

**EFFECT OF COVID-19 PANDEMIC ON PERFORMANCE OF DEPOSIT- TAKING
SACCOs IN KENYA**

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DECLARATION

I, the undersigned, affirm that this is my original work and that it has not been presented for a degree to any other learning institution or university other than the University of Nairobi.

Signed 

Date 23rd September 2022...

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This Research project has been submitted for examination with my consent as the University Supervisor.

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DEDICATION

I dedicate this project to God for His protection, knowledge, and wisdom. and inspiration He has accorded me throughout the study.

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LIST OF ABBREVIATIONS

Act	Sacco Societies Act No 14 of 2008.
AGM	Annual General Meeting
BOD	Board of Directors
CAR	Capital Adequacy Ratio
CBK	Central Bank of Kenya
COVID-19	Corona Virus Disease 2019
CRB Regulation 2020	The Banking (Credit Reference Bureau) Regulations, 2020 (L.N.) 55/2020
CSA	Cooperative Societies Act (Cap 490)
DT-SACCOs	Deposit Taking Sacco Societies
FRC	Financial Reporting Centre
MFBs	Micro-Finance Banks
Non-WDT-SACCOs	Non-Withdrawable Deposit-Taking SACCOs
ROA	Return on Assets
SACCO	Savings and Credit Cooperative Organization
SASRA	SACCO Societies Regulatory Authority
SMEs	Small and Medium Enterprises
SPSS	Statistical Package for Social Sciences
SSAR	The SACCO Supervision Annual Report

ABSTRACT

The COVID-19 pandemic's impact on the Kenyan economy was felt from March 2020 when containment measures like a ban on public gatherings, and lockdowns were implemented by the government. This study sought to establish the effect of COVID-19 on the performance of deposit-taking SACCOs in Kenya, as measured by the Return on Assets (ROA). Specifically, the study sought to assess the impact on capital adequacy, scale and outreach, and leverage. The researcher used a descriptive research design with a sample of 40 SACCOs. The researcher collected secondary data from individual financial reports as provided by the SACCOs and SASRA Reports. The study adopted an event-study methodology which included four years from 2018 to 2021. The event methodology included two years before the COVID-19 pandemic and two years after the COVID-19 pandemic. The data was collected to compute the four variables based on financial parameters, like the number of members, total equity, total assets, profit after tax, number of employees, and total debt. The data collected were analyzed using SPSS version 25 and descriptive and inferential statistics were used for analysis. The researcher checked the performance of the SACCOs pre and post COVID-19 and a comparison done to establish if COVID-19 had a significant impact on the performance of the Kenyan Deposit-Taking SACCOs. The research study findings showed that mean profitability, as measured by return on assets, declined post-COVID-19. The SACCOs had a higher leverage ratio post-pandemic, while the capital adequacy reduced following the pandemic. The scale and outreach ratios were adversely affected by the pandemic. Concerning the significance of the predictor variables, the regression analysis showed that capital adequacy had the most significant effect on the SACCOs' return on assets post-pandemic. The ANOVA results also showed that the F-statistic was greater than the F-critical at 5% significance ($p=0.000$) indicating that the regression model used was suitable to determine if COVID-19 impacted the financial performance of Kenyan SACCOs. The paired t-test showed that only financial leverage had a statistically significant difference in the mean performance before and after COVID-19 pandemic ($t(39) = 2.524, P < 0.005$). Based on these findings, this study recommends that the government should prioritize SACCOs in their financial deepening policy plans and work with SACCO management to improve SACCOs' scale and outreach. The study recommends that SACCOs establish innovative plans on how to improve their equity to prevent over-reliance on debt that can further worsen the leverage and capital adequacy situations.

CHAPTER ONE

INTRODUCTION

1.1 Background of The Study

The COVID-19 pandemic's impact on the Kenyan economy was felt from March 2020 when containment measures like curfews, a ban on public gatherings, and lockdowns were taken by the government. Consequently, mainstream, and unconventional financial institutions, like the Savings and Credit Organizations (SACCOs), were significantly affected in their everyday operations, performance, and growth. The study's first variable is the performance of deposit taking SACCOs in Kenya. According to the Ministry of Industrialization, Trade, and Enterprise Development, the history of SACCOs can be traced back to 1908, when the first Cooperative Society was established in the dairy sector. The ministry further posits that SACCOs' performance has been improving consistently over the years since the Sessional Paper No. 1 of 1994 was passed, requiring more private sector involvement in the economic and sustainable development, what was called the "recovery and sustainable development of the year 2010." As a variable in the study, the performance of these SACCOs will therefore focus on return on assets, as an indicator. Other indicators of performance in SACCOs include operating and financial self-sufficiency, the membership impact, the risk average ratio, effective repayment rate, and the impact on the growth in the loan portfolio's value. The second study variable is the COVID-19 pandemic. According to the Kenya Union of SACCOs (KUSCCO), SACCOs offer much-needed credit facilities to Small and Medium Enterprises (SMEs) during the pandemic through technological and adequate loan appraisal processes; thus, the two study variables are related. SACCOs can be deposit taking or non-deposit taking. The deposit-taking SACCOs are further categorized into withdrawable and non-withdrawable deposit-taking SACCOs.

Three theories will complement the current study that seeks to examine the relationship between the performance of SACCOs in Kenya and the COVID-19 pandemic. The first is the kin effects theory. According to studies done by Al-Azzam, Hill & Sarangi (2012) on the loan repayment of SACCOs, the authors made a finding that there was a significant negative relationship between the percentage of repayment rate and close relatives in the SACCO groups, among 262 loan groups in Jordan. This is because an individual might find it difficult to impose a penalty on a kin member. The result of this theory leads to the hypothesis that the performance of SACCOs in Kenya with more kin members has suffered compared to the SACCOs with fewer kin members. The second theory is the prior-interaction theory, which posits an association between pre-existing factors like social ties and past interactions. Besides, the frequency of meetings on loan repayment rates is also a factor examined in the study. With the COVID-19 restriction measures, there is a high chance of reduced meetings, which can be hypothesized to have reduced the performance of the SACCOs in Kenya if the prior-interaction theory holds. However, research by Van Bastelaer and Leathers (2006) in Africa suggests that the theory may not apply in some cases as they found that farmer loan groups made decisions by themselves on how frequently they met. Based on this decision, the study found a negative correlation between the frequency of meetings and repayment rates. This was because of reversal, where the non-repayment by the groups motivated members to have more frequent meetings to improve repayment. The last anchoring theory that can show the relationship between the study variables is the Assortative or Partner Choice, which posits that most SACCOs support the loan groups to have endogenous formation, meaning that in such a group, individuals select their group members themselves. While research by Cassar et al. (2007) posited that social and cultural homogeneity did improve loan repayment in a laboratory microfinance experiment conducted in South Africa and Armenia, another research by Paxton, Graham Douglas, and Thraen (2000) made a finding that there was a negative association between group homogeneity and repayment, based on

data from Burkina Fasso. Thus, the theory's applicability in the Kenyan case is proven as the theory does support some sort of association or relationship between the study variables, as will be further examined in the project.

In Kenya's wake of the COVID-19 pandemic, Small and Medium Enterprises (SMEs) in the tourism, hotel, transportation, and restaurant sectors were the hardest hit by the COVID-19 pandemic. Since the performance of SACCOs depends significantly on the performance of their clients or members, the adverse impact of the pandemic contributed to an increased number of loan defaults by SACCOs in these sectors (SASRA, 2021), especially the transportation one where tough measures were taken like the ban of night travel due to curfew. The report by KUSCCO (2021) shows that SACCOs became more skeptical of extending credit facilities to SMEs because of the high number of non-performing loans, thus the need to research the overall impact of such moves on the performance of the SACCOs in Kenya. In this context, the key performance indicators to be researched are portfolio quality, financial viability, scale and outreach, leverage and capital adequacy, and profitability and efficiency ratios. According to SASRA (2022), there are 49, 43, 22, 37, and 24 farmer, teacher, community, government, and private sector-based Deposit Taking SACCOs in Kenya with a total membership of 5,470,192 members.

1.1.1 COVID-19 Pandemic

World Health Organization (WHO) declared COVID-19 a global pandemic in 2019, but the announcement was made in Kenya in March 2020. The immediate effect of the pandemic was a restriction of movement globally and other government restriction measures. Some of the measures that Kenya put in place, in March 2020, were a lock-down in Nairobi and the immediate environment, a curfew across the country, and mandatory use of face masks in public. Face-to-face

meetings of individuals more than 100 were also banned, including the Annual General Meetings of institutions like the SACCOs.

The research issues related to the concept of the COVID-19 pandemic that would warrant a study are the impact of the disease on the performance of different economic sectors in Kenya, the general lessons that can be learned from the nature of economic preparedness for handling the disease, the long-term economic impact of vaccination, or lack thereof, on the performance of key economic sectors in the country and possible opportunities for economic growth for the SACCOs arising from the pandemic.

Considering the COVID-19 pandemic has affected the economy since March 2020, it is new in the research field. There is inadequate data on the operationalization of COVID-19 to support proper empirical evidence on how the variable is measured. However, because the pandemic has had both qualitative and quantitative impacts, researchers like Kansime, Tambo, Mugambi, Bundi, Kara & Owuor (2021) have used mixed measurement methods with both qualitative and quantitative aspects like surveys.

1.1.2 SACCO's Performance

The information by SASRA (2021) shows that SACCOs have maintained their lending model despite the pandemic's effect on the national economy. The performance of SACCOs is analyzed through metrics like portfolio quality, productivity and efficiency ratios, financial viability, scale, and outreach, leverage and capital adequacy, and profitability ratios. The effect of the pandemic on performance, as a variable, can either be adverse/negative or positive. SACCOs are said to have positive performance if they meet their objectives, and conversely, they are said to be negatively performing if they fail to meet the laid down objectives.

Three research issues within the concept of SACCOs performance would therefore warrant a study. The first issue is the relationship between specific performance indicators on the overall progress of SACCOs. For example, it would warrant a study to research the performance indicator, among the listed ones, which would have the most significant impact on the overall SACCOs' performance in Kenya. The second research issue would be the role of Board Management on the performance of the SACCOs. It would be informative to research and make findings on the role of BODs on the performance of these SACCOs considering that COVID-19 must have impacted SACCOs differently, thus the need to find out if their Management could have contributed to the differences. The last key research issue is the factors that influence the performance of SACCOs other than COVID-19, which can then help determine if the performance of Kenyan SACCOs is more influenced by the other factors like legal framework and financial deepening, or the pandemic itself.

Unlike the COVID-19 pandemic, the performance of SACCOs as a variable has been explored, and there exists a plethora of information on its measurement. Alexander (2010) used a survey to measure the performance from the perspective of performance indicators, while Goodluck (2013) used a cross-sectional design to operationalize the data. Quantitative data measurement tools have been used in the existing literature regarding this study variable.

1.1.3 Saccos Performance and COVID-19

Based on market efficiency, next of kin, and assortment theories, there is evidence pointing to the positive correlation between market events, like the COVID-19 pandemic, and the performance of SACCOs, like in Kenya. However, there is no direct empirical evidence supporting this theoretical relationship between SACCOs' performance and the COVID-19 pandemic, thus the need for

research in the area. The research will therefore rely significantly on the financial reports provided by the 175 licensed DT-SACCOs, as provided for in the SASRA database (SASRA, 2022).

The research will also use other academic sources, government reports, and secondary data from KUSCCO to explain the relationship between the COVID-19 pandemic and the performance of SACCOs in Kenya. The effect will therefore be examined by comparing the performance of SACCOs before and after the COVID-19 pandemic. The relationship will therefore be empirically proven and thus the research gap identified in the existing literature will be addressed.

1.1.4 Saccos in Kenya

Savings and Credit Cooperative Organizations have the objective of pooling savings for the benefit of members and, in turn, providing these institutions with credit facilities at reduced interest rates compared to the rates charged by mainstream financial institutions like commercial banks. In Kenya, SACCOs are based on principles of equity, solidarity, self-help and self-responsibility, and democracy. There are categorized into In Kenya, SACCOs are Government based, teacher-based, community-based, private sector based, and farmers based. These SACCOs can be categorized into non-financial and financial, with the non-financial ones dealing with the marketing of members' produce like coffee and tea while financial cooperatives offer active financial services like housing and investment on behalf of their members (SASRA, 2022). According to research by Okwach (2017) on the capability to innovate and performance of deposit taking SACCOs in Nairobi County, there are 38 registered SACCOs in the country, which shows a significant growth in the sector. Performance of SACCOs as a variable of the study is therefore related to the COVID-19 pandemic because of the general impact of the pandemic on the money supply and demand, like reduced employment opportunities which has reduced individuals buying and spending power, thus

impacting the members' ability to contribute deposits to the SACCOs. However, the pandemic has also opened the SACCOs. The mainstream banks use selective credit control to lower the default rate, thus leaving the public with limited options, SACCOs being one of them. Therefore, the research will seek to find out the impact, positive or negative, on the performance of the SACCOs arising from the COVID-19 pandemic.

1.2 Research Problem

A study by Nyamrunda & Freeman (2021) established that two-thirds of SACCOs fail within their first year of incorporation and operation due to a lack of access to finance. The COVID-19 pandemic could have worsened this performance issue. The researchers further posited that the number of SACCOs registered annually has increased, given the country's massive infrastructure and technological penetration that allows transactions to be made online. Still, the issue remains with the lack of business finance for sustainability which is a backbone of SACCOs' operations, as they rely totally on members' contributions and any factor affecting the members can cripple the sector; thus, the inadequacy of accessing financing options forces these institutions to either merge or shut down. Therefore, the first central problem this proposed study aims to explore is the key performance areas of SACCOs that have been adversely affected and the performance areas that may have benefited from helping expand the performance of these institutions into the future, as they support not only the individual members but also the SMEs.

Studying the performance of the SACCOs before and after the COVID-19 pandemic would benefit the ordinary citizen based to a report by the Ministry of Industrialization, Trade, and Enterprise Development (Gatuguta, Kimotho & Kiptoo, 2014). The report shows that Kenya is among the nations with unique coronavirus strains, like the Delta variant, which destabilized its financial sector, with

many citizens being middle- or low-income earners. Further, the ravaging impacts of the pandemic affected the relationship between customers and financial institutions such as microfinance entities and banks as the slowed economic activity affected the capacity of customers to repay their credit and increased the appetite for debt. The pandemic would most probably affect the SACCOs' performance; thus, by studying the two variables, the findings could help the members to remain resilient moving forward or better prepare themselves should another global pandemic interfere with the financial markets.

The literature has limited information considering the COVID-19 pandemic has affected the economy for less than three years. Because of this limited information, there is a significantly wide gap on the effect of the pandemic on the performance of SACCOs, making the proposed research critical for the Kenyan economy's future success, especially regarding the individual members and the Small and Medium Enterprises (SMEs). As posited in the context of the study, the existing literature has not addressed the specific performance factors affected by the pandemic, with more emphasis currently on the overall effect of the pandemic on the Kenyan economy.

The specific questions that the study seeks to explore include: How has the SACCOs paradigm changed within Kenya in the wake of COVID-19? To what extent has the recent pandemic and economic changes destabilized the relationship between microfinance institutions and SACCOs in Kenya? What other SACCO dimensions can help better understand the relationship between SACCO's performance and the pandemic? What is the role of SACCOs on SMEs' development in Kenya?

1.3 Research Objective

To assess the impact that COVID-19 had on the performance of SACCOs in Kenya.

1.4 Value of The Study

The study findings will add to the academic research on the impact of the pandemic on the performance of SACCOs in Kenya. This is because there is little literature in the field of SACCOs performance after events like the pandemic, or political seasons, as most research papers focus on micro and small enterprises like SMEs. Therefore, the research will shed light and form a foundation for future research in this area.

The outcomes of the study will also have a positive impact on the policy framework regulating the performance of SACCOs, which is currently spearheaded by SASRA. Considering that SACCOs stimulate savings among members and contribute significantly to the growth of small firms in the country, it should be in the interest of the government of Kenya to ensure that policies are in place to enhance their resilience during tough economic times. Through the research findings, the government, through SASRA, will be able to develop reliable and relevant policies for SACCOs further.

The stakeholders in the business of governing SACCOs will also benefit from the outcomes of the study. Management of SACCOs is one of the key determinants of their performance regardless of the economic condition. The findings will help shed light on the role of Management in influencing the other performance factors like profitability and loan repayment rates during the COVID-19 pandemic. Besides, the study will bring out the best performance indicators that apply to the SACCOs to ensure that in the future, the firms focus on these areas to be better prepared for economic disturbances such as that caused by the COVID-19 pandemic.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides an overview of the theories that the study will be based on. Besides, the study evaluates empirical evidence from local and global literature. To ensure the relevance of the studies to the research problem, the literature review is based on recent, original, and authoritative sources like thesis, dissertations, and peer-reviewed journals from local (Kenya) and international publications.

2.2 Theoretical Framework

The theoretical review focuses on the theory, its originator, the key propositions, the criticisms, and the relevance of the theory to the study. Considering the containment measures imposed by the government and economic measures like increased contributions directly to SMEs, the following theories are related to the research study.

2.2.1 Efficient Market Theory

The Efficient Market Theory is based on the economist Eugene Fama's Ph.D. dissertation in the 1960s about the efficient market hypothesis. The background of this theory can be traced back to 1863 when Ragnauly, a French stockbroker, articulated the first clear proposition of the random walk hypothesis, which also included the proposition that "the market of a publicly traded asset aggregates all value-relevant information." The theory was supported by Cowles and Jones (1937) who examined whether professional market forecasts could help predict stock prices. Later in 1970, Fama (1970) made a review of the empirical evidence on the Efficient Market Theory based on the

proposals. Roberts (1967) and supported the theory by arguing that there are three forms. The weak form efficiency where the past returns' patterns cannot be used by experts to predict future excess returns, semi-strong form where the public information cannot influence or be used to predict future excess returns and the strong form implies that no information, including the direct personal knowledge of SACCO leaders, can be used to predict future excess returns in the organizations or the market.

In contrast, Ross (1976) posted that the EMH failed to explore the source of information or the mechanism that caused the information to be reflected in the market performance of firms and developed the Arbitrage Pricing Theory [APT]. The author further argued that the arbitrageurs' activity would usually "drive the expected return of assets toward a value consistent with an equilibrium trade-off between risk and return" (Ang, Goetzmann & Schaefer, 2011).

Even though the theory focuses on stock market reaction to latest information in the market, it can be applied to the analysis of SACCOs performance based on latest information in the market, like the COVID-19 pandemic. For example, the reaction of the SACCOs to the COVID-19 pandemic would help understand if the firms supported the weak, semi-strong, or strong hypothesis. The theory is therefore relevant to the current study.

2.2.2 Prior Interaction Theory

George Herbert Mead is credited to have founded the prior interaction theory in the 1920s at the University of Chicago. The research by George Herbert was corroborated in 1998 by Zeller who investigated the connection that interaction factors like social ties, past social experiences, and frequency of meetings have on the loan repayment rates in organizations like Zeller (1998). Further, Zeller (1998) made the finding that many social bonds between group members, like belonging to the

same village, extended family, or ethnicity resulted in a positive correlation with repayment rates in 146 loan groups based in Madagascar. Feigenberg, Field, and Pande (2013) also weighed in and performed an experimental intervention study with SACCOs in India. After randomly varying the frequency of meetings, during the first cycle of the loan, the authors found that more frequent meetings have an association with long-term social interaction and lower default rates.

In contrast, Wydick (1999) conducted a study refuting any connection between prior interaction and the performance of SACCOs. In his study conducted in Guatemala, the author sought to ascertain if all members of the SACCO were friends and whether they were involved in any common social activities. He wanted to find if there was a significant effect on repayment and made a finding that there was none. Further, van Bastelaer and Leathers (2006) also made an opposing view on the theory based on their finding that the frequency of group meetings had a negative association with repayment rates in rural Zambia. However, according to this study, the farmer loan groups included decided how frequently they met, but the authors still concluded a negative relationship between frequency of meetings and repayment rates in SACCOs but commented that the relationship could result from reversed causality.

Therefore, the theory is critical to the current study considering the physical hindrance caused by the pandemic. Besides, the theory will be essential to find if the impact of physical interaction may have influenced their performance in one way or another. An example of the possible effect is the annual general meetings of the SACCO members.

2.2.3 Assortation or Partner Choice theory

SACCOs are formed based on shared interests, like belonging to the same profession, like Kenya Police SACCO, or the same family. George Homans founded the theory in 1937. The theory was

premised on the assumption that self-selection could improve the group-lending schemes' repayment rates. This premise was further supported in 1999 by Ghatak who posited that through mitigation of adverse selection in credit markets, in which SACCOs operate, the cost of borrowing is lowered as well as the default risk (Ghatak 1999). More studies have examined whether the self-selecting groups do indeed perform better than groups with random membership; because most SACCOs use the exact mechanism to form or invite their members. Sharma and Zeller (1997) found that groups formed via self-selection posted better repayment performance. Besides, Abbink et al. (2006) relied on a microfinance game with student subjects, to make the finding that cooperation of self-selected groups declined in later rounds. Similarly, Cassar et al. (2007) found that social and cultural homogeneity influences improving loan repayment, based on research conducted in South Africa and Armenia.

In contrast, Wydick's (1999) study of Guatemalan SACCOs reaches a conclusion of no statistically proven significant difference between the repayment rates of groups' assortment methods, as associations like acquaintances did not improve repayment rates. Besides, Paxton, Graham Douglas, and Thraen (2000) found a negative association between group homogeneity and repayment in Burkina Fasso.

The theory will guide this research by focusing on the membership of SACCOs based on their nature, like farmers-based, rural-based, or urban-based. It will therefore help the research to examine if the effects of the COVID-19 pandemic like curfews prevented physical meetings and if the SACCOs were equally affected. Considering that there is mixed evidence that assortment improves loan repayment in SACCOs, the theory is therefore relevant to the current study to interpret these findings carefully.

2.3 Determinants of Performance of SACCOs

Four key performance indicators can be researched to know the impact of COVID-19 on the performance of SACCOs in Kenya. These determinants are examined in respect of their meaning, relevance to the current study, and measurement. The three determinants of performance of SACCOs, as measured by the Return on Assets (ROA) are scale and outreach, leverage, and capital adequacy.

2.3.1 Capital Adequacy and performance

Capital adequacy is the measurement of the available capital or equity expressed in the percentage of the total assets (Barus, Muturi, Kibati & Koima, 2017). According to SASRA (2022), the recommended capital adequacy for SACCOs is 10%, and a SACCO with an adequacy ratio below 10% is risky as default on loans can significantly affect their performance.

Capital adequacy is positively correlated with the performance of SACCOs because a higher capital adequacy ratio indicates that the SACCOs are well capitalized and do not over-rely on debt thus can get higher returns from the assets. The measurement of capital adequacy is the capital to total assets ratio.

2.3.2 Leverage and Performance

Financial leverage is the use of fixed cost financing which is a decision reached by a firm or SACCO when its funds derived from fixed costs are used to earn more than the incurred fixed financing costs. The aim of using financial leverage as a financial strategy is to increase return to the SACCO members or shareholders in a firm (GWEYI & Karanja, 2014)

Financial leverage is measured by the leverage ratios, like the debt-to-equity ratio. Concerning the relationship between leverage and performance among SACCOs, Ibhagui and Olokoyo (2018) found a negative association while the research by Widyastuti found no relationship between performance and leverage in SACCOs.

2.3.3 Scale, Outreach, and Performance

Scale and outreach entail the number of clients served, and growth is the increase in both scale and outreach regarding SACCOs. As a performance measure, the key aspects that should be examined are the number of clients per staff, the loan outreach with regards to active borrowers, and the saving outreach, which would focus on the total balance of voluntary savings accounts with the SACCOs. According to SASRA (2020), the overall membership of SACCOs has decreased from 83.05% to 74.91% among the active members while the dormant ones have increased from 16.95% in 2019 to 25.09% as of December 2020. According to research, performance is positively correlated to scale and outreach, because more members imply higher deposits which translated into higher interest on deposits and overall performance. The ratio of members to employees will be used to measure scale and outreach.

2.4 Empirical Review

Rwigema (2020) focused on the Effect of COVID-19 on MSMEs in Rwanda and had the objective of finding the effect of the containment measures by the Rwandan government on the small and micro firms' operations. Therefore, the study's target population was the Rwandan microfinance sector consisting of 460 institutions (438 SACCOs, three banks, and 19 limited liability companies). The sample size for the research was 110 MSMEs, even though the researcher did not indicate the study period used to gather data from the sample size. The data, analyzed using descriptive statistics, made

the finding that most participating enterprises have been severely affected by the pandemic regarding decreased demand, reduction in sales, supply chain disruptions, and financial disruptions. For example, the researcher made the finding that non-performing loans went up by 11%. Therefore, the research is significant to the study as it relates to the hypothesis that the pandemic may have had adverse effects on Kenya's SACCOs, considering the closeness of environmental factors between Rwanda and Kenya. Besides, the large sample size makes the research generalizable.

Japhet and Cyril (2020) focused on the Socio-economic effects of the COVID-19 pandemic on the performance of Cooperative societies in Tanzania. The researcher's objective was to find the social and economic impacts of the pandemic on SACCOs, using a qualitative approach. The researchers focused on the Tanzanian SACCOs and gathered data from 40 of them. The data was analyzed qualitatively, and the researchers made the findings that the impacts of COVID-19 on the Tanzanian SACCOs could be summarized into a sluggish movement of agricultural products, disrupted AGMs, limited loans, an increase in loan non-performance, and a decrease in members' savings. Even though the researchers stated the resource dependence and epidemiologic transition theories, the researchers did not indicate ethical concerns, which may have watered down the interview data. Still, overall, the study is relevant to the proposed research.

William (2017) researched the role of savings and credit cooperatives in improving household income, the case of teachers in the Mukono district, Uganda. Even though the research did not primarily focus on the performance of the SACCOs as is the central objective in the proposed study, the findings can be relevant. The researcher aimed at studying the relationship between SACCOs and the household income of teachers, focusing on the study population, which included schools and teacher members of SACCOs in the district. The researcher further narrowed the research to a sample size of 15 teacher SACCOs, whose data was analyzed using SPSS. The researcher made the

finding that SACCOs did improve the overall living standard of teachers, considering that they had a low default rate as the deductions were made directly from their salary, thus making the current study focus also on such SACCOs in Kenya to find out the impact of the pandemic on their performance. The researchers also did an excellent work of ensuring that they disclosed ethical considerations, making the findings reliable and applicable to the current study.

Davies and Fizz (2021), focused on the barriers to product innovation among the manufacturing micro, small and medium enterprises in Malawi. The objective was to investigate the innovation barriers that affect MSMEs in Malawi. The research used a sample size of 45 manufacturing MSMEs. Having collected empirical data using semi-structured questionnaires, the research made the finding that market competition, difficulty in accessing loans, inadequate government support, and labor laws contributed to the failure of most MSMEs. These findings are relevant to the proposed research as the same factors could also contribute to the SACCOs' performance in Kenya.

Kamau John Mburu (2010) did a study to establish the determinants of financial performance of SACCOs in Kenya. The research also aimed to establish the challenges of performance experienced in the SACCO sector of the economy. The study was done in Kenya, focusing on deposit taking SACCOs. The study population was the SACCOs operating within Nairobi Province (County) and were registered by the Nairobi telephone directory 2010. The researcher narrowed it down to a random sample of 35 SACCOs that were surveyed. Concerning the study period and analytical model used, the researcher did the study within three months and made three key findings, based on the data analysis done by statistical method, using SPSS version 25. First, the researcher found that 70.4% of SACCOs relied on strategic plans to guide their operations. The second key finding was that SACCOs employed managerial staff and lower-level staff to run their organizations. The last finding was that SACCO membership was a key determinant of its overall performance. The study

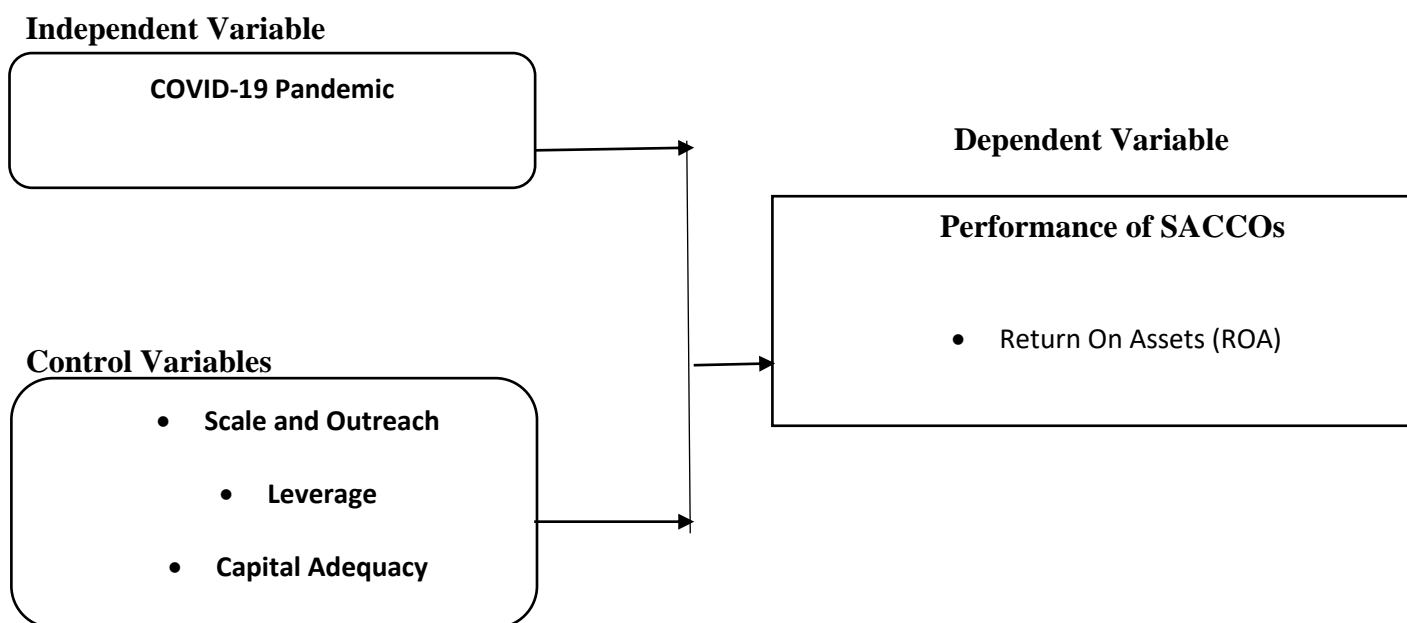
provides valuable information as the current study will focus on the financial-based factors related to SACCO performance and examine other possible non-financial determinants. However, the study ought to have included more SACCOs from other regions to have better and more generalizable findings as the current sample size was narrowed to one county.

Kiai Joanne Cheruto (2015) studied the board performance measurement policies of SACCOs and the relationship between board performance measurement practices. The research was done in Kenya and focused on the SACCOs in Mombasa County as the target population. The researcher narrowed down her work to a sample of seven SACCOs within the county. The study was done within four months, and multiple regression was used to analyze the relationship between the variables. The researcher made the finding that various performance measurement practices were adopted in the firms, like regular board meetings, publishing of board chairman's reports, peer assessment, and performance contracts. Based on the regression results, the research concluded a positive relationship between peer assessments and the overall performance of SACCOs, while there was a negative relationship between board meeting resolutions, performance contracts industry indicators, independent evaluators, and the performance of SACCOs. Therefore, the study provides helpful information for the current study to focus on peer assessments while researching the performance of SACCOs in Kenya. The study ought to apply more than one analytical test to ensure that the relationship of the variables was proven by more than the regression analysis.

Onguka (2012) did a study to determine the effect of regulations on the financial performance of deposit-taking savings and credit cooperative societies in Kenya. The researcher collected data from a population of 135 DTS licensed by SASRA and used both inferential and descriptive statistics to analyze the data. From the research, the author found out that capital adequacy, liquidity, and Management efficiency were the most affected by regulations on DTS, which is relevant to the

proposed study that focuses on the research, considering that the research finding is based on a large sample size, thus is not only valid and reliable but also generalizable.

2.5 The Conceptual Framework



Discussion of the conceptual framework

The proposed research seeks to find the relationship between the COVID-19 pandemic and the performance of SACCOs. In this research, the key control measures to be researched under the COVID-19 pandemic independent variable are leverage, capital adequacy, scale, and outreach. The dependent variable is the performance of SACCOs to be measured by the return on assets. The COVID-19-related restrictions that could have affected the SACCOs are movement restrictions and positive economic stimulus aimed at the organizations.

2.6 Summary of Literature Review

This chapter has reviewed theories upon which the research will be based and reviewed the empirical literature from both local and global sources. The review of literature has covered the performance indicators, the key areas within the SACCOs where these performance indicators are like evaluation of employee's work and the strategies of monitoring the progress of SACCOs to ascertain if their performance has been adversely or positively impacted. From the empirical evidence, little information is available on the relationship between COVID-19 on the performance of SACCOs, even though the reviewed studies help to develop the hypothesis that COVID-19 has had a negative effect on the performance of the SACCOs, as will further research in the proposed study. The studies reviewed show that there has not been a direct focus on the impact that the COVID-19 pandemic has had on the performance of SACCOs, thus the study aims to establish the impact.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter defines the research design and methodology to be used in the overall study, focusing on the research design, the population, sample size, data collection instruments and procedures, and data analysis.

3.2 Research Design

According to Khaldi (2017), a research design is a strategy used when conducting research to establish an acceptable standard that has been effectively validated and regarded significant by various researchers in the field. To achieve the research objective, a descriptive research design will be used. A descriptive research design is scientific and is best when describing a phenomenon or an object, like COVID-19 and its effect on the performance of the SACCOs in Kenya. As a research design, the descriptive research will involve an extensive and well-focused identification of existing knowledge gaps through data gathering from the respondents in a natural setting, like SACCOs in Nairobi County.

3.3 Population and Sample

Population in research is a complete set of individuals or objects with common observable characteristics. A sample refers to the exact group of events, people, services, elements, houses, or other objects that a researcher wants to analyze. The population of this study will include all registered SACCOs in Kenya, as given by the data in the ministry of industrialization, trade and enterprise development, and KUSCCO Limited. As of now, the number stands at 5,000 registered

SACCOs in the country (KUSCCO, 2021). Further, the registered SACCOs to be included in the research must comply with the Cooperatives Societies Act (Cap 490 Laws of Kenya), which require all the firms to report their audited annual returns by 30th April every year, which will be critical in analyzing the performance measures (Kanana & Matabi, 2021).

3.4 Sample Design and Sample Size

This section shows the sampling technique and steps to be followed to identify the final sample size. It also shows the exact sample size that will be considered in the study.

3.4 1 Sampling Technique

According to Taherdoost (2016), a sampling technique is the procedure that comprises picking a sample of objects to represent all cases under consideration as part of the investigation. The best sampling design to use in the research is stratified random sampling, which is based on the general classification by KUSCCO that SACCOs are rural-based or urban-based.

3.4 2 Sample Size

From each category or stratum, the research will include 20 SACCOs, leading to 40 SACCOs which will be a fair representation of the population. Through a random stratified sampling design, the table below shows a summary of the sample size.

SACCOs Strata	Sample Size
Rural SACCOs	20
Urban SACCOs	20

3.5 Data Collection

Secondary data sources will be used as the exclusive means of collecting data to determine the impact that the pandemic has had on the performance of SACCOs in Kenya. Data from secondary sources will be collected in a data collecting sheet, shown in Appendix II, and will come from a range of publications like the SASRA Database and individual SACCOs' databases.

3.6 Data Analysis

This section explains the data analysis model that the proposed research will use. The section further shows the calculation involved in the model and operationalization of the study variables. The section also explains the significance tests to be used and how the study results will be interpreted.

3.6.1 Diagnostic Tests

Diagnostic tests are useful in testing the feasibility of the model selected for the study and the fitness of data before further analysis. A normality test was done to check if data was normally distributed, using Shapiro Wilk Test, while multicollinearity and serial correlation were done to check if the predictor variables had a linear relationship, using the Variance inflation factor test. Heteroscedasticity was done to assess whether the error term had remained consistent over time, using the Breusch Pagan test.

3.6.2 Analytical Model

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \varepsilon$$

Where,

Y is the performance of the SACCOs in Kenya as measured by the Return on Assets (ROA)

β_1 , β_2 , and β_3 are the beta coefficients of the variables

X1 is the scale and outreach as measured by the number of members per employee

X2 is the leverage as measured by the total debt to total equity ratio

X3 is the capital adequacy as measured by the equity capital to total assets ratio

ε is the error term

3.6.3 Significance Test

F-statistics was used to evaluate the significance of the model. The study was based on a 5% (0.05) level of significance. The null hypothesis (H_0) was that the model is not fit to measure the study variables. The decision based on the significance test was that the null hypothesis is rejected if F-statistic is greater than the F-critical at a 5% significance level.

3.6.4 Operationalization of Study Variables

Concept	Variable	Indicators	Measurement
Dependent Variable	Financial performance	Return On Assets (ROA)	Profit After Tax/ Total Assets
Control Variables	Scale and Outreach	The loan outreach with regards to active borrowers	Number of members/ Number of employees
	Leverage	Leverage Ratio	Total Debt/ Total Equity
	Capital Adequacy	Capital Adequacy ratio	Core Capital/ Total Assets

CHAPTER FOUR

DATA ANALYSIS, RESULTS, AND DISCUSSION

4.1 Introduction

This section provides the study results aligned with the study objectives. The section focuses on data collected from SASRA and the SACCO's financial reports to assess the impact of the COVID-19 pandemic on the performance of deposit-taking SACCOs in Kenya. The section provides results narrowing down on the financial performance with regards to measures of return on assets and control variables, capital adequacy, leverage, scale, and outreach. The results collected from secondary sources have been presented and summarized in tables for easy analysis.

4.2 Descriptive Statistics

This section describes the data in form of mean, standard deviations, minimum, and maximum. The provided statistics compare the financial performance of SACCOs, as measured by the Return on Assets, before and post-COVID-19 pandemic to assess whether the pandemic had a significant impact on the Kenyan SACCOs' performance.

4.2.1 Pre-Covid Descriptive Analysis

The research sought to find out the nature of study variables before COVID -19 pandemic. The mean, minimum maximum, and standard deviation statistics were used for analysis.

Table 4 1 Pre-COVID Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	40	.00095045	.08222940	.0225946705	.0187230679
SCALE AND OUTREACH	40	5.40151515	2517.581579	401.9622326	451.7276046
LEVERAGE	40	1.07748542	50.22398765	10.29098743	11.28061718
CAPITAL ADEQUACY	40	.02088063	.38000633	.1556895061	.0915787283
Valid N (listwise)	40				

The study findings showed that before the COVID-19 pandemic, the SACCOs recorded an average Return on Assets of 2.3% with the maximum SACCO recording 8.2% in the period, with a standard deviation of 1.8%. This indicates that the SACCOs had a moderately low ROA but were productive before the pandemic.

The Scale and Outreach data showed that the best performing SACCO had a member-to-employee ratio of 5 while some SACCOs had 2,517 members for every employee employed. The average member-to-employee ratio stood at 402 members, with a standard deviation of 451. This indicates that the number of members in SACCOs before the pandemic increased at a faster rate than the new employees.

The leverage position of the SACCOs had a mean of 10.29 before the pandemic, indicating that for every shilling in equity, the SACCOs had a debt of Ksh.10.29. The minimum leverage was 1.08 while the maximum leverage was 50.22 with a standard deviation of 11.28.

The capital adequacy, which measures the equity capital to total assets, stood at an average of 15.57%, which is above the recommended rate of 10%. The minimum capital adequacy was 2.1% while the maximum capital adequacy was 38%, with a standard deviation of 9.1% within the same period.

4.2.2 Post-Covid Descriptive Analysis

The research sought to find out the nature of study variables post-COVID -19 pandemic. The mean, minimum maximum, and standard deviation statistics were used for analysis.

Table 4 2 Post-COVID Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	40	.00156404	.08407651	.0224406267	.0181855825
SCALEANDOUTREA	40	4.99693878	3425.033333	405.6975434	597.1562190
CH	40	1.64682597	59.02106270	11.89549678	13.39139343
LEVERAGE	40	.01680937	.49475167	.1494677255	.1031736062
CAPITAL ADEQUACY	40				
Valid N (listwise)	40				

The researcher sought to establish the status of the four variables during and after COVID -19 pandemic. The study findings showed that during and after the COVID-19 pandemic, the SACCOs recorded an average Return on Assets of 2.2% with the maximum SACCO recording 8.4% in the period, with a standard deviation of 1.8%. This indicates that the SACCOs had lower ROA because of the pandemic but were still generally profitable.

The descriptive data on Scale and Outreach showed that the best performing SACCO had a member-to-employee ratio of 4 while some SACCOs had 3,425 members for every employee employed. The average member-to-employee ratio stood at 405 members, with a standard deviation of 597. This indicates that SACCOs reduced their employee number to cut expenses and the membership did not grow at the same rate it did before the pandemic. The larger standard deviation also indicates that SACCOs were affected differently, but overall, their Scale and Outreach was adversely affected by the pandemic.

The leverage position of the SACCOs had a mean of 11.89 post-pandemic, indicating that for every shilling in equity, the SACCOs had a debt of Ksh.11.89. This indicates that the SACCOs accumulated more debt after the pandemic considering that the minimum leverage was 1.65, up from the Pre-pandemic ratio of 1.08 while the maximum leverage was 59.02 with a standard deviation of 13.39.

The capital adequacy, which measures the equity capital to total assets, stood at an average of 14.94%, which is above the recommended rate of 10%, but lower than the capital adequacy before the pandemic. The minimum capital adequacy was 1.7% while the maximum capital adequacy was 49.5%, with a standard deviation of 10.31% within the same period. This indicates that the pandemic adversely affected the performance of SACCOs regarding capital adequacy.

4.3 Diagnostic tests

Table 4 3 Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ROA	.145	40	.034	.886	40	.001
SCALEANDOUTRE	.237	40	.000	.694	40	.000
ACH						
LEVERAGE	.282	40	.000	.684	40	.000
CAPITAL						
ADEQUACY	.106	40	.200*	.931	40	.017

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The study sought to find out the normality of the data. The null hypothesis is that the data does follow a normal distribution. From the analysis, Shapiro Wilk statistics showed that all the variables had significance values below 0.05. The findings show that we reject the null hypothesis and conclude that the data does not follow a normal distribution.

Table 4 4 Multicollinearity

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
SCALEANDOUTREACH	.944	1.059
1 LEVERAGE	.536	1.867
CAPITAL ADEQUACY	.544	1.837

The regression model used assumed no linear relationship between the three predictor variables. The Variance Inflation Factor (VIF) was used in the multicollinearity test. VIF is useful as it helps to determine the level of inflation of the variance in the data, with a high correlation existing if VIF exceeds 10 and tolerance exceeds 2. However, the data shows that the VIF was below 10 and the tolerance below 2, implying that the variance was inflated but at an extremely low level, and therefore, the conclusion is that there is no relationship between the predictor variables in the data.

Table 4 5 Heteroskedasticity

Model	Sum of Squares	df	Mean Square	F	Sig.
1					
Regression	.000	3	.000	2.983	.054 ^b
Residual	.000	36	.000		
Total	.000	39			

a. Dependent Variable: Residual Squares

b. Predictors: (Constant), CAPITAL ADEQUACY, SCALEANDOUTREACH, LEVERAGE

To evaluate the heteroskedasticity of the data, the Breusch-Pegan test was used. The concept of the test is that the independent variables do not affect the residual values. The data is heteroskedastic if an increasing number of independent variables do not drastically change the dependent variable. The null hypothesis is that data is homoscedastic. The statistics showed that significance (0.54) is higher than 0.05, implying that we fail to reject the null hypothesis and state that the data has no heteroskedasticity.

4.4 Regression Analysis

The regression analysis was done to assess the impact that the pandemic had on the performance of SACCOs in Kenya. The regression analysis was done based on the data collected between 2018 and 2021. In the regression analysis, capital adequacy, scale and outreach, and leverage were used as the independent or predictor variables, and the Return on Assets (ROA) was used as the independent Dependent Variable.

4.4.1 Pre-COVID-19 Regression Analysis

Table 4 6 Pre-COVID Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.599 ^a	.359	.306	.01560213992

a. Predictors: (Constant), CAPITAL ADEQUACY, SCALE AND OUTREACH, LEVERAGE

The model summary shows that the pre-COVID 19 correlation coefficient (R) was 0.599. This shows that leverage, capital adequacy, scale, and outreach had a strong relationship with the return on Assets. The regression summary as expressed by R Square of 0.359 shows that before the pandemic, leverage, capital adequacy, and scale and outreach affected the financial performance of the SACCOs by 35.9%, leaving about 61.1% of the performance, as measured by the Return on Assets, to be affected by other factors.

Table 4 7 pre-COVID ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.005	3	.002	6.721	.001 ^b
	Residual	.009	36	.000		
	Total	.014	39			

a. Dependent Variable: ROA

b. Predictors: (Constant), CAPITAL ADEQUACY, SCALE AND OUTREACH, LEVERAGE

From the ANOVA, the F-statistic (6.721) was greater than the F-Critical (2.26), showing that the regression model used fits the data in the research. From the analysis of the level of significance (0.05) compared to the ANOVA significance (0.01), the allowable error is greater than the ANOVA significance thus the regression model is the best model for this data.

Table 4 8 Pre-COVID Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.007	.009		.777	.442
	SCALE AND OUTREACH	2.008E-006	.000	.048	.351	.728
	LEVERAGE	.000	.000	-.095	-.505	.617
	CAPITAL ADEQUACY	.105	.039	.514	2.717	.010

a. Dependent Variable: ROA

The regression analysis showed that holding capital adequacy, leverage, and scale and outreach constant, the performance of SACCOs before COVID-19 would stand at 0.7%. The analysis further showed that a unit increase in leverage would not change the return on assets, but a unit increase in capital adequacy would increase the return on assets by 0.105. A change in the Scale and Outreach would also have a lower impact on the return on assets, by 2.0-006. Considering the significance scores, only Capital Adequacy had a significant impact on the SACCOs' return on Assets, while Leverage and Scale and Outreach had an insignificant impact on the performance of SACCOs, considering their significance being higher than 0.05 (0.728 for scale and outreach, and 0.617 for leverage).

4.4.2 Post-Covid Regression Analysis

Table 4 9 Post COVID Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.638 ^a	.407	.357	.01458054617

a. Predictors: (Constant), SCALE AND OUTREACH, CAPITAL ADEQUACY, LEVERAGE

The model summary shows that the post-COVID 19 correlation coefficient (R) was 0.638. This shows that leverage, capital adequacy, scale, and outreach had a stronger relationship with the return on Assets than they did before the pandemic. The regression summary as expressed by R Square of 0.407 shows that during and after the pandemic, leverage, capital adequacy, and scale and outreach affected the financial performance of the SACCOs by 40.7%, implying that their contribution to return on assets increased in the COVID-19 period.

Table 4 10 post-COVID ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.005	3	.002	8.223	.000 ^b
	Residual	.008	36	.000		
	Total	.013	39			

a. Dependent Variable: ROA

b. Predictors: (Constant), SCALE AND OUTREACH, CAPITAL ADEQUACY, LEVERAGE

From the variance analysis, the F-statistic (8.223) was greater than the critical F (2.26), showing that the regression model used fits the data in the research. From the analysis of the level of significance (0.05) compared to the ANOVA significance (0.000), the allowable error is greater than the ANOVA significance thus the regression model is the best model for this data.

Table 4 11 Post COVID19 Coefficients ^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	.014	.007		2.002	.053
	CAPITAL ADEQUACY	.074	.028	.421	2.650	.012
	LEVERAGE	.000	.000	-.245	-1.523	.136
	SCALE AND OUTREACH	4.296E-006	.000	.141	1.077	.289

a. Dependent Variable: ROA

The post-covid 19 regression analysis showed that holding capital adequacy, leverage, scale, and outreach constant, the performance of SACCOs before COVID-19 would stand at 1.4%. The analysis further showed that a unit increase in leverage would not change the return on assets, but a unit increase in capital adequacy would increase the return on assets by 0.074, indicating the adverse impact on capital adequacy. A change in the Scale and Outreach would also have a lower impact on the return on assets, by 4.29E-006. Considering the significance scores, only Capital Adequacy had a significant impact on the SACCOs' return on Assets (sig.=0.012), while Leverage and Scale and Outreach had an insignificant impact on the performance of SACCOs, considering their significance being higher than 0.05 (0.136 for scale and outreach, and 0.289 for leverage).

From the regression analysis, COVID-19 did not change the relationship between the predictor variables and return on Assets, even though leverage and scale ad outreach became more significant in determining the overall ROA, even though the impact was not statistically significant.

4.5 Paired T-Test

SPSS software version 25 was used to measure the t-test of difference and statistical significance for return on assets, scale and outreach, leverage, and capital adequacy of the SACCOs for the period before and after the COVID-19 pandemic. This statistical test was conducted to assess if the mean difference between two sets of data was zero. The study also used the dataset to establish the change in value of each variable and whether it was significant by comparing the value of t-statistic (T) as shown in Table 4 11 and the t-significance (t) as read from the T-distribution tables at a significance level of 0.05 or 5%.

Table 4 12 Paired T-Test

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	POSTCOVIDROA - PRECOVIDROA	-.0002	.0161	.00254	-.0053	.00498	-.061	39	.952
Pair 2	POSTCOVIDSCALEANDOUTREACH - PRECOVIDSCALEANDOUTREACH	3.7353	461.2857	72.9357	-143.7912	151.2616	.051	39	.959
Pair 3	POSTCOVIDLEVERAGE - PRECOVIDLEVERAGE	1.6045	4.0208	.63574	.3186	2.8906	2.524	39	.016
Pair 4	POSTCOVIDCAPITALADEQUACY - PRECOVIDCAPITALADEQUACY	-.0062	.0516	.00815	-.0227	.01028	-.763	39	.450

The paired T-test showed that the mean difference in the Return on Assets (ROA) of the SACCOs was not statistically significant ($t(39) = -0.061 < 1.697, p > 0.05$). This implies that the performance of SACCOs, as measured by the return on assets, decreased but not significantly because the decrease occurred in both the Net Income and the total Assets. Further, the paired t-test results showed that the mean difference in scale and outreach before and after the pandemic was not statistically significant to the overall performance of the SACCOs ($t(39) = 0.051 < 1.697, P > 0.05$) implying that while COVID-19 pandemic decreased in the scale and outreach of the SACCOs, the decrease did not have a significant impact on the SACCOs performance. The paired t-test results showed a statistically significant mean difference in the leverage position of the SACCOs ($t(39) = 2.524 > 1.697, P < 0.005$), implying that the performance of SACCOs was affected by their inability to maintain a balance between debt and equity, as debt increased significantly more than equity post-COVID-19 pandemic. However, the paired t-test did not show a statistically significant mean difference in the capital

adequacy of the SACCOs ($t(39) = 0.763 < 1.697, p > 0.05$). This shows that there was a proportional change in the capital and total assets before and after the pandemic. This shows that of the three predictor variables, only leverage was statistically significant with regards to its effect on the performance of SACCOs.

4.6 Discussion of Research Findings

The research found that COVID-19 had a negative impact on the profitability of the SACCOs. The study findings showed that during and after the COVID-19 pandemic, the SACCOs recorded an average Return on Assets of 2.2% with the maximum SACCO recording 8.4% in the period, with a standard deviation of 1.8%. This indicates that the SACCOs had lower ROA because of the pandemic but were still generally profitable because the ROA was higher before the pandemic at an average of 2.4%. The impact on the profitability was caused mainly because of the decline in the profit after tax, even though SACCOs' total assets did not reduce at the same rate as the net income. This finding is in line with the expectancy theory because in reaction to the pandemic, the SACCOs' interest on loans, which is one of the main sources of earnings, decreased because of defaults because of the harsh economic times caused by the COVID-19 pandemic. This goes against the assortment partner theory which is premised on the assumption that self-selection could improve the group-lending schemes' repayment rates.

The descriptive data on Scale and Outreach showed that the best performing SACCO had a scale and outreach ratio of 4 while some SACCOs had 3,425 members for every employee. The average member-to-employee ratio stood at 405 members, with a standard deviation of 597. The ratio implies that SACCOs reduced their employee numbers to cut expenses. While some SACCOs saw a decline in their membership, most SACCOs had an increase in membership, despite the pandemic, but the

effect on the expenses was adverse thus the SACCOs had to cut their expenditure on salaries by reducing the workforce. The larger standard deviation also indicates that SACCOs were affected differently, with the smaller SACCOs being most affected than the larger ones, but overall, COVID-19 affected their Scale and Outreach adversely. The study finding supports earlier research by Onguka (2012) who posited that regulations, like the changes in the number of employees, significantly affect the financial performance of deposit-taking savings and credit cooperative societies in Kenya.

The descriptive statistics showed that the SACCOs leverage position of the SACCOs worsened post-COVID-19 as the total debt, including the short and long-term liabilities, increased from Ksh.10 in debt for every shilling in equity to a mean of Ksh.11.89 in debt for every Sh. In Equity. The data show that in trying to manage their operations, the SACCOs shifted from equity to debt capital, as they were not able to host an annual AGM in the 2020 financial year to get equity from shareholders. Further, the descriptive statistics showed that the SACCOs accumulated more debt after the pandemic considering that the minimum leverage was 1.65, up from the Pre-pandemic ratio of 1.08 while the maximum leverage was 59.02 with a standard deviation of 13.39. The negative effect of high leverage on the performance of SACCOs corroborates the finding by van Bastelaer and Leathers (2006) who made a finding that the frequency of group meetings had a negative association with repayment rates among SACCOs in rural Zambia as stated under the prior interaction theory.

The statistics on capital adequacy, which measures the equity capital to total assets, stood at an average of 14.94%, which is above the recommended rate of 10%, but lower than the capital adequacy before the pandemic. This show that while the pandemic had a negative effect on the SACCOs' capital adequacy, the SACCOs managed to achieve, on average, the required 10% to remain afloat. The minimum capital adequacy following COVID-19 was 1.7% while the maximum

capital adequacy was 49.5%, with a standard deviation of 10.31% within the same period. This indicates that the pandemic adversely affected the performance of SACCOs regarding capital adequacy because it lowered the rate as indicated by the mean. The findings support claims by Barus, Muturi, Kibati & Koima (2017) that capital adequacy has a significant impact on the performance of SACCOs. The regression analysis indicates that Capital adequacy had the most significance on the performance of SACCOs, as measured by the Return on Assets (ROA), followed by the financial leverage then Scale and Outreach.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

This section provides a summary of the research findings and presents the conclusion and recommendations of the research. The section also discusses the limitations of the study, and suggestions for further research.

5.2 Summary of Findings

This study sought to establish if COVID-19 had an impact on the performance of Deposit-Taking SACCOs in Kenya. The section summarizes the findings based on this study's objective and the variables.

The regression analysis pre-COVID showed a moderate relationship between the independent variables (leverage, scale and outreach, and capital adequacy), and the dependent variable (ROA) with an r of 0.59 while the variables had a stronger relationship with the return on Assets after COVID-19 with $r=0.63$. From the regression analysis, COVID-19 reduced the impact of capital adequacy on the return of assets of SACCOs and increased the impact of scale and outreach on the performance of SACCOs but did not significantly impact the relationship between leverage and performance of SACCOs.

Pre-COVID-19, the study findings showed that SACCOs recorded an average Return on Assets of 2.3%. The Scale and Outreach data showed that the best performing SACCO had a member-to-employee ratio of 5 while some SACCOs had 2,517 members for every employee employed. The average member-to-employee ratio stood at 402 members, with a standard deviation of 451.

The leverage position of the SACCOs had a mean of 10.29 before the pandemic. The capital adequacy stood at an average of 15.57%, which is above the recommended rate of 10%. The minimum capital adequacy was 2.1% while the maximum capital adequacy was 38%, with a standard deviation of 9.1% within the same period.

Post-COVID-19, the researcher sought to establish the status of the four variables. The study findings showed that during and after the COVID-19 pandemic, the SACCOs recorded an average Return on Assets of 2.2%, which was lower than the financial performance before COVID-19. Scale and Outreach showed that the best performing SACCO had an average member-to-employee ratio of 405 members, with a standard deviation of 597, which was higher than before COVID-19. The leverage position of the SACCOs had a mean of 11.89 post-pandemic, indicating that for every shilling in equity, the SACCOs had a debt of Ksh.11.89. This was higher leverage than that recorded before the pandemic. The capital adequacy, which measures the equity capital to total assets, stood at an average of 14.94%, which is above the recommended rate of 10%, but lower than the capital adequacy before the pandemic.

The paired T-test showed that the mean difference in the Return on Assets (ROA) of the SACCOs before and after COVID-19 pandemic was not statistically significant ($t(39) = -0.061, p > 0.05$). This implies that the difference in that return on assets decreased but not to the extent that could have impacted the overall performance of the SACCOs because the decrease occurred in both the Net Income and the total Assets. Further, the paired t-test results showed that the mean difference in scale and outreach before and after the pandemic was not statistically significant to the overall performance of the SACCOs ($t(39) = 0.051, P > 0.05$) implying that while COVID-19 pandemic did decrease the scale and outreach of the SACCOs, the decrease did not have a significant impact on the SACCOs performance. The test results showed a statistically significant mean difference in the

leverage position of the SACCOs ($t(39) = 2.524, P < 0.005$), implying that the performance of SACCOs was affected by their ability to maintain a balance between debt and equity. However, the paired t-test did not show a statistically significant mean difference in the capital adequacy of the SACCOs ($t(39) = -0.763, p > 0.05$). This shows that of the three predictor variables, only leverage was statistically significant with regards to its effect on the performance of SACCOs.

5.3 Conclusion

The findings showed that the mean profitability post-covid was less than the mean before the pandemic. The study concludes that holding other variables constant, Covid-19 had a negative effect on the SACCOs' profitability because of higher default risk and reduced profit after tax relative to the total assets. The findings from the descriptive statistics showed that the mean scale and outreach ratio increased during Covid-19, implying that there were fewer employees to serve the increased number of members. From an operational efficiency perspective, the study, therefore, concludes that the pandemic lowered SACCOs' efficiency. However, SACCOs became more innovative and conducted their meetings online, which explained the cut in expenses by hiring fewer employees post-Covid. The study further showed that capital adequacy reduced post-Covid, while the leverage ratio for the SACCOs increased. The study concludes that SACCOs' debt increased because of the harsh economic environment which lowered the funds available through equity.

From the regression analysis, the findings showed that leverage had a negative impact on the return on assets as a measure of performance, while scale and outreach had an insignificant impact on the return on assets. However, capital adequacy has a significant impact on the return on assets of SACCOs. Overall, the ANOVA statistics showed that the F-statistic value was greater than the f-

critical, thus the regression model was the best for assessing the impact of leverage, scale and outreach, and capital adequacy on the performance of SACCOs.

The paired t-test of difference showed that there was a statistically significant mean difference in the financial leverage of the SACCOs, while there was no statistically significant difference in the other parameters; the scale and outreach, return on assets and capital adequacy. This shows that despite the deficient performance of the SACCOs after COVID-19 than before the pandemic, the results demonstrate that the leverage status was the most impacted.

5.4 Recommendations

Three recommendations ensure that the study findings become useful. First, the policy makers like SASRA should use the study findings to improve on the areas of performance, especially the growth of SACCOs. The study findings showed that the mean scale and outreach ratio increased, meaning that SACCOs should employ more staff members to improve their operational efficiency.

The study findings showed a weakening capital adequacy mean after the pandemic, thus the management of SACCOs should be innovative in incentives to give equity capital providers, like increased returns, to ensure that they get more equity capital in the subsequent financial years. This is also because the SACCOs had higher leverage during the pandemic and need to have more equity capital in their structure.

The study findings showed reduced profitability following the Covid-19 pandemic. The last recommendation would be for the government to give SACCOs priority in its efforts to achieve financial deepening, as SACCOs can offer alternative financial services to members who do not have access to high interest-loans provided by the banks.

5.5 Limitations of the Study

The research focused on the impact of Covid-19 on the performance of SACCOs in Kenya. The first limitation, therefore, is that the study was only limited to the four variables and there is a possibility of different outcomes had other variables, like financial viability, been included. Besides, the study findings have a limitation of generalizability because the context of the study was limited to Kenyan SACCOs.

The research encountered challenges associated with secondary data like difficulty to verify the authenticity of the data in some cases. However, the researchers used the most recent data, between 2018 and 2021, and thus managed to overcome the limitations of using historical data in research. Considering that this study used an event-study methodology, it is possible for different results to be obtained if a different methodology is used.

5.6 Recommendations for Further Research

The study proposes the inclusion of more variables in future research to assess if the COVID-19 pandemic could have had an impact on other metrics of financial performance, like the financial viability of SACCOs. Considering the limitation of the research on context, future researchers should focus on banks or other financial institutions to compare the impact of the pandemic on the financial institutions.

The research relied on secondary data, which had its limitations, like the verifiability of the data used. The research, therefore, recommends that future researchers adopt a mixed data methodology that will incorporate both primary and secondary data. Besides, future researchers can use other methodologies, other than event-study, and compare the outcomes.

REFERENCES

- Abbink, K., Irlenbusch, B., & Renner, E. (2006). Group size and social ties in microfinance institutions. *Economic Inquiry*, 44(4), 614-628.
- Al-Azzam, M., Hill, R. C., & Sarangi, S. (2012). Repayment performance in group lending: Evidence from Jordan. *Journal of Development Economics*, 97(2), 404-414. doi: <http://dx.doi>.
- Ang, A., Goetzmann, W. N., & Schaefer, S. M. (2011). *The efficient market theory and evidence: implications for active investment management*. Now Publishers Inc.
- Barus, J. J., Muturi, W., Kibati, P., & Koima, J. (2017). Effect of capital adequacy on the financial performance of savings and credit societies in Kenya. *American Journal of Finance*, 1(4), 1-12.
- Cassar, A., Crowley, L., & Wydick, B. (2007). The effect of social capital on group loan repayment: evidence from field experiments. *The Economic Journal*, 117(517), F85-F106.
- Cheruto, J. K. (2015). *Board performance measurement practices and performance of deposit-taking savings and credit cooperative societies in Mombasa County*. MBA Project. University of Nairobi.
- Feigenberg, B., Field, E., & Pande, R. (2013). The economic returns to social interaction: Experimental evidence from microfinance. *Review of Economic Studies*, 80(4), 1459-1483.
- Gatuguta, E. M., Kimotho, P., & Kiptoo, S. (2014). History And Organization of Cooperative Development and Marketing Sub Sector in Kenya. *Republic of Kenya*.

- Ghatak, M. (1999). Group lending, local information, and peer selection. *Journal of Development Economics*, 60(1), 27-50.
- Grace, D. (2001, May). The Developmental Potential of Remittances & The Credit Union Difference. In *Remittances as a Development Tool: A Regional Conference*, "Inter-American Development Bank. <<http://www.iadb.org/mif/v2/files/davidgrace.doc>>. May (pp. 17-18).
- Gweyi, M. O., & Karanja, J. (2014). Effect of financial leverage on the financial performance of deposit taking savings and credit co-operative in Kenya. MBA Project. University of Nairobi.
- Kanana, F. & Matabi, M. (2021). SACCOS are offering much-needed credit facilities to SMEs during the COVID-19 pandemic through TIFI and adequate loan appraisal processes. KUSCCO.
- Kansiime, M. K., Tambo, J. A., Mugambi, I., Bundi, M., Kara, A., & Owuor, C. (2021). COVID-19 implications on household income and food security in Kenya and Uganda: Findings from a rapid assessment. *World Development*, 137, 105199.
- Ledgerwood, J. (1998). *Microfinance Handbook: An institutional and financial perspective*. World Bank Publications.
- Mburu, J. K. (2010). *Determinants Of Performance of Savings and Credit Co-Operative Societies (Saccos) In Kenya*. MBA Project. University of Nairobi.
- Mgema, J. M., & Komba, C. K. (2020). Socio-Economic Effects of Covid-19 Pandemic on The Performance of Cooperative Societies in Tanzania. *Journal of Co-operative and Business Studies (JCBS)*, 5(2).

- Mweta, D. E., & Suwadi, F. (2021). Barriers to product innovation among the manufacturing micro, small and medium enterprises in Malawi. *African Journal of Business Management*, 15(9), 211-218.
- Nnyanja, W. (2017). The role of saving and credit cooperatives in improving household income: The Case for Teachers in Mukono District. Masters In Monitoring and Evaluation. Uganda Technology and Management University (UTAMU)
- Nyamrunda, F. C., & Freeman, S. (2021). Strategic agility, dynamic relational capability, and trust among SMEs in transitional economies. *Journal of World Business*, 56(3), 101175.
- Okwach, R. M. (2017). *Innovation Capability and Performance of Deposit Taking Saccos in Nairobi County*. MSC Project. University of Nairobi.
- Onguka, E. M. (2014). *The effect of regulations on the financial performance of deposit-taking savings and credit cooperative societies in Kenya*. MBA Project. University of Nairobi.
- Paxton, J., Graham, D., & Thraen, C. (2000). Modeling group loan repayment behavior: new insights from Burkina Faso. *Economic Development and cultural change*, 48(3), 639-655.
- Rwigema, P. C. (2020). Effect of covid-19 on micro, small and medium enterprises (MSMEs) in Rwanda. *The Strategic Journal of Business & Change Management*, 7(4), 1630-1655.
- SACCO Societies Regulatory Authority (SASRA). (2022). SACCO Supervision Reports. SASRA. doi: SACCO Supervision Annual Reports – Sacco Societies Regulatory Authority (SASRA).
- Sharma, M., & Zeller, M. (1997). Repayment performance in group-based credit programs in Bangladesh: An empirical analysis. *World Development*, 25(10), 1731-1742.

Van Bastelaer, T., & Leathers, H. (2006). Trust in lending: Social capital and joint liability seed loans in Southern Zambia. *World Development*, 34(10), 1788-1807.

Wydick, B. (1999). The effect of microenterprise lending on child schooling in Guatemala. *Economic development and cultural change*, 47(4), 853-869.

Zeller, M. (1998). Determinants of repayment performance in credit groups: The role of program design, intragroup risk pooling, and social cohesion. *Economic development and cultural change*, 46(3), 599-620.

APPENDICES

Appendix 1: List of SACCOs in Kenya used in the Study

- 1 AIRPORT SACCO
- 2 BANDARI
- 3 BIASHARA
- 4 BIBLIA
- 5 BRAEMEG
- 6 BUNISTA
- 7 CHUNA
- 8 COSMOPOLITAN
- 9 FAMILY
- 10 FINNLEMM
- 11 FORTUNE
- 12 JAMBORA
- 13 KANISA
- 14 KENCREAM
- 15 KENPIPE
- 16 KENTOURS
- 17 KENVERSITY
- 18 KENYA MEDICAL
- 19 KENYA POLICE
- 20 KENYATTA MATIBABU
- 21 KIMISITU

- 22 KINGDOM
- 23 MAGADI
- 24 METROPOLITAN
- 25 MWALIMU NATIONAL
- 26 MWITO
- 27 MZIMA
- 28 NYATI
- 29 PCEA RUIRU
- 30 RAFIKI
- 31 RELIEF
- 32 SAFARICOM
- 33 SHERIA
- 34 SHIRIKA
- 35 STIMA
- 36 TORCH
- 37 TOWER
- 38 UNAITAS
- 39 UNISA
- 40 USHURU

Appendix II: Data Collection Sheet

Year	Profit After Tax	Total Assets	Number of Members	Number of Employees	Total Equity	Total Debt
2018						
2019						
2020						
2021						