0.874	6.961	4
	2018	0.0180	1.000	1.315	0.992	7.039	5
	2019	0.0180	1.000	1.081	2.880	7.118	6
MWALIMU NATIONAL SACCO SOCIETY LTD	2015	0.1605	1.000	1.153	2.137	8.338	29
	2016	0.1071	1.000	0.784	1.830	8.424	30
	2017	-0.0045	1.000	1.019	1.955	8.414	31
	2018	-0.0225	1.000	0.853	2.840	8.456	32
	2019	0.0400	1.000	0.936	1.492	8.486	33
MWITO SACCO SOCIETY LTD	2015	0.0397	1.000	1.116	1.279	8.338	42
	2016	0.0421	1.000	0.007	1.256	8.424	43
	2017	0.1185	1.000	1.299	1.876	6.761	44
	2018	0.0468	1.000	1.110	1.959	6.794	45
	2019	0.0662	1.000	0.801	1.819	8.288	46
NACICO SACCO SOCIETY LTD	2015	0.1105	0.714	0.987	1.997	8.207	33

DT-SACCO	Year	ROA	Diversi fication	Liquidi ty	Managem ent efficiency	Firm size	Firm age
	2016	0.0800	0.818	0.748	1.846	8.288	34
	2017	0.0468	0.818	0.757	0.727	8.377	35
	2018	0.0759	0.818	0.702	0.863	8.425	36
	2019	0.2283	0.818	0.698	1.002	8.452	37
NAFAKA SACCO SOCIETY LTD	2015	0.2214	1.000	0.677	1.128	8.486	8
	2016	0.3650	1.000	0.992	1.051	8.338	9
	2017	-0.0561	1.000	0.856	1.174	8.424	10
	2018	0.0168	0.917	0.321	1.177	6.072	11
	2019	0.1243	0.917	1.153	1.113	6.505	12
NATION SACCO SOCIETY LTD	2015	0.1145	0.917	2.576	1.151	7.511	21
	2016	0.1364	0.917	2.284	1.006	7.538	22
	2017	-0.0400	0.917	0.254	1.089	7.508	23
	2018	0.0199	0.917	0.226	1.078	7.640	24
	2019	-0.0111	0.917	0.206	1.090	7.651	25
NSSF SACCO SOCIETY LTD	2015	-0.2872	0.857	0.853	2.133	8.390	27
	2016	-0.0267	0.875	0.936	1.999	8.480	28
	2017	-0.0035	0.875	0.753	1.895	8.528	29
	2018	-0.1599	0.875	2.074	1.840	8.572	30
	2019	-0.1599	0.857	0.853	1.492	8.626	31
NYATI SACCO	2015	-0.1966	0.875	1.327	1.279	7.673	12

DT-SACCO	Year	ROA	Diversi fication	Liquidi ty	Managem ent efficiency	Firm size	Firm age
SOCIETY LTD							
	2016	-0.2632	0.938	1.191	1.256	7.797	13
	2017	0.0323	0.938	1.296	1.457	7.617	14
	2018	0.0706	0.923	2.606	1.226	7.675	15
	2019	0.1038	0.938	1.987	2.443	7.686	16
SAFARICO M SACCO SOCIETY LTD							
	2015	0.1004	0.857	1.757	2.058	7.125	5
	2016	0.0773	0.929	1.153	1.743	7.092	6
	2017	0.0718	0.929	1.146	1.815	7.102	7
	2018	-0.0745	0.889	1.306	1.816	7.169	8
	2019	0.0365	0.889	1.568	0.897	7.165	9
SHERIA SACCO SOCIETY LTD							
	2015	0.0635	1.000	1.642	0.233	7.469	39
	2016	0.0277	1.000	1.486	0.510	7.421	40
	2017	-0.0882	1.000	0.912	1.251	7.434	41
	2018	-0.0327	1.000	0.796	1.230	7.441	42
	2019	-0.0327	1.000	0.619	1.292	7.458	43
SHIRIKA SACCO SOCIETY LTD							
	2015	-0.2284	0.900	1.049	1.025	7.102	48
	2016	-0.3270	0.900	0.796	1.271	7.097	49
	2017	0.2227	0.900	0.650	1.211	7.090	50
	2018	0.2210	0.900	0.685	1.028	7.118	51
	2019	0.2283	0.900	0.827	1.856	7.125	52

DT-SACCO	Year	ROA	Diversi fication	Liquidi ty	Managem ent efficiency	Firm size	Firm age
SHOPPERS SACCO SOCIETY LTD	2015	0.2175	0.800	0.621	1.588	7.198	14
	2016	0.2715	0.800	1.249	1.517	7.279	15
	2017	0.2842	0.800	0.998	1.827	7.338	16
	2018	0.2461	0.800	1.424	1.555	7.416	17
	2019	0.2692	0.800	1.520	1.557	7.426	18
STIMA SACCO SOCIETY LTD	2015	0.3188	0.909	0.553	1.877	6.505	15
	2016	0.3282	0.909	0.735	1.559	7.511	16
	2017	0.3134	0.909	0.548	1.703	7.538	17
	2018	0.0600	0.909	0.832	1.785	7.508	18
	2019	0.0642	0.909	1.234	0.548	7.640	19
TAQWA SACCO SOCIETY LTD	2015	0.0383	1.000	0.853	0.465	7.651	19
	2016	0.0409	1.000	0.936	0.259	8.390	20
	2017	0.1052	1.000	0.704	2.737	8.480	21
	2018	0.1249	1.000	1.576	4.314	8.528	22
	2019	0.1203	1.000	1.539	1.332	8.572	23
TEMBO SACCO SOCIETY LTD	2015	0.2358	0.750	2.212	1.173	8.626	23
	2016	0.1874	0.750	2.227	1.059	7.673	24
	2017	0.1596	0.750	2.267	0.894	7.797	25
	2018	0.1253	0.750	3.011	0.941	7.617	26

DT-SACCO	Year	ROA	Diversi fication	Liquidi ty	Managem ent efficiency	Firm size	Firm age
	2019	0.1372	0.833	1.263	0.534	7.675	27
UFANISI SACCO SOCIETY LTD	2015	0.0661	0.714	1.153	1.092	7.686	49
	2016	0.0758	0.714	1.068	1.024	7.125	50
	2017	0.0722	0.818	0.722	1.035	7.092	51
	2018	0.0795	0.818	0.520	1.126	7.102	52
	2019	0.0795	0.818	1.152	2.223	7.169	53
UKRISTO NA UFANISI WA ANGLICAN A SACCO SOCIETY LTD	2015	0.0868	0.818	0.998	2.311	7.165	96
	2016	0.0940	0.800	0.828	2.120	7.469	97
	2017	0.0215	0.875	0.831	1.720	7.421	98
	2018	0.0961	0.875	0.625	1.737	7.434	99
	2019	0.0562	0.875	0.904	0.997	7.441	100
UKULIMA SACO SOCIETY LTD	2015	0.0812	0.875	0.695	1.010	7.458	24
	2016	0.0910	0.875	0.759	1.078	7.102	25
	2017	0.0507	0.571	1.151	0.449	7.097	26
	2018	0.0743	0.571	0.499	2.591	7.090	27
	2019	0.0581	0.571	0.616	11.384	7.118	28
UNAITAS SACCO SOCIETY LTD	2015	0.0650	0.571	0.918	7.477	7.125	23

DT-SACCO	Year	ROA	Diversi fication	Liquidi ty	Managem ent efficiency	Firm size	Firm age
	2016	0.0540	0.714	1.343	3.995	7.198	24
	2017	0.0468	0.889	1.610	3.394	7.279	25
	2018	0.0138	0.889	1.804	1.694	7.338	26
	2019	0.0138	0.889	1.646	1.521	7.416	27
UNITED NATIONS SACCO SOCIETY LTD	2015	0.3482	0.889	1.357	1.521	7.426	5
	2016	0.2536	0.889	0.588	1.506	8.216	6
	2017	0.0833	0.889	1.054	1.562	8.248	7
	2018	0.0851	0.889	1.592	3.597	8.287	8
	2019	0.0991	0.889	2.182	4.861	8.293	9
USHIRIKA SACCO SOCIETY LTD	2015	0.2214	0.941	1.610	5.024	7.027	20
	2016	0.3650	0.933	1.804	3.654	7.000	21
	2017	-0.0561	0.933	0.853	4.945	6.977	22
	2018	0.0168	0.933	0.936	2.781	6.937	23
	2019	0.1243	0.933	1.111	3.045	6.934	24
WANA – ANGA SACCO SOCIETY LTD	2015	0.0912	0.938	1.424	3.027	6.858	14
	2016	0.1378	0.938	1.520	2.598	6.861	15
	2017	0.1111	0.938	0.553	2.513	6.961	16
	2018	0.0781	0.938	0.735	1.527	7.039	17
	2019	0.0672	0.938	0.548	1.604	7.118	18

DT-SACCO	Year	ROA	Diversi fication	Liquidi ty	Managem ent efficiency	Firm size	Firm age
WANANDE GE SACCO SOCIETY LTD	2015	0.0664	0.917	0.832	1.507	8.338	15
	2016	0.0664	0.917	1.234	1.437	8.424	16
	2017	0.0673	0.923	0.853	1.025	8.414	17
	2018	0.0547	0.938	0.936	0.839	8.456	18
	2019	0.0547	0.941	0.704	0.744	8.486	19
WAUMINI SACCO SOCIETY LTD	2015	0.0420	0.909	1.576	0.800	8.338	19
	2016	0.2936	0.909	1.539	0.704	8.424	20
	2017	0.1131	0.909	2.212	0.821	6.761	21
	2018	0.1881	0.909	2.227	1.147	6.794	22
	2019	0.2053	0.909	2.267	1.152	8.288	23