UNIVERSITY of RWANDA

NON-PERFORMING LOANS AND FINANCIAL PERFORMANCE OF MICROFINANCE INSTITUTIONS IN RWANDA

CASE STUDY OF UMURENGE SACCO (2016-2018)

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DECLARATION

I MUSENGAMANA Adeline declare that this research thesis is my original work and has not been presented for a degree or any other award in any other University.

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Signature

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DECLARATION

I confirm that the work reported in this thesis was carried out by the candidate under my supervision and has been submitted with my approval.

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First of all glory be to God having helped and guided me to accomplish this work in the scheduled time. I owe gratitude to my lovely Mother for his constant financial support. To my lovely brothers and sisters, colleagues and all my friends who helped me, without their guidance and prayers I could not make it. I would like to express gratitude and appreciation to my supervisor Dr. NDIKUBWIMANA Philipe for his time, guidance and comments have been of great importance towards the completion of this work. I am very grateful to his to have been available whenever I needed his help.

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ABSTRACT

This research entitles the Non-Performing Loans and Financial Performance of Microfinance Institutions in Rwanda and was guided by the following objectives: to examine the effects of interest rates on financial performance of Umurenge Sacco, to examine the effects of loans size on financial performance of Umurenge Sacco, to determine the effects of repayment installments on financial performance of Umurenge Sacco, The study adopted a descriptive research design. The population under this study consisted employees of Umurenge Sacco of credit department and finance totaling 25 potential respondents which took randomly. The instrument of the study was self made (questionnaire) and a set of questions was formulated. The findings show that the change of one standard unit on effect on low level of savings will result in a change of 0.056 standard unit in the financial performance, the change of one standard unit on low supply of loan will result in a change of -0.092 standard unit in the financial performance, the change of one standard unit on effect on insufficient competition will result in a change of 0.998 standard unit in the financial performance, about the effects of loans size on financial performance of Umurenge Sacco, the findings shows that the standardized coefficients for each technology and it reports that the change of one standard unit on effect on profitability will result in a change of 0.396 standard unit in the financial performance, the change of one standard unit on effect on economic development will result in a change of 0.520 standard unit in the financial performance, the change of one standard unit on effect on loan repayment will result in a change of 0.053 standard unit in the financial performance, about the effects of repayment installments on financial performance of Umurenge Sacco shows the standardized coefficients for each technology and it reports that the change of one standard unit on facility in repayment will result in a change of 0.449 standard unit in the financial performance, the change of one standard unit on quick repayment will result in a change of 0.237 standard unit in the financial performance, the change of one standard unit on Credibility opportunity will result in a change of 0.319 standard unit in the financial performance. Nonperforming loan ratio of Umurenge Sacco Nyarugenge branch is 1.5% in 2016, 5% in 2017 and 2.9% in 2018. Kabusunzu branch has 6.5% in 2016, 13% in 2017 and 8.4% in 2018; Nyabugogo Branch has 2.4% in 2016, 11.3% in 2017 and 9.1% in 2018.The researcher recommended by saying that Umurenge Sacco should credit for equity financing instead of debt financing if it wants to improve on its leverage. This involves funding growth through retained earnings and issuing of shares. The study also recommends that loan approval and monitoring procedures should focus on the borrower's cash flow and ability to repay in an effort to improve the quality of the loan assets and mitigate future allowances for loan losses. All the relevant data was analyzed and evaluated by using primary and secondary data and the results was interpreted accordingly.

Key word: Return On Assets (ROA), Return On Equity (ROE), Non-Performing Loan (NPL), Net Interest Margin (NIM). (456wods)

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Abbreviations

AMIR **:** Association of Microfinance Institutions in Rwanda

BDF **:** Business Development Fund

BNR **:** Rwanda National Bank

CPI **:** Consumer Price Index

EAC **:** East African Community

EDPRS **:** Economic Development and Poverty Reduction Strategy

FPUS **:** Financial Performance of Umurenge Sacco

GDP **:** Gross Domestic Product

KZN **:** Kwa-Zulu Natal

MFI **:** Micro - Finance Institution

NBFLs **:** Non Banking Financial Institution

NIM **:** Net Interest Margin

NPL **:** Non-Performing Loan

RDB **:** Rwanda Development Board

ROA **:** Return on Assets

ROE **:** Return on Equity

SACCOs **:** Saving and Credit Co-operatives

CHAPTER ONE
GENERAL INTRODUCTION

Financial performance is a subjective measure of how well a Microfinance institution can use assets from its primary mode of business and generate revenues. The term is also used as a general measure of a Microfinance institution's overall financial health over a given period. Non-performing loan is a loan or an advance in respect of which the interest or installment of principal remains overdue for a period of more than 90 days in respect of a term loan or remains out of order for a period of more than 90 days in respect of an Overdraft /Cash Credit. In this chapter the researcher discusses the study based on the following sub-headings: the background of the study, the problem statement, objectives of the study, research questions, scope and significances of study and limitation of study.

1.1 Background to the Study

Nearly 3 billion people in developing countries especially African countries have little or no access to formal financial services that can help them increase their incomes and improve their lives. Access to a range of microfinance services savings, loans, micro insurance, and money transfers enables poor families to invest in enterprise and in better nutrition, improved living conditions, and the health and education of their children.

Microfinance, also called micro-credit, is a type of banking service that is provided to unemployed or low-income individuals or groups who otherwise would have no other access to financial services. While institutions participating in the area of microfinance most often provide lending (microloans can range from as small as $100 to as large as $25,000), many banks offer additional services, such as checking and savings accounts, and micro-insurance products; and some even provide financial and business education. Ultimately, the goal of microfinance is to give impoverished people an opportunity to become self-sufficient (Gorter & Bloem, 2001).

From the above-mentioned, it can be concluded that microfinance is a poverty alleviation scheme which operates by providing financial and non-financial services to economically active and low income households and their businesses. To realize this poverty mitigation objective, microfinance supports the poor and low-income households increase their income, build sustainable enterprises, reduce susceptibility to shocks and generate employment.

The goal of the National Microfinance Strategy of developing countries is to achieve substantial progress towards the formal financial inclusion of 80% of the population by 2020. This has to be achieved through the efficient and responsible provision of a broad variety of microfinance services by sustainable financial institutions to a wide range of clients, including the economically active poor, urban and rural microenterprises and other groups in a dynamic microfinance market. To identify opportunities to increase formal financial inclusion, financial service providers and decision makers need to look at those individuals who were not formally served. This would be the people who were informally served only, and those who were financially excluded(BNR, 2018).

The ultimate objective of Rwanda's long term development plan is to transform the country into a middle income country and an economic trade, communication and financial hub by the year 2020. Towards the achievement of the year 2020, the Government of Rwanda has adopted an Economic Development and Poverty Reduction Strategy (EDPRS II), with Financial Sector Development as one of its key components. Rwanda has been putting measures in place to develop the financial sector, with the ultimate objective of achieving sustainable economic growth via private sector development as one of the pillars of the EDPRS II. Like many developing countries, the banking sector dominates the Rwandan financial system. It includes a small microfinance sector, and some Non-Bank Financial Institutions (NBFIs). NBFIs comprise insurance companies, pension funds, and insurance intermediaries. In order to achieve remarkable poverty reduction, financial inclusion was strengthened where one should be excluded from the possibility to access financial services because of her/his social or economic status. Financial services should be accessible throughout the country which is the ultimate goal of MFIs (Freixas &Rochet, 2008).

Microfinance institutions (MFI) provide important banking services to the poorest sections of the world's population. MFIs provide financial tools for the poorest of the poor to finance new investments and smooth consumption, but crucial for their ability to sustainably alleviate poverty is consistent financial performance in negative economic climates. Consistent and efficient lender operations are important from both financially and socially oriented perspectives. When banks lend out money, they do so with the hope that their borrowers will make their payments as scheduled. But that doesn't always happen. Sometimes borrowers run out of money or fall into

situations where they can't repay their debt, and that's how Non-performing loans become a problem for so many banks.

A loan is said to be nonperforming if at least one of the following two elements applies: First, there is non-payment of the principal or interest for a period of 90 days or more. Secondly, the loan or the borrower exhibit weaknesses such as the borrower's business suffering economic or financial deterioration (Barisitz, 2011, Koch & MacDonald, 2006). The loan amount recorded as nonperforming is the gross value recorded on the bank's balance sheet, and not the overdue amount comprising of the installment on the principal and the interest. The ratio of NPLs is the proportion of the total value of a loan portfolio (before the deduction of loss-loan provisions) to the total loan portfolio of the bank (Freixas & Rochet, 2008).

Nonperforming loans have got an effect on not only the financial institutions but on the entire economy. When non-performing loans continue to increase over time, it makes difficult for financial institutions including micro finance institutions to manage them. It also implies that more resources have to be committed towards provisions for the non performing loans and the additional costs were spent in financing recovery efforts. These costs and the provisions devour a huge portion of the profits that is earned by microfinance institutions thus retarding their financial performance. It is therefore evident that nonperforming loans are very critical in determining the level of financial performance that can be attained by a microfinance institution. In this study the researcher to look at NPLs' impact to the micro finances institutions in Rwanda taking Umurenge SACCO as my case studies.

The large number of Microfinance failures have been associated with large proportions of NPLs prior to failure. The case of bank instability in Cyprus in 2010-2012 supports the view that financial distress goes hand in hand with increases in NPLs and a slowdown in economic growth. In this three-year period, NPLs grew more than threefold from 5.6 percent to 18.6 percent. Economic growth slowed down from 1.3 percent in 2010 to -2.4 percent in 2012 (World Bank, 2014). The same trends were observed in Greece where NPLs increased from 9.1 percent in 2010 to 23.3 percent in 2012 and economic growth slowed down from -4.9 percent to -7.0 percent in 2010 and 2012 (Hughes & Mester, 1993; Berger & DeYoung, 1997).

Thus, a relationship has been established between loans quality and efficiency because at the point of failure, banks have higher ratios of NPLs, and tend to be located far from the best practice efficient frontier. The non-performing loans also affect the economy of a country which explains the rationale behind the setting of guidelines by the central bank for enabling financial institutions to alleviate NPLs. From the foregoing discussion, it is probable that economic growth has links with an efficient banking sector with low ratios of NPLs (Berger & DeYoung, 1997; Berger & Humphrey, 1997).

Except for Burundi, Rwanda still records higher levels of NPLs than its EAC peers. For example, for the period 2007 – 2013, the average level of NPLs in Rwanda was 6.57 percent while the figures for other EAC members were 4.25 percent for Uganda; 4.87 percent for Kenya; 5.85 percent for Tanzania; and 9.08 percent for Burundi. For Microfinance institutions in Rwanda, the Non-Performing Loans ratio and gross loans to total assets ratio are used to assess the quality of loans in microfinance sector. Non-performing loans to gross loans indicate a slight decline of the sector's quality of assets (World Bank, 2014).

The ratio increased from 8.4 percent in June 2012 to 8.9 percent as at June 2013, gross loans to total assets ratio, an indicator of the share of loans in the sector's assets, went on decreasing to 52.3 percent as at June 2013 from 54.2 percent in June 2012Thus, determining the factors that explain the variation in the level of NPLs in Rwanda's Micro finances sector is crucial with NPLs of 8%. Non-performing loans of Umurenge SACCOs had average between 3.1% and 9.3% of NPLs from 2016 to 2018. While the level of NPLs in Rwanda has been decreasing over time (to 6.9 percent as at June 2018 from 8.2 percent as at June 2016 and from 12.3 percent in June 2017 to 8 percent in June 2018 in MFIs), it is still relatively high compared to its peers in the EAC except for Burundi and at international level. From international standards, a bank is considered healthy if it records a maximum rate of NPLs ranging between 1 percent and 3 percent (Heffernan, 2005).

1.2 Statement of the Problem

It is asserted that all over the globe, financial institutions face enormous risks of non-performing loans (NPLs). Financial institutions particularly microfinance institutions are very important not only in providing financial assistance to the low income earners in the society, but also in

granting of credit facilities to them. However, just like other financial institutions, microfinances experience numerous cases of non-performing loans. The NPLs negates the profitability of microfinances. Nonperforming loans are not only argued to harmfully affect the financial performance of microfinances, but they also have other far reaching repercussions. This is due to the fact that, other potential borrowers may be denied to access credit facilities since part of the funds that could be extended as loans by microfinances are still knotted to NPLs. This study seeks to find the cause of non-performing loans especially for Umurenge SACCOs that have average between 3.1% and 9.3% of NPLs from 2016 to 2018(Umurenge Report, 2016-2018). These affect negatively by decreasing performance of Umurenge Sacco and recommend how to take measures on NPLs in next year's. This shows the importance of NPLs to the financial performance thus necessitate this study which aimed to explicitly analyze the effects that NPLs have on financial performance of micro finances institutions in Rwanda.

1.3 Research Objectives

This study was guided with both general and specific objectives.

1.3.1 Specific Objectives

i. To examine the effect of interest rates, loan size and repayment installment on Return on Equity of Umurenge Sacco.
ii. To examine the effect of interest rates, loan size and repayment installment on Return on Asset of Umurenge Sacco.
iii. To determine the effect of interest rates, loan size and repayment installment on Net Interest Margin of Umurenge Sacco.

1.3.2 Research Questions

i. What are effects of interest rates, loan size and repayment installment on Return on Equity of Umurenge Sacco?
ii. What are the effects of interest rates, loan size and repayment installment on Return on Asset of Umurenge Sacco?
iii. What are the effects of interest rates, loan size and repayment installment on Net Interest Margin of Umurenge Sacco?

Hypothesis

H_01: There is no an effect between non performing loans and financial performance of Umurenge Sacco.

H_02: There are no effects of interest rates, loan size and repayment installment on Return on Asset of Umurenge Sacco.

H_03: There are no effects of interest rates, loan size and repayment installment on Net Interest Margin of Umurenge Sacco.

1.5 Significance of the study

1.5.1 To Umurenge Sacco

Understanding the impact of NPLs on financial performance of microfinance institutions could help in mitigating their causes and could lead to the improved financial performance while lifting a larger number of people out of poverty. Since many financial institutions have collapsed as a result of non-performing loans, this work would benefit not only credit unions but all institutions that give loans. This is because all these institutions are faced with similar external environmental factors and clients who share similar characteristics.

1.5.2 To University of Rwanda

This study contributes to fill the gap in the literature concerning non-performing loans implications in microfinance performances especially the targeted ones. On the other hand, the study uses the banking sector in Rwanda as a case, where economic research is in its early stages; it will thus serve as a reference point for other studies.

1.5.3 To Future Researchers

This study will help the future researchers to consider the similar study could be done in other institutions within the country in order of augmentation of the findings

1.6 Scope of the Study

This study is oriented on Effect of Non-Performing Loans and Financial Performance of Microfinance Institutions in Rwanda. All the relevant data analyzed and evaluated by using primary and secondary data and the results was interpreted accordingly. This study was conducted locally, in Kigali City specifically in Nyarugenge District hand in hand with Umurenge Sacco Branch Kabusunzu, Nyarugenge Branch and Nyabugogo Branch and it was

covered a period of 3 years from 2016 to 2018. This research was only concentrate to interest rates, loan size, payment installment and collateral.

1.7 Justification of the study

Understanding the impact of NPLs on financial performance of microfinance institutions could help in mitigating their causes and could lead to the improved financial performance while lifting a larger number of people out of poverty. Since many financial institutions have collapsed as a result of non-performing loans, this work would benefit not only credit unions but all institutions that give loans. This is because all these institutions are faced with similar external environmental factors and clients who share similar characteristics. On the one hand, this knowledge will also contribute to fill the gap in the literature concerning non-performing loans implications in microfinance performances especially the targeted ones. On the other hand, the study uses the banking sector in Rwanda as a case, where economic research is in its early stages; it will thus serve as a reference point for other studies.

1.8 Limitation of the Study

This study was depending on having access to people, organizations or documents and if whatever reason access is denied or otherwise limited then the collection of data may be hindered. Organizations or people may fail to provide me with information or refuse to give their ideas about this matter. I had to meet the leaders of organization before engaging into the collection of data and explain them well the objectives of my study to win their consent.

CHAPTER TWO

REVIEW OF LITERATURE

The main objective of this chapter is to review of the available literature for published researches related to the topic. It attempts to define, explain and illustrate the issue related to the topic of research and relate it to within findings for interpretation later on.

2.1 Conceptual Review

2.1.1 Non-Performing Loan

Non- performing loan is a loan or an advance in respect of which the interest or installment of principal remains overdue for a period of more than 90 days in respect of a term loan or remains out of order for a period of more than 90 days in respect of an Overdraft /Cash Credit.

2.1.1.1 Interest Rates

Interest rate is the price a borrower pays for the use of money they borrow from a lender/financial institutions or fee paid on borrowed assets Collins and Wanjau, (2014). It measures the price at which borrowers of funds are willing to pay to the owners of capital while at the same time measures the price at which lenders are willing to lend their money to enterprise in exchange for consumption.

Cost of loan includes the principal repayments and interest rates are agreed at the time of the loan application Caporale & Gil-Alana, (2014). According to Boudriga, Boulila and Jellouli, (2015), (Chege, 2014), when there is no ceilings on lending rates, it is easier for banks to charge a higher risk premium and therefore give loans to more.

The factors that determine interest rate spreads include low level of savings, low supply of loans, insufficient competition in the domestic banking system, the inefficiency and low profitability of banks, uncertainty in the economic environment, the inherited low quality of loan portfolios, institutional limitations, etc. (Hou,2014). Hawtrey & Liang, (2015) (Shahidul & Shin-Ichi, 2015)opine that interest rate spread is highly correlated with non-performing loans and narrowing of interest rate spreads is related to superior bank efficiency.

2.1.1.2 Loans Size

Loan sizes and loan policies are believed to influence default of loans to a great extent. Well formulated loan policies are believed to have inversely proportional relationship with loan default. Whereas poor loan policies are believed also to have directly proportional relationship with loan default. Adams & Von-Pischke, 2013, reported that there are numerous negative repercussions associated with loan default among which are: the incapability of the organization to salvage credit to borrowers; reluctance of financial mediators to attend to the requests of lesser loan seekers; and the formation of suspicion.

2.1.1.3 Repayment Installments

The repayment period of loans is determined on the basis of the liquidity position of each borrower and the economic life of the investment. Repayment schedules must be made flexible so that it should be adjusted to borrower's cash flow pattern. In addition to this credit policy instruments, some relevant lending principles are used by banks as their guiding principles (Zena 2013)(Bholat, Lastra, Markose, Miglionico, & Sen, 2016). These include; borrowers perceived need, competence or repayment capacity and personal character. According to William (2014), there are certain criteria that most lenders require the business owner to meet in order to successfully acquire the funds needed for the business. These hurdles or requirements are generally categorized as: Good Credit, Equity, Experience, Business Plan, and Collateral.

2.1.2 Cause of Nonperforming loan

2.1.2.1 Causes related to supervision

The supervision is conducted by both the National Bank of Rwanda and Rwanda Cooperative Agency. Due to the large number of MFIs to be supervised (13 limited microfinance institutions, 64 SACCOs and 416 Umurenge SACCOs); there is a lack of frequent supervision.

2.1.2.2 Causes related to Hanga Umurimo Programme (HUP)

Business Development Fund (BDF), as a core partner in HUP, provides 75% guarantee funds for the approved HUP projects and financed by Commercial Banks and Microfinance institutions including SACCOs. However, the programme is facing many challenges including the lack of collaterals, diversion of loans, misunderstanding of HUP and BDF guarantee taken by MFIs and

SACCOs (clients thinking of it as a grant or free money from Government) , delays in payment by BDF, etc.

2.1.2.3 Causes related to inadequate sharing of information among financial institutions through the Credit Reference Bureau

To effectively lock out serial defaulters, MFIs need referencing solution that enable them submit and share data whilst processing their customers' credit application.

2.1.2.4 Causes related to Microfinance institutions themselves

Some Microfinance institutions faces no only the lack of qualified and experienced financial services professionals but also proper appraisal of loan applications and financial education for clients. Besides, high interest rates, ineffective monitoring and weak recovery systems and inadequate financial analysis lead of loans default.

2.1.2.5 Causes related to lending activities

The most affected are clients involved in the agricultural sector as for delayed reception of loans for instance compared to planting season dates.

2.1.2.6 Causes of non-performing loans related to lending to solidarity groups for health insurance (ibimina bya mutuelle de sante)

When "Mutuelles de Santé" is funded through lending from MFIs and SACCOs, farmers are grouped in organizations known as tontines or Ibimina. It was found that loans given to the solidarity groups constituted generally under pressure from Local Authorities are not paid.

Non-compliance with credit policy

Microfinances were found to have customer pressure of about 39%, management pressure in order to meet performance contracts in specific national programs of 11% and ignorance of the requirements around 26%.

Delayed loan approval (60.5%)

Delays in approving loans cause the loss of business opportunities. Hence borrowers tend to misuse the funds or at best use them for wrong or unplanned and hazardous business ventures. Consequently, they are unable to repay the loan in the end.

Causes related to Clients

Many microfinances' clients are of low income status, therefore due to inadequate skills, lack of credit culture they likely to face business failure, diversion of funds and willful default.

2.1.3 Implication of NPLs for Microfinance Institutions

Loans generate a lot of revenue to the bank in the form of interest and other charges on loans. This revenue takes a high a percentage of the entire revenue, performance and profitability of financial institutions. Loans, as said, are a double edged sword. This means that if loans are not well managed it can be a bane to the development of a bank; this happens when loans become delinquent. When this happens, the performance of the institution is put in jeopardy.

This is because when banks have chunks of non-performing loans, it makes it impossible for that institution to grant more loans; in effect reducing the profit level of the said bank.

Non-performing loans may also lead to liquidity problems, which might lead to loss of confidence on the part of clients and other stakeholders. This may lead to a run on the bank and the eventual collapse of the bank.

Non-performing loans also have a negative impact of making banks lose huge sums of money in the form of written off bad debt, which negatively affects the growth of the institutions . It further affects dividend since credit losses are deducted before dividends are declared.

It is argued that failing banks have huge amount of non-performing loans before their eventual collapse (Berger & De Young(1997). Kwan & Eisenbeis (1994) further argued that even when they do not fail, there is an inverse relationship between the non-performing loans and performance efficiency. Just the above two literature confirms the devastating effect non-performing loans can have on microfinance institutions.

2.1.4 Financial Performance of Microfinance Institutions

Financial performance is a subjective measure of how well a Microfinance institution can use assets from its primary mode of business and generate revenues. The term is also used as a general measure of a Microfinance institution's overall financial health over a given period. Non-performing loan is a loan or an advance in respect of which the interest or installment.

According to the Association of Microfinances in Rwanda, The return on equity (ROE) and return on assets (ROA) were the main indicators to assess the quality of earnings and performance in Rwandan microfinance sector. ROE is a rapport between adjusted net income and period average equity. It measures the return on investment in the institution, and is often used as a proxy for commercial viability (MicroRate, 2003). As for the ROA, it is a rapport between net income after tax and donations to the average assets, and measures how well an MFI puts its assets to good use (MicroRate, 2003). There has been a decrease in both indicators during the period under review, which is may be explained by the increasing completion from new entrants (new microfinance institutions and Umurenge SACCO)(AMIR, 2015).

2.1.5 Relationship between Non- Performance Loan and Financial performance of Microfinance institutions

Negera (2012) conducted a study on the determinants of non-performing loans, the case of Ethiopian banks and stated that mixed research approach was adopted for the study. Survey was conducted with professionals engaged in both private and state owned banks in Ethiopia holding different positions using a self-administered questionnaire. In addition, the study used structured review of documents and records of banks and in depth interview of senior bank officials in the Ethiopian banking industry. The findings of the study showed that poor credit assessment, failed loan monitoring, undeveloped credit culture, lenient credit terms and conditions, aggressive lending, compromised integrity, weak institutional capacity, unfair competition among banks, willful default by borrowers and their knowledge limitations, fund diversion for unintended purpose, over/under financing by banks ascribe to the causes of loan default. However, the study outcome failed to support the existence of relationship between bank size, interest rate they charge and ownership type of banks and occurrence of NPL.

Kamunge (2013) conducted a study on the effect of interest rate spread on the level of non-performing loans of commercial banks in Kenya and research design used was explanatory because the study intended to establish if there was a causal relationship between inters rate spread and level of NPL. The study population was all the 43 commercial banks. The study used secondary data sources to gather information relevant in reaching at the research objective the secondary data were collected from the CBK supervision reports on the macroeconomic indicators and the Kenya National Bureau of statistics (KNBS) reports. Data was sorted and input into the SPSS for production of tables and descriptive statistics. The ANOVA results showed that the independent variable; factors accounting for bad loans, challenges of managing credit and loan portfolio performance were good predictors on the level of NPL. The results indicated that log interest rate spread and log debt collection cost were statistically significant in explaining the level of non-performing loans. Results indicate that a unit change in log interest rate spread variable will lead to a positive change in level of NPL while a unit change in log debt collection cost will cause a negative and significant change in level of NPL. It is recommended that banks should be encouraged to conduct regular training programs for credit staff. It is recommended that Central bank which is the Regulatory Authority of commercial banks in Kenya should apply stringent regulations on interest rates charged by commercial banks. Banks should also apply efficient and effective credit risk management.

2.2 Theoretical Review

In this research, the researcher discuss the related ideas that provides guidance to research project or business endeavor with the purpose of clear identifying what will be explained, measured or described.

2.2.1The Moral Hazard Theory

Moral hazard refers the risk in which a party to a transaction provides misleading information about its assets, liabilities or credit capacity, or has an incentive to take unusual risks in a desperate attempt to earn a profit before the contract settles. Usually a party to a transaction may not enter into the contract in good faith, thus providing misleading information about its assets, liabilities or credit capacity (Richard, 2011). It is postulated that, moral hazard problems may be occasioned by asymmetric information which makes it difficult to distinguish between good and

bad borrowers (Richard, 2011). It is also noted that moral hazard has led to substantial accumulation of NPLs (Bofondi & Gobbi, 2003).

Problems of moral hazard in financial institutions are evident at many stages of the recent financial crises. This theory is considered relevant in this study since borrowers and lenders tend to conceal crucial information pertaining to the lending and borrowing agreement. Yet in modern macroeconomic theory economic growth rate depends, crucially, on the efficiency of financial institutions. The financial systems themselves depend on accurate information about borrowers and the project the funds are used for. Though it is asserted that NPLs may be caused by less predictable incidents (Gorter & Bloem, 2001), they indicated that moral hazards resulting from generous government guarantees could lead to loan default.

Consistent with earlier assertions regarding moral hazard (Klein, 2013), it is arguable that microfinance banks with relatively low capital, just like other mainstream financial institutions, may respond to moral hazard incentives by increasing the riskiness of their loan portfolio. The foregoing is bound to result in higher non-performing loans on average in the future. As further reinforced by another study's argument (Gabriel & Saurina, 2005), microfinance banks that tend to take more risks, including in the form of excess lending ultimately incur losses. Still in tandem with moral hazard, higher equity-to assets ratio results in lower NPLs. Given that, moral hazard incentives such as low equity tend to aggravate NPLs (Klein, 2013), then microfinance banks and other financial institutions ought to avoid such moral hazard incentives in order for them to mitigate losses through NPLs.

2.2.2 Adverse Selection Theory

The theory rests on two main assumptions: that lenders cannot distinguish between borrowers of different degrees of risk, and that loan contracts are limited. This analysis is restricted to involuntary default, that is, it assumes that borrowers repay loans when they have the means to do so. In a world with simple debt contacts between risk-neutral borrowers and lenders, the presence of limited liability of borrowers imparts a preference for risk among borrowers, and a corresponding aversion to risk among lenders. This is because limited liability of borrowers implies that lenders bear all the downside risk. On the other hand, all returns above the loan repayment obligation accrue to borrowers. It is further asserted that, just like moral hazard, adverse selection can lead to significant accumulation of NPLs (Bofondi & Gobbi, 2003).

Raising interest rates would affect the profitability of low risk borrowers disproportionately, causing them to drop out of the application pool. However, excess demand in the credit market may persist even in the face of competition and flexible interest rates. In the adverse selection theory, the interest rate may not rise enough to guarantee that all loan applicants secure credit, in times when loan able funds are limited. Therefore, in line with this theory, microfinance banks may find themselves in dilemma; whether to increase interest rates and lower the number of applicants, or reduce the rates and have many applicants some of which may default in servicing their loans.

It is argued that in line with stipulations of the adverse selection theory, information sharing is said to reduce adverse selection by enhancing banks' information on credit applicants. It is argued that, ordinarily, each banking institution has private information about local credit applicants, but has no information about foreign applicants. In this light, it is reasoned that if banks were to share information about their clients' credit worth, they can assess the quality of foreign credit applicants as carefully as they would assess their local customers. As such, minimizing information asymmetry between lenders and borrowers, loans are extended to borrowers with lower credit risk (Auronen, 2003).

2.3 Theoretical Framework

The theoretical framework is the structure that can hold or support a theory of a research study. The theoretical framework introduces and describes the theory which explains why the research problem under study exists. This is based on Moral Hazard Theory: Which is a situation in which one party gets involved in a risky event knowing that it is protected against the risk and the other party will incur the cost. It arises when both the parties have incomplete information about each other. It describes that in a financial market, there is a risk that the borrower might engage in activities that are undesirable from the lender's point of view because they make him less likely to pay back a loan. It occurs when the borrower knows that someone else will pay for the mistake he makes. This in turn gives him the incentive to act in a riskier way. This economic concept is known as moral hazard.

According to research by Dembe & Boden (2000), the term dates back to the 17th century and was widely used by English insurance companies by the late 19th century. Early usage of the term carried negative connotations, implying fraud or immoral behavior (usually on the part of an insured party). Dembe & Boden point out, however, that prominent mathematicians studying decision making in the 18th century used "moral" to mean "subjective", which may cloud the true ethical significance in the term. The concept of moral hazard was the subject of renewed study by economists in the 1960s and then did not imply immoral behavior or fraud. Economists would use this term to describe inefficiencies that can occur when risks are displaced or cannot be fully evaluated, rather than a description of the ethics or morals of the involved parties.

Rowell and Connelly offer a detailed description of the genesis of the term moral hazard, by identifying salient changes in economic thought, which are identified within the medieval theological and probability literature. Their paper compares and contrasts the predominantly normative conception of moral hazard found within the insurance-industry literature with the largely positive interpretations found within the economic literature. Often what is described as "moral hazards" in the insurance literature is upon closer reading, a description of the closely related concept

This theory was supported by William J. McDonough (1998), head of the New York Federal Reserve, helped the counter-parties of Long Term Capital Management avoid losses by taking over the firm. This move was criticized by former Fed Chair, Paul Volcker and others as increasing moral hazard. Tyler Cowen concludes that "creditors came to believe that their loans to unsound financial institutions would be made good by the Fed as long as the collapse of those institutions would threaten the global credit system." Fed Chair, Allan Greenspan, while conceding the risk of moral hazard, defended the policy to orderly unwind Long Term Capital by saying the world economy is at stake.

Economist Paul Krugman (2009) described moral hazard as "any situation in which one person makes the decision about how much risk to take, while someone else bears the cost if things go badly". Financial bailouts of lending institutions by governments, central banks or other institutions can encourage risky lending in the future if those that take the risks come to believe that they will not have to carry the full burden of potential losses. Lending institutions need to take risks by making loans, and usually the riskiest loans have the potential for making the

highest return. Taxpayers, depositors, and other creditors often have to shoulder at least part of the burden of risky financial decisions made by lending institutions. Many have argued that certain types of mortgage securitization contribute to moral hazard. Mortgage securitization enables mortgage originators to pass on the risk that the mortgages they originate might default and not hold the mortgages on their balance sheets and assume the risk. In one kind of mortgage securitization, known as "agency securitizations", default risk is retained by the securitizing agency that buys the mortgages from originators. These agencies thus have an incentive to monitor originators and check loan quality. "Agency securitizations" refer to securitizations by either Ginnie Mae, a government agency, or by Fannie Mae and Freddie Mac, both for-profit government-sponsored enterprises. They are similar to the "covered bonds" that are commonly used in Western Europe in that the securitizing agency retains default risk. Under both models, investors take on only interest-rate risk, not default risk.

In another type of securitization, known as "private label" securitization, default risk is generally not retained by the securitizing entity. Instead, the securitizing entity passes on default risk to investors. The securitizing entity, therefore, has relatively little incentive to monitor originators and maintain loan quality. "Private label" securitization refers to securitizations structured by financial institutions such as investment banks, commercial banks, and non-bank mortgage lenders. During the years leading up to the subprime mortgage financial crisis, private label securitizations grew as a share of overall mortgage securitization by purchasing and securitizing low-quality, high-risk mortgages. Agency Securitizations appear to have somewhat lowered their standards, but Agency mortgages remained considerably safer than mortgages in private-label securitizations and performed far better in terms of default rates.

Economist Mark Zandi(2009) of Moody's Analytics criticized moral hazard theory as a root cause of the subprime mortgage crisis. He wrote that "the risks inherent in mortgage lending became so widely dispersed that no one was forced to worry about the quality of any single loan. As shaky mortgages were combined, diluting any problems into a larger pool, the incentive for responsibility was undermined." He also wrote, "Finance companies weren't subject to the same regulatory oversight as banks. Taxpayers weren't on the hook if they went belly up [pre-crisis], only their shareholders and other creditors were. Finance companies thus had little to discourage them from growing as aggressively as possible, even if that meant lowering or winking at traditional lending standards."

Moral hazard can also occur with borrowers. Borrowers may not act prudently (in the view of the lender) when they invest or spend funds recklessly. For example, credit card companies often limit the amount borrowers can spend with their cards because without such limits borrowers may spend borrowed funds recklessly, leading to default.

Securitization of mortgages in America started in 1983 at Salomon Brothers and where the risk of each mortgage passed to the next purchaser instead of remaining with the original mortgaging institution. These mortgages and other debt instruments were put into a large pool of debt, and then shares in the pool were sold to many creditors. Thus, there is no one person responsible for verifying that any one particular loan is sound, that the assets securing that one particular loan are worth what they are supposed to be worth, that the borrower responsible for making payments on the loan can read and write the language that the papers that he/she signed were written in, or even that the paperwork exists and is in good order. It has been suggested that this may have caused subprime mortgage crisis.

Brokers, who were not lending their own money, pushed risk onto the lenders. Lenders, who sold mortgages soon after underwriting them, pushed risk onto investors. Investment banks bought mortgages and chopped up mortgage-backed securities into slices, some riskier than others. Investors bought securities and hedged against the risk of default and prepayment, pushing those risks further along. In a purely capitalist scenario, the last one holding the risk (like a game of musical chairs) is the one who faces the potential losses. In the sub-prime crisis, however, national credit authorities (the Federal Reserve in the US) assumed the ultimate risk on behalf of the citizenry at large. Others believe that financial bailouts of lending institutions do not encourage risky lending behavior since there is no guarantee to lending institutions that a bailout will occur. Decreased valuation of a corporation before any bailout would prevent risky, speculative business decisions by executives who conduct due diligence in their business transactions. The risk and the burdens of loss became apparent to Lehman Brothers (who did not benefit from a bailout) and other financial institutions and mortgage companies such as Citibank and Countrywide Financial Corporation, whose valuation plunged during the subprime mortgage crisis.

2.4 Empirical Review

This part presents a review of empirical, and empirical studies that touch on Non-Performing Loans and Financial Performance of Microfinance Institutions.

2.4.1 Effects of Non-Performing Loans on the economy

There has been renewed interest in the issue of NPLs among researchers due to its influence on banks' lending and profitability as well as the performance of the economy. NPLs give rise to loss-loan provisions that decrease banks' profits and hence their dividends to shareholders (Fofack, 2005). They also disturb the flow of credit to borrowers, as funds loaned out are not paid back, either in full or in part. Consequently, NPLs contribute to a decrease in investment and/or consumption (Demirgüç-Kunt & Detragiache, 1998). NPLs are also among the signals of banks' failure and can affect macroeconomic performance (Freixas & Rochet, 2008; Waweru & Kalani, 2008). It is argued that banking crises can also drive firms, including viable banks, into bankruptcy because borrowers are unable to service their debt. Therefore, banks' assets drop in value leading to insolvency that ends in banking crises.

The literature has argued that deposit insurance should prevent banking crises as it protects depositors in the advent of bank runs or bank failure (MacDonald & Koch, 2006). Depositors that are fully covered by deposit insurance will not care about the selection of a bank when making regular deposits because they are assured of getting their money back should the bank fail or become insolvent. However, empirical evidence has shown the opposite; instead of preventing the failure of banks, deposit insurance has been a source of moral hazard in the banking industry that leads to banking instability (Chang & Velasco, 2001; Ngalawa, Tchana, & Viegi, 2016). The presence of deposit insurance gives bank managers room to maneuver to take excessive risk by lending to borrowers with high-risk projects, as they are assured cover for depositors in the advent of bank failure (Demirgüç-Kunt & Detragiache, 1998; Gans, King, Stonecash, & Mankiw, 2011). This free riding behavior led to an accumulation of NPLs.

In addition, the evidence indicates that NPLs have served as warning sign of several banking and financial crises (Yang, 2003; Ahmad and Bashir, 2013). The banking distress in France and Scandinavian countries in the early 1990s, the Asian crisis of 1997 which began in Thailand, first as currency crisis where the Thailand's currency, the Thai baht underwent massive devaluations,

and later escalated into financial crisis, and the global financial crisis of 2007–2009, are among recent examples.

Matthews and Thompson (2008) report that NPLs were among key drivers of banking distress in France and Scandinavian countries. In 1994, France recorded a level of 8.9 percent of total loans as NPLs. The French government decided on a rescue package for Credit Lyonnais amounting to US$ 27 billion. Equally, following a liquidity crisis in 1991, the Scandinavian bank crisis of 1991– 1992 cost about US$ 16 billion. In Finland, NPLs reached 13 percent of total bank loans in 1992. Substantial losses and insolvency in Norway led to a banking crisis in 1991 in which 6 percent of commercial bank loans were non-performing. In Sweden, 18 percent of total bank loans were reported lost between 1990 and 1993, and the Swedish government assisted the main banks to avert their failure.

Yang's (2003) study on the connection between the Asian financial crisis and the level of NPLs in Taiwan, found that the rates of NPLs steadily increased from 1996, as a precursor of the 1997 crisis. The ratio of NPLs was reported to be above 6 percent, which is relatively high by international standards (1 to 3 percent). The same trend was observed in other countries in the region, and worsened during the crisis(Xiaoping & Heffernan, 2005). From 1996 to 1999, the rates of NPLs varied from 3.9 percent to 9 percent in Malaysia; 4.1 percent to 6.2 percent in South Korea; 8.8 percent to 37 percent in Indonesia, and 7.7 percent to 38.6 percent in Thailand. Similarly, (Arena, 2008) shows that banks' asset quality contributed significantly to the probability of bank failure in the 1997 East Asian financial crisis and that of Latin America from 1994 to 1995. In East Asia, 69.74 percent of failed financial institutions had a problem of NPLs while the figure stood at 55.46 percent in Latin America. This indicates that generally, banks with lower asset quality had a higher likelihood of failure than those that were stronger; with a lower level of NPLs. The majority of banks that failed were those with a higher level of NPLs prior to the crises.

Subsequent to the increase in the level of NPLs in Thailand, the intermediation role of banks declined, implying that businesses shifted to other non-bank financing sources such as corporate bond issues or simply their retained earnings (Disyatat & Vongsinsirikul, 2003). During this time of financial troubles, the systemic macroeconomic and liquidity shocks that were additional factors that triggered the crises, not only destabilized the weak banks, but by contagion even the well capitalized and strong banks were affected in one way or another (Arena, 2008).

It was also reported that the global financial crisis which started in the US was prompted by borrowers defaulting on sub-prime mortgages loans (Adebola, Yusoff, & Dahalan, 2011). The persistent effects of such bad loans and uncertainty about the health of financial institutions prolonged the crisis and depressed economic growth in many countries. The economic fallout of 2007–2009 highlights how a financial crisis can increase damage to the global economy (Stojković, 2013). Many business owners closed their companies, and retired people's savings plummeted. Millions of families lost their homes and their wealth. Around the world, about 30 million workers lost their jobs (Claessens, Kose, Laeven, & Valencia, 2014).

In the US, the problems relating to the global financial crisis of 2007–2009 can be compared with those of the Great Depression of 1929. During the Great Depression, real output fell by an estimated 27 percent while unemployment rose from 3 percent in 1929 to 25 percent by 1933. There were approximately 30,000 banks in 1920 but this declined to 15,000 in 1933, and more than 9,000 banks closed between 1930 and 1933 causing huge losses to depositors and shareholders estimated at about US$ 2.5 billion (Gans, King, & Mankiw, 2011). Banks in rural areas closed due to large levels of NPLs among farmers, who were not able to pay on time due to low prices on farm's products.

In addition, NPLs affect banks and other deposit-taking institutions by reducing profits due to loan loss provisions, thus affecting the payment of dividends to shareholders. They also reduce institutions' lending capacity, hence placing a limit on the expansion of credit, that indirectly affects economic growth (Berger & DeYoung, 1997). An increase in NPLs leads to additional costs among all financial intermediaries in the process of loan recovery. These include telephone calls, visiting borrowers who encounter repayment problems, and the legal costs associated with the process of foreclosure of the collateral pledged by borrowers when contracting the loan and selling it in bank auctions. Thus, banks spend additional funds in trying to recover bad loans. While the factors contributing to increased NPLs are both exogenous and endogenous to the bank, this chapter focuses on endogenous factors that make a greater contribution to the change in the level of NPLs in the Rwandan banking sector, and which are under the control of the management of banks, suggesting that they can be reduced or eliminated.

2.4.1 Factors influencing Non-Performing Loans in the Banking Sector

Loan quality and macroeconomic variables are closely connected to the phases of expansion and contraction of the business cycle. During economic booms, investors are optimistic regarding potential returns on new projects, and they apply for more credit to invest in targeted projects. The level of NPLs is lower because the high and regular revenue of borrowers provide them with assured means to meet their credit obligations. Conversely, banks and other deposit taking institutions grant loans even to low quality borrowers. In contrast, during an ongoing period of contraction, investors are hesitant to invest in new projects. Households postpone some consumption decisions. Consequently, banks hold back on lending decisions because borrowers are experiencing a shortage of revenue. Banks are cautious to raise the amount of loans as they fear they will not be repaid (Sexton, 2008). They tend to be selective in granting new loans. In such circumstances, bad loans are likely to have soared during the boom period because banks significantly increased the amount of loans. Some of these loans become non-performing during the recession period, therefore increasing the level of NPLs.

Investigating the explanatory power of macroeconomic variables as determinants of NPLs using Pakistan banking data, Ahmad & Bashir (2013) found that GDP growth, interest rates, inflation, the Consumer Price Index (CPI), exports and industrial production, are significant in explaining the level of NPLs in the country during the period 1999 – 2000. The study concluded that factors such as unemployment, real effective exchange rate and foreign direct investment did not contribute to the level of NPLs in Pakistan. Gerlach, Peng and Shu (2005) fitted a regression analysis using Hong Kong data for the period 1995–2002 to examine the relationship between a set of variables that included economic growth, interest rates, inflation, the change in property prices, asset size and sector concentration in lending and NPLs. Their findings suggest that an increase in interest rates led to an increase in NPLs ratio, whereas increases in economic growth, inflation, and change in property prices, negatively affected the level of NPLs.

Although most studies do not necessarily adopt the same variables, many have concluded that a relationship exists between a combined set of macroeconomic variables and bank specific characteristics and the level of NPLs. Salas & Saurina (2002) combined macroeconomic and microeconomic variables to explain aggregate the NPLs of Spanish commercial and savings banks for the period 1985–1987. They found that bank-specific determinants such as bank size,

market power, and capital structure could serve as precursor indicators for increases in NPLs. Variables such as real GDP growth, bank size, market power, and rapid credit expansion and capital ratio explain fluctuations in NPLs.

Louzis, (2012) employed a dynamic panel data method on data from banks in Greece for the period 2003 – 2009 to test the validity of seven bank specific hypotheses on NPLs. The study found that variables such as GDP, interest rates, and unemployment have a significant impact in explaining variations in NPLs. However, using a regression analysis to investigate the determinants of NPLs in Indian commercial banks for the period 1999 – 2009, Dash and Kabra's (2010) findings suggest that only the real exchange rate has a significant impact on NPLs. The remaining variables (GDP growth rate, real interest rate, inflation, loans to total assets ratio, bank size and growth in loans) were found to be insignificantly associated with NPLs. Sinkey Jr and Greenawalt (1991) applied a log-linear regression to assess the factors underlying loan-losses in US large commercial banks for the period 1984 – 1987. The study concluded that risks that ended up in loan-losses occurred as a result of external factors related to the economic environment, or to internal factors such as poor managerial decisions in granting loans or both. Their results suggest that loan-loss rates in 1987 were positively correlated with loan rates, volatile funds, and the amount of outstanding loans granted in the three preceding years.

Some studies have also targeted a panel of countries. Babihuga (2007) used a pooled regression on 96 countries for the period 1998–2005 to investigate the linkages between financial stability indicators and macroeconomic variables. The study regressed NPLs against the quality of banking sector regulations and supervision, business cycle components of GDP, terms of trade, lending rates, unemployment, inflation and real effective exchange rates. The results indicate that terms of trade, quality of regulatory supervision, and a boom in the business cycle led to reduced NPLs. Other factors such as high inflation, lending rates, the unemployment rate, and depreciation of the real exchange rate did not influence changes in the level of NPLs.

Empirical findings also postulate that there is interaction among NPLs and attributes such as borrower characteristics and loans terms. Keeton (1999) investigated the influence of loan delinquencies and credit growth on NPLs, using data from US banks over the period 1982 – 1996. Applying a VAR model for analysis, the findings show a highly significant relationship between loan losses and credit growth. Further, he argued that in few states in the US, high loan losses are primarily associated with weak credit terms and the standards of the banks. Berger and

DeYoung (1997) focused on the links between bank-specific characteristics, efficiency indicators, and the problem of non-performing loans. They formulated possible channels through which certain factors, namely, 'bad luck', 'bad management', 'skimping', and 'moral hazard', relate to banking efficiency and capital adequacy. They tested the derived hypotheses for a sample of US commercial banks spanning the period 1985 to 1994 and concluded that the level of NPLs was generally associated with measured cost efficiency. Low cost efficiency was positively related with increases in future NPLs.

'Bad management' refers to mismanagement that may involve weak assessment of the loan application, undervaluation of the pledged collateral, and poor monitoring of the allocation of borrowed funds, as well as the borrower's ongoing business. Podpiera and Weill (2008) provided strong support for the bad management hypothesis in a study investigating the influence of bad luck or bad management on NPLs using data from a panel of Czech Republic banks for the period 1994 – 2005. They argued that bad managers do not pay attention to monitoring loan portfolios, leading to an increase in NPLs. Louzis, (2012) study examined mortgage and consumer loans that became nonperforming and provided further evidence of the bad management hypothesis. This suggests that the effect of management quality is mainly reflected in the efficiency of credit granting procedures, where to some extent the evaluation of collateral is not properly done due to a lack of relevant skills or simply because of a corrupt environment. Bad managers do not adequately monitor loan portfolios (Podpiera and Weill, 2008). The authors add that bad loans incur additional costs related to monitoring the defaulting borrower such as telephone calls, visits to the borrower, and seizing and disposing of the pledged collateral. Imprudent management is argued to have been the major driver of banks' failure in the US between 1920 and 1933 (Sexton, 2008).

Moral hazard, on the other hand, is explained by deliberate decisions of managers to finance high-risk, high-return projects when their banks are delicately capitalised. This moral hazard behaviour causes an increase in NPLs because in high-risk projects, the rate of pay back of borrowed money is very low. With regard to the bad luck hypothesis, unpredictable external factors are blamed for NPLs. These include factors such as floods and drought or economic recession that could lead to borrowers' inability to fulfil their payment obligations. The skimping hypothesis refers to a trade-off between short operating costs and future loan performance. Under this hypothesis, bank managers devote less effort to ensuring higher loan quality in the short-run,

aiming to minimise resources, albeit at the expense of a higher level of NPLs in the long-run (Hughes and Mester, 1993). It suggests that bank managers allocate less resources in initial credit assessment and continual monitoring.

Turning to bank size, Salas and Saurina (2002) agree with HU, Li and Chiu (2004), among others, that bank size is likely to contribute to the reduction of NPLs. Salas and Saurina (2002) report a negative relationship between bank size and NPLs. They argued that a bigger size allows for more diversification opportunities, hence reducing NPLs. Similarly, HU et al. (2004) argue that large-sized banks have enhanced capabilities for loan evaluation and processing due to their ability to devote more resources to the whole process prior to granting the loan and subsequently in monitoring. In the same vein, Arena (2008) found that total assets which are a proxy for the size of a bank are relevant in allowing a diversified portfolio and consequently reducing countries' asset risks during financial crises as was the case in East Asia in 1997 and Latin America in 1994 –1995. Similarly, Sexton (2008) found that the small size of banks in the US was among the factors that triggered their failure between 1930 and 1933. However, Louzis et al.'s (2012) findings rejected the diversification hypothesis related to bank size affecting the level of NPLs. They argue that the size variable may not fully capture diversification even if non-interest income is used as a proxy for diversification. The coefficients estimates, even if they are of expected signs, are not statistically significant.

With regard to the relationship between macroeconomic and bank specific characteristics and NPLs, a number of studies have focused on the influence of borrowers' attributes and loan terms on NPLs. Louzis, (2012) empirical results suggest that the quantitative effects of the various determinants of NPLs depend on the type of loans. A consumer loan was the most sensitive to a change in lending interest rates while mortgage loans were not significantly affected by macroeconomic fundamentals.

With respect to macroeconomic fundamentals, the ratio of business loans to GDP growth as well as unemployment had a significant effect on NPLs. A number of studies have been conducted on the relationship between microcredit and NPLs. Mokhtar, (2012) study on the determinants of microcredit loans repayment among microfinance borrowers in Malaysia focused on two important microfinance institutions involved in microcredit programmes, namely, Yasasan Usaha Maju (YUM) and an Economic Fund for National Entrepreneurs Group called TEKUN. They applied a logistic regression model. The findings reveal that age, gender, type of business,

mode of repayment, and repayment amount contribute to loan repayment problems among TEKUN and YUM borrowers. Along the same lines Brehanu and Fufa's (2008) study on the determinants of repayment performance among small-scale farmers in Ethiopia using probit and logit regressions found that borrowers who own large farms, are located in high rainfall regions, and have a considerable number of livestock were most likely to be able to repay back their loans. Loans to this group of borrowers are most likely to increase the farmers' productivity and income. They also found that additional business income earned by a farmer was a good predictor of repayment performance. In addition, they found that gender matters, with male borrowers have a higher probability of default (Roslan & Karim, 2009; Mokhtar, 2012).

The study also established that repayment period matters. An investigation of microcredit loan repayment behaviour in AgoBank Malaysia by Roslan & Karim (2009) found that male borrowers and borrowers with a long repayment period had a higher probability of defaulting. Furthermore, borrowers involved in non-production business activities such as the services or support sectors that had undergone training in their particular business, and had borrowed higher amounts had lower probabilities of defaulting. These findings suggest that the more a borrower is equipped with managerial skills relating to the activities that he/she wants to undertake, the higher the probability of success, and if he/she contracts a loan, the probability of default is lower.

To limit moral hazard behaviour, some financial institutions grant loans in inputs instead of providing funds. Okorie (1986) studied repayment behaviour in an agricultural corporation in Nigeria. He found that borrowers who received a loan in kind (seed, fertilisers and equipment) had a lower probability of default relative to those who received a cash loan. The explanation lies in the fact that some borrowers misused the cash received, diverting it to their own consumption instead of allocating it to the real motive for borrowing, that is, a productive project.

Several studies also suggest a significant relationship between repayment rates and educational level. Chaudhary and Ishfaq (2003) examined the credit worthiness of 224 rural borrowers in Pakistan. Applying a logistic regression model, they found that borrowers with higher educational levels, that were involved in a non-farm business activity, were using the loan for investment, and were female, had a higher probability of repaying their loans. Similarly, Bhatt and Tang's (2002) study on the determinants of loan repayments in microcredit programmes in the US found that higher educational level was significantly and positively related to better

repayment performance. Unlike the previous studies, they found that female borrowers, level of household income, type of business and borrower's experience had no significant effect on repayment behaviour.

2.4.3 Causes of NPLs for MFIs in Rwanda

According to 2015 joint research report done by the Association of Microfinance Institutions in Rwanda (AMIR), TROCAIRE and Access to Finance Rwanda, the found out that Causes of non-performing loans in Rwanda are:

2.4.3.1 Causes related to policy and legal framework

1. Securities registration

Most MFIs rely only on the existence the law no 10/2009 of 14/05/2009 on mortgage registration and selling in case of failure to pay back loans without registering borrower's collateral because they find securities registration to RDB expensive. The risk associated with such unregistered collateral is that the MFI finds it difficult to recover such loan through legal means because it will find itself in a weak legal position. Finally, MFIs end up avoiding the procedures hence getting unpaid loans in the long run.

2. Judicial processes

The judicial process provides that MFIs submit defaulters before the commercial courts. Legal Action, Outsourcing (External solicitor/ Debt collectors) and write off are the most procedures used to manage defaulters' cases. However, they reported that commercial courts are far from most MFIs as there are only 4 courts in the country (Nyarugenge, Huye, and Musanze and High Commercial Court in Kigali). The access to judicial process is itself of a deposit of Rwf500000 per individual case is by far expensive compared to the defaulted amount of the microloan.

2.5 Gap in Literature

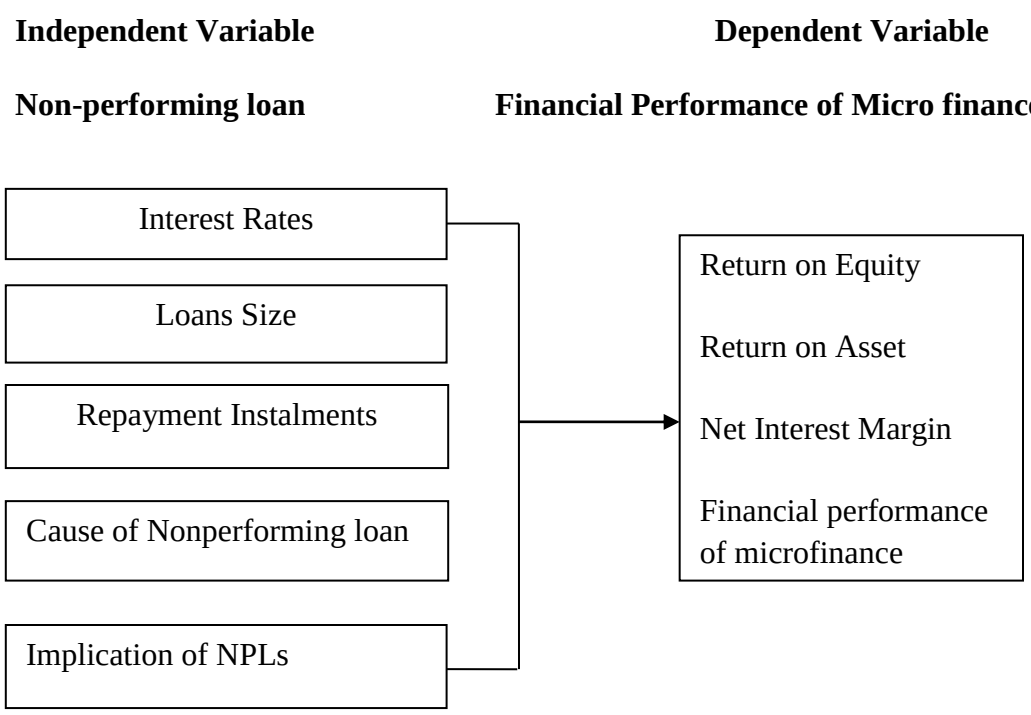
Beyond the financial sector, researchers have studied the underlying factors responsible for the defaulting behaviour of households. Their findings add value to this research as they investigate the common problem of defaulting. Canner and Luckett (1990) fitted a logistic regression to assess the determinants of households' loan repayment performance. Their results suggest that the marital status of the household head is significantly related to a household's repayment

performance. Households with married and single heads had a higher probability of not missing a payment or making a late repayment than separated or divorced adults, all other things remaining constant. Lawrence's (1995) investigation of how a default option changes the standard implications of the life model concluded that low-income borrowers have a higher average probability of default, which probably explains why they pay higher interest rates than high-income borrowers do. Canner, Luckett, Cook and Middleton (1991) reported that US households' difficulty in making loan repayments was strongly related to the borrower's level of income. The marital status of the borrower as well as whether or not the borrower owns a home were also influencing factors. The study, which covered a sample of 1534 families, was commissioned by the Federal Reserve Board in the US to obtain information on consumer debt in the 1980s with a view to ascertaining how a default option alters the standard implications of the lifetime model.

2.6 Conceptual framework

Conceptual framework can be defined as a concise description of phenomenon under study accompanied by a graphical or visual depiction of the major variables of the study. According to (Young, 2009), conceptual framework is a diagrammatical representation that shows the relationship between dependent variable and independent variables. A conceptual framework shows the relationship between independent and dependent variable. In this study, the dependent variable is financial performance while the independent variables non-performing loans asshown in the diagram below.

Figure 1Conceptual framework



Source: *Research, 2019*

CHAPTER THREE
METHODOLOGY

This chapter explains in few words how the research was conducted. It gives the plan, strategy research design that is required for the study. Plan includes what was done from writing the hypotheses and their operational implications to the final analysis of data. Strategy includes the methods to be used to gather and analyze the data and implies how the research objectives were reached and how the problems encountered was tackled.

3.1 Research Design

This research study was adopted a ex post facto design which is a quasi-experimental study examining how an independent variable, present prior to the study, affects a dependent variable. So like we just said, there is something about the participant that we're going to study that we don't have to alter in the participant. An ex post facto research design is a method in which groups with qualities that already exist are compared on some dependent variable. Also known as "after the fact" research, an ex post facto design is considered quasi-experimental because the subjects are not randomly assigned they are grouped based on a particular characteristic or trait.

Although differing groups are analyzed and compared in regards to independent and dependent variables it is not a true experiment because it lacks random assignment. The assignment of subjects to different groups is based on whichever variable is of interest to the researchers. According to Ngechu, 2004)(Ngechu, 2004).

3.2 Population of the study

According to Ary, (1972), a “population” consists of all the subjects you want to study. A population comprises all the possible cases (persons, objects, events) that constitute a known whole.

Population size (usually denoted N) is the number of individual organisms in a population. The effective population size (n) is defined as "the number of breeding individuals in an idealized population that would show the same amount of dispersion of allele frequencies under random genetic drift or the same amount of inbreeding as the population under

consideration." Ne is usually less than N (the absolute population size) and this has important applications in conservation genetics.

The population under this study consisted employees of Umurenge Sacco of credit department and finance totaling 25 potential respondents which took randomly from accounting department and finance department of Umurenge Sacco. The simple size determination, according to Morgan,(2005), says that when the respondents are under 100 respondents you ask all of them.

3.3 Sample Size

The study was look at the impact of non-performing loans on microfinances institution in Rwanda taking three branches of branch of Umurenge SACCO in Nyarugenge District for a period of three years from 2016 to 2018.

Table1Stratum of respondents

Umurenge SACCO	**Population**
Umurenge SACCO Kabusunzu Branch	8
Umurenge SACCO Nyarugenge Branch	9
Umurenge SACCO Nyabugogo Branch	8
Total of Respondents	**25**

3.4 Research Instruments

According to Saunder (2008) there are many tools for data collection. In this study, the researcher was used primary data and secondary data. Primary data was comprised questionnaires. While secondary data was comprised data which have been already analyzed.

3.4.1 Questionnaire

According to David (2009), primary data are those data which are collected at the first hand either by the researcher or someone else especially for the purpose of the research. Therefore primary data are those which are collected for the first hand and this happens to be original in character. The primary data was collected by using questionnaires.

A questionnaire: is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. Questionnaire is a formalized framework consisting of a set of questions and scales designed to generate primary data. Questionnaire construction involves taking established sets of scale measurements and formatting them into an instrument for collecting raw data from respondents (Oppenheim, 2008).

The questionnaire was administered to employees of Umurenge Sacco were designed in English with three parts: the first part was capture the demographic information of respondents: gender, age, education background, marital status, experience. The second part talking about perceptions of respondents on Effect of Non-Performing Loans and Financial Performance. The questionnaire used a Likert scale five-point, since it is simple and easy to understand. A Likert scale is easy to construct and administer. The four scales required respondents to indicate the selected option for a given statement. The interpretation of results followed the analysis so as to draw conclusions and recommendations about the findings.

3.5 Validity and Reliability

3.4.1 Validity of the Instruments

Before a researcher analyzes data, he has first analyzed the validity of instrument to make sure that these instruments generated relevant information during the study. The validity interval is from 0 up to 1. 0 means full of errors whereas 1 means absence of errors. Validity of above 0.5 is assumed to be valid. In this research, the content validity index was calculated from the formula below:

CVI=n/N

Where

CVI: Content Validity Index

N: Total number of items in questionnaire

n: Number of relevant items in the questionnaire

In this study the N: 10 Questions and n: 7 Questions.

CVI: 7/10=0.7 which is greater than 0.5which confirm that the instrument is valid.

3.4.2 Reliability of the Instruments

The research instrument that the researcher intended to use is questionnaire. The reliability of this instrument was established by having it cross examined for approval by a research consultant, to make sure that these instruments would generate relevant information during the study. Use of additional methods for reliability testing was deemed inappropriate given the time constraints and if Cronbach Alpha is greater than 75%, then the instruments will said to be reliable.

According to Allen (2007)**,** Likert Scale is a rating scale that requires the subject to indicate his/her degree of agreement or disagreement with a statement. By rating scale researcher mean the scales that are usually used to measure attitudes in an object, the degree to which an object contains a particular attribute, (Like or dislike), toward some attribute, or the importance attached to an attribute.

3.5 Data Collection

In this study was mainly used secondary data. These data was obtained from the published annual reports and financial statements of the institutions. The information was covered a period of five years from years 2016 to 2018. This category of data was mainly found in the print and electronic media meant for public consumption. The use of this type of information was beneficial in several ways to the study and some of the benefits include:

Firstly, this it is less expensive to collect, in terms of time and money. It is affordable to the researcher the opportunity to collect high quality data which would not have been of the same quality if the researcher were to collect it in its primary form. Saunders, (2007) quote Stewart and Kamins (1993)

Saunders, (2009) as stating that secondary data are likely to be in higher quality and hopefully the data collected were very useful information needed to answer the research questions like loan portfolio of the institution, provision and charge for credit loss (i.e. provision for bad and doubtful debt) and profitability during the five-year period.

3.6 Data Analysis

Because much of the information was not come from one source, editing was the primordial step for data analysis. Indeed, different publications were explored deeply and figures from National

Bank of Rwanda was properly arranged so as to allow for the analysis proceed. The second step was to arrange date into table format. This exercise allows not only the comparison between different indicators at the same period but also to have an idea of trends and their possible causes in time series(Mchopa, 2013).

The data was analyzed by use of summary statistics, including percentages, and regulations to measure interrelationships between the variables. Data from the 25 completed questionnaires were coded to facilitate statistical analysis. Regressions analysis was used to analyze the data. The (Statistical Package) SPSS was used to analyze the collected data by using linear regression.

3.7 Ethical considerations

Social research should be ethical in collection of the data in the process of analysis. The data in dissemination of findings they are accepted to respect right dignity of those who are participating in the research project and avoid any harm to the participating in the arising from their involvement in the research and operate with honesty and integrity.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

The previous chapter described different techniques used to collect data. This chapter aims at presenting the collected data, analyze and interpret the findings, as the aim objective of this research was to the main objectives were to assess the effects of non-performing loans on the financial performance of Umurenge Sacco. The following are the specific objectives: To examine the effects of interest rates on financial performance of Umurenge Sacco, to examine the effects of loans size on financial performance of Umurenge Sacco, to determine the effects of repayment installments on financial performance of Umurenge Sacco, to determine the relationship between non-Performing loans and financial performance Umurenge Sacco.

4.1 Profile of the Respondents

The distribution of respondent was analyzed to assess the percentage' composition of different categories as well as the proportion of males and females in the sample. The assessment was also made to understand the sample age, structure, gender, qualification and nature of the respondents held. This helped the researcher to know the relevance of the information given in relation with the research.

4.1.1 Respondents background characteristics

The background of the study describes Gender of respondents, age of respondents, level of education of respondents and marital status of respondents as its indicated in tables below.

Table 2 Gender

		Frequency	Percent
Valid	Male	18	72
	Female	7	28
	Total	**25**	**100**

Source: *primary data, 2019*

The table above shows that 18 respondents with 72% of total number of respondents is male and 7 respondents with 28% of total number of respondents is female. This shows that this study consider gender balance.

Table 3 Age group, level of Education and Marital status

		Frequency	Percent
Respondents' age group	Between 21-28 years	11	44
	Between 29-36 years	9	36
	Between 37-44 years	3	12
	45 years and above	2	8
	Total	**25**	**100**
Respondents' level of education	Bachelors Degree	21	84
	Masters Degree	3	12
	PhD Level	1	4
	Total	**25**	**100**
Respondents' marital status	Between 0-1year	2	8
	Between 1-2 years	6	24
	Between 2-3 years	11	44
	Between 3-4 years	3	12
	5 years and above	3	12
	Total	**25**	**100**

Source: *primary data, 2019*

The table above shows that 11 respondents with 44% of total number of respondents have between 21-28 years old, 9 respondents with 36% of total number of respondents have between 29-36 years old, 3 respondents with 12% of total number of respondents have between 37-44 years old and 5 respondents with 8% of total number of respondents have 45years and above, it also shows that 21 respondents with 84% of total number of respondents have Bachelor's degree, 3 respondents with 12% of total number of respondents have master's degree, 1 respondent with 4% of total number of respondents have PhD level and also shows that 2 respondents with 8% of total number of respondents have between 0-1 years of experience, 6 respondents with 24% of total number of respondents have between 1-2 years of experience, 11 respondents with 44% of total number of respondents have between 2-3 years of experience, 3 respondents with 12% of total number of respondents have 3-4 years of experience, 3 respondents with 12% of total number of respondents have 5 years and above of experience.

4.1.2 Return on equity

The return on equity examines the profitability from the perspective of the equity investors by relating profits available for the equity shareholders with the book value of the equity investment.

Table 4 ROE ratio of Umurenge Sacco

	Umurenge Sacco	
Year	Return on equity ratio = $\frac{Net\ profit\ after\ tax}{Equity\ shareholders'funds} \times 100$	Ratio %
2016	3,866,544,920/12,957,549,075	29.8
2017	6,410,153,155/23,693,720,130	27
2018	5,943,816,916/30,866,544,920	19.2

Source: *Secondary data, 2019*

4.1.3 Return on assets

The profitability is measured in term of relationship between profit and assets. The return on assets may also be calculated profit-to-assets.

Table 5 ROA of Umurenge Sacco

	Umurenge Sacco	
Year	ROA = $\frac{Net\ profit\ after\ tax}{Average\ total\ assets} \times 100$	Ratio %
2016	2,800,564,648/12,957,549,075	21.6
2017	4,742,670,764/23,693,720,130	20
2018	7,376,805,016/30,866,544,920	23.8

Source: *Secondary data, 2019*

4.1.4 Net interest Margin

It measures the price at which borrowers of funds are willing to pay to the owners of capital while at the same time measures the price at which lenders are willing to lend their money to enterprise in exchange for consumption.

Table 6 Net interest Margin of Umurenge Sacco

	Umurenge Sacco	
Year	$NetProfitMargin = \frac{\text{Net Income}}{\text{Total Financial Income}}$	Ratio %
2016	1,513,259,682/12,957,549,075	11.6
2017	2,840,975,565/23,693,720,130	11.9
2018	3,807,555,358/30,866,544,920	12.3

Source: *Secondary data, 2019*

The ratios calculated above show the relationship between independent variable (Non performing loans) with indicators which are, Interest rates, Loans size, Repayment installments and Collateral) and Dependent variable (performance Umurenge Sacco) with indicators which are Return on Equity, Return on Assets, and Net Interest Margin and how depend on each other. It show also the level of performance of Umurenge Sacco in 2016 up to 2018 which is in low level and need to be improved.

Table 7 The effects of interest rates on financial performance of Umurenge Sacco

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.964[a]	.929	.919	.20164

Source: primary data, 2019

The table above shows the regression summary representing the proportion of variance in financial performance of Umurenge Sacco by non performing loan on interest rates. From this table, it is shown that 91.9% of the total variance of the profitability was accounted for by the studied non performing loan. This means that the non performing loan (Effect on profitability, effect on economic development, effect on loan repayment) represents 91.9% of the variance in profitability. The same table shows that R=0.964 which shows positive strong correlation which helped a researcher to confirm the hypothesis by saying that there is an effect between non performing loans and financial performance of Umurenge Sacco.

Table 8Analysis of variance about the effects of interest rates on financial performance of Umurenge Sacco

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.146	3	3.715	91.378	.000[a]
	Residual	.854	21	.041		
	Total	12.000	24			

Source: primary data

The table above illustrates the analysis of variance and by inspecting the significance level (which is .000 and <.05), it is noted that the regression model is highly significant and this help to confirm that there is an effect between non-Performing loans and financial performance Umurenge Sacco. According to Babihuga (2007) used a pooled regression on 96 countries for the period 1998–2005 to investigate the linkages between financial stability indicators and macroeconomic variables.

Table 9 Regression coefficients about the effects of interest rates on financial performance of Umurenge Sacco

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.131	.120		1.090	.288
	Low level of savings	.054	.206	.056	.261	.797
	Low supply of loan	-.092	.254	-.092	-.364	.720
	Insufficient competition	.946	.149	.998	6.349	.000

Source: primary data, 2019

The table above shows that the standardized coefficients for each technology and it reports that the change of one standard unit on effect on low level of savings was result in a change of 0.056 standard unit in the financial performance, the change of one standard unit on low supply of loan will result in a change of -0.092 standard unit in the financial performance, the change of one standard unit on effect on insufficient competition was result in a change of 0.998 standard unit in the financial performance. Chaudhary and Ishfaq (2003) examined the credit worthiness of 224 rural borrowers in Pakistan. Applying a logistic regression model, they found that borrowers with higher educational levels, that were involved in a non-farm business activity, were using the loan for investment, and were female, had a higher probability of repaying their loans. Similarly, Bhatt and Tang's (2002) study on the determinants of loan repayments in microcredit programmes in the US found that higher educational level was significantly and positively related to better repayment performance.

Table 10 The effects of loans size on financial performance of Umurenge Sacco

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.950[a]	.902	.888	.25060

Source: primary data, 2019

The table above shows the regression summary representing the proportion of variance in financial performance of Umurenge Sacco by non performing loan on loan size. From this table, it is shown that 90.2% of the total variance of the profitability was accounted for by the studied non performing loan. This means that the non performing loan (Effect on profitability, effect on economic development, effect on loan repayment) represents 90.2% of the variance in profitability. The same table shows that R=0.950 which shows positive strong correlation which helped a researcher to confirm the hypothesis by saying that there is an effect between non performing loans and financial performance of Umurenge Sacco.

Similarly, Bhatt and Tang's (2002) study on the determinants of loan repayments in microcredit programmes in the US found that higher educational level was significantly and positively related to better repayment performance. Unlike the previous studies, they found that female borrowers, level of household income, type of business and borrower's experience had no significant effect on repayment behaviour.

Table 11 Analysis of variance about the effects of loans size on financial performance of Umurenge Sacco

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.121	3	4.040	64.337	.000[a]
	Residual	1.319	21	.063		
	Total	13.440	24			

Source: primary data

The table above illustrates the analysis of variance and by inspecting the significance level (which is .000 and <.05), it is noted that the regression model is highly significant and this help to confirm that there is relationship between non-Performing loans and financial performance Umurenge Sacco. According to Berger & DeYoung, (1997), NPLs affect banks and other deposit-taking institutions by reducing profits due to loan loss provisions, thus affecting the payment of dividends to shareholders. They also reduce institutions' lending capacity, hence placing a limit on the expansion of credit, that indirectly affects economic growth.

Table 12 Regression coefficients about the effects of loans size on financial performance of Umurenge Sacco

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.021	.140		-.150	.882
	Effect on profitability	.409	.312	.396	1.314	.203
	Effect on economic development	.500	.177	.520	2.822	.010
	Effect on loan repayment	.056	.262	.053	.213	.834

Source: primary data, 2019

The table above shows that the standardized coefficients for each technology and it reports that the change of one standard unit on effect on profitability was result in a change of 0.396 standard unit in the financial performance, the change of one standard unit on effect on economic development will result in a change of 0.520 standard unit in the financial performance, the change of one standard unit on effect on loan repayment was result in a change of 0.053 standard unit in the financial performance. Adams and Von-Pischke, 2013, reported that there are numerous negative repercussions associated with loan default among which are: the incapability of the organization to salvage credit to borrowers; reluctance of financial mediators to attend to the requests of lesser loan seekers; and the formation of suspicion.

Table 13 The effects of repayment instalments on financial performance of Umurenge Sacco

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.959[a]	.919	.907	.21980

Source: primary data, 2019

The table above shows the regression summary representing the proportion of variance in financial performance of Umurenge Sacco by non performing loan in repayment installment.

From this table, it is shown that 91.9% of the total variance of the profitability was accounted for by the studied non performing loan. This means that the non performing loan (facility in repayment, Quick repayment, Credibility creation) represents 91.9% of the variance in profitability. The same table shows that R=0.959 which shows positive strong correlation which helped a researcher to confirm the hypothesis by saying that there is an effect between non performing loans and financial performance of Umurenge Sacco.

The repayment period of loans is determined on the basis of the liquidity position of each borrower and the economic life of the investment. Repayment schedules must be made flexible so that it should be adjusted to borrower's cash flow pattern. In addition to this credit policy instruments, some relevant lending principles are used by banks as their guiding principles (Zena 2013)(Bholat, Lastra, Markose, Miglionico, & Sen, 2016).

Table 14 Analysis of variance about the effects of repayment installments on financial performance of Umurenge Sacco

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.992	3	3.664	75.839	.000[a]
	Residual	.966	20	.048		
	Total	11.958	23			

Source: primary data

The table above illustrates the analysis of variance and by inspecting the significance level (which is .000 and <.05), it is noted that the regression model is highly significant and this help to confirm that there is effect between non-Performing loans and financial performance Umurenge Sacco. According to Moral hazard refers the risk in which a party to a transaction provides misleading information about its assets, liabilities or credit capacity, or has an incentive to take unusual risks in a desperate attempt to earn a profit before the contract settles. Usually a party to a transaction may not enter into the contract in good faith, thus providing misleading information about its assets, liabilities or credit capacity (Richard, E., 2011)

Table 15 Regression coefficients about the effects of repayment instalments on financial performance of Umurenge Sacco

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.102	.132		.777	.446
	Facility in repayment	.431	.135	.449	3.200	.005
	Quick repayment	.238	.135	.237	1.766	.093
	Credibility opportunity	.254	.119	.319	2.132	.046

Source: primary data, 2019

The table above shows the standardized coefficients for each technology and it reports that the change of one standard unit on facility in repayment was result in a change of 0.449 standard unit in the financial performance, the change of one standard unit on quick repayment was result in a change of 0.237 standard unit in the financial performance, the change of one standard unit on Credibility opportunity was result in a change of 0.319 standard unit in the financial performance. According to William (2014), there are certain criteria that most lenders require the business owner to meet in order to successfully acquire the funds needed for the business. These hurdles or requirements are generally categorized as: Good Credit, Equity, Experience, Business Plan, and Collateral.

Table 16 Non-performance ratio of Sacco Nyarugenge Branch

Year	2016	2017	2018
Total normal loans	582,886	3,253,568	2,031,033
Provisions	38,717,568	63,810,646	69,758,644
NPLs Ratio	**1.5%**	**5%**	**2.9%**

The table above indicate that non performance ratio of Sacco Nyarugenge Branch is 1.5% in 2016, 5% in 2017 and 2.9% in 2018. This indicates that Sacco Nyarugenge branch mate requirement of national bank of Rwanda of never go beyond of 5% of NPLs.

Table 17 Non-performance ratio of Sacco Kabusunzu Branch

Year	2016	2017	2018
Total normal loans	69758655	9,275,796	9,615,225
Provisions	109090541	69,758,644	114,965,220
NPLs Ratio	**6.5%**	**13%**	**8.4%**

The table above indicates that Non performance ratio of Sacco kabusunzu branch is 6.5% in 2016, 13% in 2017 and 8.4%. This shows that Sacco Kabusunzu Branch didn't meet the requirement of National bank of Rwanda of never go beyond of 5% of NPLs.

Table 18 Non-performance ratio of Sacco Nyabugogo Branch

Year	2016	2017	2018
Total normal loans	952884	1,253,568	1,031,033
Provisions	38717586	63,810,646	69,758,644
NPLs Ratio	**2.4%**	**11.3%**	**9.1%**

The table above indicates that non performance ratio of Umurenge Sacco is 2.4% in 2016, 11.3% in 2017 and 9.1% in 2018. This indicate that Umurenge sacco Nyabugogo Branch did not mate the requirement of National bank of Rwanda.

The indicated tables show that the loan managing situation in Umurenge Sacco ni Nyarugenge Branch, kabusunzu Branch and Nyabugogo Branch during the period of 2016 to 2018. The variation of year to year implicated that there is a critical management of recovery in Umurenge Sacco according to the regulation of BNR and the risks were very high. According to National Bank of Rwanda, NPLs ratios could not be above 5%. Therefore the ratios above indicate that NPLs of Umurenge Sacco Branch Kabusunzu, and Muhima are above 5% as the regulations of National bank says. Managers of Umurenge Sacco$_s$ need to make more effort so that they can recover the Non- performing loan in order to prevent the loss which can affect Umurenge Sacco.
The findings above made a researcher to reject ***$H_0$1:*** There is no an effect between non performing loans and financial performance of Umurenge Sacco. ***$H_0$2:*** There are no effects of interest rates, loan size and repayment installment on Return on Asset of Umurenge Sacco. ***$H_0$3:*** There are no effects of interest rates, loan size and repayment installment on Net Interest Margin of Umurenge Sacco. And confirm that ***$H_0$1:*** There is an effect between non performing loans and financial performance of Umurenge Sacco. ***$H_0$2:*** There are effects of interest rates, loan size and repayment installment on Return on Asset of Umurenge Sacco. ***$H_0$3:*** There are effects of interest rates, loan size and repayment installment on Net Interest Margin of Umurenge Sacco.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the final summary of the research findings, the conclusion, the recommendations and suggestions for future research. Both the summary of findings and recommendations are based on the objectives of the study, such as To examine the effects of interest rates on financial performance of Umurenge Sacco, to examine the effects of loans size on financial performance of Umurenge Sacco, to determine the effects of repayment installments on financial performance of Umurenge Sacco and to determine the relationship between non-Performing loans and financial performance Umurenge Sacco.

5.1 Summary of findings on the effects of interest rates on financial performance of Umurenge Sacco

The summary of findings indicates the regression summary representing the proportion of variance in financial performance of Umurenge Sacco by non performing loan on interest rates. From this table, it is shown that 90.2% of the total variance of the profitability was accounted for by the studied non performing loan. This means that the non performing loan (Effect on profitability, effect on economic development, effect on loan repayment) represents 90.2% of the variance in profitability, its illustrates the analysis of variance and by inspecting the significance level (which is .000 and <.05), it is noted that the regression model is highly significant and this help to confirm that there is relationship between non-Performing loans and financial performance Umurenge Sacco, also it's shows that the standardized coefficients for each technology and it reports that the change of one standard unit on effect on low level of savings was resulted in a change of 0.056 standard unit in the financial performance, the change of one standard unit on low supply of loan was result in a change of -0.092 standard unit in the financial performance, the change of one standard unit on effect on insufficient competition was result in a change of 0.998 standard unit in the financial performance.

5.2 Summary of findings on the effects of loans size on financial performance of Umurenge Sacco

The findings indicated the regression summary representing the proportion of variance in financial performance of Umurenge Sacco by non performing loan on loan size. From this table, it is shown that 90.2% of the total variance of the profitability was accounted for by the studied non performing loan. This means that the non performing loan (Effect on profitability, effect on economic development, effect on loan repayment) represents 90.2% of the variance in profitability, it's illustrates the analysis of variance and by inspecting the significance level (which is .000 and <.05), it is noted that the regression model is highly significant and this help to confirm that there is effect between non-Performing loans and financial performance Umurenge Sacco, also its shows that the standardized coefficients for each technology and it reports that the change of one standard unit on effect on profitability was result in a change of 0.396 standard unit in the financial performance, the change of one standard unit on effect on economic development was result in a change of 0.520 standard unit in the financial performance, the change of one standard unit on effect on loan repayment was result in a change of 0.053 standard unit in the financial performance.

5.3 Summary of findings on the effects of repayment installments on financial performance of Umurenge Sacco

The findings indicated the regression summary representing the proportion of variance in financial performance of Umurenge Sacco by non performing loan in repayment installment. From this table, it is shown that 91.9% of the total variance of the profitability was accounted for by the studied non performing loan. This means that the non performing loan (facility in repayment, Quick repayment, Credibility creation) represents 91.9% of the variance in profitability, its illustrates the analysis of variance and by inspecting the significance level (which is .000 and <.05), it is noted that the regression model is highly significant and this help to confirm that there is relationship between non-Performing loans and financial performance Umurenge Sacco and it's also showed the standardized coefficients for each technology and it reports that the change of one standard unit on facility in repayment was resulted in a change of 0.449 standard unit in the financial performance, the change of one standard unit on quick repayment will result in a change of 0.237 standard unit in the financial performance, the change

of one standard unit on Credibility opportunity will result in a change of 0.319 standard unit in the financial performance.

5.4 Conclusion

From the study's findings, the researcher conclude that factors such as leverage, nonperforming loans, and size determines the performance of Umurenge Sacco. Nonperforming loans has negative effect on Umurenge Sacco performance as loans are assets that need to generate returns and when loans given out are not recovered together with interest then it implies that more resources will need to be committed towards provision for nonperforming loans and additional costs will be used in financing recovery efforts.

5.5 Recommendations

From the findings and conclusions, the study recommends that Umurenge Sacco should credit for equity financing instead of debt financing if it wants to improve on its leverage. This involves funding growth through law level of savings, law supply of loan and insufficient competition on the effects of interest rates on financial performance of Umurenge Sacco. Effect on profitability, effect on economic development and effect on loan repayment on the effects of loans size on financial performance of Umurenge Sacco. Facility in repayement, quick repayment and credibility opportunity on the effects of repayment instalments on financial performance of Umurenge Sacco. The study also recommends that loan approval and monitoring procedures should focus on the borrower's cash flow and ability to repay in an effort to improve the quality of the loan assets and mitigate future allowances for loan losses (Amir, 2015) (Arena, 2008).

5.6 Suggestion for Further Study

Lastly, the researcher cannot claim that this research is exhaustive. Several issues, associated with the limitations inherent in this study, require further research considerations. The similar study could be done in other institutions within the country in order of augmentation of the findings

REFERENCE

AMIR. (2015). *Rwanda microfinance sector status report.*

Arena, M. (2008). *Bank failures and bank fundamentals: A comparative analysis of Latin America and East Asia during the nineties using bank-level data.* Journal of Banking & Finance, 32(2), 299-310.

Auronen, L. (2003). *Asymmetric information: theory and applications.* Paper presented at the Seminar of Strategy and International Business as Helsinki University of Technology.

Berger, A. N., & DeYoung, R. (1997). *Problem loans and cost efficiency in commercial banks.* Journal of Banking & Finance, 21(6), 849-870.

Freixas & Rochet, (2008). *Non-performing loans:* regulatory and accounting treatments of assets.

Bofondi, M., & Gobbi, G. (2003). *Bad loans and entry in local credit markets.* Bank of Italy.

Chang, R., & Velasco, A. (2001). *A model of financial crises in emerging markets.* The Quarterly Journal of Economics, 116(2), 489-517.

Hefferman,(2005). *Effect of Interest Rates on Non-performing Loans in Commercial Banks in Kenya.* Unpublished Masters. University of Nairobi.

Claessens, S., Kose, M. M. A., Laeven, M. L., & Valencia, F. (2014). *Financial crises: Causes, consequences, and policy responses*: International Monetary Fund.

Demirgüç-Kunt, A., & Detragiache, E. (1998). *The determinants of banking crises in developing and developed countries.* Staff Papers, 45(1), 81-109.

Disyatat, P., & Vongsinsirikul, P., (2003). *Monetary policy and the transmission mechanism in Thailand.* Journal of Asian Economics, 14(3), 389-418.

Collins & wanjau, (2014). *Nonperforming loans in Sub-Saharan Africa: causal analysis and macroeconomic implications*: The World Bank.

Sexto, (2008). *Microeconomics of banking*: MIT press.

Gabriel, J., & Saurina, J., (2005). *Credit cycles, credit risk, and prudential regulation.* Bank of Spain.

Hou, (20014). *Principles of microeconomics*: Cengage Learning.

Caporal & Gil-Alana(2014). *The impact of macroeconomic variables on Islamic banks financing in Malaysia.* Research Journal of Finance and Accounting, 2(4), 22-32.

Yang, Ahmad and Bashir, (2013). *Principles of economics*: Cengage Learning.

Gorter, M. C., & Bloem, M. A. M. (2001). *The treatment of nonperforming loans in macroeconomic statistics*: International Monetary Fund.

Klein, N. (2013). *Non-performing loans in CESEE: Determinants and impact on macroeconomic performance*: International Monetary Fund.

MacDonald, S. S., & Koch, T. W. (2006) *Management of banking*: Cengage Learning India Private Limited.

Zena,(2013). *An assessment of the causes of non performing loans in Tanzania commercial banks: a case of NMB bank plc* (Doctorate), Mzumbe University.

Bholat, Lastra, Markose, Miglionoco, (2016). *Banking instability and deposit insurance: the role of moral hazard.* Journal of applied economics, 19(2), 323-350.

Gabriel & Sourina, (2005). *Understanding the research process and methods. An introduction to research methods.* Unpublished MBA Thesis, School of Business: University of Nairobi.

Omwenga, N. K., & Omar, N., (2017). *Effects of Non-Performing Loans on the Financial Performance of Commercial Banks in Kenya.* Imperial Journal of Interdisciplinary Research, 3(5).

Louzis, (2012). *Factors that cause non–performing loans in commercial banks in Tanzania and strategies to resolve them.* Journal of management policy and practice, 12(7), 2012.

Freixas & Rochet, (2008). *Research methods for business students.* Pearson education.

Shahidul, I., & Shin-Ichi, N., (2015). *The determinants of bank net interest margins:* A panel evidence from South Asian countries.

Gerlach, P. & Shu, (2005). *Commercial banking crises in Kenya*: Causes and remedies. Global journal of finance and banking issues, 3(3).

Williams, C., (2007). *Research methods.* Journal of Business & Economic Research, 5(3), 65-72.

Xiaoping, F., & Heffernan, S., (2005). *Cost X-efficiency in China's Banking Sector.* W orking Paper, Cass Business School, City University, I. Ondon. 3D .

Hugher & Rochet, (2008). *Microfinance Default Rate in Ghana:* Evidence from Individual Liability credit contract.

Boudriga, Boulila & Jellouli, (2011). *Factors Affecting Bank Profitability in Pakistan*. The Romanian Economic Journal, 2(3), 6-9.

Adams & Von- Pischke (2013). *Modern banking in Theory and Practice*. England: Published by John Wiley & Sons Ltd, West Sussex PO19 1UD.

Zichard, (2011). *Impoverishing a Continent*: The World Bank and the IMF in Africa. 2004.

Gorter & Bloem, (2001). *In-House Training in Accounting for non-accountants for credit officers.*

Kwan & eisenbeis, (1994). *Overconfidence Arbitrage, and Equilibrium Asset Pricing. J. F., 56*(3), 921-965.

Microrate, (2003). *Determinants of Commercial Banks Performance:* Evidence from Jordan. International Research Journal of Finance and Economics.

Chary & Velasco, (2003). *Commodities in action:* measuring embeddedness and imposing values. *Sociol. Rev., 50*(4), 543-569.

Gans, K., (2011). *Capital Adequacy, Cost Income Ratio and the Performance of Commercial Banks: The Kenyan Scenario. The International Journal of Applied Economics and Finance, 3*(2), 35-47.

Kwan & Eisenbeis (1994). *Research Methods: Qualitative and Quantitative Approaches.* Publisher African Centre for Technology studies.

Freixas & Rochet (2008). *A Study on Financial Ratios of major Commercial Banks.*ResearchStudies, College of Banking & Financial Studies, Sultanate of Oman.

Stonecash M., (2011). *An exploration of the relationship between bank capital levels and return on equity.* Proceeding of the 16th Australasian Finance and Banking Conference, 1-15

Adebola Y., (2012). *The Impact of Credit Risk Management on the financial performance of Commercial Banks in Kenya*. DBA Africa Management Review.

Ahamad & B., (2013). *Banking Survey Report, The best banks this decade 2000-2009*, Think Business Limited,

Kenya.Oloo, O. (2011). *Banking Survey Report*, The best banks this decade2001-2010,*Think Business Limited, Kenya*.

Gans K. Markiw, (2011). *Effects of Banking Sectoral Factors on the Profitability of Commercial Banks in Kenya.* Economics and Finance Review, 1(5), 1-30.

Salas & Sourina, (1989). *Banker's Lending techniques*. London Chartered Institute of Bankers. Financial World Publishing.

Saunders M., Lewis P., & Thornhill A. (2007). *Research Methods for Business students*(4th Ed.). Essex, Pearson Education Limited

Sinkey J. greenawalt, (1991). *Sparse and stable Markowitz portfolios. Proc. Natl. Acad. Sci*., pp. 106.

Babihunga, (2007). *Bank Insolvency-Bad Luck, Bad Policy or Bad Banking*. Annual World Bank Conference on Development Economics.

Chambernan G. (1983). *A characterization of the distributions that imply mean-variance utility functions*, J. Econ. Theory, 29, 185-201.

Louzis, (2012). *Crossing disciplinary boundaries:* Applying financial portfolio theory to model the organization of the self-concept. J. Res. Personal., 41(2), 346-373.

Hughes & Mester, (1993). *Regional Economy Size and the Growth-Instability Frontier: Evidence from Europe"*. J. Reg. Sci., 43(1), 95-122.

podpiera & weill, (2008). *The CAMEL Rating System in Banking Supervision: a Case Study of Arcada University of Applied Sciences. International Business.*

Riz chiu (2004). *Microfinance: Developing Paths to Self-sufficiency.*

Roslan & Karim, (2009). *A Theory of Bank Capital*. The Journal of Finance, 55(6), 2431–2465.

Okorie (1986). *Modern portfolio theory,* 1950 to date. *J. Bank. Fin., 21*, 1743-1759.

Bhatt & tang's, (2010). *Rural Women and Microfinance in Ghana:* Challenges and Prospects

Chaudhary & ishfaq (2003). *Bank Ownership and Performance in the Middle Eastand North Africa Region.*

Young, (2009). *The Determinants of Commercial Bank Profitability in Sub-Saharan Africa.* IMF Working Paper.

Dembe, Allard E. and Boden, Leslie I. (2000*). "Moral Hazard: A Question of Morality?" Archived 2016-05-13 at the Wayback Machine New Solutions 2000 10(3). 257–79*

Krugman, Paul (2009). *The Return of Depression Economics and the Crisis of 2008*. W.W. Norton Company Limited. *ISBN 978-0-393-07101-6*.

Zandi, Mark (2009). *Financial Shock. FT Press. ISBN 978-0-13-701663-1*.

APPENDICES

Questionnaire

My name is MUSENGAMANA Adeline a student in University of RWANDA carrying out a research study on **Non- Performing Loan on Financial Performance of Microfinancce Institutions in Rwanda**. I request my kind respondents to answer the entire questionnaire by exhausting their opinions; therefore every answer is correct. Thank you very much for your assistance.

Please tick the appropriate box or explain where necessary.

SECTION A

BACKGROUND INFORMATION

1) **Gende**r
   ( ) Male
   ( ) Female
2) **Age**
   ( ) Between 21 – 28
   ( ) Between 29 – 36
   ( ) Between 37 – 44
   ( ) 45years – above
3) **Level of education**
   ( ) Bachelors Degree
   ( ) Masters Degree
   ( ) PhD level
4) **Marital status**
   ( ) Married
   ( ) Single
   ( ) Widow

Directions: please respond to the questions of your choice by using the corresponding letter(s) as guided;

SA : Agree with no doubt

A : Agree with some doubt

D : Disagree with some doubt

SD : Strongly disagree with no doubt

Response code: SA=1; A=2 ;D=3, SD=4

SECTION B

The interest rates on financial performance of Umurenge Sacco

	SA	**A**	**D**	**SD**
Low level of savings				
Low supply of loan				
Insufficient competition				

The loans size on financial performance of Umurenge Sacco

	SA	**A**	**D**	**SD**
Effect on profitability				
Effect on economic development				
Effect on loan repayment				

The repayment installments on financial performance of Umurenge Sacco

	SA	**A**	**D**	**SD**
Facility in repayment				
Quick repayment				
Credibility opportunity				

SECTION C

What are the measures to use to improve the performance of Umurenge Sacco in terms of interest rate, loan size, payment installments and collateral?

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