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**DETERMINANTS OF FINANCIAL DISTRESS: CASE OF DEPOSIT TAKING
SAVINGS AND CO-OPERATIVE SOCIETIES IN KENYA**



JOSEPH ONYANGO ODIPO

ADMISSION NO. MBA/73111

**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS
ADMINISTRATION, STRATHMORE BUSINESS SCHOOL, STRATHMORE
UNIVERSITY**

MAY, 2019

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Joseph Onyango Odipo

May, 2019

Approval

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Abstract

The purpose of this study was to investigate the determinants of financial distress in Deposit Taking Sacco Societies in Kenya. SACCOs are an important part of the financial sector in Kenya, providing savings, credit and insurance services to a large part of the population. The SACCO stakeholders are faced with challenges to increase financial returns and such challenges comes with increase in risks. Insolvency situation is a major risk to SACCOs in Kenya hence a source of financial instability. Both primary and secondary data was collected in this study. Data was obtained from a sample of 61 Deposit taking SACCOs out of a population of 174 licenced Deposit Taking Saccos in Kenya as of 31 December 2017. The secondary financial data was obtained from SASRA, the SACCO regulator for the 5 years under study and a comprehensive listing provided for licensed Deposit Taking SACCOs. The Z-Score model developed by Altman was used in the analysis of secondary data, to assess the annual financial statement to determine the level of financial performance and stability of the DT-SACCO sector. Questionnaires were used to collect primary data from Sacco Executives. This data was analyzed using descriptive and inferential statistics such as correlation and logistic multiple regression. The multiple logistic regression analysis was done using R-Programming statistical software. Varied statistical tests such as t-test, F-test, Spearman Correlation, deviances and McFadden R^2 were employed to make statistically significant decisions. The study established the determinants of financial distress in DT-SACCOs and identified the strategies employed by these SACCOs to overcome these challenges. The financial analysis done showed a fairly distressed financial sector and need to improve performance for DT-SACCOs in distressed and grey zones moving them to a stable zone. Weaker internal controls was the major contributor to negative financial distress among the DT-SACCOs in Kenya while the study identified no clear strategy used to counter financial distress levels. The study concluded that the DT-SACCO sector is fairly distressed and therefore there is need by the stakeholders to address the key determinants by employing appropriate strategies to improve the financial distress levels of the DT-SACCO sector. The study contributes to knowledge in the sector and to the various stakeholders in managing the DT-SACCOs in Kenya.

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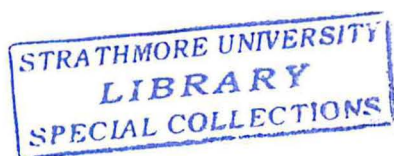
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ABBREVIATIONS AND ACRONYMS

DTS	Deposit-taking Sacco Societies
EAC	East Africa Communities
MDA	Multiple Discriminant Analysis
MOCDM	Ministry of Co-operative Development and Marketing
NPL	Non Performing Loans
PEARL	Protection, Effective financial structure, Asset Quality, Rate of Return and Cost, Liquidity and Signs of growth.
SACCO	Savings and Credit Co-operative Societies
SASRA	SACCO Societies Regulatory Authority
UA	Univariate Analysis
WOCCU	World Council of Credit Union

CHAPTER ONE: INTRODUCTION

1.1 Introduction

The Deposit-taking Sacco Societies (DTSs) is part of the larger Sacco sub-sector in Kenya which comprises the deposit-taking and the non-deposit taking Sacco Societies. The non-deposit taking segment is composed of those Sacco Societies whose business is limited to mobilization of deposits (non-withdrawal) for purposes of lending to members. The deposits are non-withdrawable in that they may be used as collaterals for loans only, and can only be refunded upon the member's withdrawal.

This study is motivated by the need to understand how financial performance of Sacco's is affected by financial distress. This will enable Sacco's to take corrective measures in time to avoid any collapse or failure. It is important to ensure the growth and stability of the Sacco sector in Kenya and to avoid any unwarranted failure by factors such as financial distress which can be predicted and appropriate measures taken to restore the stability of the sector. The study seeks to establish the determinants of financial distress among the Deposit Taking SACCOs in Kenya; assess the level of financial distress and identify strategies (if any) that are taken by the SACCOs to improve the level of financial distress.

1.2 Background of the Study

A financial sector distress may be loosely defined as a situation that occurs when financial sector problems and weaknesses reach very severe levels. It is a grave situation to all the stakeholders and the broader society given the impact and consequences it has in the society. This is the case because the financial sector plays a central role in the economic system of the nation and influencing the price and availability of credit in the economy. The latest effects of financial distress are well illustrated by the sub-prime mortgage crisis in the the United States, with the impact fully known. The distress severely affected home ownership and consumer expectations and contributed to economic recession.

Consequently Kenyas financial sector also experienced a financial distress in the recent past from 2015 to 2016 with the key stakeholders incurring unprecedented losses over the period thus negatively impacting the economy. This resulted to a few banks collapsing over the period

including Dubai Bank, Imperial Bank and Chase Bank. The collapse of these banks affected the financial sector forcing the Central Bank of Kenya to intervene and to create some order in the system to avoid the level of dire consequences of economic recession experienced previously in the country (R N Gathaiya).

Back to the SACCOs. It is worth noting that, the deposit-taking segment of the sub-sector is composed of those Sacco Societies which undertake both withdrawable and non-withdrawable deposits. Whereas the non-withdrawable deposits portion of the business may be used as collateral and are not refundable unless on withdrawable from membership, the withdrawable deposits portion of the business can be accessed by the members at any time. The Sacco-Societies Act and Regulations 2010 made thereunder, however apply only to deposit-taking Sacco Societies because regulations relating to non-deposit taking business have not been developed (SASRA Sacco Supervision Annual Report-2014). Because of this act, the Sacco Societies have greatly transformed from a non-regulated sector into a more organized financial outfit. The authority is mandated with the following responsibilities; licensing of Sacco Societies to carry out deposit taking business, regulate and supervise deposit taking, manage the deposit guarantee fund and finally to advise the government on policy matters pertaining to Deposit Taking Saccos. It is during this period that the sector has experienced high growth.

A summary of the key financial figures for both assets and liabilities over the period of study is highlighted below.

Table 1.1: Brief Overview of DT-SACCOs in Kenya Between 2013-2017

Year	2017	2013
	Kshs. 'billion	Kshs. 'billion
Total Assets (Kes)	442.27	241.00
Total Deposits (Kes)	305.30	172.50
Total Loans (Kes)	331.20	184.50
Non Performing Loans (NPL)	6.14%	4.72%
Number of DT-SACCOs	174	215

Kenya has a diversified financial system of which the Sacco's play a critical role, however there has been constraints in the growth of the sector due to factors like non-performing loans and weaknesses in corporate governance leading to a number of them failing. It is for this reason that this study is being initiated to identify these factors and strategies being put in place to resolve them.

Financial distress is one of the most significant threats for many firms globally despite their size and nature. The term financial distress is used in a negative connotation to describe the financial situation of a company confronted with a temporary lack of liquidity and with the difficulties that ensue in fulfilling financial obligation on schedule and to the full extent of these requirements (Outecheva, 2007). A situation where a firm's operating cash flows are not sufficient to satisfy current obligations and the firm is forced to take corrective measures.

The financial health of the Sacco sector is an important prerequisite for economic stability and growth. Consequently the assessment of Sacco's financial conditions is a fundamental goal for all the stakeholders. The cost of their failure can be catastrophic to the country and therefore any distressed Sacco will require immediate attention and quick action from the supervisory authority to intervene and salvage them before they collapse.

1.2.1 Financial distress

Financial distress is a situation whereby a firm does not meet creditor's obligations or are met with difficulties. It may also mean that a firm is in financial distress when it is having significant trouble paying its debt as they fall due. A variety of terms are used to describe financially distressed firms. Three of the more widely used terms are bankrupt, in default and insolvent. Financial distress is evident in many companies in Kenya today. It is therefore a major concern to various stakeholders who have interest in these firms. For that reason Deposit Taking Sacco Societies are also seen to be growing over the last decade in the country and is seen to be playing a critical role in our economy today. In the wake of new regulations around this sub-sector it is therefore important to effectively manage the Sacco's (SASRA annual supervision report 2017) .

According to Pandey (2005), suppliers curtail or discontinue granting credit to the firm fearing liquidation. Creditors become less tolerant when a firm faces financial problems. For investors, they are not ready to supply capital to the distressed firm or they make funds available at high costs and rigid terms and conditions. Non availability of funds on acceptable terms could adversely

affect the operating performance of the distressed firm. On the other hand, shareholder's may be tempted to undertake risky projects using whatever cash the firm is left with. If a risky project succeeds, their gain can be substantial. If the project fails, the creditor will suffer loss.

According to Outecheva (2007), financial distress can be subdivided in four sub-intervals; deterioration of performance, failure, insolvency and default. Whereas deterioration and failure affects the profitability of the company, insolvency and default are routed in its liquidity. In general, financial distress is characterized by a sharp decline in the firm's performance and value. The researcher also noted that, a company can be distressed without defaulting, however default and bankruptcy cannot occur without the preceding period of distress.

There are various causes of financial distress but Bwownbridge (1998) attributed financial distress to insider lending, lending to high risk borrowers, macroeconomic instability, liquidity support and prudential regulation unlike Babalola (2009) who attributes bank distress to a chain of causation from non-panic related, observable, exogenous adverse changes in the economic conditions of a bank, to intrinsic weakening of bank condition, ultimately leading to bank failure. Managerial incompetence is the most common reason for a company's distress and possible failure according to Aesen (2011) but the ultimate cause of failure is often simply running out of cash and other liquid funds.

Failure does not happen suddenly but it is a gradual process. As Outecheva (2007) points out, it's a dynamic process where a company moves in and out of financial trouble, as it passes through separate stages, each of which has specific attributes and consequently contributes differently to corporate failure. This means that financial distress is time varying and once a company enters it, it does not stay in the same state until is liquidated or until it recovers. Changes in financial conditions affect the transition from one state of financial distress to another. If financial conditions become rampant, the company most probably will face bankruptcy.

Opler and Titman (1994) found out that total distress costs consist of three classes of factors causing losses in sales; customer driven losses, competitor-driven losses and an employee-driven loses.

1.2.2 Financial Distress on Financial institutions

There has been improvement in the Kenyan banking sector which is reflected in the liquidity ratios which have been above a minimum statutory requirement and the earning measures which have improved steadily (Becks et al, 2010). However, according to the number of banks that failed due to financial distress over the last decade all over the world, it is safe to say that financial distress affects profit or operating cash flows negatively. Tan (2012) in his study on the impact of financial distress on firm`s performance using the regression analysis and using financial leverage as a proxy for financial distress found out that financial distress firms underperform. This means that firm`s performance deteriorates during financial distress.

The magnitude and the level of loss caused by credit risk as compared to other kinds of risk is so high making it the most expensive risk in financial institutions (Ogilo 2012). This is because its severity is such that it can cause high level of loan losses and even bank failure. He also points out that loans are the largest source of credit risk to commercial banks in Kenya. He adds that banks should be aware of the need to identify measure and control credit risk.

The growth of local banks and non-bank financial institutions was temporarily slowed down in Kenya due to a series of bank failures in the mid-1990s. Financial distress has impacted local banks in Kenya many of which have been closed down or have been restructured. As Brownbridge (1998) points out, nine local banks and twenty Non-Bank Financial Institutions were closed down or taken over between 1984 and 1996 in Kenya. He also notes that, most of the financial distress in local banks in Kenya were caused by insider lending, lending to high risk borrowers, macroeconomic instability, liquidity support and prudential regulation. Insider lending contributed to bad loans which consequently led to liquidity problems leading to failure of banks. In particular, Continental bank, Trade Bank and Pan African bank in Kenya failed due to involvement in extensive insider lending often to prominent personalities.

According to Waweru and Kalani (2009), the leading cause of many financial institutions that collapsed in Kenya was due to non-performing loans. The study points out that according to the CBK (1999) the level of non-performing loans in 1998 was estimated at 80 billion shillings or 30 percent of advances up from 27% in 1997 as compared to 81.3 billion shillings or 33.4 percent of total loans in November 2001. Non-performing loans refer to accounts whose principal or interest remain unpaid 90 days or more.

According to Ngige (2011) Kenyan banks disposed-off securities at a reserve price to meet cash flow shortfalls. This move was to help ease the liquidity problem that the banks were facing. The sale of government securities by banks to meet cash shortfalls is a clear sign of financial distress which the banks were going through. This means that financial distress is very present in commercial banks in Kenya and that it does affect their performance.

1.2.3 Financial Distress on Deposit Taking Sacco Societies in Kenya

Savings and Credit Co-operative Societies (SACCOs) are defined as ``democratic, unique, member driven, self-help, not for profit financial co-operatives, they are owned by members with the same common bond`` (Afya SACCO, 2005). Cooperative societies as formal organizations enable their membership make efforts to achieve any common objectives on voluntary and democratic basis. It is therefore important that they are properly managed to avoid going into distress and liquidation. Given the recent challenges in the sector with many SACCOs collapsing with members proceeds it is important to understand how this predicament can be safeguarded and protected for the benefit of all the stakeholders and the economy.

Deposit Taking Sacco Societies plays a crucial role in country`s socio-economic development significantly contributing to the Country`s Gross Domestic Product. On average Saccos have been contributing 48.55% in the gross National Savings underscoring the role played by Saccos in saving mobilation making them perfect vehicles in promoting high level of savings for investment as envisioned in vision 2030 (SASRA Annual Report 2013). For that reason management faces various challenges to increase returns and such responsibilities come with increases in risk. Insolvency is a major risk to SACCO`s hence a source of finance instability. Kenya`s enhanced regulatory requirement in this sector has emphasized on capital adequacy requirement for SACCOs and developed financial reporting standard that is required to be complied with by all the Deposit Taking SACCOs (SASRA annual supervision report 2014).

There are also circumstances where DT-SACCOs may fail due to operational or governance related issues. Governance according to a co-operative centric definition by Central Bank of Brazil states that governance is ``A set of internal and external mechanisms enabling the members to define and ensure attainment of their objectives and prosperity of their Co-operative Society (SASRA annual supervision report 2014). Deposit Taking Sacco Societies in Kenya face a number

of governance problems and in particular financial problems, mismanagement and corruption amongst others. This affects the provision and management of their services and products.

It is reported that mismanagement and corruption are two major challenges facing the co-operative movement in Kenya today, many cases of fraud in the co-operative sector in Kenya are investigated by the inquiry section of the Ministry of Co-operative Development and Marketing (MOCDM); 37 investigations were carried out in the sector during the financial year ending on 30th June 2007 (MOCDM, 2008).

SACCOs are also required to file audited financial statements every fiscal year and although SACCOs comply with this requirement, financial statements have shortcomings including non-availability on a regular basis. To promote financial transparency, SACCOs are required to provide timely financial updates and external auditors are evaluated every three to five years using competitive bidding process. This is to ensure a going concern which is a general accounting assumption and according to (Wood & Sangster, 2005) economic entities are assumed to continue operating in the foreseeable future.

The growth momentum over the period ensured that the Kenyan Sacco sub sector remained the largest and most vibrant Cooperative Financial Institution in Africa, while registering an improvement in the global ranking to 11th position from 13th position recorded in the previous year according to the World Organization of Credit Unions (WOCCU) 2014.

The year 2014 also saw the lapse of the four year transition period which was provided in law for all to meet the minimum licensing threshold. Consequently, the Deposit taking Sacco's which were operating under the transitional phase were assessed, and those that failed to meet the prescribed minimum licensing requirement were ordered to close and to cease the respective deposit taking business and revert to non-deposit taking business. The supervisory and regulatory framework of Deposit Taking Sacco's in Kenya has thus gone a complete cycle. The key focus has now shifted from transitioning issues, to innovative initiatives aimed at developing the sub-sector to new heights, while strengthening and consolidating the gain made in the transition phase.

In this regard, the SACCO Societies Regulatory Authority (SASRA) is in consultation with the stakeholders in the sub-sector to pursue legal and policy initiatives aimed at strengthening the financial stability of the Deposit Taking Sacco's, and enhancing the member confidence in the

Sacco sub-sector. These are being pursued in accordance with the Authority's second strategic plan.

Given the importance of this sector, the momentum for prudential regulation of deposit taking Sacco's has continued to realize its intended objectives as evidenced by the growth in key performance indicators, general stability in the sector and increased confidence by the public in joining and patronizing deposit taking Sacco's financial services. This momentum can only be increased further through the adoption and implementation of progressive legal and sound policy reforms.

Notably the important role this sector is playing in the economy is therefore fundamental to ensure that the SACCO's are managed in a professional manner to ensure that they continue to offer their services to their member's and in return boosting their role in the economy.

However as any given financial entity they are bound to have some challenges which may impact their performance thus they may end up operating successfully or failing altogether due to financial distress. This is a situation which can be protected if appropriate actions are put in place to safeguard the SACCOs from getting to a distress position.

As previously explained, financial distress is a situation whereby a firm does not meet creditor's obligations or are met with difficulties. It may also mean that a firm is in financial distress when it is having significant trouble paying its debt as they fall due. A variety of terms are used to describe financially distressed firms. Three of the more widely used terms are bankrupt, in default and insolvent. Financial distress is evident in many companies in Kenya today. It is therefore a major concern to various stakeholders who have interest in these firms. For that reason Deposit taking Sacco Societies are also seen to be growing over the last decade in the country and is seen to be playing a critical role in our economy today. In the wake of new regulations around this sub-sector it is therefore important to effectively manage the Sacco's.

Financial distress may also be defined as a situation in which an institution is having operational, managerial and financial difficulties (Adeyemi, 2011). The value of any company reduces through the costs it undergoes during the period of distress. Direct costs of insolvency include auditor's fees, legal fees, management commission and other payments while indirect costs are those costs related to the action of employees, suppliers, investors and shareholders (Pandey, 2005).

Financial distress decreases the incentives of the employees to work hard and stimulate them to renegotiate their compensation packages or to leave the company. Both declining productivity and replacement of employees are costly and destroy the company's value. Competitors also may pursue an aggressive marketing and price strategy in order to attract customers of the vulnerable company and therefore squeeze the troubled competitor out of the market. As a consequence, the distressed company suffers losses in sales leading to a loss of the market share (Natalia, 2007)

SACCOs are therefore required to file audited financial statements every fiscal year and although SACCOs comply with this requirement, financial statements have shortcomings including non-availability on a regular basis. To promote financial transparency SACCOs should provide timely financial updates and external auditors are evaluated every three to five years using competitive bidding process (SASRA supervision report 2017).

The global financial markets crisis faced in 2007 have grave implications for the economic growth in developed and developing countries. Kenya's economy and financial system stability still faces vulnerabilities associated with global risks. It is also noted that the state of a country's economy affect SACCO membership and loan intake as well. With the Saccos contributing an average of 48.0 percent of the National Gross Savings of the country, it is important that this sector is appropriate guarded to ensure stability in the market and the economy.

Lastly the managers generally have a tendency to expropriate the firm's resources in the form of perquisites and avoid risk. When a firm is under distress, they may have higher temptation to pocket firm's resources. Managers may also start making decisions keeping in mind short term rather than long term interests of the company. They may cut costs that affect the quality of the products and sell productive assets to improve the short term liquidity of the company. They may pass up profitable investment opportunities to avoid any sort term risks. These sub-optimal decisions will further deepen the problem of a distressed firm, and ultimately cause its liquidation (Pandey, 2005).

Therefore, financial distress is destructive not only for the financial system of the company, but also it impairs its organizational structure, its relationship to external partners and negatively affects the attitudes of the employees towards their work. The loss of a sufficient amount of financial and human resources is dangerous and can cause the company to liquidate (Natalia,

2007). Thus, financial distress is a huge wastage of funds either directly or indirectly which needs to be detected earlier and possibly be eliminated completely.

With these challenges, financial analysis in the sector is crucial to safeguard member investment. The Researcher in this study conducts financial analysis using financial data from sampled DT-SACCOs. The analysis is done to determine the sectors financial state using Z score bankruptcy prediction model. The challenges facing the sector makes collapse of a DT-SACCOs detrimental, this could have ripple effect on the entire financial sector and the Kenyan economy due to the large market share SACCO's have in Kenya.

Internationally, the World Council of Credit Unions has a set of financial ratios which includes, Profitability, Earnings, Assets, Returns, Liquidity and Sales that are critical in assessing the stability of the SACCOs. These ratios when consistently reviewed are able to indicate the soundness of the SACCOs. In this Research Paper the Z score model has been used to test the distress levels of the SACCOs. The model combines several ratio measures into a meaningful predictive model which is used in analyzing the financial statements and makes a clear understanding of the financial state of the SACCO.

According to SASRA supervision report (2017) a total of 176 DT SACCOSs started operations of which two of the DT SACCOs failed in their financial obligation, leading to a revocation of their respective licenses. This effectively left a total of 174 DT-SACCOs in operation in the country. It is also noted in the same report that there was no new SACCO society that was licensed during the year 2017, with a total of five applications being rejected for failing to meet the prescribed minimum licensing threshold, out of the seven application which were pending at the beginning of the year. The remaining two are still under consideration (SASRA supervision annual report 2017).

A deterioration of the asset quality, measured by loan quality was however recorded with the non-performing loan ratio increasing to 6.14% in 2017 from the 4.72% recorded in 2013. This increase in the aggregate NPLs is principally attributed to the spike in the NPLs portfolio among the community-based, the private-sector and the government based SACCOs, which experienced a relatively tougher years (SASRA supervision annual report 2017).

It is also noted that during 2017, twelve (12) DT-SACCO societies Limited operated on a half year-restricted licenses; (Comoco, Jitegemee, Kenya Midland, Miliki, Moi University, Nandi Hekima, Nanyuki Equator, Nitunze, Orient, Rachuonyo, Telepost, and Uchongaji). It is further observed that five of these SACCOs were also operating under restricted licenses in 2016. This is an indication of the consistent failure by these SACCOs to address pertinent regulatory and compliance issues attached to their licenses (SASRA supervision annual report 2017).

It is further noted that in the year 2017, six SACCOs failed to submit acceptable financial statements for the period ended December-17 (Moi University, Nitunze, Uchongaji, Ainabkoi and Nandi Hekima), due to none compliance with IFRS and inadequate disclosure of material issues in line with the SACCOs act (SASRA annual supervision report-17). Given the above concerns there is reasonable indication that the DT-SACCO sector is distressed (SASRA supervision annual report 2017).

The study is therefore undertaken with the aim of understanding whether Kenya Deposit-Taking Sacco's are really financially distressed, analyze the determinant factors of these distress, the level of distress and the strategies in managing these SACCOs. The study analyzes the determinants ratios of financial distress using annual financial statements to determine the level of financial performance. The Z-Score model by Altman has been used in this study. The period of the study is to range from 2013 to 2017. The study population is 174 Deposit taking SACCOs with a sample of sixty one (61) to be identified randomly. The Altman Z score model used in this study has the following thresholds, with the following zones of discrimination; $Z > 2.6$ -Safe Zone; $1.1 < Z < 2.6$ -Grey Zone; $Z < 1.1$ -Distress Zone. The key ratios assessed includes; the level of firms liquidity; the firms stability and soundness of operation, the current profitability and earnings; the growth potential and the effectiveness in using assets to generate turnover. More details discussed under conceptual framework.

The SACCOs under study have been clustered (SASRA Clusters, Supervision Annual Report, 2017) by either the original closed bond or by asset base. When clustered by the original closed bond, the SACCOs falls into five clusters namely; Teacher Based SACCOs; Farmer Based SACCOs; Government Based SACCOs; Private Based SACCOs and Community Based SACCOs.

The SACCOs have further been clustered Asset Base into three categories, namely; Small tier (Asset Base < KES 1 Billion); Medium tier (KES 1 Billion < Asset Base < KES 5 Billion) and the Large Tier (Asset Base > KES 5 Billion)

Government-Based SACCOs (SASRA 2017); Original membership from government ministries and departments, State Corporations, Public Universities and Colleges. These were mostly headquartered in Nairobi, or in towns or counties where the state corporation, Public University or Colleges were based.

Teacher-Based SACCOs (SASRA 2017); Original membership from the teaching fraternity in the country. Even though the DT-SACCOs teaching fraternity is part of the main stream government, share a unique facet in a common employer namely the Teachers Service Commission; and the only major difference among them is that they sprouted up along the geographical boundaries of the country's districts (now counties) within which they had their offices. This is in contrast from other government-based DT-SACCOs which were singularly defined by reference to the particular national government ministry where they drew their membership nationwide; had nothing to do with geographical boundaries and were mostly headquartered in Nairobi.

Farmer-based SACCOs (SASRA 2017); On the other hand are those which were founded upon the foundations of the agricultural activities of the would-be members, such as coffee, tea, or sugarcane farming; or dairy production

Private-Based SACCOs (SASRA 2017); Original memberships were principally drawn from privately owned companies, institutions or entities. The common-bond would then be that the members are employed by one private entity or group of similar private entities.

Community-Based SACCOs (SASRA 2017); Original memberships were defined on the basis of some social association or based DT-SACCOs membership of the potential members within the community such as churches and similar community initiatives groupings.

1.3 Statement of the Problem

SACCO management challenges include increasing returns to shareholders and such come at a cost of increases in risks. Insolvency as defined by (Saunders & Cornett, 2009) as risk that a financial institution may not have enough capital to offset a sudden decline in the value of its assets relative to its liabilities is an ever present reality in SACCO sector. The enhanced regulatory framework in the sector is not the solution for inadequacy requirements as set out in (SACCO Societies Act, 2008). SASRA has developed a web-based electronic submission of financial returns for objective analysis of the financial returns submitted by the licensed SACCOs and to establish the true and fair values of the SACCO. Currently some progress has been realized though some SACCOs are still lagging behind, because proper compliance has not been embedded.

Deposit Taking SACCOs in Kenya have been in existence for the last decade, however this sector has not been able to impact the members as positively as had been anticipated. This is because their performance has not been comparable to their counter parts in the banking sector. One of the key justifications of the advancement of a financial institution is one that is profitable and stable. Mvula (2013) presented a report on common issues affecting financial performance of SACCOs in Malawi and highlighted the following; inadequate capital, poor asset quality, poor governance, poor profitability, poor liquidity and non-compliance. Consequently Mudibo (2005) discussed some of the factors affecting performance of SACCOs as follows; weak regulation, limited product and services, low marketing and poor image, though these have never been linked to the impact of long term stability.

Ndubi (2009), study on strategic responses of SACCOs to challenging operating environment a case study of Nairobi province found out that SACCOs have made various changes in their traditional, resource mobilization and lending methods in an attempt to cope with the changes in the operating environment and meet the requirements for their members.

In Kenya, SACCOs are an important player in the provision of financial services and have deeper outreach than any other type of financial institution and they contribute 45% of the country's GDP. Previously lack of funding has been identified as a main challenge to SACCOs. KUSCCO (2009) indicates that many SACCOs are unable to meet the demands of their members for loans and withdrawal of savings. A recent study by KUSCO revealed that SACCOs are facing severe

liquidity problems and majority of them are unable to meet their financial obligations. Failure to address this situation, many Kenyans may experience losses as a result of collapse of many SACCOs in terms of assets and employment.

The World Council of Credit Unions, has also a set of financial ratios “PEARLS” developed by (David, 2002) to measure key areas of SACCOs operation and to determine their effectiveness: Protection, Effective financial structure, Asset quality, Rates of return and cost, Liquidity and Signs of growth. A study by (Chavez, 2006) based PEARL rating found that the financial performance of the SACCO sector is extremely weak and translating to weakness in other areas, especially governance, fiscal discipline, financial, operational, internal controls, and the risk management involved in running a SACCO.

Financial distress literature reveals a considerable attention to financial distress prediction models. These models rely much on financial ratios which may not represent all organizational aspects. Moreover, a well- developed theory on corporate financial distress that specifies what financial statement ratios or how many ratios to be incorporated in these models or what factors will best allow assessment of the probability of distress has a wide applicability of these models (Altman Z-score, Beaver, Correia & McNicholas, 2011). However these models focuses mostly around quantative variables and not qualitative variables, which have considerable impact. In addition, the influence of non-accounting or qualitative variables such as corporate governance related issues; management experience, appropriate structures, customer concentration, dependent on one or a few suppliers, level of diversification, qualified audit opinion among others have not been incorporated in these models in calculating the level of financial distress. Hence the results of such empirical works are often inconsistent and impossible to generalize.

Financial ratio methodologies are essentially univariate in nature with emphasis being placed on individual signals of impending problems. Ratio analysis is susceptible to faulty interpretation which may be potentially confusing, for instance a firm with a poor profitability and/or solvency record may be regarded as a potential bankrupt. However, because of its above average liquidity, the situation may not be considered serious hence potential ambiguity as to the relative performance of several firms is clearly evident. These shortcomings led to development of a combination of several ratio measures into a meaningful predictive model, Z score model use predictor measures of profitability, liquidity, and solvency which are most significant indicators

used to derive the Multiple Discriminant function, the Z score. The researcher in this study performs financial analysis to determine sector performance, variable potency and financial stability using the Z score model developed by (Altman, 1968) on Kenyan SACCO's.

Despite all the studies, the determinants of financial distress in DT-SACCOs in Kenya has not been extensively studied and there is lack of sufficient literature about how and to what extend these determinants affect the financial health of the SACCOs. The study therefore seeks to address the objectives of the study and to answer the following research questions.

1.4 Research Objectives

1.4.1 General Objective

The general objective of the study is to establish the determinants of Financial Distress in DT-SACCOs in Kenya, and to evaluate the relative importance of each determinant in the sub-sector.

1.4.2 Specific Objectives

The study seeks to address the following specific objectives.

- 1) To establish the level of financial distress of Deposit Taking SACCOs in Kenya.
- 2) To identify and evaluate the importance of the determinants of financial distress in deposit taking Saccos in Kenya.
- 3) Identify the strategies adopted by deposit taking SACCOs to manage financial distress

1.5 Research Questions

- 1) Are Deposit Taking SACCOs in Kenya distressed?
- 2) What is the level of distress in deposit taking Saccos sector in Kenya?
- 3) Which are the key determinants of financial distress in deposit taking Saccos in Kenya?
- 4) What are the key strategies being adopted by deposit taking Saccos in Kenya to deal with distress?

1.6 Scope of the Study

The study considered information from deposit taking Sacco's that were under the supervision of SASRA during the survey period (2013 to 2017). This study covered the DT-SACCO sub-sector

in Kenya. The researcher is confident that valuable insights and conclusions drawn from this study will be useful in making financial, regulatory and policy decisions relating to the sector.

This period is also considered appropriate because of a number of reasons namely: it is recent and therefore relevant, the financial sector has experienced increasing incidents of financial distress and lastly, the SACCO sector has been undergoing legal reforms including the establishment of SASRA supervision over DT-Sub-sector over the survey period.

1.7 Significance of the Study

The results of this study will be helpful and beneficial to the managers of SACCOs, SASRA and the various stakeholders who have interest in the SACCOs sub-sector and in the financial sector.

To management, it will help the management team of the SACCOs to improve their performance and efficiency through better managerial practices. For the financial sector, it could improve the risk return trade-off from investment by not investing in failing firms. It could also improve decision making and policy enhancement.

To the government and other policy-making institutions will be assisted by the study in coming up with appropriate policies that will be beneficial to the SACCO sector and to improve regulatory requirements to safeguard member's deposits.

To financial service-institutions who are currently the main financiers to entrepreneurs, will also benefit by not investing their money in SACCO's that will eventually go under within the short term.

To the investors who often commit large sums of money in support of development in specific sectors. This study will assist them in choosing SACCO's that are capable in achieving their objectives. In addition the study of financial distress in this sector will assist investors in understanding the nature of determinants of Corporate Distress and how they will be able to predict future financial distress.

This study will also be useful to academicians and will stimulate further interest to both researchers and students interested in this field to carry further studies.

1.8 Organization of the Dissertation

Chapter one identifies and explains the importance of this study. It also contains a statement of the research questions, the objectives of the study, its significance and importance to the stakeholders. Chapter two reviews the literature relevant to the study, the development and the formulation of the conceptual framework for the study. Chapter three discusses the description of the study framework and the sampling technique used. Chapter four presents the methods of data analysis used, and the findings of the study. Chapter five presents the conclusions and recommendations.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The aim of this chapter is to present a literature review on theories and scholarly articles related to financial distress among financial institutions. It also provides a diversity of theoretical reviews on SACCO sector worldwide, Africa and Kenya. The chapter is structured as follows; Theoretical literature review, Predictive models on financial distress, Empirical literature review, determinants of financial distress and how they play a role in SACCOs, The strategies applied by SACCOs to turnaround the firm, Summary of literature review, The research gap, Conceptual framework and Summary of the chapter.

2.2 Theoretical Literature Review

This subsection provides an insight into theories revolving around financial distress; it presents theories that seek to predict financial distress, theories that explain the effects of financial distress, and theories that determine procedures that minimize and spread the cost of financial distress in order to reduce its impact. The study is based on distressed determinant theories, Wreckers theory of financial distress, normative theory of Bankruptcy and other related theories as explored in this section.

2.2.1 Predictive Models

Determinant theories provide an assortment of empirically developed distress predictive models by means of matching accounting ratios and distressed firms. A variety of models have been developed in the academic literature using techniques such as Multiple Discriminant Analysis (MDA), logit, probit, recursive partitioning, hazard models, and neural networks. Despite the variety of models available, both the business community and researchers often rely on the models developed by Altman (1968) and Ohlson (1980; (Wang and Campbell, 2010).

One of the classic works in the area of ratio analysis and prediction classification was performed by Beaver in the year 1966. His was a univariate analysis that used t-tests to predict bankruptcy by studying one accounting ratio at a time. The analysis revealed cash flow to debit ratio to be the most effective variable of predicting bankruptcy for as long as five years prior to failure by giving statistically significant signals well before actual business failure. Despite his questioning of the use of multivariate analysis, his univariate analysis of a number of bankruptcy predictors set the stage for multivariate attempts which followed in a real sense.

Subsequent models were developed by Altman in 1968 and Ohlson in 1980. Altman extended Beavers model by developing a discriminant function which combines ratios in a multivariate analysis. Altman found that his five ratios outperformed Beavers cash flow/total debt ratio. The Altman model combines seven accounting variables (current assets, current liabilities, noncurrent assets, retained earnings, earnings before interest and taxes, long-term liabilities, book value of equity, and net sales) to produce a single Z score that groups analyzed firms into distressed, grey and safe zones. According to Altman (2000), the models accuracy in predicting bankruptcy one year after reporting is 80%-90% prior.

Ohlson's 1980 analysis raised questions about the MDA model, particularly regarding the restrictive statistical requirement imposed by the model (Wang and Campbell, 2010). To overcome the limitations, Ohlson employed logistic regression to predict company failure. He used the logit model and US firms to develop an estimate of the probability of failure for each firm. He argued that this method overcomes some of the criticisms of MDA, which requires an assumption of a normal distribution of predictors, and suffers from the arbitrary nature of identifying non-failed matching firms. Ohlson selected nine independent variable, that he thought should be helpful in predicting bankruptcy, but provided no theoretical justification for the selection. Variables used were total assets, gross national product, total liabilities, current liabilities, current assets, cash flow from operations, net income from two financial periods prior to analysis, and net income for the period of analysis (Wang and Campbell, 2010).

In predicting the distressed levels in SACCOs in Kenya, a combination of similar ratios have been used by applying Altmans Z score model to assess the level of distress in the sector and to come up with appropriate strategies to remedy the situation.

2.2.2 Wreckers theory

This theory was developed out of a distressed firm to try and understand the impact of key ratios should the strength of the firm decline. After developing a reduced form of default risk indicators, Cambell, Hilscher and Szilagi (2005 presented a hypothesis that stocks of distressed firm perform in a manner which is vastly inferior to stock of financially healthy firms. The wreckers' theory of financial distress seeks to explain the benefits that may step out of financial distress to stakeholders. It is not always necessary to attribute the negative excess returns of distressed firms to inefficient or irrational markets. Such negative excess returns can be shown to be the equilibrium

outcome under efficiency in an environment where a subset of participants is able to draw returns from distressed companies. For firms close to bankruptcy or insolvency, non-cash returns to ownership may be the dominant form of payout. It is hard to believe that financial market participants as a group can be that irrational or inefficient. Therefore, Campbell, Hilscher and Szilagyi (2005), took a step back and try to tell the story of ``profiting or gaining from a ship wreckage`` from a completely different perspective. They highlighted a mirage of a firm being hit by a series of negative shocks, making losses and approaching a state of financial distress. With higher leverage volatility of share prices increased with respect to private information; the ultimate fate of the firm depends on issues unknown to the general public and the stakeholders at large.

Given the information imbalance where one party has more or better information than the other persons, this is becoming more important, un-informed investors, will leave their position and take a completely different stand which may not be the perfect position. Very soon, equity will be owned by insiders –market participants who have a specific advantage in obtaining and interpreting information related to the company in question. Two groups come to mind; managers themselves, and competing firms. A third possibility might be private equity or funds, working on a restructuring (Campbel, Hilscher, & Szilagyi, 2005). Instead, the utility maximizing managers will try to make use of the firms` resources in a more direct way. Competitors, on the other hand, are those market participants that have the same use of the firms material and non-material resources, among other things; specialized labour, market information, technical and engineering information and product knowledge. Much of these resources can be transferred by anybody who happens to have executive power.

Of course, controlling the market behavior of the competing firm can also have a direct positive impact on the competitor`s own profits. This type of benefit will not necessarily deplete the resources of the company (Campbel, Hilscher, & Szilagyi, 2005). This leads to a crucial point; Equity is not only a right to receive dividends, it also confers control rights, These control rights have an economic value on their own, as they enable owners to draw a return in kind. If control rights had no economic value, who would care to have them? The value of control rights therefore makes equity comparable to a commodity.

The return of a storable commodity consists of two parts; the capital gain and the convenience yield, that is, the flow of services which accrues to the owner of a physical inventory but not the

owner of a contract on future delivery (Brennan, 1991). The convenience yield of corporate control comprises all non-cash economic benefits of ownership, by no means necessarily illegal ones. Although it does not show up in the books, the convenience yield of company control is economically equivalent to a dividend, and will be valued as such-not only by the ultimate beneficiary, but also by all other market participants who try to form rational price expectations. The shares of distressed firms to generate returns which are consistent with their risk class, but only a subset of market participants can make use of the flows (Brennan, 1991). On this basis it is important for all the market participants to appreciate the true value of a firm to enable them make accurate and informed decisions about their investments, contribution or ownership. Given that SACCOs are a voluntary member based organizations, it is imperative that both the members, management, employees and the board have a common understanding as to the performance of the SACCO for them to remain stable as any information assymetry may cause panic resulting to a distressed situation.

2.2.3 Bankruptcy theory

Bankruptcy is a state of insolvency and inability to timely meet a firms obligation. This theory began with the recognition that a bankruptcy system is sometimes necessary to solve a collective action problem among the creditors of an insolvent firm. Insolvency may be a function of economic distress, financial distress, or both. Economic distress occurs when the firm cannot earn revenues sufficient to cover its costs, exclusive of financing costs. Such a firm has negative economic value. A firm is only in financial distress if it would have positive earnings, but required to service its debt and other financial related costs. Because a firm's debt is sunk cost when insolvency occurs, the existence of debt is irrelevant to the question of whether the firm should continue or not. Social welfare is maximized when economically distressed firms are liquidated but financially distressed firms are continued. Creditors are less interested in saving firms rather than in whether assets exists to satisfy their claims. If assets exist, creditors will attempt to seize them, which commonly will yield a piecemeal liquidation. When a firm is experiencing only financial distress, however, the creditors total insolvency state payoff would be maximized were the firm continued. Saving a firm, though, will often require creditors to coordinate their collection efforts, as co-ordination costs may be high. As a consequence, reasonable equilibrium exists in which, without regulation, financially as well as economically distressed firms are liquidated piecemeal. A bankruptcy system can avoid this inefficient equilibrium by staying creditor collection efforts so that a state officially

has time to decide whether the firm is worth saving or not depending on the number and interest of the various stakeholders (Alder, 2002).

It is also noted that early bankruptcy theory favored letting the market make the liquidation/continuation decision of the firm. More concretely, a state official should conduct auction of insolvent firms, free of current claims, and distributing the proceeds to creditors. If economic value would be maximized by a piecemeal liquidation, then highest bids will be for individual assets; if continuing the firm as an economic entity would maximize value, then the highest bids would be for the firm as a unit (Longhover, 2004). Early theorists believed that a bankruptcy system should strictly follow the absolute priority rule, which requires creditors to be paid in the order that the firm`s contracts created. An implication of this rule is that equity holders, the owners, should receive nothing because the residual claim on an insolvent firm is worth nothing.

Justifiably only distributional goals could justify violating absolute priority in this, but using a bankruptcy system to pursue such goals is questionable on two grounds. Firstly, these goals are difficult to implement because parties can contract around the distributional rules through the price term or through other terms. For example, if a bankruptcy system is amended to subordinate senior creditor`s claims in order to shift wealth to junior creditors, senior creditors can respond with increased interest rates or more rigorous lending terms. Consequently, bankruptcy systems cannot achieve distributional objectives in the long run. Distributional objectives are sometimes cast in social terms (for example, the law should attempt to save jobs). However, early theorists believed that bankruptcy system was a poor vehicle for achieving social goals (Douglas, 2002).

In a social set up like the SACCOs environment which is member based. This theory may be well favoured because most of the time members have equal rights and therefore may benefit them equally in times of distressed situation and final liquidation. This is because their rights are well embedded based on their priority.

Bankruptcy predictions have been premised on both accounting ratios and other financial variables to determine the firms which entered the bankruptcy situation and which ones survived. Beaver, 1967, found that a number of indicators could discriminate between matched samples of failed and non failed firms for as five years prior to failure and the results used to explain empirical observations of the power of various financial ratios in decision making in an organization.

2.3 Empirical Review of Extant Literature

This section presents a review of empirical studies conducted in the past on MDA, Altman Z-score model and corporate financial distress.

Bankruptcy prediction models

2.3.1 Altman Z score model

Altman (1968) conducted a study attempting an assessment of the quality of ratio analysis as an analytical technique. This was a mid-argument by scholars (Bum, 2003) that the traditional ratio analysis is no longer an important analytical technique in the academic environment due to relatively unsophisticated manner in which it has been presented. The prediction of corporate bankruptcy was used as an illustrative case. Specifically, a set of financial and economic ratios were investigated in a bankruptcy prediction context wherein a multiple discriminant statistical methodology was employed. The data used in the study were limited to manufacturing corporations. In order to assess its potential rigorously, a set of financial ratios was combined in a discriminant analysis approach to the problem of corporate bankruptcy prediction. The theory is that ratios, if analyzed within a multivariate framework, will take a greater statistical significance than the common technique of sequential ratio comparisons (Altman, 1968).

The discriminant ratio model proved to be extremely accurate in predicting bankruptcy correctly in 94 per cent of the initial sample with 95 per cent of all the firms in the bankrupt and non-bankrupt groups assigned to their actual group classification. Furthermore, the discriminant function was accurate in several secondary samples introduced to test the reliability of the model. Investigation of the individual ratio movements prior to bankruptcy corroborated the model's findings that bankruptcy can be accurately predicted up to two years prior to actual failure with the accuracy diminishing rapidly after the second year. A limitation of the study was that the firms examined were all publicly held manufacturing corporations for which comprehensive financial data were obtainable, including market price quotations. An area for future research was suggested to extend the analysis to relatively smaller asset sized firms and unincorporated entities where the incidence of business failure is greater than with larger corporations (Altman, 1968).

2.3.2 Discriminant models

Considering the fundamental role played by small and medium sized enterprises (SMEs) in the economy of many countries and the considerable attention placed on SMEs in the new Basel

Capital Accord. Sabato and Altman (2005) developed a distressed prediction model specifically for the SME sector and to analyze its effectiveness compared to a generic corporate model. The behavior of financial measures for SMEs is analyzed and the most significant variables in predicting the entities credit worthiness were selected in order to construct a default prediction model. Using a log it regression technique on panel data of over 2,000 US firms (with sales less than \$65 million) over the period 1994-2002, they developed a one year default prediction model. This model had an out of sample prediction power which is almost 30 per cent higher than a generic corporate model. An associated objective was to observe our model's ability to lower bank capital requirements considering the new Basal Capital Accord's rules for SMEs (Sabato & Altman, 2005).

Wang and Campbell (2010) re-examine the well-known Ohlson (1980) model on firm failure prediction. The data came from china publicly listed companies and covered a range of 11 years (1998-2008). The Ohlson (1980) model was re-estimated and then revised to better fit the specific situation of China publicly listed companies. The result showed that OENEG (if total liabilities exceeds total assets, 0 otherwise) and in two (1 if net income was negative for the last two years, 0 otherwise) were the two most influential variables in failure prediction and were significant at <0.1 . This study contribute to the literature by expanding the application of Ohlson (1980) model to China publicly listed companies. It provided applicable measures for predicting firm delisting events in China stock markets.

Keating & Hillegeist, 2003, assess whether two popular accounting based measures, Altman's (1968) Z-score and Ohlson's (1980) O-score, effectively summarized publicly available information about the probability of bankruptcy. They compared the relative information content of these scores to a market based measure of the probability of bankruptcy that they developed based on the Black-Scholes-Merton option pricing theory (BSM-Prob). Their test showed that BSM-prob provides significant more information than either of the two accounting based measures. This finding was robust to various modifications of Z-score and O-score, including updating the coefficients, making industry adjustments, and decomposing the score variables into their lagged levels and changes. They recommend that researchers use BSM-Prob instead of O-score and Z-score in their studies.

The study conducted by Halim, Ahmad, & Rus (2008) compared three methodologies for identifying financially distressed companies; multiple discriminant analysis (MDA) logistic regression and hazard model. In a sample of 52 distressed and non-distressed companies with a holdout sample of 20 companies, the prediction of the hazard model were accurate in 94.9% of the cases examined. This was a higher accuracy rate than generated by the other two methodologies. However, when the holdout sample is included in the sample analyzed, MDA had the highest accuracy rate at 85%. Among the ten determinants of corporate performance examined, the ratio of debt to total assets was a significant predictor of corporate distress regardless of the methodology used. In addition, net income growth was another significant predictor in MDA, whereas the return on assets was an important predictor when the logistic regression and hazard model methodologies were used.

Zauari and Abid (2000) carried out an exploratory research examining and modelling the financial distress prediction using neural network approach. The study was based on financial ratios. Nine different neural network models were constructed to test the predictive capability of the model by considering; the impact of time varying information structure prior the distressed situation using first, independent annual financial ratios (four models) and second, different panel data sets (three models), and the influence of time varying probability estimates of financial distress in panel data sets (two models). Results support that it is not necessary to have complex architecture in neural models to predict firm's financial distress. Besides the more the predictability horizon is shorter and the input information structure is most recent, the more the predictive capability of the neural model is better.

Financial distress is more likely to happen in bad times. The present value of distress costs therefore depends on risk premia. Almeida & Philippon (2006) estimate this value using risk-adjusted default probabilities derived from corporate bond spreads. For a BBB-rated firm, their benchmark calculation show that the NPV of 1.4%. They show that marginal distress costs can be as large as the marginal tax benefit of debt. Thus, distress risk premia can help explain why firms appear to use debt conservatively. According to Dichev (1998), several studies suggest that a firm distress risk factor could be behind the size and the book-to-market effects. A natural proxy for firm distress is bankruptcy risk. He hypothesized that if bankruptcy is systematic, one would expect a positive association between bankruptcy risks and subsequent realized returns. However,

his study demonstrated that bankruptcy risk is not rewarded by higher returns. Thus a distress factor is unlikely to account for the size and book to market effects. Surprisingly, firms with high bankruptcy risk earn lower than average returns since 1980. A risk based explanation cannot fully explain anomalous evidence.

Szilagy, Hilsche, and Campell (2010) considered the measurement and pricing of distress risk. They present a model of corporate financial to 2008. They found that distressed stocks have highly variable returns and high market betas and they tend to underperform safe stocks by more at times of high market volatility and risk aversion. However, investors in distressed stocks have not been rewarded for bearing these risks. Instead, distressed stocks have had very low returns, both relative to the market and after adjusting for their high risk. The underperformance of distressed stocks is present in all size and value quintiles. It is lower for stocks with low analyst coverage and institutional holdings which suggests that information or arbitrage related friction may be partly responsible for the underperformance of distressed stocks.

Hoshi, Kashyap, and Scharfstein (1990) explored the idea that financial distress is costly because free-rider problems and information asymmetries make it difficult for firms to renegotiate with their creditors. They present evidence that Japanese firms with financial structures in which these problems are likely to be small perform better than other firms after the onset of distress. In particular, their study shows that firms in industrial groups- those with close financial relationships to their banks, suppliers, and customers-invest more and sell more after the onset of distress than non-group firms. They found similar results for non-group firms that nevertheless have strong ties to a main bank.

Salehi & Abedini (2009) in their study, the ability of financial ratios for prediction of financial distress of the listed companies in Tehran Stock Exchange (TES) was investigated. For this reason, the multiple regression model were used and a model was presented for prediction of financial distress in listed companies in TES. The assessment of the model was done by utilizing the data of two groups. The first group contained 30 companies which don't have any financial distress, and the second group, similarly, contained 30 companies which have financial distress. The present model was according to five ratios namely; ratios indicating liquidity, profitability, managing of debt and managing of property. The statistical results of the model indicate the validity of that model and the selected ratios. The results of the test of the ability of the model prediction indicate

the reality that the model designed four years before financial distress in companies present a correct prediction about the financial distress.

Titman and Opler (1994) found that highly leveraged firms lose substantial market share to their more conservatively financed competitors in industry downturns. Specifically, firms in the top leverage decile in industries that experience output contractions see their sales decline by 26 percent more than do firms in the bottom leverage decile. A similar decline takes place in the market value of equity. These findings are consistent with the view that the indirect costs of financial distress are significant and positive. Consistent with the theory that firms with specialized products are especially vulnerable to financial distress, we find that highly leveraged firms that engage in research and development suffer the most in economically distressed periods. They also found that the adverse consequences of leverage are more pronounced in concentrated industries.

Paranowo (2010) empirically examined the dynamics of corporate financial distress of public companies (non-financial companies) in Indonesia for the period of 2004-2008. Using panel data regression, he analyzed internal and external factors affecting corporate financial distress. To distinguish the status of financial condition, the process of integral corporate financial distress was classified into four steps: good, early impairment, deterioration and cash flow problem companies. The results showed that current ratio, efficiency, equity and dummy variable of the status good financial condition have positive and significant influences to Debt Service Coverage (DSC) as a proxy of financial distress. On the other hand, leverage has a negative and significant relation with DSC. Other variables such as profit, retain earning, good corporate governance and macroeconomic factor have no significant impact on the status of corporate financial distress. Furthermore, the analysis indicated that profitable companies should not be a guarantee that the companies can survive to fulfill its liabilities. Liquidity of companies which can be a prominent point can be recognized by evaluating cash flow performance.

Sitati and Odipo (2009) assessed whether Edward Altman's financial distress prediction model can be useful in predicting business failure in Kenya. The target population was composed of all the companies listed in the Nairobi Stock Exchange 1989 to 2008. Twenty firms were selected for the study: 10 firms that continue to be listed and 10 firms that were delisted in Nairobi Stock Exchange during period 1989 to 2008. The source of Secondary data was obtained from financial reports of these listed and delisted companies at the Nairobi Stock Exchange and the Capital

Markets Authority. The research study revealed that Edward Altman's financial distress prediction model was applicable in 8 out of the 10 failed firms that were analyzed, which indicates an 80% successful prediction of the model. On the 10 non failed firms analyzed, 9 of them proved that Edward Altman's financial distress prediction model was successful indicating a 90% validity of the model. They concluded that Edward Altman model of predicting financial failure of companies is a useful tool for the investors in the Kenyan market.

Baimwera (2006) examined the relationship between book to market ratio of equity, distress risk and stock returns. The distress risk was proxied by Ohlson's score, a measure devised to find the probability of a stock being delisted in stock exchange. The book-to-market ratio of equity and distress risk as proxied by O-score was also compared with other variables thought to be related to distress including leverage, return on assets and size. Stocks were ranked every year on the basis of the probability of distress and book to market ratio of equity with the spearman's rank correlation co-efficient being calculated between the ranks. The results showed that book-to-market ratio of equity and distress risk were both negatively related to variables thought to be associated with distress ie return on assets, market leverage and size as measured by market capitalization of equity. Moreover, the sorts revealed that both distress risk and the book-to-market ratio of equity were positively related to return though not very strong.

Kiragu (1993) carried out a study on the prediction of corporate failure using price adjusted accounting data. He used a sample consisting of 10 failed firms and 10 non failed firms. Financial ratios were calculated from price level adjusted financial statistics. Discriminant model developed showed that 9 ratios had high corporate failure predictive ability. These ratios were times interest coverage, fixed charge coverage, quick ratio, current ratio, equity to total asset, working capital to total debt, return on investments to total assets, change in monetary liabilities, total debt to total assets . The most critical ratios were found to be liquidity and debt service ratios. The results were consistent with the finance theory relating to the firm's risk. The firm has to maintain sufficient liquidity in order to avoid insolvency problems. It also needs to generate sufficient earnings to meet its fixed finance charges. The result however differed from earlier studies done by Altman (1968) and Kimura (1980) who had concluded that liquidity ratios were not of any significance in bankruptcy prediction. Both had indicated that efficiency and profitability ratios were the most important.

Keige (1991) did a study on business failure prediction using discriminant analysis. He concluded that ratios can be used to predict company failure. However, the types of ratios that will best discriminate between failing companies and successful ones tend to differ from place to place. In Kenya current ratio, fixed charge coverage, return on earning to total assets, and return on net worth can be used successfully in predicting for a period up to two years before it occurs. Keige concludes that stakeholders should pay attention to liquidity, leverage and activity ratios.

Liquidity measures the ability of the firm to meet its current obligations. A firm should ensure that it does not suffer from low of liquidity. The failure of a company to meet its obligation due to lack of sufficient liquidity will result to poor creditworthiness, loss of creditors' confidence or even legal tangles leading to the closure of the company. On the other hand growth is measured by organic growth when the company ploughs back its earnings, and accumulates its funds, through retained earnings in order to finance further investment thereby increasing output and enhancing sales. Organic growth represents the true growth for the core of the company. It is a good indicator of how well management has used its internal sources to expand profits.

Concerning profitability a company should earn profits to survive and grow over a long period of time. Sufficient profits must be earned to sustain the operations of the business to be able to obtain funds from investors for expansion and growth and to contribute towards the welfare of the society. Both stock holders and creditors are interested in the profitability of the firm. Creditors want to get interest and repayment of principal regularly. Owners want to get a required rate of return on their investments. On leverage, long term creditors like debenture holders and financial institutions are concerned with the firm's long term financial position. They are concerned with the financial leverage and the capital structure of the firm. The manner in which assets are financed has implications. Debt is perceived to be more risky than equity from the firm's point of view. The firm has a legal obligation to pay interest to debt holders irrespective of the profits made or the loss incurred by the firm. In case of failure by the firm to pay debt holders in time, they can take legal action against it to get payment and, in extreme cases, can force the firm into liquidation. Despite earnings magnification through leverage, the cost of debt may be higher than the firm's overall rate of return, the earnings of shareholders will be reduced. In addition, there is threat of insolvency.

Ahab Zaki Rahim Bah Anath Rao (2011) assessed the probabilities of financial distress on banks in UAE, the purpose of their research was therefore to identify the main drivers of financial institutions financial distress. The paper estimates a probability distress prediction model using the BankScope Database and the annual reports of UAE financial institutions submitted to UAE Security Exchange Authority. The paper also analyses the impact of macroeconomic information for forecasting financial institutions financial distress. They concluded that the fundamentals of financial institutions in terms of cost income ratio, equity to total assets, total asset growth and ratio of loan loss reserve to gross loans (all these variables with a lag of one year) positively impacted the probability of financial distress in the next year. Recent findings for emerging economies have cast some doubt on the usefulness of macroeconomic information for financial institutions risk assessment.

According to (Kivuvo & Olweny), a research by (Pam, 2013) predicting of Corporate Bankruptcy in the Banking Sector of Nigeria found Liquidity, profitability, operating efficiency and total assets turnover (which are the key variables in the Altman's Z score) as very important tools in the determination of the strength of a bank. The study focusing on secondary obtained from annual financial reports and accounts of two non-failed banks and two failed banks in Nigeria selected on a convenient sampling basis.

According to (Kariuki, 2011) the expansion of the local banks and Non- Banking Financial Institutions was temporarily slowed down in Kenya due to a series of banks failures in the mid 1980s when most of the banks were being started. The growth resumed later in the decade and by the 1990s the banks had captured a quarter of the commercial banks market. Financial distress has afflicted numerous local banks in Kenya many of which have been closed down or have been restructured. As Brownbridge (1998) points out, nine local banks and twenty NBFIs were closed down or taken over between 1984 and 1996 in Kenya.

He also notes that, most of the financial distress in local banks in Kenya was caused by insider lending, lending to high risk borrowers, macroeconomic instability and liquidity support and prudential regulation. Insider lending contributed to bad loans which consequently led to liquidity problems leading to failure of banks. In particular Continental bank, Trade bank and Pan African bank in Kenya failed due to involvement in extensive insider lending often to prominent politicians.

According to Waweru and Kalani (2009), the leading cause of the many of the financial institutions that collapsed in Kenya was due to non-performing loans. They point out that according to the Central Bank of Kenya (CBK, 1999) the level of non-performing loans (NPLs) in 1998 was estimated at 80 billion shillings or 30 per cent of advances up from 27 percent in 1997 as compared to 81.3 billion shillings or 33.4 per cent of total loans in November 2001. Non-performing loans refer to accounts whose principal or interest remains unpaid 90 days or more after due dates.

According to Ngige (2011) Kenyan banks disposed-off securities at a loss to meet cash shortfalls. This move was to help ease the liquidity crunch that the banks were experiencing. The sale of government securities by banks to meet cash shortfalls is a clear sign of financial distress which the banks were going through. Due to the tight liquidity conditions, commercial banks borrowed 83.9 billion shillings from the central bank overnight window that week. This means that financial distress is very present in commercial banks in Kenya and that it does affect their performance as evidenced by the 89.6 billion shillings profit in 2011 as compared to 107.7 billion in 2012.

The paper by (Adler & Weiss, 201) finds Altman Z score model efficient and concludes it's up to business to make their process efficient. Stakeholders including business managers should be given importance by the company regarding financial information of the business. A study by (Chavez, 2006) on PEARL rating found the financial performance of the SACCO sector extremely weak translating to weakness in other areas, especially governance, fiscal discipline, financial, operational, internal controls, and the risk management involved in running a financial institution.

The discriminant-ratio model have proved to be extremely accurate in predicting bankruptcy correctly in 94 per cent of the initial sample with 95 per cent of all firms in the bankrupt and non-bankrupt groups assigned to their actual group classification. Furthermore, the discriminant function was accurate in several secondary samples introduced to test the reliability of the model according to (Altman, 1968).

Stable financial system is defined by (Schinasi, 2004) as one that enhances economic performance in many dimensions and unstable financial system as one that detracts from economic performance. A financial system in arrange of stability whenever it is capable of facilitating (rather than impeding) the performance of an economy, and of dissipating financial imbalance that arise endogenously or as a result of significant adverse and unanticipated events. According to Central Bank of Kenya, 2013, the number of individuals using SACCOs as financial service provider

decreased since 2006, from 13.5 per cent in 2009 to 9.1 per cent in 2013. This is deterioration in financial stability since financial stability broadly describes a steady state in which the financial system efficiently performs its key economic functions.

A study on financial performance and analysis using Altman Z score and its effect on stock price in the banking sector in Indonesia Stock Exchange by (Prihatni & Zakaria, 2011) found all banks analyzed as having financial difficulties with none scoring more than 2.60. The study explored whether banks have financial difficulties and its effect to companies stock price in Indonesia. Data was gathered from banking sector during year 2004-2008 listed in Indonesia Stock Exchange. The results showed that all banks used in this sample are categorized in financial difficulties but in fact, those banks are still running their operation normally.

Discriminant analysis was employed to identify and explain key features of bank profitability levels in Croatia. In the study by (Ante & Ana, 2013), data sample included balance sheet and income statement items of all banks in the Republic of Croatia which were active in two observed years; 2003 and 2008. Bank profitability was set up in the form of two categorical variables of profit or loss recorded and above or below average return on equity.

Finally, financial distress is a tight cash situation in which a business cannot pay the owed amount on the due date. If prolonged, this situation can force the owing entity into bankruptcy or forced liquidation. When a firm is under financial distress, the situation frequently sharply reduces its market value, suppliers of goods and services usually insist on cash on delivery terms, and large customers may cancel their orders in anticipation of not getting deliveries on time

.2.3.4 Determinants of Financial Distress in SACCOs

According to Jahur and Quadir (2012), the common causes of financial distress and business failure are often a complicated mix of problems and symptoms. The most significant causes of financial distress in young companies are capital inadequacy where the business did not start with enough capital and has struggled from day one. Capital in any business serves as a mean by which losses may be absorbed. It provides a cushion to withstand abnormal losses not covered in the current earning pattern (Adeyemi, 2012).

Where other companies have undertaken management succession planning for key roles and identified high potentials in their company's employees, usually firms in financial distress do not

prepare at all for top management succession (Galloway & Jones, 2006). This could lead to recruiting unbalanced management team which lack essential skills to steer the company ahead. Any wrong investment decision made may plunge the company to financial distress since some of the decisions involve huge cash outlay that are irreversible.

The importance of innovation to a firm's future has been documented extensively, though the level of risk associated with innovation has been examined to a small degree (Chao, Lipson & Loutskina, 2012). The probability that innovation will drive a firm to financial distress is high especially where the competitors introduces innovative and competitive products which reduces the attractiveness of the company `s products and services (Jahur & Quadir, 2012). Therefore, innovation can either give a firm a competitive edge to its rivals or will see its demise equally.

While most companies rely on their financial performance as the key barometer of financial health, it is important not to ignore managerial and operational signals (Zwaig & Pickett, 2012). Many profitable businesses have found themselves in trouble due to rapid expansion like Uchumi Supermarkets or the introduction of a formidable competitor (Zwaig & Pickett, 2012). In each of these instances, the companies were successful before an operational event or unheeded signal led to financial problem and in some cases the subsequent failure of the company. In other countries, the business that were able to recognize earlier warning signs such as Zellers, Canadians Tire and The Bay have survived by differentiating themselves or changing and improving their business model (Zwaig & Pickett, 2012). From the literature review the following are some of the key major determinants of financial distress.

Corporate Governance and Leadership; Corporate governance according to a co-operative centric definition by Central Bank of Brazil states that governance is ``A set of internal and external mechanisms enabling the members to define and ensure attainment of their objectives and prosperity of their Co-operative Society. Deposit Taking Sacco Societies in Kenya face a number of governance problems and in particular financial problems, mismanagement and corruption amongst others. This affects the provision and management of their services and products. Mismanagement and corruption are two major challenges facing the co-operative movement in Kenya today, many cases of fraud in the co-operative sector in Kenya are investigated by the inquiry section of the Ministry of Co-operative Development and Marketing (MOCDM); 37

investigations were carried out in the sector during the financial year ending on 30th June 2007 (MOCDM, 2008).

Financial Management and Performance; SACCOs are also required to file audited financial statements every fiscal year and although SACCOs comply with this requirement, financial statements have shortcomings including non-availability on regular basis. To promote financial transparency SACCOs should provide timely financial updates and external auditors are evaluated every three to five years using competitive bidding process. Going concern is general accounting assumption and according to (Wood & Sangster, 2005) economic entities are assumed to continue operating in the foreseeable future.

This therefore requires a sound management team in place that will steer the institution properly to achieve the laid down objectives. Financial soundness of an institution is critical in its stability. Indicators of financial health are primarily derived by aggregating of various ratios that shows the capital adequacy, asset quality, earnings and liquidity of the business.

Risk Management Policies (Credit Risk); Sound risk management policies are critical for financial institutions to detect and prevent any potential losses that may occur early enough. Financial institutions are increasingly involved in diversified operations, all which involve one or more aspects of market risks (M Bwonbridge, March 1998).

Insider Lending; Insider lending may be defined as a process of advancing of loans by a bank to its own officers or directors. Some countries require that such loans be made at the same interest rates, repayment terms, and credit evaluation criteria as they are applicable to outside borrowers. The single biggest contributor to the bad loans of many of the failed local banks was insider lending. Most of the larger local bank failures in Kenya, such as the Continental Bank, Trade Bank and Pan African Bank in the 1990s, involved extensive insider lending, often to politicians. Insider loans had accounted for 65 percent of the total loans of the four local banks liquidated in Nigeria in 1995, virtually all which was unrecoverable. Therefore the threat posed by insider lending to the soundness of the banks is real (M Bwonbridge, March 1998).

Lending to high-risk borrowers; The other factor contributing to bank failure was lending, at high interest rates, to borrowers in high-risk segments of the credit market. This involved elements of moral hazard on the part of both the banks and their borrowers and the adverse selection of the

borrowers (M Bwonbridge, March 1998). Lack of effective follow up on delinquent loans and resolution of non-performing loans would affect the health of a financial institution.

Internal Controls and Systems; Ineffective internal controls, policies or procedures and various breaches of compliance of the organizations may also impact the financial health of an organization. Consequently inefficient IT system may radically affect the level of financial performance (E Astaphan, c Cerruti, R Gomez, March 2015).

The problem of poor loan quality faced by the SACCOs is compounded by macroeconomic instability. Periods of high and very volatile inflation has got a high impact on the financial performance of the institution (M Bwonbridge, March 1998). Macro-economic instability would have two important consequences for the loan quality of the SACCOs and this impacts the financial performance.

2.3.5 Strategies to Improve financially distressed in SACCOs

A strategy would be defined as a plan of action designed to achieve a long term or overall aim of an organization (Ruben Gomez 2015). Any financial institution that is financially distressed must always have strategies to try and turnaround the institution. As failure to achieve this would result to an institution collapsing or being declared bankrupt.

According to JM Kinyua and GS Namusonge (2015) the Sacco sub-sector has been growing rapidly and has been found to be facing severe challenges as indicated above due to the following; corporate governance, liquidity issues that leads to short term external borrowing, poor financial management, lack of comprehensive loan policy, high level of non-performing loans, slow update of management information system and political interferences.

They further noted that there are four key strategy approaches that would be effective in enhancing the stake-holder value and to improve performance (defensive strategies, swing strategies, hold strategies and offensive strategies) that may be used depending on the situation and the level of distress at hand .

According to (C Cerruti and R Gomez 2015) on their study, dealing with distressed financial cooperatives, they focused on some of the following strategies to turnaround the Saccos as highlighted below;

Establishing proper corporate governance structure/Experienced competent board members: They focused on new corporate governance structures, annual general meetings, new and qualified management teams and recapitalization plan to boost the stability of the organization (C Cerruti and R Gomez 2015). Effective corporate governance improves accountability and decision making within an institution thus enhanced performance. Most SACCOs without appropriate governance structures are not likely to yield constant positive results.

Effective Risk Management policies and procedures: The development of an enterprise risk management framework that works is the beginning of having a proper risk management division. This includes effectively developing and implementing a thorough mechanism to deal with both performing and non-performing loans. This need to ensure clearly defined strategic risk management policies and procedures in ensuring a stable SACCO (JM Kinyua and GS Namusonge (2015) .

Building/Implementing effective internal controls and Fixing management information systems: To be able to maintain public confidence for both the members, management and the board there is need to ensure proper controls, conformance, innovation, systems and internal controls that addresses the gaps in the system. Regular sampling and conformance reviews are part of regular frame work that ensure effective enterprise control management (Jahur and Quadir, 2012).

Proper Financial management, liquidity and controls: In a study covering financial crisis and thinking about the exit strategy in financial institutions (A Blundell and P Atkinson 2009), they recognized the level of crisis and how to deal with the crisis and prevailing situation. In their study, they highlighted the following as some of the key turnaround strategies that may be applied in a financial sector. Improved liquidity and financial management measures, by ensuring that proper financial management is put in place that represents a true and fair position of the SACCO. This ensures that end to end management of financial management is well documented and executed that covers accountability, separation of roles and having external auditors in place (JM Kinyua and GS Namusonge (2015). It also ensures that appropriate capital structure, capital adequacy and liquidity is maintained at all times to ensure stability. Recapitalization and proper financial management is also considered necessary where SACCOs needed to raise capital to offset losses and to strengthen the balance sheet. Adequate capital base also helps to improve the liquidity of the firm to meet their obligations as they fall due and also to satisfy regulatory requirements.They

also focused on liquidity and tax rules to ensure that their businesses are well funded and are able to meet their tax obligations as required. This is also to ensure that they have adequate liquidity to cover normal daily routine operations. The need to have appropriate corporate structures to which prudential regulations may apply where it was considered necessary, as prescribed by the regulators. Application of effective prudential guidelines improves efficiency and accountability in dealing with delivery of services. They also considered that appropriate corporate governance reforms were necessary for the stability of the institution in the long run.

Lending Thresholds: Implementation of a strategy aimed at reviewing appropriate policy and procedures around approval of insider loans that stipulates maximum thresholds and agreeing on the approval process. While the non performing loans are quickly resolved through proper guidelines and early engagements with all the borrowers (E Astaphan and R Gomez, March 2015)

Each intervention applied on the various SACCOs depended on the situation and time of application. Thus each case and scenario must be applied depending on the cause and level of distress that is being experienced in the institution and the sector in general.

Improved Appraisal systems to high risk borrowers (committee approvals and decisions/dual sign-offs): The increased revenue in turning around SACCOs can be attributed to better management and appraisal of the loan portfolio where a few loans are written off, and better pricing (Heggde and Panikar, 2011) is achieved. The revenue increasing options have a higher marginal impact on net income than further cost reduction options. Most SACCO turnarounds are increased by such methods as the increased use of loan capacity, better pricing and better quality of assets.

2.3.6 Widespread Financial Sector Weaknesses

The single biggest contributor to the bad loans of many failed banks was insider lending. In at least half of the bank failures in Kenya, insider loans accounted for a substantial proportion of the bad debts. Most of the larger bank failures in Kenya, such as the continental Bank, Trade Bank and Pan African Bank, involved extensive insider lending. The threat posed by insider lending to the soundness of the banks was exacerbated because many of the insider loans were invested in speculative projects such as real estate development, breached large-loan exposure limits, and were extended to projects which could not generate short-term returns, with the result that the maturities of the bank's assets and liabilities were imprudently mismatched. The high incidence of insider

lending among failed banks suggests that problems of moral hazard were especially acute in these banks.

Second, most of the failed banks are undercapitalized, in part because the minimum capital requirements in force when they are set has been very low. Owners have little of their own funds at risk should they fail.

The third factor contributing to insider lending was the excessive concentration of ownership. In many of the failed banks, the majority of shares are held by one man or one family, while managers lacked sufficient independence from interference by owners in operational decisions. A more diversified ownership structure and a more independent management is expected to impose greater constraints on insider lending.

Lending to high-risk borrowers. The second major factor contributing to bank failure was lending, at high interest rates, to borrowers in high-risk segments of the credit market. This involved elements of moral hazard on the part of both the banks and their borrowers and the adverse selection of the borrowers.

The problems of poor loan quality faced by most failed banks were compounded by macroeconomic instability. Periods of high and very volatile inflation usually occurs during this period. Macroeconomic instability would have had two important consequences for the loan quality of the local banks. First, high inflation increases the volatility of business profits because of its unpredictability, and because it normally entails a high degree of variability in the rates of increase of the prices of the particular goods and services which make up the overall price index. The probability that the firms will make losses rises, as does the probability that they will earn windfall profits (Harvey & Jenkins, 1994). This intensifies both adverse selection and adverse incentives for borrowers to take risks, and thus the probabilities of loan default.

The second consequence of high inflation is that it makes loan appraisal more difficult for the bank, because the viability of potential borrower depends upon unpredictable developments in the overall rate of inflation, its individual components, exchange rates and interest rates. Moreover, asset prices are also likely to be highly volatile under such conditions. Hence, the future real value of loan security is also very uncertain.

Liquidity Support and Prudential regulation. The extent of imprudent management in the failed banks indicates that there are serious deficiencies in bank regulation and supervision. These weaknesses are shared across all financial institutions including the SACCOs.

2.4 Critique of the Literature and Research Gaps

There is no superior theory or model to the other. However some have more advantages than others and makes them much more accurate. As much as the univariate model is simple, it is faced with the inconsistency problem where classification for the same firm for different ratios which is confusing. The risk index model may be intuitive but it is also very subjective.

The MDA may be the most dominant classical statistical method in failure prediction but it is not without its shortcomings. For example, the MDA coefficients are not unique but only the variables in the model. It also requires that the classification rule is linear meaning that the discriminant scores above or below a certain cut off point automatically signals a good or poor financial health contracting the fact that some variable don't show a linear relationship to financial health. In addition, MDA assumes that the covariance matrices of two populations are identical and both populations need to be described by multivariate normal distribution. Clearly, these assumptions do not always reflect the real world.

Nonetheless, the MDA has been shown to be the most applicable and more accurate. In his research using Altman's Z score model, Mamo (2011) found the model to be 90% valid in predicting financial distress of commercial banks in Kenya.

Various studies have been conducted on financial distress using the Altman Z- score model and other discriminant analysis tools. With a limitation of scope to Kenya's majorly equity market, the Nairobi Stock Exchange, various studies have been covered under the literature review. Various researchers have used the Altman Z score model in assessing corporate financial distress for companies quoted in the NSE. These studies were a replica to the original and the revised Altman Z score model by stratifying sampled firms into failed and non-failed firms.

This study, however sought to match the same ratios used by the other researchers in the publicly quoted companies into Deposit Taking Sacco Societies in Kenya and then analyze the results.

2.6 Conceptual Framework

Financial distress is a tight cash flow situation in which a business cannot pay the owed amount on the due date. If prolonged, this situation can force the owing entity into bankruptcy or forced liquidation. Financial distress in financial institutions can be predicted through the application of modern science such as the application of Altman's z-score tool. This study has applied the Altman z-score to establish the DT-SACCO sector level of financial distress and the below parameters have been defined to assess the sector.

The first Altman Z score model was developed using large number of variables found to be significant indicators of corporate problems. Past studies with a list of twenty-two potentially helpful ratios were compiled for evaluation and eventually classified into five standard ratio categories. The final discriminant function for Z score was given as follows:

$Z=1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$, which is applicable to public manufacturing firms.

Where;

X_1 = Working Capital/Total Assets,

X_2 = Retained Earnings/Total Assets,

X_3 = Earnings before interest and taxes/Total Assets,

X_4 = Market value equity/Book value of total debt,

X_5 = Sales/Total assets and

Z= Overall Index

Secondly Altman then further revised the Z-score model where the market value of equity was changed to the book value of equity where the model was applicable to private and non-manufacturing firms. He also came up with different coefficients for the ratio as shown below.

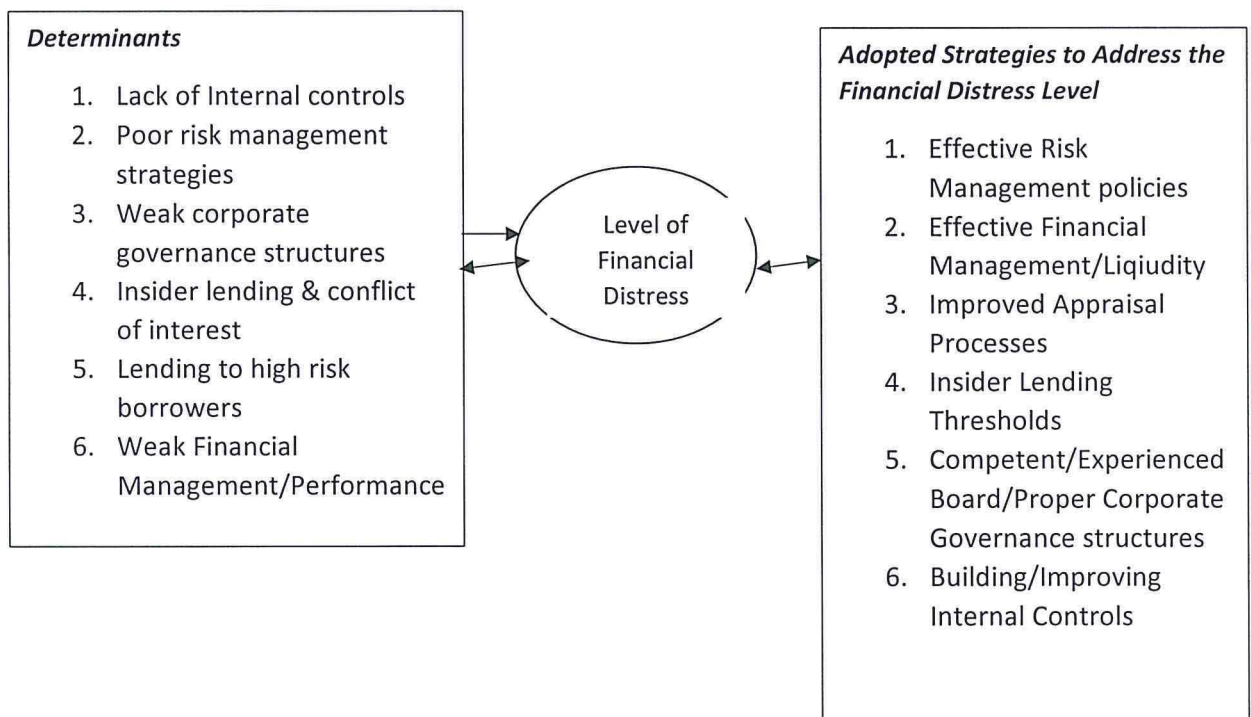
$Z=0.717X_1+0.847X_2+3.107X_3+0.420X_4+0.998X_5$

In 1995 this model was further revised to include emerging markets where the model could be used by both manufacturing and non-manufacturing companies as well as public and private firms

and therefore the relevance in this study. The model had different coefficients and cut off points as follows;

$$Z=6.56X1+3.26X2+6.72X3+1.05X4.$$

Whereas Altman z-score factors enable prediction of the financial health (relative distress levels) of a SACCO, it is short in identifying the factors underlying the movements of the financial parameters applied in its estimations. This study identified a number of key determinants of financial distress in financial service companies from the literature review, and assessed their relative importance in contributing to improved or distressed financial health in SACCOs. The study also assessed the strategies that DT-SACCOs in Kenya have adopted to manage financial health of SACCOs. Some of the key determinants of financial distress and the strategies adopted in managing them are outlined herewith



Independent Variables

Dependent Variable

Source Researcher

As indicated above, the following parameters have been used, SACCOs having a Z score of greater than 2.6 clearly fall into the non-bankrupt zone, while those SACCOs having a Z score below 1.1 are all bankrupt. The area between 1.1 and 2.6 will be defined as the zone of ignorance or grey area. Thus this may be summarized as follows;

Zone of discrimination; $Z > 2.6$ -Safe Zone; $1.1 < Z < 2.6$ -Grey Zone; $Z < 1.1$ -Distress Zone.

In the above diagram the independent variables are determinants that would affect the level of financial distress in the SACCOs (Z-Score Overall Index), while the dependent variables are the strategies being applied by the SACCOs to resolve or remedy the level of distress in the SACCOs and restore them to stronger financial health.

2.6.1 Discussion of the Variables

Calculations of the Altman Z-Score. Usually as a firm's financial position continue to worsen, it will begin to show signs of financial distress. Losses will begin to occur, interest coverage starts to deteriorate and the firm's operations start to consume more cash than they are able to generate. In most cases the net working capital may turn negative. The deterioration in the financial can therefore be used to predict the beginning of financial distress.

Where;

X_1 = Working Capital/Total Assets,

X_2 = Retained Earnings/Total Assets,

X_3 = Earnings before interest and taxes/Total Assets,

X_4 = Market value equity/Book value of total debt,

X_5 = Sales/Total assets and

Z= Overall Index

Altman then further revised the Z-score model where the market value of equity was changed to the book value of equity where the model was applicable to private and non-manufacturing firms. He also came up with different coefficients for the ratio as shown below.

$$Z = 0.717X_1 + 0.847X_2 + 3.107X_3 + 0.420X_4 + 0.998X_5$$

In 1995 this was further revised to include emerging markets where the model could be used by both manufacturing and non-manufacturing companies as well as public and private firms and therefore the relevance in this study. The model had different coefficients and cut off points as follows.

$$Z=6.56X_1+3.26X_2+6.72X_3+1.05X_4$$

From the variables above;

X_1 can be said to represent the level of a firm's liquidity and therefore the ability to meet their obligations as they fall due.

X_2 can be said to reflect the stability of the firm and the soundness of its operations. Retained earnings shows historical profitability and the current financial leverage.

X_3 reflects the current profitability and the earning of the firm.

X_4 reflects the firm's growth potential, given that the stock prices may reflect the future market performance.

X_5 explains the firm's effectiveness in using the assets to generate sales or turnover.

For that reason we can conclude that Z-score model considers liquidity, stability, profitability, rate of growth and turnover ratios which are the key determinants for a firm's analysis.

The study has employed the use of multiple logistic regression analysis model to evaluate the effects of the financial distress determinants as discussed under the determinants of financial distress sub-section which includes (corporate governance; internal control; risk management; insider lending; high risk lending and financial management) among the DT-SACCOs on financial distress level of the SACCOs. Model of study;

$$\begin{aligned} Fin_Distress_{it} &= \beta_0 + \beta_1 Corp_Gov_{it} + \beta_2 Int_Controls_{it} + \beta_3 High_Risk_Lending_{it} \\ &+ \beta_4 Risk_Mgt_{it} + \beta_5 Insider_Lending_{it} + \varepsilon_t \end{aligned}$$

2.7 Summary of the Chapter

Management of many DT cooperative societies in Kenya were facing various challenges, which resulted to poor performance in the past. With the introduction of the the Cooperative Act 2008, there has been several changes that have taken place in the sector thus reducing the level of distress in the sector hence improving financial performamnce. The establishment of the SACCO regulatory Authority (SASRA) has in the recent past also streamlined the sector operation.

As indicated previously there is no preferred theory or model to the other. However some have more advantages than others and makes them much more accurate and efficient depending on the situation at hand. As much as the univariate model is simple, it is faced with the inconsistency problem where classification for the same firm for different ratios may be confusing.

Assumably the MDA may be the most dominant classical statistical method in failure prediction but it is not without its shortcomings and therefore its usage must also be done with some level of caution. For example, the MDA coefficients are never unique but only the variables in the model. It also requires that the classification rule is linear meaning that the discriminant scores above or below a certain cut off point automatically signals a good or poor financial health contracting the fact that some variable don`t show a linear relationship to financial health. In addition, MDA assumes that the covariance matrices of two populations are identical and both populations need to be described by multivariate normal distribution. Clearly, these assumptions do not always reflect the real world.

Nonetheless, the MDA has been shown to be the most applicable and more accurate. In the various reseach work carried using Altman`s Z score model, Mamo (2011) found the model to be 90% valid in predicting financial distress of commercial banks in Kenya, Odipo M.K and Sitati. A (2010), found also the prediction model to be successful, indicating a 90% validity of the model in predicting financial distress in companies quoted in the Nairobi Stock Exchange and Richard Mbuli Kivuvo & Tobias Olweny (2014) in their study on financial performance analysis of Kenya Sacco sector was also found to be over 90% valid.

Financial distress has affected various DT SACCOs, many which have been closed down by the regulatory authorities or have been re-organized under their supervision, The need to study the various determinants of distress in the sector and and to come up with appropriate strategies to address the distress situation in the SACCOs is an important milestone in ensuring that the sector

remains robust and focused in achieving their mandates. Many SACCOs have been observed to take quite some time to identify these determinants and to put appropriate strategies to resolve them. At times delays in finding a lasting solution to the determinants may be caused by failure in coordinating internal policies.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research design, population of study, the basis of sampling, the data collection as well as the data analysis techniques to be used to achieve the objectives of study. According to Saunders, Philip and Adrian (2009) research methods are techniques and procedures used to obtain and analyze data. Hence, this chapter contains the Research Design, Target Population, Sampling Frame, Sample and Sampling Technique, Data Collection Instruments, Data Analysis Techniques and Presentation.

3.2 Research Design

A research design is a framework or a blue print for conducting a research. It provides a clear plan on how the research will be conducted and helps the researcher in sticking to the plan. For secondary data, the research was conducted using a descriptive research design which sought to assess the effect of financial distress on performance of Deposit Taking SACCOs. The research design adopted is according to (Copper & Schindler, 2003) to highlight in technical terms what is to be done. The research design is quantitative in nature and relies on longitudinal financial data collected for the period 2013-2017. This is used by the researcher in analysis to determine the financial performance of the DT-SACCO sector in Kenya. For the primary data the research design is qualitative in nature and obtained from Chief Executive Officers/Executive Directors of the DT-SACCOs through a questionnaire administered through a survey and face to face interview.

3.3 Population and Sampling

A population is the entire set of elements from which a sample is drawn. According to Mugenda and Mugenda (2003), the target population is the population to which a researcher wants to generalize the results of the study. The target population for this study was the 174 Deposit Taking SACCOs which is the total registered with SASRA as at December 2017. Secondary financial data was obtained from SASRA, The SACCO regulator for the 5 years under study and a comprehensive listing provided for licensed Deposit Taking SACCOs. Altman Z- score used in analysis has the discriminating variables of liquidity, profitability, leverage, solvency and activity ratios. Since it was not possible to interview all the population under consideration, a sample size of 61 respondents members was considered and selected randomly. Given the known population

size $N=174$, and assuming 90% confidence interval, the error level is 0.1. The minimum sample size was calculated by using Yamane method: $N_{Yamane} = N / (1 + N * e^2)$, The calculation follows: $174 / (1 + 174(0.01)^2) = 174 / (1 + 1.74) = 174 / 2.74 = 63.5$. Therefore the required sample size was about 63. According to Gay (1981) 10% of the accessible population in such a study is enough samples. In this research 35% of the population has been considered.

Table 3.1: Population and Sample breakdown

Sacco attributes	Number
Number of SACCOs registered as of 31 December 2017	174
Sampled Numbers	(61)
Sampled Percentage	35.1%

Source: Researcher

3.4 Sample and Sampling Techniques

A sample is a segment of the population under study. A sampling frame is a representative of the elements of the target population (Shukla, 2010). According to Mugenda and Mugenda (2003), a sampling frame is a list, directory, or index of cases from which a sample can be selected. The study has relied on random sampling technique to obtain financial data from a sampled SACCO's under study. Researcher based sample selection on Saccos Asset and Capital Base. Sample as noted by (Kothari, 2008) is a physical representation of the target population comprising all the units that are potential members of a sample. Total of sixty one (61) SACCO's selected was used in this study and are considered a representative of SACCO sector analysis.

3.5 Data Collection Methods

Secondary and primary data was used in this study. The period of analysis for secondary data covered five financial years from 2013 to 2017. Secondary data was extracted from audited past financial annual reports (most current five years) of the SACCOs provided by SASRA. Relevant financial information for the calculation of financial distress was extracted from Balance sheets and income statements of the sampled SACCOs. In addition, primary data was obtained by the use of structured questionnaires distributed electronically to the sampled DT-SACCO CEOs to collect information on determinants of financial distress and strategies employed to either enhance their positive or counter their negative effects.

3.6 Data Analysis

Data was collected, collated and analysis of the two variables undertaken, quantitative (financial ratios) and qualitative (determinants of distress). These were subjected to various computations and analysis. In the analysis, percentages, ratios and tabulations were done and appropriate references have been drawn. The data collected was analyzed in two different forms; the first analysis was relating to the secondary data (quantitative) and the second one was relating to the primary data (qualitative).

For the secondary data, the analysis related to the calculation of financial ratios as per Altman Z-Score model and was done using excel spreadsheet packages. The Altman model specifications used is highlighted below;

$$Z=6.56X_1+3.26X_2+6.72X_3+1.05X_4$$

Where

X_1 =(current assets-current liabilities)/Total assets

X_2 =Retained earnings/Total Assets

X_3 =Earnings before interest and tax/Total assets

X_4 =Book value of Equity/Total liabilities

Zone of discrimination; $Z > 2.6$ -Safe Zone; $1.1 < Z < 2.6$ -Grey Zone; $Z < 1.1$ -Distress Zone.

Return on assets (ROA) was used to measure financial performance. This is because ROA corrects for SACCOS size allowing for comparability between SACCOS performance. It shows how efficiently the SACCO is utilizing its assets to generate earnings and was calculated as follows.

$$ROA = \text{Net Income} / \text{Total Assets}$$

Discriminating variables for liquidity, profitability, leverage, solvency, and activity ratios were analyzed using the Altman Z-score in order to determine the financial distress levels of DT-SACCOS in Kenya.

For the primary data, the study employed multiple logistic/logit regression analysis to evaluate the effects of the financial distress determinants (corporate governance; internal control; risk management; insider lending; high risk lending and financial management) among the DT-SACCOS on financial distress level of the SACCOS. Logistic regression is a method for fitting a regression curve, $y = f(x)$, when y is a categorical variable. The typical use of this model is predicting y given a set of predictors x . The predictors can be continuous, categorical or a mix of

both. In this case, the financial distress status was the dependent, y, variable while the determinants were predictors which we re modelled using the equation:

$$\begin{aligned} Fin_Distress_{it} &= \beta_0 + \beta_1 Corp_Gov_{it} + \beta_2 Int_Controls_{it} + \beta_3 High_Risk_Lending_{it} \\ &+ \beta_4 Risk_Mgt_{it} + \beta_5 Insider_Lending_{it} + \varepsilon_t \end{aligned}$$

Where:

Fin_Distress = Financial Distress Status; Corp_Gov = Corporate Governance; Int_Controls = Internal Controls; High_Risk_Lending = High Risk Lending; Risk_Mgt = Risk Management; Insider_Lending = Insider Lending.

The multiple logistic regression analysis was done using R-Programming statistical software. Varied statistical tests such as chi-square, t-test, F-test, Spearman Correlation, deviances and McFadden R² were employed to make statistically significant decisions. Chi-square test was employed in testing of the hypotheses, Spearman correlation to test the relationship between the determinants and the financial distress status and among the determinants. The multinomial logistic regressions was tested using the deviances, t-tests, F-tests, ANOVA and McFadden R² statistical tests. All the tests were carried out at 95% confidence interval, $\alpha = 0.05$.

3.7 Research Quality

The study has been based on both Audited annual financial information obtained from SASRA over a period of five (5 years) covering 2013 to 2017 and structured questionnaires. The data has been tested with appropriate techniques to arrive at the conclusions that have been drawn. Reliability and validity is the measure to which a research instrument yields consistent results after repeated trials (Mugenda and Mugenda, 2003). The study is based on both Audited annual financial information obtained from SASRA the SACCO regulatory body and structured questionnaires obtained from SACCO executives, and the data tested with appropriate techniques. The two component sources are considered reliable given the nature, experience and responsibility that goes with these offices. The results of this study is validated in consultation with the supervisor and since the researcher has randomly selected the respondents, it is believed that the results of the study are valid and without ambiguity. Validity is that which makes sense or is persuasive and

seems right to the reader (Mugenda and Mugenda 2003). Polkinghorne (1988) defined validity of a theory as those results that have the appearance of truth or reality.

3.8 Ethical Issues in Research

The design of study questions was conducted in line with the objectives of the study and the information collected at arms length. Where reference has been made to any published material, appropriate citations have been given. The researcher has enhanced ethics by keeping the information shared by the respondents confidential and assuring them of the same position as stated and committed in the participants information and consent form. The study has avoided asking personal questions that may invade into the respondents privacy. The design of study questions is conducted in line with the objectives of the study and the information collected at arms length. Where reference has been made to any published material, appropriate citations are given. After successful completion of the study, questionnaires are kept in a securely locked cabinet for future reference should there be a need to do so.

Only the people who are closely concerned with this study have access to this information. The participation in this research was entirely voluntary and optional and the decision rested with the respondent, after they are satisfied that they have fully understood the goals behind the study. Even in circumstances where the respondents may have decided to take part at first but later changes their mind, they were free to withdraw at any time without any explanation. There were no payments and compensation for the participants, as already been mentioned this was done solely on request so long as the respondent understood the purpose behind the study. In case of any further questions on the research, the respondent were free to contact the researcher, the supervisor or the secretary-Strathmore University Institutional Ethics Review Board.

CHAPTER FOUR: PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

This chapter reports the findings of the study in relation to the study objectives; presentation and interpretation of the results. It provides an extensive discussion of the findings along the research objectives, and research methodology,. It discusses the qualitative (primary) data collected from the SACCOs and the financial (secondary) data collected from SASRA repository, which have been summarized and presented using tables and figures. We have also appended information on the SACCOs studied.

4.2 Characteristics of the DT-SACCOs

The study involved an analysis of secondary financial data from sixty one (61) Deposit Taking SACCOs as availed by the SASRA(**Appendix 1**), and primary data from sixty one (61) SACCOs. Relevant data of the sampled SACCOs was extracted from annual financial statements held at SASRA's Repository, while qualitative data was collected by a Do-It-Yourself questionnaires by Chief Executive Officers (CEOs) of the sampled SACCOs. The questionnaire sought information on the determinants of financial distress as known in other financial institutions and strategies that have been employed by these SACCOs to manage them.

The means of the average z-scores over a period of five years was 1.722679 with a standard error of 0.231127 and standard deviation of 1.80516. This implies that though the mean is affected by the outliers in the data, most of the DT-SACCOs had z-scores around the mean 1.722679 (which could be classified as in the Gray Zone of the Altman Z-Score).

Skewness, a measure of symmetry of the data indicated that the data was skewed to the right (skewness = 4.18) thus an indication that most of the SACCOs had z-score to the right (more than) of the mean, hence more in safer zones of the financial distress levels. Since the kurtosis was more than 3 (kurtosis = 26.48) indicated that the data had more tails compared to a perfect normal distribution. The wide range in the z-scores (range = 15.50, min = -2.42 max = 13.08) is an indication of varied differences in strategies used to counter the financial distress.

Table 4.1: Descriptive Statistics of the z-scores

Statistical Test	Statistics
Mean	1.722679
Standard Error	0.231127
Median	1.390689
Standard Deviation	1.80516
Sample Variance	3.258603
Kurtosis	26.48297
Skewness	4.180238
Range	15.50197
Minimum	-2.42494
Maximum	13.07702

4.3 Level of Financial Distress in Deposit Taking SACCOs in Kenya

Secondary financial data collected for the years 2013 to 2017 (five years) were used in the determination of the financial distress level among the Deposit Taking SACCOs. Altman Z-Score Model for emerging markets and private sectors (Altman *et al*, 2016) was applied to this data to determine the financial health of DT-SACCOs in Kenya. Analysis revealed representations in all the three areas: distress, grey and safe..

The study considered the trend of financial health of DT-SACCOs at the beginning (2013) of the survey period, during (five years period) and at the end (2017).

At the beginning of the study period, 57.38% of the SACCOs were in the Distressed zone, 31.15% and 11.48% were in the Grey and Safe zones respectively, which represented a very distressed sector. The entire DT-SACCO sector average z-score for the five-years period (1.48, 1.70, 1.99, 1.84, 1.60) were entirely in the grey zone, which represents an average financial health, and an

improvement of the sectors financial health status. Based on the five year average z-scores, most of the Deposit Taking SACCOs in Kenya (47.54%) were also in the Grey Zone followed by 37.70% of the SACCOs in the distressed zone and 14.75% in safe zone.

The entire DT-SACCO sector average z-score for the year 2017 showed a significant improvement on the sectors financial health . The proportion of DT-SACCOs with healthy z-scores (safe) improved by 85.63% from 11.48% to 21.31%, the grey zone improved by 63.15% from 31.15% to 50.82%, which represents an average financial health, while the distress zone declined by 105.88% from 57.38% to 27.87%, a general indication that the distressed levels of the DT-SACCOs has improved. Equally, based on the five year average z-scores, most of the Deposit Taking SACCOs in Kenya (47.54%) were also in the Grey Zone, followed by 37.70% of the SACCOs in the distressed zone and 14.75% in safe zone.

At the end of financial year 2017, the financial health of the sector can be described as average (grey zone z-score). However, the proportion of SACCOs in grey and safe zones increased significantly by 40%. Financially distressed SACCOs proportion reduced two-fold to 28% (57% in 2013). The proportion of SACCOs in the safe zone also increased two-fold to 21% (11% in 2013). While the proportion of SACCOs in the grey zone expanded from 31% to 51% representing an equally improvement in the sector’s financial health. It is noteworthy that the five years period under study also represents the period SASRA has been regulating the sector.

An analysis of the SACCOs sampled by Asset Base revealed that DT-SACCOs in Kenya are largely in the grey zone ($Z=1.7227$). When clustered further by asset base (SASRA Asset Based) Tiers, those in the large tier had lower Z-scores ($Z=1.4971$) compared to Medium tier ($Z=1.5077$) and the Small tier ($Z=2.5336$), as illustrated in table 4.2, and figure 4.4 respectively.

Table 4.2: Analysis of DT-SACCOs Distress Levels by Asset Base Tiers

Categories of the DT-SACCOs	Number of SACCOs	Average of Altman Z-Score	Overall Status
Large Tier	13	1.4971	Grey Zone
Medium Tier	36	1.5077	Grey Zone
Small Tier	11	2.5336	Grey Zone
Sampled Average		1.7227	Grey Zone

The above analysis of SACCOs distress level by Asset base tiers (table 4.2) revealed a unique relationship between the size of the SACCO and financial health which could not be explained without further analysis of each tier.

4.4 Determinants of Financial Distress among DT-SACCOs in Kenya.

The study also analyzed the various known major determinants of the Financial Distress among the DT-SACCOs in Kenya using primary data. The data was collected by a Do-It-Yourself structured questionnaires administered to the respondents (SACCO CEOs/ Executive Directors). Analysis of the responses produced an assessment of the managers perceptions of the level of contribution of each of the factors to their respective SACCO levels of financial distress. Table 4.3 gives a description of the responses by the SACCOs on different financial distress determinants.

Table 4.3: Summary Ratings of the Determinants by the SACCOs

	Corporate Governance	Internal Controls	Risk Management	Insider Lending	High Risk Lending	Financial Management
Insignificant	3	6	4	10	7	13
Minor	10	11	12	21	14	11
Moderate	12	15	14	8	8	15
Major	26	19	22	14	17	8
Severe	8	8	8	7	15	13

4.4.1 Bivariate Correlation Analysis

Like the case of a normal correlational analysis (univariate) analysis, bivariate correlational analysis analyses the relationship between two variables and can be both descriptive or inferential. Bivariate analysis can be described as a simple (two variable) special case of multivariate analysis (where multiple relations between multiple variables are examined simultaneously). In this case relationships between (bivariate) and among (multivariate) were explored using Spearman Correlation coefficients.

A bivariate spearman correlation analysis of the determinants showed that low correlations among the determinants. Financial distress status of the DT-SACCO had the highest negative correlation with insider lending (-0.61564) and a positive correlation with corporate governance (0. 598522), financial management (0.594709) and internal controls (0.573222). On the other hand, risk management had the lowest correlations with internal controls (0.15299) and corporate governance (0.235927) and high risk lending was negatively correlated with risk management (-0.25751) and internal controls (-0.29122) (table 4.4). Since the correlational analysis revealed low correlations below 0.75, it could be deducted that the variables were independent and hence fit for a regression model.

Table 4.4: Bivariate Analysis of the Determinants

	<i>Distress Status</i>	<i>Corporate Governance</i>	<i>Internal Controls</i>	<i>Risk Management</i>	<i>Insider Lending</i>	<i>High risk lending</i>	<i>Financial management</i>
Distress Status	1						
Corporate Governance	0.598522	1					
Internal Controls	0.573222	0.447925	1				
Risk Management	0.499864	0.235927	0.15299	1			
Insider Lending	-0.61564	-0.41932	-0.35576	-0.38524	1		
High risk lending	-0.56013	-0.4601	-0.29122	-0.25751	0.373495	1	
Financial management	0.594709	0.417223	0.499557	0.38417	-0.58555	-0.39798	1

4.4.2: Multivariate logistic regression Model

A multivariate logistic regression was employed in the analysis of the effects of the determinants on the financial distress level of a DT-SACCO. This is because both the dependent variable (SACCO Distress Level status) and the independent variables (determinants) were categorical. Multivariate logistic regression is used to analyze the relationship between a categorical dependent variable with more than one independent variables. All the tests were carried out with a significance level, $\alpha = 0.05$. The study identified the following six financial distress determinants among DT-SACCOs in Kenya; Corporate Governance, Internal Controls, Risk Management, Insider lending, High risk lending and Financial management

Table 4.5: Multiple Logistic Regression Coefficients of the Model

<i>Coefficients:</i>	<i>Estimate</i>	<i>Std. Error</i>	<i>t values</i>	<i>p-values</i>
Financial Distress Status –Intercept	1.50524	0.37995	3.962	0.000216
Corporate Governance	0.10127	0.04737	2.138	0.036996
Internal Controls	0.13279	0.0443	2.997	0.004083
High Risk Lending	-0.11296	0.0455	-2.482	0.016128
Risk Management	0.13179	0.04484	2.939	0.004805
Insider lending	-0.11996	0.05256	-2.282	0.026375
Financial management	0.03521	0.0556	0.633	0.529214

Table 4.6 indicates that five determinants (corporate governance, internal controls, high risk lending, risk management and insider lending) significantly impacts the financial distress level of a DT-SACCO in Kenya at 95% confidence interval (CI), $\alpha = 0.05$. However, financial management did not significantly affect the financial distress status of the DT-SACCOs. Consequently, the financial management determinant was dropped from the model, and the model re-analysed with the five determinants; corporate governance, internal controls, high risk lending, risk management and insider lending, Table 4.6.

By dropping the financial management as determinant, there was significantly a small drop in AIC (Akaike Interval Criterion) from 70.99 to 69.44 while the deviances (null and residual) remained at 28.8387 and 8.8127 respectively. These indicated that there was no/slight statistically significant change in the model by dropping Financial management as a determinant of the financial distress status of the DT-SACCOs. Consequently, financial management had no significant contribution to the entire model and could be dropped from the model without any effect.

Table 4.6: Coefficients of the Revised Model

<i>Coefficients:</i>	<i>Estimate</i>	<i>Std. Error</i>	<i>t-test</i>	<i>p-values</i>
Financial Distress Status -Intercept	1.60012	0.34728	4.608	0.000024
Corporate Governance	0.10274	0.04706	2.183	0.03324
Internal Controls	0.14222	0.0415	3.427	0.00115
High Risk Lending	-0.11696	0.04482	-2.609	0.01161
Risk Management	0.13749	0.04369	3.147	0.00265
Insider lending	-0.13262	0.04835	-2.743	0.00817

Consequently, from table 4.6, the following equation was derived to summarise the model

Fin_Distress_{it}

$$\begin{aligned} &= 1.60012 + 0.10274\text{Corp_Gov}_{it} + 0.14222\text{Int_Controls}_{it} \\ &- 0.11696\text{High_Risk_Lending}_{it} + 0.13749\text{Risk_Management}_{it} \\ &- 0.13262\text{Insider_Lending}_{it} \end{aligned}$$

Furthermore from table 4.6 and succeeding equation, the financial distress leve (z-score) of a DT-SACCO is likely to be 1.60012 (y-intercept, p-value = 0.000024) when all the determinants remain constant. Corporate governance, Insider Controls and Risk Management had a proportionate positive effect on the financial distress level of the DT-SACCO (coefficients = 0.10274, 0.14222 and 0.13749 respectively). For instance, an increase on the corporate governace by one unit shall cause an increase on the z-score by 0.10274. On the high risk lending and insider lending negatively affected the finance distress status of the DT-SACCOs (coefficients = -0.11696 and -0.13262 repectively)

Internal controls had the greatest effect (coefficient = 0.14222) on the financial distress level (z-score) of the DT-SACCOs while corporate governance (coefficient = 0.10274) had the least effect. While no exact equivalent to the R² of linear regression exists in logistic regression, the McFadden R² index can be used to assess the model fit. A McFadden R² index test result showed that the revised model accounted for upto 84.786% of the variances in the data. This showed that the model was a good fit for the data.

4.5 Strategies Employed to Counter Financial Distress Among DT-SACCOs in Kenya

The primary data collected via structured questionnaire on strategies employed by the DT-SACCOs to counter high financial distress levels. The data was collected from the sixty one (61) sampled SACCOs. Six of these strategies were identified and respondents tasked with identification of those strategies they commonly apply in their SACCOs.

Table 4.7: Strategies Employed by the DT-SACCOs to counter Financial Distress

Strategies to Counter Financial Distress	Proportion (%) of DT-SACCOs
Building and implementing effective internal controls (Audits, Sampling, Conformance reviews, e.t.c)	87.88
Effective Risk Management policies and procedures	72.73
Improved appraisal systems to high risk borrowers (Committee approvals and decisions/ Dual sign-offs)	63.64
Effective Financial Management	60.61
Use of experienced and competent board members	54.55
Use of Specific thresholds for insider lending	51.52

From the results obtained, Building and implementing effective internal controls (Audits, Sampling, Conformance reviews, e.t.c) was employed by 87.9% of the DT-SACCOs; Effective Risk Management policies and procedures was employed by 72.7% of the DT-SACCOs while Improved appraisal systems to high risk lenders (Committee approvals and decisions/ Dual sign-offs) came at a distance third as most commonly used strategy employed by 63.6% of the DT-SACCOs. Other strategies included Effective Financial Management (60.6%), use of experienced and competent board members (54.5%) and use of Specific thresholds for insider lending at 51.5% of the DT-SACCOs; see table 4.7.

CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The general objective of the study was to assess the level of Financial Distress of DT-SACCOs in Kenya over a five-year period (2013-2017) generally and in 2017 specifically. The study also sought to identify and evaluate the extent to which the known determinants of financial distress in financial institutions have impacted the level of financial distress in the DT-SACCOs in Kenya.

5.2 Summary of the Findings

The specific objectives of the survey was to establish the level of financial distress of Deposit Taking Saccos in Kenya. It also sought to identify and evaluate the extent to which each of the six known key determinants of financial distress of financial institutions and banks, contributed to the levels of financial distress within deposit taking Saccos in Kenya. Additionally, the study sought to identify the strategies that have been deployed by SACCOs to manage financial distress.

From the literature review, the researcher identified the main determinants of financial distress in DT-SACCOs. The previous studies identified corporate governance (MOCDM, 2008), risk management policies, insider lending and lending to high risk borrowers (M Bronbridge, March, 2005), internal controls (E Astaphan, C Cerruti, R Gomez, March 2015) and proper financial management (Wood & Sangster, 2005) as key determinants of financial distress. Accordingly the findings of this report is in line with the previous studies, however financial management was found not to be a major determinant in DT-SACCOs in Kenya. It is also noted that Altman Z score model (1968) is applicable in determining the distress levels in DT-SACCOs in Kenya.

5.2.1 Objective One: Establishing the level of financial distress of Deposit Taking SACCOs in Kenya

The financial health of the entire DT-SACCO sector was found to be moderately distressed, with an average Z-score for each of the five-years falling within the grey zone (Altman z-score model). Over the survey period (2013-2017), the distress level of the DT-SACCOs sector improved from 58% classified as distressed in 2013 to 28% in 2017.

The researcher further established that almost half (48%) of the DT-SACCOs in Kenya are also under the Grey Zone of the Altman Z-score for the emerging markets and private sector >1.1 to 2.6). A substantial proportion of DT-SACCOs (37%) are financially distressed (Distressed Zone

of the Altman Z-score for the emerging markets and private sector below 1.1) while 15% of the DT-SACCOs were under stable financial health (safe Z-score above 2.6).

The study also established that the size of the SACCO by asset base did not have association with the level of distress. An analysis (A hypothesis test 95% confidence interval, $\alpha=0.05$) to determine any association between financial distress status of a DT-SACCO in Kenya with the DT-SACCO clusters (based on the Asset base) showed no significant association (chi-square = 122, df = 120, p-value = 0.43). A further analysis of the relationship between financial distress level and asset base clusters also did not find a significant relationship (One-ANOVA test results; F-statistics = 1.706, p-value = 0.191, $\alpha = 0.05$, Confidence Interval (CI) = 95%).

5.2.2 Objective Two: Identifying and evaluating the importance of the determinants of financial distress in deposit taking Saccos in Kenya.

The study evaluated the individual contributions of each of the six key financial distress determinants among the DT-SACCOs in Kenya. A multinomial logistic regression analysis revealed that financial management was insignificant determinant of the financial distress level among the DT-SACCOs in Kenya. Corporate governance, Internal controls and Risk Management have positive effects/influence on the distress status of the DT-SACCOs while insider lending and high risk lending negatively influenced the distress status of the DT-SACCOs.

Internal controls had the greatest effect (coefficient = 0.14222) on the financial distress level (z-score) of the DT-SACCOs while corporate governance (coefficient = 0.10274) had the least effect. A McFadden fitness test revealed the model accounted for 84.786% of the variances in the data.

5.2.3 Objective Three: Identifying the strategies adopted by deposit taking SACCOs to manage financial distress

A review of the strategies implemented by the DT-SACCOs to manage financial health of the institutions established that implementing effective internal controls (Audits, Sampling, Conformance reviews, e.t.c) was employed by 87.9% of the DT-SACCOs; Effective Risk Management policies and procedures was employed by 72.7% of the DT-SACCOs, while Improved appraisal systems to high risk lenders (Committee approvals and decisions/ Dual sign-offs) came at a distance third as the most commonly used strategy employed by 63.6% of the DT-SACCOs. Other strategies included Effective Financial Management (60.6%), use of experienced and competent board members (54.5%) and use of Specific thresholds for insider lending at 51.5% of the DT-SACCOs.

5.3 Conclusions

It can be concluded from the study that the financial health of DT-SACCOs in Kenya remains distressed, though there has been significant improvement over the five-year period with the distressed SACCOs dropping from 57% to 27%).

It can be further concluded from the study that there is no association between the size of the SACCO (by asset base) and the level of financial distress under the various categories.

It can also be concluded that management consider strong internal controls as the most significant determinant of financial health and also concur that corporate governance is potentially critical in determining the direction of a SACCOs financial health within the DT-SACCOs sub sector.

Financial distress determinants can be further regrouped into Management Related Determinants which include Internal Controls, Corporate Governance and Risk Management, Lending Related Determinants which includes Lending to high risk borrowers and Internal Lending to Staff and Board and Financial Performance of the DT-SACCOs.

The study further noted that, even though the determinants of the financial distress in the DT-SACCOs resulted from different factors, the most common strategies employed by the SACCOs to counter the negative financial distress levels are implementation of effective internal controls such as audits and conformance reviews and effective risk management strategies.

5.4 Contribution to Knowledge

The DT-SACCO sub sector is a relatively new area in Kenya and therefore very little study has been done in this area. The findings of this study indicates that the sector is relatively distressed with the Z-score average indicators showing the lower end of the grey zone. It also indicates that the Z-Score model can actually be used to determine the distress levels of DT-SACCOs in Kenya. This therefore means that the sub-sector requires very close monitoring to achieve an optimum level of performance and to achieve a sustainable healthy financial position .

5.5 Recommendations

5.5.1 Recommendations for Policy

From the finding of the study, most of the DT-SACCOs are in the grey zone. This therefore means if corrective actions are not taken immediately to improve their financial health then they can easily move from the grey zone to a distressed zone which can lead to SACCOs failures. The SACCOs

should ensure that they find out the source of their perceived current financial health and ensure that measures are put in place to improve their current financial position. Some of the strategies they can use have been highlighted in the study but must be appropriate to address the causes of their current financial health.

Given the high number of SACCOs under the grey and the distressed Zone according to the study, this can lead to the loss of stakeholder's confidence level in the Saccos which may escalate the level of distress in the sector causing negative financial impact in the country. For that reason the SACCOs should ensure that financial stability is an important part of its policy framework.

As per the study, financial distress is caused by various determinants. These determinants need to be included as part of the governance and policy framework that should be monitored very closely by both the Boards and the management team to ensure that there is no laxity in ensuring they are appropriately implemented to avoid a distress situation in the sector.

For the SACCOs that are currently considered to be in the distress and the grey zone, they need to be thoroughly examined to understand the current causes of their perceived financial health and appropriate strategies put in place to address the concerns and to avoid other SACCOs from going to a distressed situation. By identifying these causes they can be used as a solution to prevent financial distress from occurring in the sector.

5.5.2 Recommendations for Practice/Managerial Recommendations

The finding of this study indicates that the DT SACCO sector is relatively distressed with the majority of the cases falling within the grey and the distressed zone. Almost all the SACCOs suffered financial distress in at least one year during the period of study. The sector is therefore negatively impacted by financial distress and therefore close monitoring is necessary in the sector.

The management need to review their individual SACCOs to understand the causes of their current level of performance and apply appropriate strategies to help them turnaround their SACCOs to a positive financial health.

5.6 Suggestions for Further Research

This study makes suggestions to various stakeholders as to the level of financial distress in the sector and the key determinants that drives the financial health of the SACCOs. However the level of these financial ratios and the key determinants highlighted may not be exhaustive. This therefore

gives an opportunity for further study on the level of contribution by other determinants like regulation, economic conditions, competition and capital adequacy.

Given that the majority of the models used to determine the level of financial distress rely on annual financial statements which at times may not be accurate thus giving inaccurate information, it may be necessary for further research to consider also other factors that do not rely on annual financial statements to determine the distress levels in the sector.

In most of the sectors, the large firms usually perform better than the small firms and consequently large firms are expected to have lower probability of distress compared to the small firms. It may be necessary to explore other techniques and models that are size specific. For that reason further research could be carried out to come up with specific models that are size based.

Most of the strategies used to improve the financial health of the SACCOs may have been appropriate and effective, however the impact of changing economic factors have not been considered in the study and therefore giving an opportunity for further study.

5.7 Limitations of the Research

The study was conducted on a sample of sixty one (61) DT-SACCOs out of the One Hundred and seventy four (174) DT-SACCOs in Kenya. This may have made it difficult to generalize and come to a conclusion that this is a fair representation of the whole population. The results may have been generalized and conclusions could have been different had the whole population been studied.

The process of determining the level of financial distress in the sector depended purely on financial ratios extracted from annual financial statements on the studied SACCOs. Even though there is a general assumption that the annual financial statements provides a fair view of the financial position of the SACCOs there are circumstances where the financials provided are manipulated to overstate or understate the correct position of the firm and thus providing a misleading position. It is also worth noting that annual financial statements usually provides a historical position which may mislead at times.

Given the high volume of data that needed to be collected for this study, there may have been human errors during collation, which could have impacted the results negatively. This can result to errors that may mislead statistical results and outcome of the study. Data captured incorrectly can change the interpretation and findings of the study.

There are a full range of determinants of financial distress that may affect the financial health of the SACCOs and therefore the list may be endless if not properly controlled. An open survey may provide an endless list of determinants that may be difficult to collate, analyse and interpret. Thus the study focuses on the key determinants of financial distress only.

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APPENDICES

APPENDIX 1: Deposit Taking SACCOs sampled for the Survey

SN SACCO NAME

NK SACCO SOCIETY LTD

AFYA SACCO SOCIETY LTD

AMICA SACCO SOCIETY LTD

ASILI SACCO SOCIETY LTD

BANDARI SACCO SOCIETY LTD

BINGWA SACCO SOCIETY LTD

BORESHA SACCO SOCIETY LTD

CENTENARY SACCO SOCIETY LTD

COMOCO SACCO SOCIETY LTD

COSMOPOLITAN SACCO SOCIETY LTD

ECOPILLAR SACCO SOCIETY LTD

EGERTON SACCO SOCIETY LTD

GOOD HOPE SACCO SOCIETY LTD

GUSHI MWALIMU SACCO SOCIETY LTD

HARAMBEE SACCO SOCIETY LTD

HAZINA SACCO SOCIETY LTD

IMARIKA SACCO SOCIETY LTD

IMARISHA SACCO SOCIETY LTD

INVEST AND GROW SACCO SOCIETY LTD

JAMII SACCO SOCIETY LTD

KENYA BANKERS SACCO SOCIETY LTD

KENYA HIGHLANDS SACCO SOCIETY LTD

KENYA POLICE SACCO SOCIETY LTD

KIMBILIO DAIMA SACCO SOCIETY LTD

KINGDOM SACCO SOCIETY LTD

KITUI TEACHERS SACCO SOCIETY LTD
KWETU SACCO SOCIETY LTD
MAGEREZA SACCO SOCIETY LTD
MAISHA BORA SACCO SOCIETY LTD
MENTOR SACCO SOCIETY LTD
METROPOLITAN NATIONAL SACCO SOCIETY LTD
MOMBASA PORT SACCO SOCIETY LTD
MWALIMU NATIONAL SACCO SOCIETY LTD
MWITO SACCO SOCIETY LTD
NACICO SACCO SOCIETY LTD
NAWIRI SACCO SOCIETY LTD
NDEGE CHAI SACCO SOCIETY LTD
NEW FORTIS SACCO SOCIETY LTD
NOBLE SACCO SOCIETY LTD
NSSF SACCO SOCIETY LTD
OLLIN SACCO SOCIETY LTD
QWETU SACCO SOCIETY LTD
SAFARICOM SACCO SOCIETY LTD
SHERIA SACCO SOCIETY LTD
SHIRIKA SACCO SOCIETY LTD
SIMBA CHAI SACCO SOCIETY LTD
SKYLINE SACCO SOCIETY LTD
STIMA SACCO SOCIETY LTD
SUPA SACCO SOCIETY LTD
TEMBO SACCO SOCIETY LTD
TOWER SACCO SOCIETY LTD
TRANS ELITE SACCO SOCIETY LTD
TRANSNATIONAL TIMES SACCO SOCIETY LTD

UKRISTO NA UFANISI SACCO SOCIETY LTD

UKULIMA SACCO SOCIETY LTD

UNAITAS SACCO SOCIETY LTD

UNISON SACCO SOCIETY LTD

UNITED NATION SACCO SOCIETY LTD

WAUMINI SACCO SOCIETY LTD

WINAS SACCO SOCIETY LTD

YETU SACCO SOCIETY LTD

APPENDIX 1: Research questionnaire/interview guide

DETERMINANTS OF FINANCIAL DISTRESS IN DEPOSIT TAKING SACCOs IN KENYA:

High level of confidentiality will be accorded to the information in this questionnaire and will be used for academic purposes only. Any difficulties experienced will be discussed with you during the interviews.

Date-----

Background Information

I am currently working on academic thesis, focusing on determinants of financial distress in Deposit Taking Saccos in Kenya. Financial distress is a situation where an organization is unable to meet its obligations or struggling to meet their obligations. An understanding of its determinants is important to managers.

This is a questionnaire to enable me develop an overview of the present state of the determinants of financial distress in DT SACCOs in Kenya and the strategies that have been adopted or being adopted to manage them.

General and specific Information about the SACCO

- 1) Deposit Taking SACCOs in Kenya are clustered by their original common bonds into five clusters. Tick as applies to your SACCO.
 - a) Government based
 - b) Farmers based
 - c) Teachers based
 - d) Community based
 - e) Private based
- 2) Deposit Taking SACCOs in Kenya are clustered by their balance sheet sizes. In which of these categories is your SACCO.
 - a) Small
 - b) Medium size
 - c) Large
- 3) Do you have a strategic plan as a guide to management action of the SACCO
 - a) Yes
 - b) No

- 4) How many staff do you have in total in your SACCO -----
- 5) What is the current number of active members of your SACCO -----

- 6) The following are some of the key determinants of financial distress in DT-SACCOs in Kenya. Kindly provide a rating for each of their perceived impact on your SACCO as follows (Insignificant; Minor; Moderate; Major, Severe).
 - a) Weak corporate governance structure and Leadership -----
 - b) Lack of Internal controls and systems-----
 - c) Poor risk management policies and strategies -----
 - d) Insider lending and conflict of interest (Board/Staff members) -----
 - e) Lending to high risk borrowers -----
 - f) Weak financial Management/Performance-----

- 7) Which of these strategies has your SACCO employed to manage financial distress? (Tick all that apply to your SACCO)
 - a) Experienced/competent board members and proper corporate governance.
 - b) Building/Implementing effective internal controls (Audit, sampling, conformance reviews etc)
 - c) Effective Risk Management policies and procedures.
 - d) Specific thresholds for insider lending
 - e) Improved appraisal systems to high risk lenders (committee approvals and decisions/dual sign-offs).
 - f) Proper financial management and controls

Name of Respondent/Institution-----

Date-----

APPENDIX 3: Letter of introduction



Strathmore Business School

6 November 2018

Chief Executive Officer,
Sacco Societies Regulatory Authority (SASRA),
P.O. Box 25089-00100,
Nairobi, Kenya.



Dear Sir/ Madam

RE: FACILITATION OF RESEARCH – JOSEPH ONYANGO ODIPO

This is to introduce Joseph Onyango Odipo who is an MBA student at Strathmore Business School, admission number MBA/73111/08. As part of our MBA Program, Joseph is expected to do applied research and to undertake a project. This is in partial fulfilment of the requirements of the Master of Business Administration Course. To this effect, he would like to request for appropriate data which includes financial statements from your organization.

Joseph is undertaking a research paper on “Determinants of Corporate Financial Distress: Case of Deposit Taking Savings and Credit Cooperatives Societies in Kenya”. The information obtained from your organization shall be treated confidentially and shall be used for academic purposes only.

Our MBA seeks to establish links with industry, and one of these ways is by directing our research to areas that would be of direct use to industry. We would be glad to share the findings with you after the research, and we trust that you will find them of great interest and of practical value to your organization.

We appreciate your support and we shall be willing to provide any further information if required.

Yours sincerely,

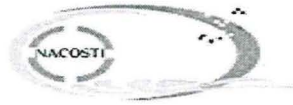
Caroline Tiara,
Manager – MBA Programs



Strathmore
UNIVERSITY

Ole Sangale Road, Madaraka Estate P.O. Box 59857 00200 Nairobi, Kenya
Tel: +254 6007 277/ 6003 412
Cell: +254 724 256 249/ 734 256 225/ 703 034 414
email: info@sbs.ac.ke or visit www.sbs.ac.ke

APPENDIX 4: Letter of Authorization from National Commission for Science, Technology and Innovation (NACOSTI)



**NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION**

Telephone: +254-20-2213471,
2241349,3310571,2219420
Fax: +254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No. **NACOSTI/P/18/11092/26842**

no. **16th November, 2018**

Joseph Onyango Odipo
Strathmore University
P.O. Box 59857, 00200
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***“Determinants of corporate financial distress: Case of deposit taking SACCOs”*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **15th November, 2019**.

You are advised to report to the **County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit a **copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.


GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

**COUNTY COMMISSIONER &
NAIROBI COUNTY**
P.O. Box 30124-00100, NBI
TEL: 341666

APPENDIX 5: Letter of Authorization from Ministry of Education



Republic of Kenya

**MINISTRY OF EDUCATION
STATE DEPARTMENT OF EARLY LEARNING AND BASIC EDUCATION**

Telegrams: "SCHOOLING", Nairobi
Telephone: Nairobi 020 2453699
Email: rcenairobi@gmail.com
cdenairobi@gmail.com

REGIONAL COORDINATOR OF EDUCATION
NAIROBI REGION
NYAYO HOUSE
P.O. Box 74629 – 00200
NAIROBI

When replying please quote

Ref: RCE/NRB/RESEARCH/1/64/VOLI

Date: 19th November, 2018

Joseph Onyango Odipo
Strathmore University
P. O. Box 59857-00200
NAIROBI

RE: RESEARCH AUTHORIZATION

We are in receipt of a letter from the National Commission for Science, Technology and Innovation regarding research authorization in Nairobi County on "*Determinants of corporate financial distress: Case of deposit taking SACCOs*".

This office has no objection and authority is hereby granted for a period ending 15th November, 2019 as indicated in the request letter.

Kindly inform the Sub County Director of Education of the Sub County you intend to visit.

JAMES KIMOTHO
FOR: REGIONAL COORDINATOR OF EDUCATION
NAIROBI

Copy to: Director General/CEO
National Commission for Science, Technology and Innovation
NAIROBI



Appendix 5: Approval Letter



12th March 2019

SU-IERC0325/19

JOSEPH ONYANGO ODIPO
P.O BOX 8010-00100
Nairobi

Email: joseph.odipo@absa.co.za

Dear Joseph,

REF **Protocol ID: SU-IERC0325/19 Student Number: MBA/73111/08**
DETERMINANTS OF FINANCIAL DISTRESS: CASE OF DEPOSIT TAKING SAVINGS AND CO-OPERATIVE SOCIETIES IN KENYA

We acknowledge receipt of your application documents to the Strathmore University Institutional Ethics Review Committee (SU-IERC) which includes:

1. Research Proposal version date March 2019
2. Participant Information Sheet and Consent form version date March 2019
3. Research Questionnaire version date March 2019
4. Research Budget
5. CV

The committee has reviewed your application, and your study "*Determinants of Financial Distress: Case of Deposit Taking Savings and Co-Operative Societies in Kenya*" has been granted **approval**.

This approval is valid for one year beginning **12th March 2019 until 11th March 2020**

In case the study extends beyond one year, you are required to seek an extension of the Ethics approval prior to its expiry. You are required to submit any proposed changes to this proposal to SU-IERC for review and approval prior to implementation of any change.

SU-IERC should be notified when your study is complete.

Thank you

Sincerely,

Amina Salim
Regulatory Affairs Fellow



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Email info@strathmore.edu www.strathmore.edu