

**DETERMINANTS OF THE LEVEL OF BAD DEBTS IN DEPOSIT TAKING SAVINGS
AND CREDIT COOPERATIVE SOCIETIES;**

NAIROBI COUNTY

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DECLARATION

This project is my original work and has not been presented for a degree in any other University or for any other award

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DEDICATION

This piece of academic work is dedicated to the almighty God for His guidance and protection throughout the undertaking of this research proposal. It is also dedicated to my loved ones especially my family members for their morale, prayers and financial support. My fellow classmates for their useful critiques, encouragement and views

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ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis Of variance
DT-SACCOs	Deposit Taking Saving and Credit Cooperatives
FE	Fixed Effect
FOSA	Front Office Saving Activity
GCC	Gulf Co-operation Council
GDP	Gross Domestic Product
GMM	Generalized Method of Moment
ICA	International Cooperative Alliance
IMF	International Monetary Fund
KNCU	Kilimanjaro Native Co-operative Union
MFI	Microfinance Institution
MSC	Microfinance Support Centre
NPL	Non Performing Loans
RE	Random Effect
RORE	Rates of Return to Education
SACCO	Saving and credit cooperative
SASRA	SACCO Society Regulatory Authority
UCSC	Unified Co-operative Service Commission

UGTDJLB	Uasin Gishu District Trade Development Joint Loan Board
VIF	Variance Inflation Factor
WOCCU	World Council of Credit Unions

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DEFINITION OF TERMS

Adverse selection: This is an instance where sellers may have extra information that buyers may not access. The reverse is also true. (Banks & Sundaram, 2013)

Bad debt: an outstanding debt that a company considers to be non-collectible after making a reasonable amount of attempts to collect. (Uboun, 1998)

Moral hazard: This is a chance that a transaction has taken place with one party having provided untrue details about their financial standing in bad faith. (Banks & Sundaram, 2013)

SACCO: Refers to a financial cooperative that is member-owned whose primary goal is to pool savings and enable members to get loans on fair rates as a way of enhancing their economic wellbeing. It is formed by people who have a common goal. (SASRA, 2011).

ABSTRACT

The general objective of the study was to establish the determinants of the level of Bad debts of Deposit Taking SACCO's in Nairobi County. Specific aims of the research were: to assess the level of Bad debts of deposit taking SACCO's in Nairobi County, to assess the moral hazard related determinants of bad debts in Deposit Taking SACCOs in Nairobi County, to assess the adverse selection related determinants of bad debts in DT SACCOs in Nairobi County, to determine the moderating effect of DT SACCO size on the relationship between moral hazard and adverse selection determinant and level of bad debts in DT SACCOs in Nairobi County. The study was anchored by the information asymmetry theory and the Keynes liquidity preference theory. An extensive empirical review was also carried out. The researcher used a descriptive cross-sectional research design in highlighting the determinants of the level of Bad debts of SACCOs in Nairobi County. Census technique which involves studying the entire population was used in the study. All the 43 deposit taking SACCOs licensed by SASRA were selected as sampling units. After required data had been acquired the; coding, editing and tabulation were done. Data was analyzed using quantitative techniques guided by SPSS version 24, system of analysis. The analyzed data was then presented in form of charts, graphs and tables. Regression was applied in the analysis of the determinants of the level of bad debts in deposit taking SACCO's in Kenya. The results revealed that adverse selection related determinants and level of bad debts have a significant and positive relationship. In addition, the results reflected that moral hazard related determinants and level of bad debts have a significant and positive relationship. The study recommends that SACCOs should employ qualified staff who will be able to access borrowers who are credit worth. In addition the SACCOs should train their staff on how to access their borrowers on their credit worthiness. This will help the SACCOs in the reduction of level of bad debts. The SACCOs should also discourage their borrowers from diverting their loans from its original use that they have agreed. This can be done by making follow up of the borrowers and how they are using the loans. This will minimize the amount of bad debts in the deposit taking SACCOs.

CHAPTER ONE

Introduction

1.1 Background of the Study

Imperfect information results to a minimum of four issues in credit score markets, specifically, adverse selection, and lack of coverage, moral hazard and absence of enforcement. Moral hazard takes place when there is uneven statistics among two individuals who intend to carry out a transaction and altered behavior of one party after they have succeeded to transact. On the alternative hand, adverse selection occurs when an imbalance in information therefore resulting to loss of symmetric information before carrying out the said contract to between a customer and the dealer.

(Banks & Sundaram, 2013).

In the SACCOs Moral hazard and adverse selection is a concept with a variety of principal- agent problems. According to Keitany (2013) SACCOs grant loans on the idea of member's financial savings. The loan can be extra or much less than the financial savings of the borrower. Loans much less than the member savings are secure and the repayment is assured. Loans in extra of the contributors' savings must be assured by different members. Loans that aren't recovered are taken into consideration to be delinquent and as a result defaulted. A tremendous debt that an organisation considers to be non- collectible after making a reasonable amount of tries to gather is referred to as a bad debt. These debts are worthless to the organisation and are written off as a bad debt. The current study needed to examine the determinants of the level of Bad debts of SACCO's in Nairobi County.

1.1.1 Global Perspective of SACCOs

Cooperative efforts have been there from time immemorial, Bwana (2013). People always joined efforts to help each other while hunting for survival. That allowed them to attain the objectives that they couldn't reach in the event that they acted alone. Ancient information display that Cooperative farming was practiced by the Babylonians and that advanced saving and loans institutions just like those in use these days was practiced by the Chinese. In North America, cooperative efforts were required especially to achieve barn raisings, planting of crops and threshing of crops. In the USA, the primary modern and structural co-operative enterprise is believed to have been started in 1752, nearly quarter-century earlier than the signing of the Declaration of Independence.

Cooperative financial entities have a significant market proportion in the modern world, with the IMF estimating that as at 2004, throughout all banking area property in growing nations, the marketplace percentage of Co-operative finance changed to an equivalent of fourteen percent (Hesse & Cihak, 2007).

Cooperative finance scholarly research reflect in a time of crisis shows that they tend to perform higher than privately or commercial-owned financial loans and savings establishments, as they go after extra conservative funding regulations (Malamsha & Kayunze, 2014)). For example, evaluation IMF statistics reflect that co- operative banks in evolved international locations have a tendency to be highly stable than industrial banks, particularly for the duration of financial disaster, as their investment styles have a tendency to be less speculative and returns are consequently not much and the cooperatives are not affected during such times (Hesse & Cihak, 2007). Co-operative finance in

advanced nations has an upward trend of pooling of funds hence this is extra stable and less conscious of financial coverage and market charges. Co-operative finance additionally offers competitive lower expenses than other forms of industrial banks, which now not only allows the lower class to increase right of access to credit facilities, but additionally decreases the price of the transfers made by the lower class (WOCCU, 2009). This is a trend observed over time.

1.1.2 Regional Perspective of SACCOS

Cooperative societies in Tanzania go as far back as 1925, when small holder coffee farmers in Kilimanjaro region formed cooperative societies to expand market access and utilize profits. The first cooperative to be formed was the Kibongoto Rural Primary Cooperative, registered in 1932 while the first Cooperative Union was Kilimanjaro Native Cooperative Union (KNCU) registered in 1933. After independence in 1961, the government's objective was to utilize cooperatives effectively to achieve inclusive development. Through proper legislature and regulations, cooperatives were systematically integrated into the government's development framework and were considered an important tool for transforming rural community production. In general, several kinds of cooperatives were formed including; production cooperatives, supply cooperatives, marketing cooperatives, workers and service cooperatives. The most predominant though were the agricultural cooperatives and the financial cooperatives in form of Savings and Credit Cooperative Societies (SACCOS). Total number of cooperatives registered increased from 573 in 1959 to 1,518 in 1967 (Mruma 2011). The surge in cooperatives after independence was attributed mainly to political expediency which did not allow for proper planning and execution of cooperative activities. Before long, complaints of mismanagement

and corruption were reported by members. A presidential committee on enquiry was set up to investigate and proffer solutions. The following problems were highlighted; shortage of manpower, uninformed members, lack of democratic leadership, lack of skilled manpower, political interference. Recommendations were made for the abolition of some major cooperatives and formation of new Unified Cooperative Service Commission (UCSC) which proved very ineffective in solving these problems (Viswanadham&Nahid, 2015).

Uganda is one of the leading nations in Africa that commands a huge co-operative movement. However, the performance of cooperatives is often a result of many aspects, both inner and external to the financial institution.

In 2013, the Cooperative Movement in Uganda commanded a sizable portion of the Nation's wealth with over 10,000 registered cooperative societies country-wide and a total of approximately 600,000 actively engaged members. The movement has pooled domestic financial savings expected at over shs. 125 billion with a membership of over 6.1 million (Mulwa, 2013)

In Uganda, savings and credit cooperatives (SACCOS) as monetary intermediaries, channeling financial portfolio into loans, offer saving platforms for the members, particularly in the semi urban and rural areas, additionally similar improvements are important to make their services more efficient and sustainable. The Ugandan government has backed the creation of new SACCOS all over the nation. Newly formed SACCOS can apply for a begin-up grant from the government owned apex organization Microfinance Support Centre (MSC). MSC also gives out grants to the SACCOS or other backed loans. In addition to grants and loans SACCOS can also get a hold of operational support from

its government. The government will pay salaries and rent for the first two years after the start-up. These support schemes are important factors of the government's "One SACCO per sub-county" initiative, which is a part of the broader program "Prosperity for All".

1.1.3 SACCOs in Kenya

The Kenyan cooperative movement has two large classifications of cooperatives. The two include financial co-operatives and Non-monetary cooperatives (housing, farm proceeds, transport and investment co-operatives, other relevant commodities and marketing cooperatives). SACCOs have experienced quicker increase and expansion than other co- operatives in the past recent. The creation of SACCO Societies parliamentary Act in 2008 enables the deposit taking to be streamlined in their activities. For instance, supervision and licensing are carried by SASRA (SACCO Societies Regulatory Authority). This provides for cost effective regulations that are created to steer SACCO's improvement and growth as the new legal blue print (Barrales, 2012). SACCOs contain two large categories which are non-deposit and deposit taking SACCOs.

Licensing and regulation of Deposits taking SACCOs is done by SASRA while the cooperatives Commissioner regulates and monitors the non-deposit taking ones. SASRA licenses properly structured SACCOs that follow the Cooperative Societies parliamentary Act CAP 490 (SASRA, 2014). By January 2015 a total of 181 DT-SACCOs were registered by SASRA under its regulatory framework. However, by the end of the financial year, five (5) DTSACCOs were unable to achieve the minimum standards and had their licenses recalled. Only a single request for licensing for deposit-taking license reached the threshold hence the request processed, and a license to conduct deposit-

taking enterprise was issued within 12 months. By 2015, the properly registered and monitored became 177 DT-SACCOs under the Authority's supervisory (SASRA 2015).

Kenyan SACCOs are regularly responding to short modifications experienced in the financial surroundings and applying the new techniques in the SACCO concept. The FOSA concept is one of the modern day adjustments and is not aligned with traditional SACCO ideas, which are predicated on fixed shares deposits. Additionally Cooperatives need to keep evolving and raising standards along with the demand trends changing. For example, clients need fast financial services that are easy to access. If they can't receive that kind of facility from the SACCO, then it is not meeting its economic needs. In this case, so as to remain liquid, SACCOs need to provide effective and efficient services (WOCCU, 2007)

In the previous couple of years radical competition has been witnessed, with SACCOs remodeling themselves more aggressively than before advancement. SACCOs with and without FOSAs offer loans according their loan policies which are expected to give a return to the SACCOs for survival and sustainability hence, the current study seeks to identify the determinants of the level of bad debts to enlighten the SACCOs on the importance of proper lending procedures.

1.1.4 Moral Hazard Related Determinants

Moral hazard is the chance that a transaction has taken place with one party having provided untrue details about their financial standing in bad faith (Prescott & Townsend, 2014). Moral hazard happens when a party adjusts their behavior after an agreement to transact has taken place. This could happen by presenting misleading records due to the consideration that they will not incur any repercussions for their actions. In addition, moral hazard may also imply a desperate move to profit from the agreement before it actually takes place. (Banks & Sundaram, 2013).

It is now common understanding that, moral hazard, aligned with the absence of enough collateral by the lower class is one of the major reasons why they can't access credit facilities. The problem of moral hazard may come up when certain parties are aware that their moves are privately taken hence directly affecting the probability distribution of the result. It mostly occurs in a principal-agent relationship when moves taken by an agent or one of the parties are not reliable (Kilonzi, 2012).

Risky decisions are likely to be made by SACCO managers because they have the incentives guided by the belief that they risk will work in their favor incase it turns out to be profitable (market share, profits, bonuses,) and a small element of downside risk on their part, but it may not fall in favor of the depositors and shareholders should the risk result to a loss (Thujo, 2016). Equally SACCO managers dealing capital stress (undercapitalized banks) have a tendency to react to moral hazard incentives by underwriting high-risk facilities at an excessive interest rate with the belief that excessive interest rate will raise income and capital base. To the contrary, high-risk loans bring out higher levels of NPLs, as excessive loan costs may have similar unfavorable incentive to borrowers. SACCO management

moral hazard habits are usually connected detected through balance sheet items that include, loan growth, capital adequacy ratio; asset growth, deposit growth, bank size and all these products modifications are associated with decisions made SACCO management.

In Kenya moral hazard is common incidence amongst SACCOS. Njoroge and Rotich (2016) it is noted that peer monitoring does not occur regularly in SACCOs from Kenya and that after it occurs it doesn't result to any positive changes to repayment due to the fact that the reason for default in the SACCOs is not to incapability to pay back but the consciously refusing to repay (moral hazard). The unwillingness to repay accounted for almost 25 % of all the defaults hence it was found to be the first cause of default among the SACCOs.

1.1.5 Adverse Selection Related Determinants

Adverse selection occurs when buyers have details about a transaction that sellers may not have, the reverse is also true. It is also occurs in cases whereby people who knowingly enter into a life insurance contract knowing that they are in high risk. It also implies that one of the parties; has extra accurate information prior to the transaction. The disadvantaged party is the one with less information. Technically information in a market economy is spread through prices; therefore indicating that false price signals are as a result of adverse selection (Banks & Sundaram, 2013). According to Njoroge and Rotich (2016) informational asymmetries are the source of adverse selection. All borrowers are charged normal rates when lenders are unable to filter their borrowers; hence that reflects their pooled experience (Catro, 2013). However, higher interest rates than good borrowers can have the funds for; it will lead to a filter in clientele out of the borrowing market, forcing banks to adjust their charging

rates to higher rates in order to create risk a cushion from the remaining unqualified borrowers. Consequently, in the long run, the quality of the overall bank loan portfolio deteriorates as a result of adverse selection. This in turn creates a situation whereby good quality borrowers are replaced by delinquent borrower therefore leading to an upward shift of NPLs (Kingu, Macha, &Gwahula, 2018).

1.2 Statement of the Problem

The overall performance of Deposit Taking SACCO in Kenya has been declining drastically as a result of rise in burden of high levels of bad debts in these SACCOs. According to the SACCO Supervision Report (2016) bad debts increased from 5.12 percent in 2015 to 6.23 percent in 2016. The bad debts further increased to 6.45 percent in the year 2017 indicating elevated credit risk. This bad debts may eventually have to be written off which will lead to increased expenses and losses or even bankruptcy. For example, in Nairobi County some DT-SACCOs were closed down since they went bankrupt. According to SASRA report (2016) the major reason of bankruptcy was increased level of bad debts.

Gweyi (2018) carried out a study in Kenya what influence financial risk has on DT SACCOs performance. The study revealed that there has been underperformance of Deposit Taking SACCOs due to rise in the level of bad debts. Muriithi (2013) did a study on what causes problematic loans in SACCOS in Kenya. Feedback from the study showed that loan size is significantly related to NPLs. These results agreed with those of Essendi (2013) did a study in Kenya on what effect credit risk control had on total loans within different SACCOs. The research disclosed that loan size is highly related to NPLs. Gatuhu(2013) did a study on what effect credit appraisal techniques have on microfinance institutions financial performance in Kenya. The study found out that credit appraisal techniques are negatively correlated to NPLs. However, Arsyad (2015) did a study on Assessment of Microfinance Institution Performance. The study found out that credit appraisal methods are positively and significant to NPLs.

It therefore evident from the above studies, most studies focused on non performing loans and not bad debts. Other studies focused on commercial banks and not DT SACCOs There is therefore needed to focus on DT SACCOs. In addition, it's evident that there has been a bad debt problem in the DT SACCOs. Therefore this study sought to examine the determinants of the level of bad debts in Nairobi County.

1.3 Objective of the Study

The general aim of this research sought to establish the determinants of the level of Bad debts of deposit taking SACCO's in Nairobi County.

1.3.1 General Objective

Examining the determinants of the level of bad debts in deposit taking SACCOs, Nairobi County

1.3.2 Specific Objectives

Specific objectives of the study were:

- i. To assess the moral hazard related determinants of bad debts in DT SACCOs in Nairobi County
- ii. To assess the adverse selection related determinants of bad debts in DT SACCOs in Nairobi County.
- iii. To determine the moderating effect of DT SACCO size on the relationship between moral hazard and adverse selection determinant and level of bad debts in DT SACCOs in Nairobi County.

1.4 Research Questions

This study was guided by the following research questions;

- i. What is the effect of moral hazard related determinants of bad debts in DT SACCOs in Nairobi County?
- ii. What is the effect of adverse selection related determinants of bad debts in DT SACCOs in Nairobi County?
- iii. What is effect the moderating effect of DT SACCO size on the relationship between adverse selection and moral hazard determinants and level of bad debts in DT SACCOs in Nairobi County?

1.5 Significance of the Study

The feedback from this research will be important in identifying the areas that are pertinent to SACCO's financial performance. Institutions that offer credit and education services will benefit from the findings by gaining a better understanding on the existing need and type of service required by business owners. Policy makers are able to create relevant policies in conjunction with the government, can adequately address issues pertaining to the SACCO's sector. Addition to the existing body of literature will also be done in reference to the determinants of the level of bad debts.

1.6 Scope of the Study

The scope of the research was to establish the determinants of level of Bad debts of deposit taking SACCO's in Nairobi County. The research targeted 43 deposit taking SACCOs licensed by SASRA in

Kenya. The variables used to carry out the study were moral hazard related determinants, adverse selection related determinants and the size of DT SACCOs. The study followed a descriptive cross-sectional research design.

1.7 limitations of the study

The research was not completely flawless as it was restricted to only Nairobi County. Some of the research respondents were not forthcoming with information that could have given better insight to the research. The methodology used was a descriptive cross-sectional kind of approach hence leaving a methodological gap.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter looked at both theoretical and empirical literature on the determinants of the level of Bad debts of SACCO's in Nairobi County.

2.2 Theoretical Literature

A theoretical framework is a conscious collection of ideologies that are somehow related. It gives a blueprint to a research in form of what should be measured and what kind of relationships to concentrate on especially statistical ones (Randal, Defee, Williams & Thomas, 2010).The research was anchored on these theories, Information Asymmetry Theory and Keynes liquidity preference theory.

2.2.1 Information Asymmetry Theory

Information asymmetry theory was idealized by Rothschild and Stiglitz in 1975. In light of this concept; firms prioritize their sources from observation of decisions in the course of a transaction whereby one party has more information in regards to the transaction about to take place while the other is disadvantaged. This in turn provides an unproportional power in case of transactions, hence leading the transaction in a direction that was not intended. This theory also guides organisation on how to finance its operations. According to this theory an organisation may first choose to finance itself through

retained earnings. However, in the event that the retained earnings fall short, the company may decide to seek financing from a financial institution as a last option. In the case that debt is also not adequate; an organization may fund itself through issuance of new equity. Asymmetry theory plays a good role in informing the general public on the performance of a certain firm. If an organisation is able to finance itself from within, then it is considered to be liquid and can meet its obligations and clear its debts when they fall due. This is indication that the firm is not facing any liquidation threats. In the event that the organisation has to acquire debt, it indicates that it can be able to repay monthly loan obligations and still remain liquid. However, when an organisation is issuing new equity, this is a negative indication that the firm is not liquid and is unable to meet its obligations. In most cases, many organizations facing illiquidity feel their shares are overvalued and seek to make money before the share price goes down.

In line with this theory, from the perspective of an outside investor, equity is riskier than debt. Therefore the investor will demand high return rates. Both parties are exposed to adverse selection with a chance of risk occurring but the risk is large on equity therefore it explains the investor behavior.

The basic idea behind the asymmetry theory is that the owner or the manager of the firm has factual knowledge of the firm's assets and growth capabilities of the firm. Outside investors cannot tell the true value even where financial documents are available as there is certain information known only to the business owners. In case the firm decides to sell equity, an outside investor should be able to be inquisitive and be interested as to why the management is willing to sell equity. In light of the above,

it is clear that an overvalued firm will go for the option of selling equity, while an undervalued firm would not consider such an option (Cadsby et al., 1990).

The asymmetry theory is often used to draw light on performance of organizations mainly on capital budgeting that a firm needs to make. This mainly highlights already established organisations and the paths they take when they are faced by financial distress. It's also highlight the behavior of small and micro enterprises. Mostly however, small and micro enterprises rely on different modes of financing which includes donations from friends, personal savings and family contributions in rarely instances, loans from financial institutions. This is as a result of fear of monthly payments as it may be a stretch for a small or micro enterprise. This theory was a boost to the study since it provided needed insight on the dependent variable, level of bad debts. This is because, from the perspective of an organisation, retained earnings are the best source of financing than acquiring debt while debt is a better finance source than equity financing. This indicates that if in a position to, a firm would finance all its projects through retained earnings

2.2.2 Keynes' Liquidity Preference Theory

This particular theory indicates there are three reasons for holding money. This was formulated by Keynes in 1936. The reasons include speculative motive, transactions motive and the precautionary motive. The demand for money is proportionately affected by the arbitrage in the speculative motive. Having money is perceived as a way of protecting or guarding one's finances against uncertainty. The theory seeks to determine the correlation between the demand and supply for money and how equilibrium of the same is achieved. Two reasons were the reasons for the development of this model; that money doesn't accrue any interest and that there are only two assets for storage of money. That is money and bonds.

In its applicability, this theory confirms that people prefer to hold money rather than investing it (Boehm & Schlottmann, 2007). The use of this theory explains the availability of interest rates. The rates are offered in exchange for liquidity. However, the preference to be liquid by some people is the need to purchase economic units that near future expenditure and are not easily predictable. Liquidity theory is limited by its short-term nature, if the fact that income is held constant, only demand and supply for money are put into consideration. (Boehm & Schlottmann, 2007). This theory provides relevance on this study as it informs the determinants of bad debts

2.3 Empirical review

2.3.1 Adverse Selection Related Determinants

George (2016) did a study, examining the process of credit appraisal and how it is related to loans repayment. Oral interviews were conducted with 142 respondents in Lower and Upper Denkyira East the tool used for the study was structured questionnaire. The targeted people for the study to be carried out were formal and informal sector workers. The following things were accessed, The process of credit appraisal, nature of collateral, loan processing duration, loan diversion, evaluation and credit score, loan default, loan amount released and loan repayment. This study brought to light that the credit division offered good customer service regardless of the loan officer-customer relationship. It was highlighted that proper assistance and advice on how to channel the funds was offered upon completion of the loan form. This therefore, indicated that the client-officer interaction did not have an effect on loan repayment.

In a research carried out by Wakuloba (2008) on what contributes to loan default in Uasin Gishu District Trade Development Joint Loan Board (UGTDJLB) scheme, the researcher observed that the default rates were high and continuously rising over time. The main reason for the rate of default was an economic depression, diversion of funds to other project and domestic problems. It was recommended that the board be empowered through capacity building and training so as to increase efficiency in service delivery.

Mutangili (2011) conducted a study on what relationship exists between levels of non-performing loans and credit risk handling in Kenyan commercial banks. The design used to carry out the study was causal. In this study, it was established that loan policies in commercial banks were reviewed yearly and half yearly, and that employees are trained on the changes in the policies through credit manual, and supervision. It was further indicated that credit appraisal methods used in Kenyan commercial banks are; linear probability model and risk adjusted return on capital. There is a negative correlation between levels of problematic loans and credit appraisal methods in banks, as the study revealed.

2.3.2 Moral Hazard Related Determinants

Simtowe, Zeller and Phiri (2006) did a study in Malawi on what determines moral hazard in microfinance: Evidence which was empirical was obtained from lending programs with joint liability. The study examined to what extent of moral hazard occurred and examined what determined its occurrence among joint groups sharing liability from Malawi, by the use of group data per from non-farm credit groups and 99 farm ones. The results highlighted that every peer pressure, peer monitoring, selection, dynamic incentives and variables.

Cincinelli and Piatti (2017) conducted a study on the Italian Banking System focusing on Moral Hazard poorly performing loans and Supervisory Authority. The study majored and empirically tested the premise that the mandate of the Italian banking system supervisory was effective. It was also discovered that NPL ratios could be reduced in the short term as a result of the dilution effect by making extra loans. However, the management of the bank may have to adjust to high risk positions in

order to acquire additional funding and in turn creating likelihood for higher losses in the future. The empirical reviews shows that banks are susceptible to moral hazard issues but after enforcement, find no change. Endogeneity was accounted for by conducting robustness tests.

Kiyai (2003) carried out a study in Kenya on restructuring bad debts techniques and loans that are non-performing in commercial banks. The study focused on examining the loan appraisal methods offered as incentives to entice defaulting borrowers to service their loans. It also aimed at identifying their importance and preference and whether there is a direct interaction between the loan appraisal methods and the level of loans that are non-performing.

The general conclusion drawn is that banks use a combination of techniques ranging from lowering interest rates and charges to providing addition loan facilities to distressed borrowers (in special and rare circumstances). The study also found that banks are placing increasing emphasis on restructuring of bad debts and that there is similarity between the techniques used by the various categories of banks

Owino and Otieno (2013) did a research in Kenya on what consequences lending policies had on the extent of bad loans in commercial banks. Forty three commercial banks were selected as study units with the help of a descriptive survey. The tool applied was a questionnaire in order to collect raw primary insight. The study established that loans that are non-performing and lending policies are positively correlated. Banks are assisted by lending policies to significantly reduce the risk levels and to strictly adhere to the policies hence consequently a decline in the levels of loans that are non-performing.

2.3.3 DT SACCO Size

Panizza, Yanez and Micco (2007) did a study on bank ownership and performance in Kenya. This research was conducted to determine what impact bank size had on financial and general commercial banks performance. The study employed generalized method of moment (GMM) to avoid the endogeneity problem. Panel data for the period 2007-2014 guided the study. The findings indicated that the size of the bank didn't necessarily determine profitability. Although large economies of scale convert to higher profitability, in Kenya it doesn't. The control variables, GDP growth, market concentration, lagged profitability and inflation were all helpful in giving insight on how banks make profit.

Pervan et al., (2015) realized significant and high correlation between size and profitability when he did a study in Croatia about the factors that determine advisability of banks in the country with insight from 2002 to 2010.

Naceur and Goaied (2008) looked into what impact the macroeconomic environment, bank specific characteristics and financial structure had on the profitability of banks in Tunisia by use of data from 1980-2000. The study highlighted that the bank size had negative effect on profitability. The study adopted a Random coefficient, Random effect (RE) model, and Fixed Effect (FE) model.

2.3.4 Level of Bad Debts

Viswanadham and Nahid (2015) did a study in Tanzania to question what causes loans to perform poorly in Commercial Banks. 16 commercial banks in Tanzania were studied and panel data (2007 to

2015) studied, the research adopted causality study design. The study established that growth of assets; high capital ratio and asset-loan ratio are negatively connected with the non- performing loans levels, whereas cost inefficiency is positively associated with the occurrence of defaulted loans.

According to King'ori, Kioko and Shikumo (2017) a financial institutions lending policy of an institution affects its financial performance. The lending policy of an institution, depending on how the policies are created and affected, affects the asset quality, capital adequacy, management quality, liquidity of financial earnings either negatively or positively. Ntiamoah.

Using some highlighted microfinance institutions in Ghana as a case study, Diana and Kwamega (2014) conducted a research how credit policies and loan performance are related. The outcome was that a very positive correlation existence between, credit analysis, loan performance, credit policy, credit terms, lending and credit risk aversion.

Thomas, Ayodele, Raphael and Ajayi (2014) did a study to identify what impact credit policy has on the Nigerian Banks performance using the case study of Zenith Bank. Primary data from sixty respondents was obtained through questionnaires showed that having good lending procedures significantly reduces the level of bad debts.

Nkusi and Byusa (2012) examined what effects credit policy had on the performance of banks in different Rwandan banks. The feedback highlighted that as a result of Rwanda's banks increasing their accounts, improved their financial rates and customer base, therefore, maximizing on their profits.

Absence of competition within the banking sector however, brought about an increase in the negatives.

Kargi (2011) evaluated what impact of credit risk may have on profitability commercial banks in Nigeria. The feedback highlighted that credit risk management had a positive impact on the profitability of Nigerian banks.

Al-Khouri (2011) studied the overall banking surrounding and different bank specific risk factors and the effect they have of commercial banks in operation of 6 Gulf Cooperation Council countries (GCC) by the use of panel data over 1998-2008. The feedback indicated that liquidity risk, credit in conjunction with risk capital are some of major indicators that profitability is determined by return of total assets and they have an effect the performance of the banks.

2.3.1 Adverse selection Concept

Adverse selection as suggested by Chassagnon and Chiappori (1997) is an instance where sellers may have extra information that buyers may not access. The reverse is also true. A rational entrepreneur is motivated by the objective of profit maximization just like other big firms operating in any market. An entrepreneur is therefore expected to increase profitability of the enterprise given the available technology. Numerous studies on the subject have measured entrepreneur performance using neo – classical model of growth with performance used as proxy of economic growth. Since the producer

(business owner) has various inputs; that is capital stock from borrowed sources and own savings, stocks of labor from himself and other family members, skills acquired from schools, they are combined to ensure the best outcome for the entrepreneur (Akingunola, 2011; Ihua, 2009).

There are various ways in which resources can be combined in an organization to produce output. In this study, capital stock from credit received and skills acquired through schooling and business training were combined to determine how the performance of the sample enterprises is affected financially. The capital, labor and stock of skills in the business are financed through own savings and borrowing from various sources in the economy.

2.3.2 Moral Hazard concept

Developed by Economist (Paul Krugman, 2009) Moral hazard is an instant where by one party enters a contract knowing that they are not liable for any risk and the other party will cover the cost in case of a loss. This happens after the transaction has taken place.

Moral hazard occurs when both parties to don't have sufficient information about each other at the time of transaction. (Fairlie& Robb, 2007; Chiliya& Robert, 2012).

The less likelihood of a borrower to pay a loan back is based on the fact that the borrower may engage in activities that are not desirable from the lender's perspective. Over the past decade, a variety of studies have been done to estimate success of businesses in terms of Rates of Return to Education (RORE). Most of the studies have shown that owner/manager owning precise academics which are

formal and proper are vital in determining whether an entity will be successful in performance. (Cohn & Addison, 1998).

2.4 Research Gaps

Simtowe, Zeller and Phiri (2006) conducted a study on what determines moral hazard in microfinance: Malawi lending programs which have joint liability formed empirical evidence for this study. The study carried out a desktop study design hence a methodological gap was identified. This particular study employed a descriptive research type of design. Cincinelli and Piatti (2017) did a study on poorly performing Loans that also focused on Moral Hazard incorporated Supervisory Authority: Italian Banking System was the area of focus. This study presented a scope gap since it was conducted in Italy. The current study was conducted in Nairobi, Kenya.

Viswanadham and Nahid (2015) did a study on what determines poorly performing Loans in Tanzanian Commercial Banks. The research presented a scope gap since it was conducted in Tanzania. The current study was conducted in Nairobi, Kenya. Ajayi, Thomas, Ayodele and Raphael (2014) did a research on what impact credit policy had on the attainment of results in Nigerian Commercial Banks. They focused on Zenith Bank Public limited company. The current research focused mostly on level of bad debts in DT SACCOs in Nairobi County.

2.3 Conceptual Framework

Main variables used in this study were the independent variables which include moral hazard related determinants and adverse selection determinants. The dependent variable is amount of bad debts in SACCO's. The conceptual framework assists in successfully completion of the study by providing the linkages between the various concepts. The variables were analyzed in relation to bad debts

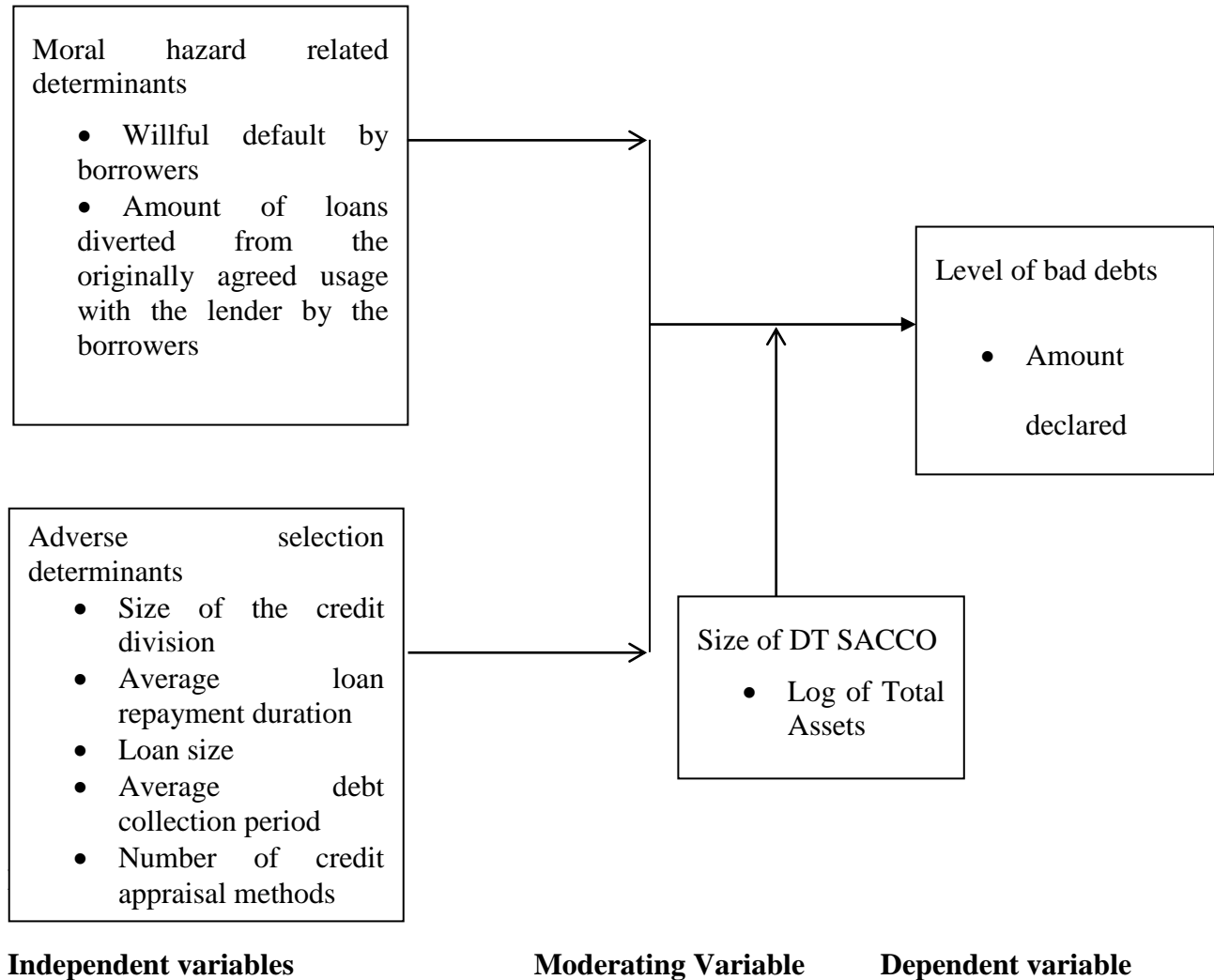


Figure 2.1: Conceptual Framework

According to Berndta and Gupta (2009) moral hazard behavior is common in cases of bank loans. Banks have a common fear that people who they qualify for a bank facility will be the ones who are less likely to pay and that a person who receives a loan may divert the funds from the original intended plan hence the less likelihood of paying back. Banks try as much as possible to evaluate loan applicants and create a proper framework to ensure repayment. Simtowe, Zeller and Phiri (2006) measured moral hazard by the unwillingness to repay and the quality of peer pressure. Hyman (1972) used price elasticities of demand to measure moral hazard. The current study used willful default by borrowers and Amount of loans diverted from the originally agreed usage with the lender by the borrowers as the determinants of moral hazard.

According to Curak, Pepur and Poposki (2013), adverse selection is a very important highlight for bank loans. Banks try as much as possible to place the right blueprint and policies in order to ensure repayment. According to Viswanadham and Nahid (2015), bank-year, bank Size, assets, costs determined the share of bad loans. Adverse selection in the current study was determined by size of the credit division, average loan repayment duration, average debt collection period and number of credit appraisal methods.

DT SACCO size was used as the moderating variable. It shall be used to moderate the relationship between adverse selection determinants and moral hazard determinants and level of bad debt. In SACCOs, the size of a SACCO is used to compare large and small entities. Total assets owned by a bank are used to determine its size (Micco, Panizza& Yanez, 2007).

If a company's bad debt keeps increasing as the level of sales goes up, then it is usually a sign of a weak framework. Many organizations sell their merchandise on pay later basis for the convenience of its clients and in turn their sales go up. Therefore, it can be useful to calculate and monitor the percentage of bad debt over time. Amount of bad debt is calculated by dividing the amount of bad debt by the total debt owned for a certain financial year then multiply by a hundred to get the percentage. (Sigidov, Korovina, Trubilin, Govdya&Vasilieva, 2016).

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter contains the research design and methodology that was employed to carry out the research. It presented the research design, the population, sample size and sampling procedure, data collection and analysis.

3.2 Research Design

Descriptive cross-sectional research design was adopted for the study. Creswell (2014), stated that the purpose of the descriptive cross-sectional study was to describe apparitions as they exist in the present at any stated time period. A descriptive cross-sectional study type was suitable for this research as it gave insight the researcher to examine the target population and be able to clearly conclude the factors under investigation. Mugenda and Mugenda (1999) on the contrary, describe descriptive research as reporting and determining the actual situation in the specific study area. The study adopted both qualitative and quantitative research approaches.

3.3 Target Population

According to Sekaran and Bougie (2013) a population is recognized as an organized collection of items or objects commonly known to have same features therefore, objects bounded in a given population in most have a bond, an essential quality.

The study used census technique which involves studying the entire population (Mugenda & Mugenda, 2012). All the 43-deposit taking SACCOs licensed by SASRA were selected as sampling units. The study used the data from the deposit taking SACCOs financial statements for the period 2018. This sample was purposively taken. This was guided by the indication that DT SACCOs are large in operations and are regulated by SASRA. Their reporting framework is also similar hence easily comparable. The specific respondents were the senior loan officers in these deposit taking SACCOs. Therefore the total population was 43 respondents.

3.4 Data Collection Procedure

Primary data obtained was collected by the aid of a questionnaire. The researcher used primary data only. The research tool, questionnaires were issued by the researcher to the senior loan officers with the assistance of two research aids.

3.5 Data Analysis Methods

Once the required data has been obtained; coding, editing and tabulation was conducted. Analysis of the data was carried out using quantitative techniques aided by the SPSS version 24 system. Graphs, tables and charts were used in the presentation of the analyzed data. Both correlation and regression were used. The correlation used was spearman rank correlation. The regression model was used in examining the determinants of the level of bad debts in deposit taking SACCO's in Kenya.

This model guided this study;

$$Y_i = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \epsilon$$
 Where:

α = Constant term

Y_i = level of bad debts

X_1 = willful default

X_2 =Amount of loans diverted

X_3 =Size of the credit division

X_4 =Average loan repayment duration

X_5 =Loan size

X_6 =Number of credit appraisal methods

X_7 =size of DT SACCO.

ϵ =Error term usually distributed about the mean of zero.

Whereby Y is dependent variable (level of bad debts), α is the regression constant or Y intercept, β_1 ---
--- β_3 are the coefficients of the regression model. Basis of the model is to help in measuring bad debts by exploring the contribution of various components.

3.5.1 Operationalization of Variables

Variable	Type	Constructs/Measurements	Literature
Level of bad debt	Independent Variable	amount of bad debt/ the total accounts receivable	Viswanadham and Nahid (2015)

Willful default by borrowers	Dependent variable	Amount of loans defaulted willfully /amount of account receivable	George (2016);Wakuloba(2008);Mutangili (2011)
Amount of loans diverted from the originally agreed usage with the lender by the borrowers	Independent variable	Amount of loans diverted from its originally agreed use /amount of account receivable	George (2016);Wakuloba(2008);Mutangili (2011)
Size of credit division	Independent variable	Number of qualified staff in the credit division/total number of DT SACCO employee	Simtowe, Zeller and Phiri (2006);Ntiamoah, Diana and Kwamega (2014);Kiyai (2003)
Average loan repayment duration	Independent variable	Months/maximum duration that loans are granted	Simtowe, Zeller and Phiri (2006);Ntiamoah, Diana and Kwamega (2014);Kiyai (2003)
Average loan size	Independent variable	Average loan size/maximum amount of loan that the SACCO can lend to borrowers	Simtowe, Zeller and Phiri (2006);Ntiamoah, Diana and Kwamega(2014);Kiyai (2003)
Average debt collection period	Independent variable	Average debt collection period/maximum duration that loans are granted in a SACCO	Simtowe, Zeller and Phiri (2006);Ntiamoah, Diana and Kwamega (2014);Kiyai (2003)
Number of credit appraisal methods	Independent variable	Number of credit appraisal methods/ Maximum Number of credit appraisal methods	Simtowe, Zeller and Phiri (2006); Ntiamoah, Diana and Kwamega (2014); Kiyai (2003)
DT SACCO	Moderating variable	Log of Total Assets	Pervan et al., (2015);Micco, Panizza and Yanez (2007)

Size			
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CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter comprises of data analysis, findings and interpretation. Results were presented in Tables and diagrams. The analyzed data was arranged under topics were in line with the research questions and objectives

4.2 Response Rate

The research tools issued out to senior loan officer in the deposit taking SACCOs were 43 questionnaires. Response rate results were presented in Table 4.1.

Table 4.1: Response Rate

Response	Frequency	Percentage
Returned	37	86.05%
Unreturned	6	13.95%
Total	43	100%

37 questionnaires were filled as expected and given back. This amounted to an impressive overall response of 86.05% as illustrated on Table 4.1. It coincides with the idea of Babbie (2004) that acceptable and ready to analyze returned questionnaires should be 50% and above to ascertain and formally work on, 60% is fair and 70% is exemplary. Based on the facts 86.05% response rate was very good for the research.

4.3 Demographic Information

Respondents were required to give feedback on their demographic specifics including the gender of the respondents, age, marital status, education level, duration worked in the deposit taking SACCO.

4.3.1 The Respondents age

Respondents were required to specify their age. The presentation in Figure 4.1 below shows the results.

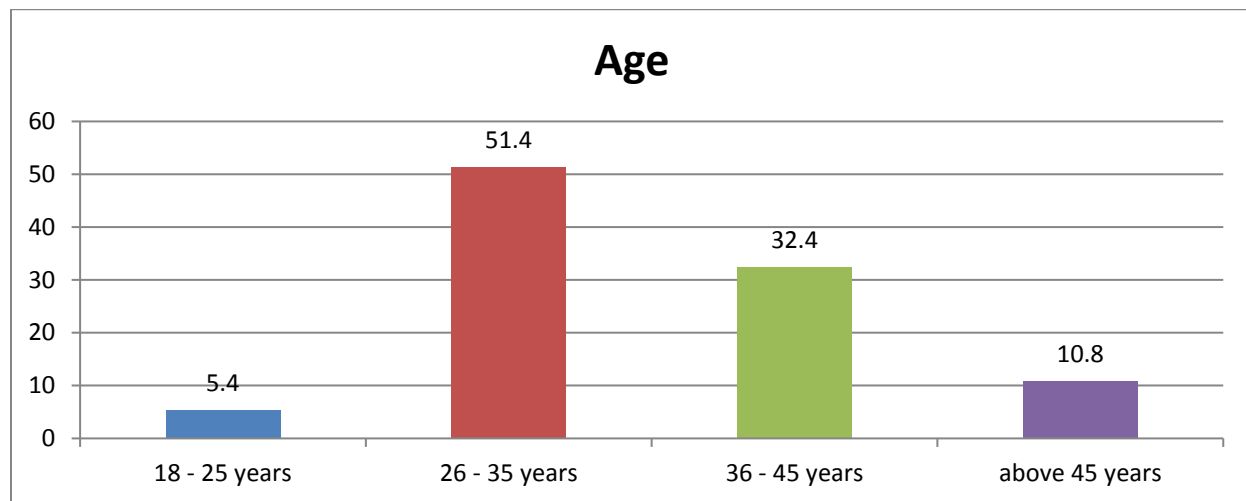


Figure 4.1: Age of the Respondents

Most respondents who were 51.4% were aged between 26 – 35 years, 32.4% aged between 36 – 45 years, 5.4 aged between 18 – 25 years while only 10.8% who aged above 45 years. This implied that most loan officers of deposit taking SACCOs are young people and thus are energetic which enables them to be proactive about the level of bad debts in the SACCOs.

4.3.2 Marital Status of the Respondents

The respondents were further asked to indicate their marital status. Results were presented in Figure 4.2 below.

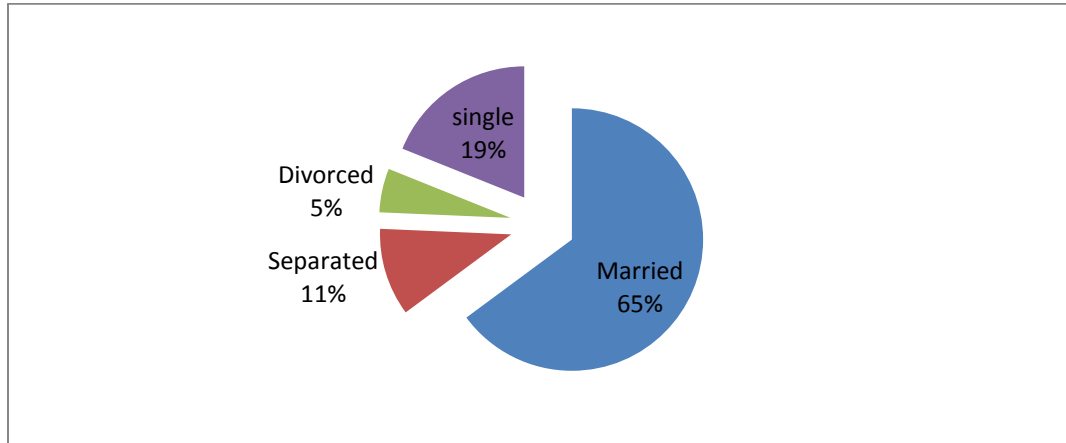


Figure 4.2: Marital Status

The respondents were asked to indicate their marital status. Most of the respondents who were 65% indicated that they were married, 19% indicated that they were single, 11% were separated while only 5% were divorced. This implied that most people are married and thus may be sober while administering the loans.

4.3.3 Education Level of the Employees

The research subjects were required to indicate their education level. Results were presented in Figure 4.3 below.

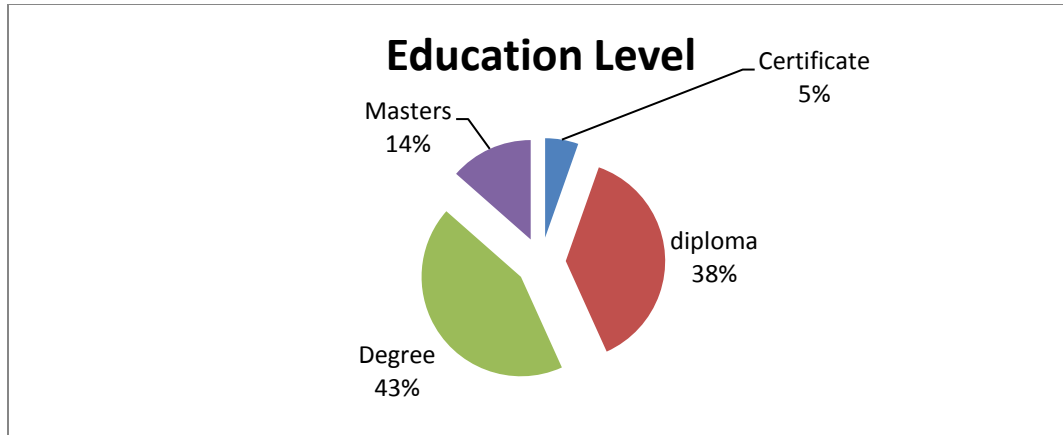


Figure 4.3: Education Level

Feedback given highlighted that many respondents who were 43% held a bachelors degree, 38% had a diploma, and 14% had a masters while only 5% had a certificate. This implied that most loan officers were education and thus could be able to take care of the level of bad debts in the deposit taking SACCOs.

4.3.4 Duration Worked

Research subjects were needed to specify the period in which they have been employed in the Deposit taking SACCO. Results were presented in Figure 4.4.

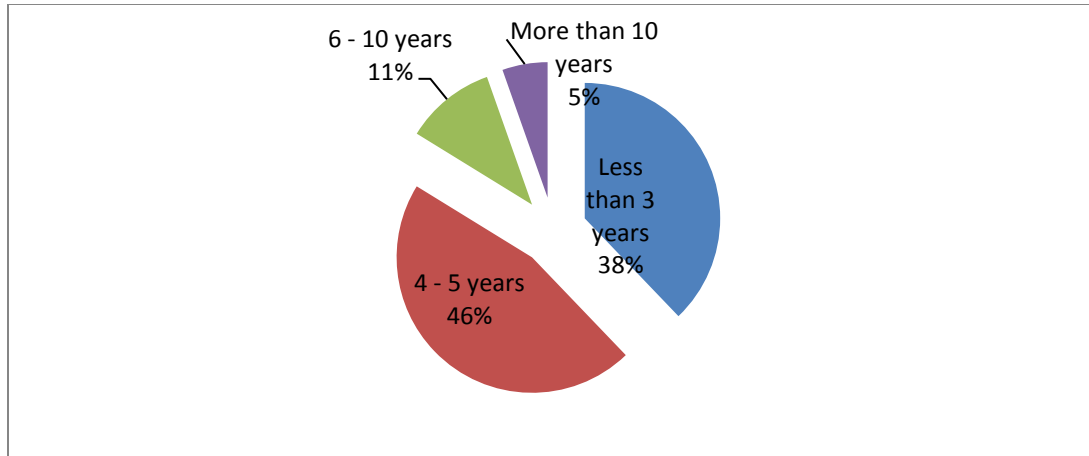


Figure 4.4 Duration Worked

Feedback revealed that most respondents represented by 46% indicated that they had been employed for 4 – 5 years, 38% had been employed for less than 3 working years, 11% had worked for 6 – 10 years while only 5% who had been employed for more than 10 working years. This implied that most loan officers had worked in the Sacco for a prolonged time and thus implying that they had enough information about the Sacco.

4.4 Descriptive Results

4.4.1 Adverse Selection related determinants

Table 4.2: Adverse Selection related Determinants

	N	Minimum	Maximum	Mean	Std. Deviation
Number of qualified staff	37	10	39	24	8.742
Total number of employees	37	9	51	31	11.672
Maximum Duration loan is granted	37	12	48	24	11.828
Maximum Loan	37	500000	2000000	986486	416441
Debt collection period	37	12	48	23.35	11.295

Number of credit appraisal method	37	1	13	7.32	3.888
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The feedback revealed that the average number qualified staff in the deposit taking SACCOs in 2018 was 24. The minimum number of employees was 10 while the maximum was 39. Deviation was 8.749. The standard deviation was 8.742 indicate that the varied with a great variance. The results also showed that the average number of employees in the deposit taking SACCOs in 2018 was 31. The minimum number of employees was 9 while the maximum was 51. The standard deviation was 11.672 which depicts that the feedback had a great variance. The results also revealed that the average duration that loans are granted in the SACCO in the deposit taking SACCOs in 2018 was 24 months. The minimum number of employees was 12months while the maximum was 48 months. The std. deviation was 11.828 hence depicted that the feedback varied with great variance.

The results further indicated that the average maximum loan that the SACCO can lend to borrowers in the deposit taking SACCOs in 2018 was 986486. The minimum maximum loan that the SACCO can lend to borrowers was 500000 while maximum was 2000000. The standard deviation was 416441 which depicts that the feedback varied with great variance. The results revealed that the average debt collection period in the deposit taking SACCOs in 2018 was 23.35. The minimum debt collection period was 12 while maximum was 48. The standard deviation was 11.295 which implied that the feedback varied and the variance was great. The feedback indicated that the average number of credit appraisal methods in the deposit taking SACCOs in 2018 was 7.32. The minimum debt collection period was 1 while maximum was 1. The std. deviation was 3.888 which imply that the feedback was varied.

Table 4.3: Adverse Related Section Determinants

	Mean	Std.Dev
All the employees in our SACCO are competent	3.73	1.26
The period of debt collection is adequate	3.65	1.21
Our borrowers are able to meet the average loan repayment duration	3.95	1.13
The loan size is dependent on the amount of share capital	3.92	1.21
The credit section in our SACCO has enough employees	3.59	1.15
Our employees are able to collect all the loans from borrowers without delay	3.92	1.16

Deviation was 8.749. The standard deviation was 8.742 indicate that the varied with a great variance.

The results also showed that the average number of employees in the deposit taking SACCOs in 2018 was 31. The minimum number of employees was 9 while the maximum was 51. The standard deviation was 11.672 which depicts that the responses had a great variance. The results also revealed that the average duration that loans are granted in the SACCO in the deposit taking SACCOs in 2018 was 24 months. The minimum number of employees was 12months while the maximum was 48 months. The std. deviation was 11.828 hence depicting that the feedback was varied with a great variance.

The feedback further indicated that the average maximum loan that the SACCO can lend to borrowers in the deposit taking SACCOs in 2018 was 986486. The minimum maximum loan that the SACCO can lend to borrowers was500000 while maximum was 2000000. The standard deviation was 416441 which depicts that the feedback was varied with great variance. The feedback indicated that the average debt collection period in the deposit taking SACCOs in 2018 was 23.35. The minimum debt collection period was 12 while maximum was 48. The standard deviation was 11.295 which

implied that the feedback was varied and the variance was great. The feedback indicated that the average number of credit appraisal methods in the deposit taking SACCOs in 2018 was 7.32. The minimum debt collection period was 1 while maximum was 1. The std. deviation was 3.888 hence implying that the feedback was varied. These findings were consistent with those of Berndta and Gupta (2009) who indicated that moral hazard to be significant factors for bank loans.

4.4.2 Moral hazard related determinants

Table 4.4: Moral hazard related determinants

	N	Minimum	Maximum	Mean	Std. Deviation
amount of account receivable	37	157896	700000	393029.62	145882
amount of defaulted willfully	37	0	5400	2591.1351	1610.03
Loans diverted from its original use	37	10000	170100	106679.89	41367.1

The results revealed that the average amount of account receivable in the deposit taking SACCOs in 2018 was 393029.62. The minimum debt collection period was 157896 while maximum was 700000. The std. deviation was 145882 which depicted the feedback was varied with great variance. The feedback further revealed that the average amount of loans defaulted willfully in the deposit taking SACCOs in 2018 was 2591.1351. The minimum amount of loans defaulted willfully in the SACCO was 0 while maximum was 5400. The standard deviation was 1610.03 which depicts that the feedback was varied with a great variance.

The feedback further indicated that the average amount of loans diverted from its original use by the members of the deposit taking SACCOs in 2018 was 106679.89. The minimum amount of loans

diverted from its original use was 10000 while maximum was 170100. The standard deviation was 41367.1 which depicts that the feedback varied with a great variance.

Table 4.5: Descriptive for moral hazard determinant

Statement	Mean	Std. Dev
Unwillingness of the borrowers to repay loans has led to bad debt	3.56	1.32
Diversion of loans from the original use by our borrowers has led to bad debt	3.52	1.25
Our employees are able to collect all the relevant information from our borrowers	4.03	0.80
Trainings are held often in our SACCO on how to get accurate employees from our borrowers	3.70	1.18
The cases of false information from borrowers has reduced in the last five years in our SACCO	3.62	1.57

The feedback indicated that most respondents were in agreement the hypothesis that unwillingness of the borrowers to repay loans has led to bad debt. This was reflected by the mean of 3.56. The std. deviation of 1.32 shows that the feedback was varied but the variance was small. The feedback further indicated that most respondents indicated that diversion of loans from the original use by our borrowers has led to bad debt. This was reflected by a mean of 3.52. The std. deviation of 1.25 shows that the feedback varied but the variance was small. Feedback further showed that most respondents were in agreement with the implication that employees are able to collect all the relevant information from our borrowers. It was reflected by a mean of 4.03. The std. deviation of 0.80 shows that the responses were varied but the variance was small. Further, the feedback showed that most of the research subjects were in agreement with the insinuation that trainings are held often in our SACCO on how to get accurate employees from our borrowers. This was reflected by a mean of 3.70. The std.

deviation of 1.18 shows that the feedback was varied but the variance was small. Feedback further showed that most respondents were in agreement with the insinuation that the cases of false information from borrowers have reduced in the last five years in their SACCO. This was reflected by a mean of 3.62. The std. deviation of 1.57 shows that the feedback was varied but the variance was small. The findings agreed with that of Wakuloba (2008) who found that credit appraisal methods caused high and increasing default rates over the period.

4.4.3 Size of the SACCO

Table 4.6: Size of the SACCO

	N	Minimum	Maximum	Mean	Std. Deviation
2018	37	150000	608400	382010.811	135619.1

The results showed that the average total assets of the deposit taking SACCOs in the year 2018 was 382010.811. The minimum was 150000 while maximum was 608400. The standard deviation was 135619.1 depicts that the responses were varied with a great variance.

4.4.5 Level of Bad Debt

Table 4.7: Level of Bad Debt

Statement	Mean	Std.Dev
The amount of bad debt has been increasing in our SACCO in the past five years	3.86	0.95
Our SACCO performance has been declining in the past five years	3.86	0.75
The SACCO expenses has been increasing in the past five years	3.49	1.28
The amount of loan default has been increasing in the last five years	3.84	0.96
Chances of bankruptcy of our SACCO are high	3.51	1.41

The feedback indicated that most respondents were in agreement with the insinuation that the amount of bad debt has been increasing in our SACCO in the past five years. This was reflected by the mean of 3.86. The standard deviation of 0.75 shows that the responses were varied but the variance was small. Additionally, feedback indicated that most of the respondents were in agreement with the implication that the SACCO expenses have been increasing in the past five years. This was reflected by the mean of 3.49. The std. deviation of 1.28 shows that the feedback was varied but the variance was small. Feedback further indicated that most respondents were in agreement with the insinuation that the amount of loan default has been increasing in the last five years. This was reflected by a mean of 3.84. The std. deviation of 0.96 shows that the responses were varied but the variance was small. The feedback also indicated that most respondents were in agreement with the insinuation that chances of bankruptcy of our SACCO are high. This was reflected by a mean of 3.51. The std. deviation in 1.41 shows that the responses were varied but the variance was small.

Table 4.8: Level of Bad Debt

	N	Minimum	Maximum	Mean	Std. Deviation
2018	37	5000	18572	12018.162	4201.71

The results further showed that the mean of level of bad debts in the year 2018 was 12018.162. The minimum was 5000 while the maximum was 18572. The std. deviation was 4201.71 which implied that the responses were varied with a great magnitude.

4.5 Diagnostic Tests

4.5.1 Normality Test

The normality test was aided by the use of a graphical method (histogram).

As indicated in the Figure 4.6. Data tabulated was normally distributed thus good for regression.

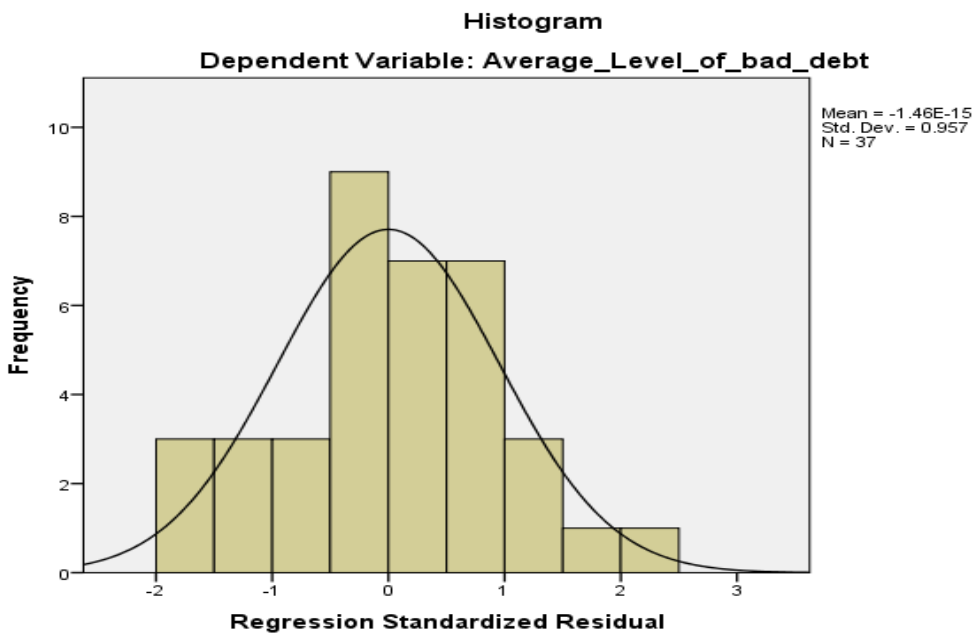


Figure 4.5: Bad Debts Normality Test

The test was conducted to examine if the data in question was well presented by normal probability and to calculate the likelihood of a stochastic variable in the data set availed to be casually distributed. The above normality test gave a mean of 1.46 and std. deviation 0.957 which implies that the availed data set is casually distributed.

4.5.2 Multi co linearity Test

Multi co linearity is considered to be existent when two independent variables have a direct effect on each other. This is not a good situation since they may interfere with each other's effect on the dependent variable making the results biased. Multi co linearity can be detected using the Tolerance of variance and VIF value. The rule of thumb is that tolerance of values coefficient should be more than 0.2 and the VIF be less than 10 for there to be no multi co linearity. Table 4.9 demonstrates the VIF of Adverse Selection related determinants was 1.898 while VIF of Moral hazard related determinants was 2.198 which are less than 10. The results also show that the tolerance of variance for Adverse Selection related determinants was 0.527 while VIF of Moral hazard related determinants was 0.455 which are more than 2. The results thus imply that multi co linearity between independent variables is non-existent since all the tested variables had a tolerance values >0.2 and VIF values <10 .

Table 4.9: Multi co linearity Test

	Co linearity Statistics	
	Tolerance	VIF
(Constant)		
Adverse Selection related determinants	0.527	1.898

4.5.3 Tests of Linearity

In this study linearity was tested using scatter plots. A scatter detects the relationship type between the dependent variable and the independent variable, whether it is linear or non-linear. As shown in the scatter plot below, there was a moderate and positive relationship between moral hazard related determinants and bad debt.

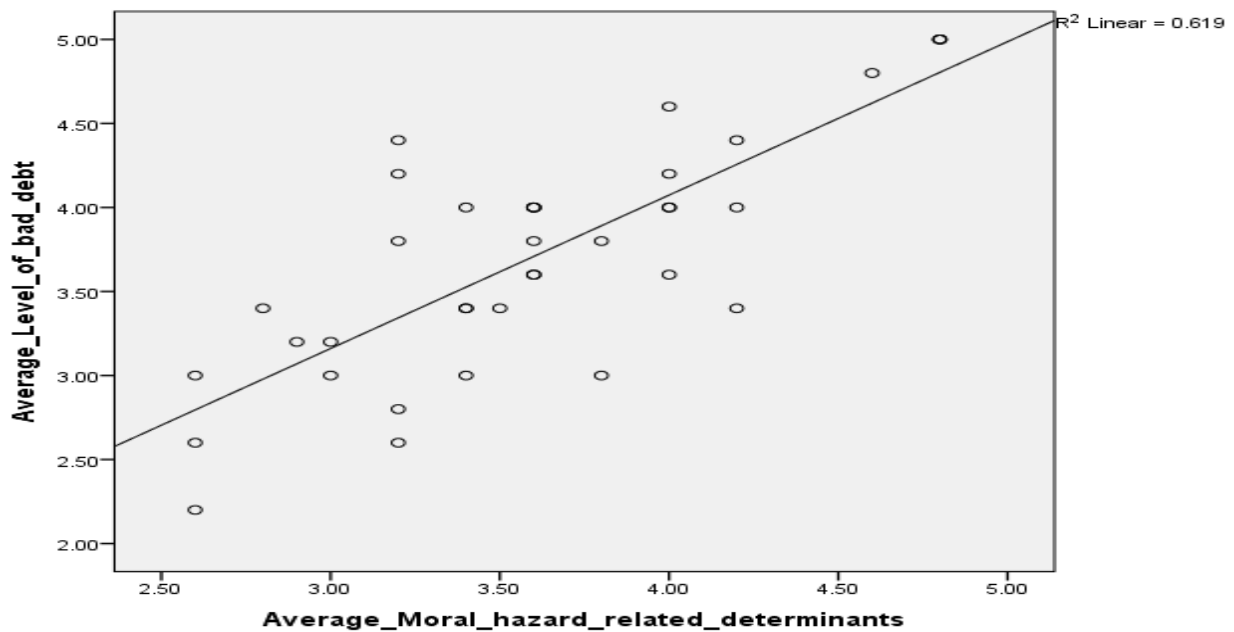


Figure 4.6: Moral Hazard Related Determinants and Bad Debt Scatter Plot

As shown in the scatter plot below, there was indication of a weak and positive interaction between adverse selection related determinants and bad debt.

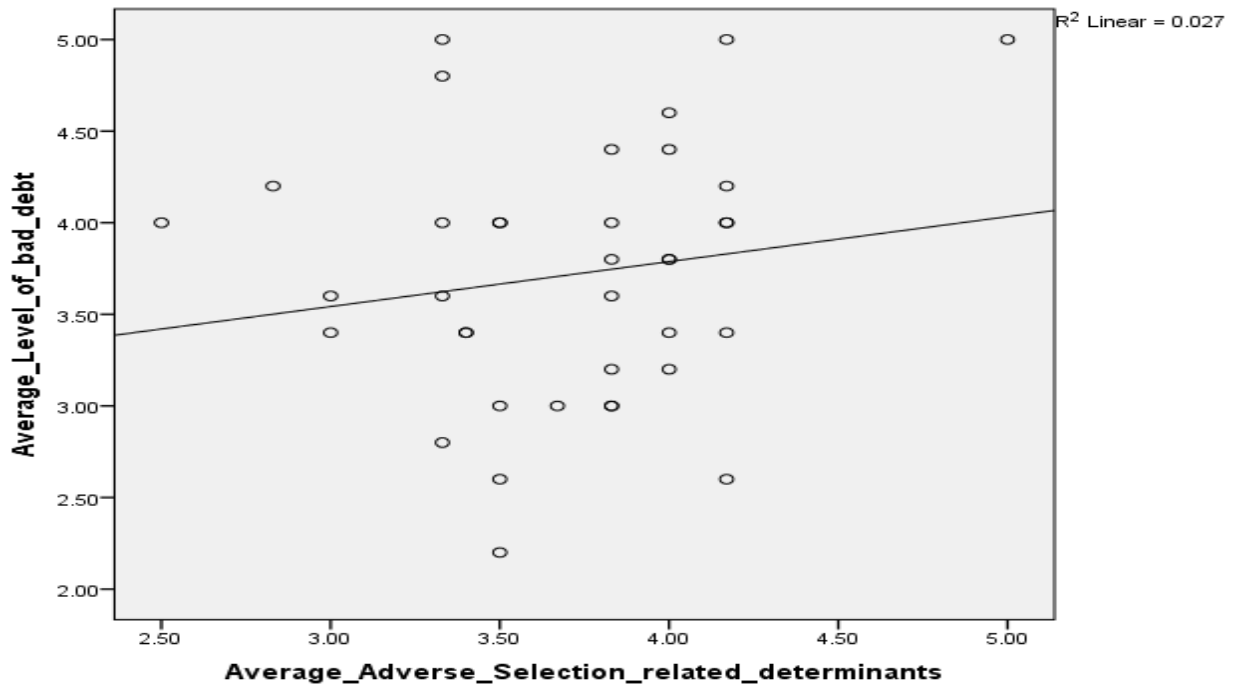


Figure 4.7: Adverse Selection Related Determinants and Bad Debt Scatter Plot

As shown in the scatter plot below, there indication of a weak and positive interaction between DT SACCO size, in terms of assets and bad debt.

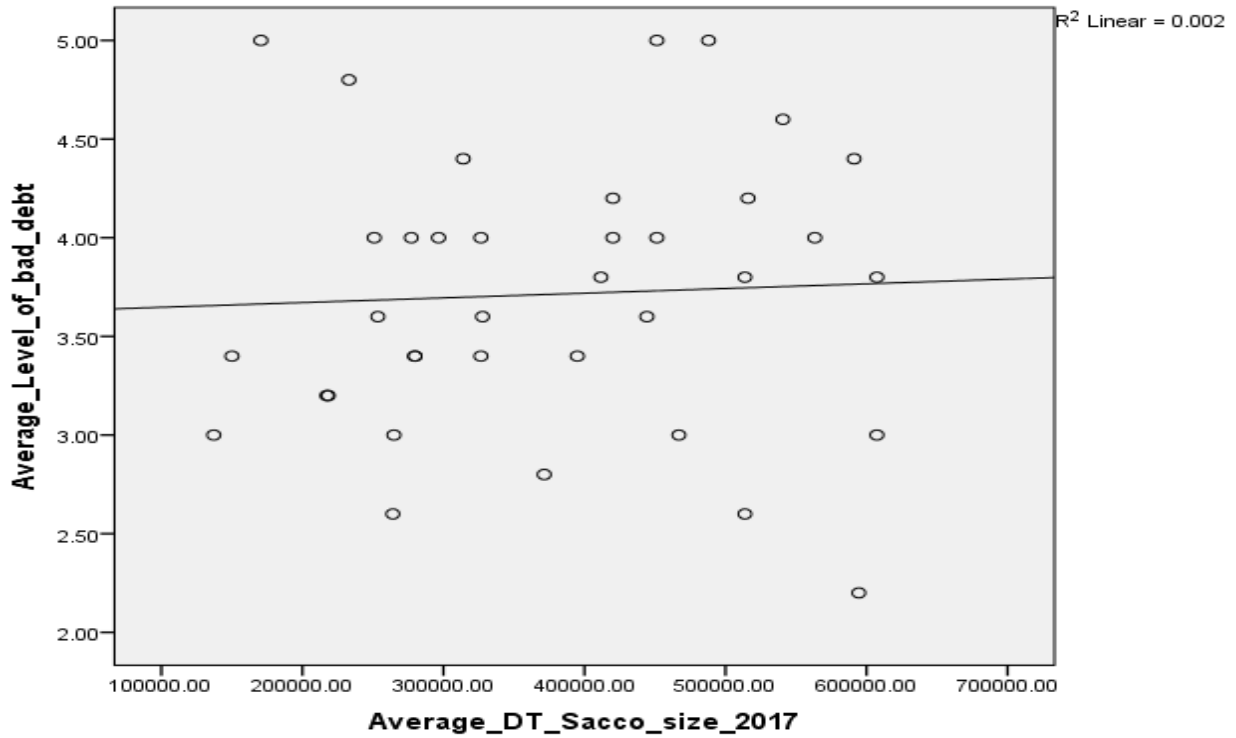


Figure 4.8: DT SACCO Size and Bad Debt Scatter Plot

4.5.4 Heteroscedasticity

Heteroscedasticity was carried out to establish if the error terms are correlated across observations. The error terms from a regression model should have a constant variance called Homoskedastic. Thus, to test whether the residuals meet these specifications, the Breusch-Pagan test aided the test for Heteroskedasticity. Null hypothesis under this test implies that residuals are Homoskedastic. There is constant variance when the p-value is >0.05 . The null hypothesis hence was not rejected at a critical p value of 0.05 since the reported value was 0.437. Therefore the data didn't experience heteroscedasticity as modeled in Table 4.10.

Table 4.2: Heteroscedasticity

Variable	P-value
(Constant)	
Residual	0.437

4.5.5 Autocorrelation

The autocorrelation test was performed aided by the Durbin Watson test. It was tested through the application of Durbin Watson Test which has values up to 4 whereby, 2 shows no autocorrelation, values of 0 to <2 shows positive autocorrelation and values of >2 to 4 shows a negative autocorrelation. Therefore, Table 4.10 demonstrates that there was positive autocorrelation as the Durbin Watson coefficient was 1.949.

Table 4.11: Results of Durbin-Watson Test

Indicator	Coefficient
Durbin Watson Test	1.949

4.6 Inferential Statistics

The inferential statistics for the study were conducted.

4.6.1 Correlation Results

The study conducted correlation between moral hazard related determinants and adverse selection related determinants and level of bad debts in deposit taking SACCOs. Results were presented in Table 4.12below.

Table 4.12: Correlational Results

	Adverse Selection related determinants	Moral hazard related determinants	Level of bad debt
Adverse Selection related determinants	1		
Moral hazard related determinants	0.19684343	1	
Level of bad debt	0.16487366	0.78655	1

The results revealed that moral hazard related determinants and level of bad debts have a positive correlation ($r=0.787$). These findings were consistent with those of Berndta and Gupta (2009) who established that moral hazard to be significant factors for bank loans. The results further revealed that adverse selection related determinants and level of bad debts have a positive and significant correlation ($r=0.165$). The findings agreed with that of Wakuloba (2008) who found that credit appraisal methods caused high and rising default rates over the period.

4.6.2 Regression Results before Moderation

Regression before moderation was done examine what relationship exists between moral hazard related determinants and adverse selection related determinants and level of bad debts. Results were as follows.

Table 4.13: Model Summary

Regression Statistics	
Multiple R	0.787
R Square	0.619

Adjusted R Square	0.596
Standard Error	0.445
Observations	37

Moral hazard related determinants and adverse selection related determinants were observed to be adequate variables in explaining level of bad debt. R square of 61.9 %, also known as coefficient of determination supported this indication. This therefore implies that the discrepancies viewed in the response variable depicted by level of bad debt is explained by 61.9% Moral hazard related determinants and adverse selection related determinants .This also explains that 29.1% of the variation in the dependent variable is accredited to different relevant variables not mentioned or tested in this particular model.

Table 4.14: ANOVA

	Df	SS	MS	F	Significance P
Regression	2	10.917	5.459	27.592	0.000
Residual	34	6.726	0.198		
Total	36	17.643			

Table 4.12 provides the results on the analysis of the variance (ANOVA). Feedback reflects that the as a result of a p value of 0.000 which is below the critical p value of 0.05, the entire model was statistically significant. This was anchored by an F statistic of 27.592 which implied that Moral hazard related determinants and adverse selection related determinants is a positive indicator of level of bad debt.

Table 4.15: Regression of Coefficients

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.373	0.678	0.550	0.586	-1.005	1.752	-1.005	1.752
Adverse Selection related determinants	0.016	0.162	0.097	0.923	-0.313	0.344	-0.313	0.344
Moral hazard related determinants	0.910	0.125	7.264	0.000	0.656	1.165	0.656	1.165

$$Y = 0.373 + 0.016 X_1 + 0.910 X_2$$

Where Y is Level of bad debt

X₁ is adverse selection related determinants

X₂ is moral hazard related determinants

The results further revealed that adverse selection related determinants and level of bad debts have an insignificant and positive relationship ($\beta=0.016$, $p=0.923$). These were consistent with that of Berndta and Gupta (2009) who established that moral hazard to be significant factors for bank loans. The results revealed that moral hazard related determinants and level of bad debts have a positive significant relationship ($\beta=0.910$, $p=0.000$). The findings clearly coincided with those of Wakuloba (2008) who found that credit appraisal methods caused rising and high default rates over time.

4.6.3 Regression Results after Moderation

Table 4.16: Model Summary

Regression Statistics	
Multiple R	0.790
R Square	0.625
Adjusted R Square	0.591
Standard Error	0.448
Observations	37

The results showed that the R squared improved from 61.9% to 62.5% after regression. This implies that SACCO size moderates the relationship between moral hazard related determinants and adverse selection related determinants and level of bad debts.

Table 4.17: ANOVA

	df	SS	MS	F	Significance F
Regression	3	11.022	3.674	18.309	0.000
Residual	33	6.622	0.201		
Total	36	17.643			

The results showed that the F statistic after moderation is 18.309 while the overall model was significant.

Table 4.18: Regression of Coefficient

	Coeffi cients	Standard Error	t Stat	P- valu e	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-1.412	2.567	-0.550	0.586	-6.634	3.810	-6.634	3.810
Adverse Selection related determinants	0.019	0.163	0.114	0.910	-0.313	0.350	-0.313	0.350
Moral hazard related determinants	0.914	0.126	7.233	0.000	0.657	1.171	0.657	1.171

Log of Assets	0.318	0.440	0.722	0.476	-0.578	1.213	-0.578	1.213
---------------	-------	-------	-------	-------	--------	-------	--------	-------

$$Y = -1.412 + 0.019M + 0.914 X + 0.318 X.M$$

Where Y is level of bad debts, M is the moderator (total log of assets) while X is the composite of all independent variables.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMENDATIONS

5.1 Introduction

This chapter presents a condensed report of the disclosures from the analysis, the recommendations and conclusions. This was carried out along with the objective of the research which was; to assess the level of Bad debts of deposit taking SACCO's in Nairobi County, to assess the moral hazard related determinants of bad debts in DT SACCOs in Nairobi County and to assess the adverse selection related determinants of bad debts in DT SACCOs in Nairobi County.

5.2 Summary of Findings

Feedback from the research indicated that most research subjects indicated that their SACCO expenses have been increasing in the past five years. Results also showed that the amount of loans defaulted had also been increasing in the SACCOs in the previous five years. Feedback further indicated that most respondents indicated that amount of loans diverted from the originally agreed usage with the lender by the borrowers had been on the rise in their SACCOs. In addition, moral hazard related determinants had a positive correlation on level of Bad debts in the deposit taking SACCOs. Regression results further showed that moral hazard related determinants and level of bad debts in the deposit taking SACCOs had a significant and positive relationship. These findings disagreed with that of Berndta and Gupta (2009) who established that moral hazard to be significant factors for bank loans. The results further showed that there has been an increase in loan size and

number of credit appraisal method in most SACCOs. In addition, adverse selection related determinants had a positive correlation on level of Bad debts in the deposit taking SACCOs. Regression results further showed that adverse selection related determinants and level of bad debts in the deposit taking SACCOs have a highly significant and positive relationship. The findings agreed with those of Wakuloba (2008) who found that credit appraisal methods caused rising and high default rates over time.

5.3 Conclusion

Feedback from the study drew conclusions that the level of bad debts had been increasing in most SACCOs. In addition the SACCOs have been declining in performance while their expenses have been increasing continually. The amounts of loans defaulted and written off have also been increasing in most of the SACCOs.

5.3.1 Moral hazard related determinants of bad debts in DT SACCOs in Nairobi County

The research also came to conclusion that there has been an upward trend in the number of Willful default by borrowers in the deposit taking SACCOs. In addition, the amount of loans diverted from the originally agreed usage with the lender by the borrowers had been on the rise in their SACCOs. In addition moral hazard related determinants had a positive relationship on level of Bad debts in the deposit taking SACCOs.

5.3.2 Adverse selection related determinants of bad debts in DT SACCOs in Nairobi County

This research further indicated conclusively that adverse selection related determinants and level of bad debts in the deposit taking SACCOs have a significant and positive relationship. Additionally, the study made a conclusion that SACCO size moderates the relationship between moral hazard related determinants and adverse selection related determinants and level of bad debts in the deposit taking SACCOs.

5.4 Recommendations

5.4.1 Moral hazard related determinants of bad debts in DT SACCOs in Nairobi County

SACCOs should also discourage borrowers from diverting their loans from its original use that they have agreed. This can be done by making follow up of the borrowers and how they are using the loans. This will minimize the amount of bad debts in the deposit taking SACCOs.

The SACCOs should also have favorable terms of giving loans to their customers so that the customers can be willing to repay back the loans. The Sacco employees should also ensure they have collected all the relevant information from the borrowers so as to avoid false from the borrowers. False information causes increase in bad debts in the long run.

5.4.2 Adverse selection related determinants of bad debts in DT SACCOs in Nairobi County

The research recommends that the SACCOs should employ qualified staff who will be able to access borrowers who are credit worth. In addition the SACCOs should train their staff on how to access

their borrowers on their credit worthiness. This will help the SACCOs in the reduction of level of bad debts.

The study further recommends that the SACCOs should minimize on the amount of loans they give to their borrowers so as to minimize their level of bad debt. The SACCOs should also increase their loan repayment duration so as the borrowers can have enough time to repay. They should also increase the debt collection period so as the debt collectors can have ample time to collect the loans from the borrowers. This will help to reduce the level of bad debts.

5.4.3 Moderating effect of DT SACCO size and how it relates to moral hazard and adverse selection determinant and level of bad debts in DT SACCOs in Nairobi County.

Small Saccos should merge together to form one large Sacco. This will enable them to enjoy the benefits that come with economies of scale. In addition, small Sacco should work towards getting more assets. With more assets they improve their performance and thus they will be able to deal with the loans that are non-performing.

5.5 Areas of Further Study

Progressive study should steer towards the research gaps identified in this study. This study steered towards determinants of level of bad debts in the deposit taking SACCOs in Nairobi County. Further study should focus on level of bad debts in the deposit taking SACCOs in other counties in Kenya for purposes of making comparisons.

Since the R squared was not 100% it seems there are other determinants of bad debts that were not addressed by the study. Other studies should therefore focus on other determinants of level of bad debts.

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APPENDICES

APPENDIX I: INTRODUCTION LETTER

ZIPPORAH WANJIRU MUIRURI,
MCM STUDENT,
THE CO-OPERATIVE UNIVERSITY OF KENYA,
NAIROBI, KENYA.

THE CHIEF EXECUTIVE OFFICER,

Dear sir/madam,

RE: **REQUEST FOR RESEARCH DATA**

I am a student from The Co-operative University of Kenya undertaking a degree course in Masters of Co-operative Management (MCM) and carrying out a research on “Determinants of the level of bad debts in DT savings and credit cooperative societies in Nairobi County”. Your organisation has been identified to aid part of this research. Kindly, request for your assistance in obtaining the audited financial statements and credit policy for the year 2018 for the completion of the attached data collection sheet. The information and data provided will be used exclusively for this study and handled with utmost confidentiality.

Thanking you prior to your action.

Yours faithfully,

Zipporah Wanjiru Muiruri.

APPENDIX II: QUESTIONNAIRE

Please give the answers to the following questions as accurately and as honestly possible. You are encouraged to give your honest opinion. The insight given by the research subjects will be treated with maximum confidentiality.

SECTION A: DEMOGRAPHIC CHARACTERISTICS

1. What is your age?

18-25 years [1] () 26-35 years [2] ()

36-45years [3] () 45 years and above [4] ()

2. What is your marital status?

Married [1] () Separated [2] ()

Divorced [3] () Single [4] ()

3. What is the highest level of education you have attained?

Certificate [1] () diploma [2] ()

Degree [3] () masters [4] ()

PhD [5] ()

4. For how long have you worked with this SACCO?

Less than 3 years [1] () 4 to 5 years [2] ()

6 to 10 years [3] () More than 10 years [4] ()

SECTION B: Adverse Selection related determinants

5. Kindly indicate the number of qualified staff in your SACCO in the following year

Year	Number of qualified staff
2018	

6. Kindly indicate the total number of SACCO employees in the following year

Year	Total number of SACCO employees
2018	

7. Kindly indicate the maximum duration that loans are granted in your SACCO

Year	maximum duration that loans are granted in your SACCO
2018	

8. Kindly indicate the maximum loan that your SACCO can lend to borrowers

Year	maximum loan that your SACCO can lend to borrowers
2018	

9. Kindly indicate the average debt collection period in your SACCO

Year	average debt collection period (years)
2018	

10. Kindly indicate the number of credit appraisal methods in your SACCO

Year	number of credit appraisal methods
2018	

11. Kindly indicate the maximum number of credit appraisal methods in your SACCO

Year	Maximum number of credit appraisal methods
2018	

12. Use the likert scale. The response scale for the questions is as below:

5= Strongly Agree, 4= Agree, 3= Neutral, 2= Disagree, 1= Strongly Disagree

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	1	2	3	4	5
All the employees in our SACCO are					

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	1	2	3	4	5
competent					
The period of debt collection is adequate					
Our borrowers are able to meet the average loan repayment duration					
The loan size is dependent on the amount of share capital					
The credit section in our SACCO has enough employees					
Our employees are able to collect all the loans from borrowers without delay					

SECTION C: Moral hazard related determinants

13. Kindly indicate the amount of account receivables in your SACCO in the following year.

Year	Amount of account receivables
2018	

14. Kindly indicate the amount of loans defaulted willfully in your SACCO in the following year.

Year	amount of loans defaulted willfully (ksh)
2018	

15. Kindly indicate the amount of loans diverted from its original use by your members in your SACCO in the following year.

Year	amount of loans diverted from its original use (ksh)
2018	

16. Use the likert scale. The response scale for the questions is as below:

5= Strongly Agree, 4= Agree, 3= Neutral, 2= Disagree, 1= Strongly Disagree

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	1	2	3	4	5
Unwillingness of the borrowers to repay loans has led to bad debt					
Diversion of loans from the original use by our borrowers has led to bad debt					
Our formal staff capable of collecting all the relevant information from our borrowers					
Trainings are held often in our SACCO on how to get accurate employees from our borrowers					
The cases of false information from borrowers has reduced in the last five years in our SACCO					

SECTION D: DT SACCO Size

17. Kindly indicate the total asset in your SACCO in the following year

Year	Total Asset (ksh)
2018	

SECTION E: Level of Bad Debt

18. Use the likert scale. The response scale for the questions is as below:

5= Strongly Agree, 4= Agree, 3= Neutral, 2= Disagree, 1= Strongly Disagree

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	1	2	3	4	5
The amount of bad debt has been increasing in our SACCO in the past five years					
Our SACCO performance has been declining in the past five years					
The SACCO expenses has been increasing in the past five years					
The amount of loan default has been increasing in the last five years					
Chances of bankruptcy of our SACCO are high					

19. Kindly indicate the amount of bad debt in your SACCO in the following year

Year	amount of bad debt (ksh)
2018	