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"Credit risk management mechanisms and financial performance of microfinance banks – A case study of the Urwego Opportunity Bank"

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DECLARATION

I, SANGWAYIRE Spéciose, to the best of my knowledge hereby declare that this thesis entitled "*credit risk management and the financial performance of microfinance banks* " a case study of theUrwego Opportunity Bank is my original work and has never been presented elsewhere for the award of any academic qualifications.

Signature…………………………………

Date ………………………………………

DEDICATION

I dedicate this work first and foremost, almighty God for all blessings and comfort, to my dearest husband, Dr. Vincent RUSANGANWA and my children RUSANGANWAI. Nissi, RUSANGANWA.N.Eunice, RUSANGANWA I. Elvis, and RUSANGANWAI. Yanis, who knew from onset that the price of success is dedication, hard work and an unremitting devotion to the things that you want to see and encouraged me tirelessly.

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I extend my sincere gratitude to the staff of the Urwego Opportunity Bankfor their significant contribution to the research by taking time out of their busy schedule to answer to some pertinent questions.

I thank my family and friends to their prayers, support and encouragement to pursue my interest.

I would like to also express my gratitude to all those who have not been mentioned in this thesis work but gave us the possibility to complete this study.

CERTIFICATION

I, **Dr. Marcela Ramírez-Pasillas** certify that this research report entitled “Credit risk management mechanisms and financial performance of microfinance banks – A case study of the Urwego Opportunity Bank”was done under my supervision.

Supervisor

Dr Marcela Ramírez-Passillas

Signature

July 7th 2016.

TABLE N^{o} Title

LIST OF FUGURES AND ACRONYMS

BNR: National Banks of RWANDA

CB: Community bank

FRB: Federal Reserve Bank

HLI: Holistic Life Improvement

MBL: Micro-Business Loans

MFIs: Micro-Finance Institutions

NPA: non-performing Assets

NPL: nonperforming loan

NSG: New Solidarity Group Loans

OIBR: Opportunity International Bank of Rwanda

ROA: Return on Assets

ROE: Return on Equity

RWF: Rwandan Francs

SA: SocieteAnonyme

SFB: School of Finance and Banking

SMEs: Small and Medium eEnterprise

UOB: Urwego Opportunity Bank

WRR: World Relief Rwanda

ABSTRACT

As a poverty-laden country, Rwanda has since 2010 deregulated its financial services sector in order to boost economic growth and most of the effort was focused on the microfinance banking sector (Rwanda Business Report of 2013).Hitherto, the sector has operated under the new guidelines and four of the country's community savings co-operatives gained the status of microfinance banks. Whether the microcredit banks have improved their status as a result of the governments proper credit management orother factors contributed. This proposed study "Credit risk management and performance of microfinance banks in Rwanda", a case study of the Urwego Opportunity Bank, is to assess the effect of credit management on financial performance of microfinance banks in Rwanda.

Specifically, the study will seek toexplorethe credit risk management used by the Urwego Opportunity Bank to maximize its level of financialperformance. The study also ends by establishing howthe creditrisk managementmechanisms affect the financial performance of microfinance banks in Rwanda.The financial performance measure by the return on Assets (ROA) and return on equity (ROE) and the credit risk management mechanisms measured by the level the cost of bad debt.The research will be significant to the researcher, theUrwego Opportunity Bankand other researchers. The population will be selected from theUrwego Opportunity Bankemployees,using purposive sampling method methods.Both primary and secondary data will be collected through questionnaire and documentary review.

CHAPTER ONE. INTRODUCTION

1.1 Back ground of the study

Microfinance has become a revolutionary way to reduce poverty due to the fact that this type of organization and the way that it operates are better designed to face information problems(Armendariz and Murdoch, 2005; Giné et al. 2010). This goal is achieved by providing small size credits or loans to the poor people. Those clients do not have any guarantee or insurance for the received credits but have good ideas for investments. They are exposed to risks when doing a business. According to Bank of Jamaica (2005), the most significant risk that an institution faces in the credit granting and collection process is default.Default occurs when a borrower cannot meet his key financial obligations to pay principal and interest (Carey & Hrycay, 2001). That constitutes high potential of credit risk which can affect the solvency of financial institution.Credit risk is most simply defined as the potential that a bank's borrower or counterparty will fail to meet its obligations in accordance with agreed terms.

Credit risk is the risk of suffering financial losses for financial institutions due to customers or market counterparties fail to the contractual obligation to the institutions or banks. Credit risk is the risk of loss due to a borrower's nonpayment, while default rate is the probability that a debtor will default, by failing to repay principal and interest at time (Dziobek, 1998). Credit risk management involves the policies and procedures made to assess, identify measure, control and monitor the risk that can arise from the potentiality of the loan nonpayment or default. Like other financial institutions, microfinance banks face the high credit risk from the unsecured microloans (Churchill and Coaster, 2001). Credit risk management can be measured by the ratio of nonperforming loans and the cost of bad debt. In the credit risk management, it is important to establish a clear structure of the institution, the responsibility allocation and accountability (De Young, Roland and Zhuravskaya 2006).

Credit risk management is the process of *identifying, assessing, scoring and monitoring credits*. *Credit identification* is the pillar of risk management in the financial institutions and it is directly or indirectly linked to their business.

Manipulation of money or management of financial securities, loan contracts is risky. Credit risk identification process is to acknowledge the potential losses that may incur and starts assessing it from the selection of potential borrowers, taking decisions based on the real facts. Next, in credit risk *assessment*, the risk must be first all defined and identified by its principal sources and level of existence. It is to analyze the credit and determine its quality in order to determine the creditworthiness of the counterparty (Ken Brown &Peter Moles, 2014). It is to analyze his capacity and willingness to pay according the agreement. *Credit risk scoring* is the statistical assessment done on the borrower side using information available on his credit report, in order to know if the borrower is willing to pay. Finally, *credit risk monitoring* is the monitoring of the quality loan portfolio, by segmenting all customer depending on how they respect the schedule of repayment agreed in the contract. The monitor for example looks if the customer is paying regularly, delay one month and execute on the following month, if there is a delay of months and then measure are taken for customers who delay, and the starts classifying them according to their current situation. After their classification, some credits need a close follow up, or classified as substandard credit, doubtful or loss.

Microfinancebanks assess each credit and risk associated before the approval and disbursement of the credit in order to minimize the exposure to the losses. In managing credit, many researchersin microfinance credit institutions (MFIs) have concentrated on their financial performance and the performance of their customers frequently the SMEs (Rukwaro, 2000; Mokogi 2003). There isa high default rates among the Microfinance institutions. Microfinance bank increasingly recognizes the need to measure and manage the credit risk of the loans they have originated not only on a loan-by-loan basis, but also on a portfolio basis. This is due to the fact that only the aggregate credit exposure is the relevant factor for the future solvency of microfinance banks. The goal of credit risk management is to maximize a bank’s risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Microfinance banks, like other Banks, need to manage the credit risk inherent in the entire portfolio as the risk in individual credits or transactions (Fredrick, 2012). They are meant to reduce poverty since it is directed towards the poor people in the economy and the effectiveness of the functions is dependent on having well defined credit granting criteria (Microfinance Gateway, 2009). Many credit problems reveal the basic weaknesses in the credit granting and monitoring processes (Bank of Tanzania, 2010).

Therefore, the MFIs develop credit risk management mechanisms to identity and reduce the potentiality of risks from the lending activities.Risk management is the integration of recognized risk, risk assessment, and development of strategic management approaches that endeavor to mitigate the risk by use of managerial resources (Apps. R.,1996).For large business, risk management is part of business planning, but in MFIs it is like a new discipline, where only one or two staff are appointed in risk managementor simply the department does not exist. Risk management could be approached as acontinuous process, whichstarts by screening the borrower's request of a loan, defining the type of loan and stipulatingmechanisms forrecovering the amount lent.

In 2006, Rwanda experienced that someMFIs had important losses due poor internal organization and amismanagement of their loan portfolio, which caused significant difficulties in loanrecovery and nine microfinance banksclosed due to that reason(BNR, 2008).In 2008, due to the importance of the MFIs, Rwanda reformed the sector.The parliament adopted a microfinance law that was published in 2009 and new regulationwas established and published, setting the guideline for MFIs(BNR, 2009).The Central Bank of Rwanda has regulated and enhancedthe financial sector by providing the internal tool of assessment, control and monitoring the quality of loan portfolio. The tool indicates how to classify the credits in order to assess the probability of default and report it quarterly (BNR, 2011). From that background, credit risk management is an issue for all lenders inthe MFIs, including banks and microfinance banks.Microfinance bank is recent in Rwandan banking sector where the first microfinance bank was licensed in 2007and the four others followed. And later after, in 2011 ZIGAMA CSS licensed cooperative formed to serve welfare of Rwandan military families at its start, after some years include Rwandan national police and correctional services membership. In the same year also AgasekeBank was licensed which is recently acquired by the Bank of Africa.

In 2012, another microfinance bank called UNGUKA BANK ltd was licensed and lastly the AB Bank in 2013.It is interesting to know how credit risk management are managed and its effect on their performance, reason of the focus of this study.

1.2 Problem statement

Credit risk management is an important element in the microfinance banksactivities, which are risky by nature. Commercial banks deal with big borrowers and give the credit that have collateral or guarantee. The case of microfinance banks is different. With a hybrid position, microfinance banks deal with all categories of borrowers, big and small including many people with lower incomes, who in many case do not have the mortgage to secure their loans.People with lower incomes incur the risk of not-fulfilling their loan payments. Even if in general MFIs and in particular microfinance banks are fighting to be sustainable, there are cases of losses are registered (Dziobek, 1998).

In Rwanda, at the end of 2007, in the banking sector, there wereabout 92billion RWF of deposits and more 82 billion of credits (BNR, 2008). 7 billion RWF of the creditswere non-performing credits and gives the average rate of 8% (BNR, 2008). At that time, according to the regulation in force, there was a problem with credit risk definitions and other risk associatedlike the risk of loss and portfolio risks. (BNR, 2008). In 2014, the rate of non-performing loan (NPL)reduced to 5, 82 % (BNR, 2015). The NPL affect the financial performance of banks as well as microfinance banks. This indicates the difficulties in loan portfolio management and credit risk are associated with banks in general and microfinance banks in particular in Rwanda.The focus of this study is the case microfinance bank, one type of MFI in Rwanda. There is a need to examine the risk credits mechanism utilized by microfinance banks and how these mechanisms affect its financial performance.

1.3 Objective of the thesis

The general objective of this study is to explore the effect of credit risk management mechanisms on the financial performance of microfinance banks in Rwanda. Tofulfill this goal, a case study on the credit risk management mechanisms at the Urwego Opportunity Bank (UOB) in Kigali, Rwanda is conducted.This thesis has the following specific objectives:

- To identify the credit risk management mechanisms used in theUOBin Rwanda.
- To explore to what extend the credit risk management mechanisms influence the financial performance in the UOBin Rwanda.

1.4 Research Questions

There are two research questions guiding the work in this thesis:

- What are the credit risk management mechanisms used by the UOBin Rwanda?
- To what extent the credit risk management mechanismsinfluence the financial performance of the UOB in Rwanda?

1.5 Scope of the study

This study explores the credit risk management mechanisms on performance of microfinance banks with the case study of the UOB. It focuses on credit risk management mechanisms used to maximize its level of profitability and how the loaning criteria influence the loan recovery and the relationship between credit risk management mechanisms andtheperformance ofthe UOB. To measure the financial performance,the study used the financial statements of five years from 2011 and 2015.

1.6 Significance of the thesis

This thesis provides an indication of how the credit risk management mechanismslooks like in Rwanda'sUOB. The findings for this research show that the credit risk management mechanisms start from the analysis of the capacity of the potential borrower which guide the decision taking of the lender.This study is significant since it shows the difference between the respondents' perceptions and results from the bank statement. This results signals the importance of combining both indicators to better understand risk credit management.The resulting recommendations in the study are helpful for microfinance banksbecause it gives the critical areas where the banks can focus toassess and mitigate risks associated with their loan portfolio; hence improve their level of performance.

1.7 Structure of the thesis

This thesis is organized into six main chapters in well-structured and organize order as outlined below. The first chapter provides the general introduction of whole thesis which is presented in current section. The second chapter gives an overview of some literature review on risk management and related study. The chapter three outlines the methodology used with details of steps to be taken to conduct the research, the population and sampling techniques and data analysis approaches will be covered. Chapter four provides analysis and interpretation obtained through this methodology. Chapter five presents the summary,conclusion and recommendations of the thesis.

CHAPTER 2.LITERATURE REVIEW

2.0 Introduction

In this chapter, the researcher presents a review of literature on the importance, challenges and processes of credit risk management and its relation to financial performance of microfinance banks. It is basically related to the views extracted from the journals, books and reports. This review helps to understand the topic under study and also identifies different gaps of further research.

2.1 Literature review

The majority of small businesses do not have the enough resources or enough expertise to operate a sound credit management system (Mc Meaning, 1999). A company operating in financial services may give credits to its customers. Sometimes customers fail to repay the Credit, it incurs at that time a risk of default. Credit management is a system set by a company including procedures and system of controls to ensure the effective collection of customer payments in order to reduce the risk of non-payments for the granted credits to its customers when it incurs the risk of nonpayment (Mokogi, 2003). Microfinance as institutions made for providing loans for customers with low income and receiving savings are exposed to the risk. Customer of low income commonly known as poor people normally are willing to pay because of the advantage they have for not requiring collateral (Gaurv, 2011).

Credit risk is generated directly or indirectly from the business of the financial institutions. It refers to the loss incurred because of the nonpayment of a loan other types of credit and the default is the failure of borrower to repay the principal of loan and related interest in the set time. (Dziobek, 1998). Firms which offer tot to their customer, have to set procedures to manage them. The identification, measurement, monitoring, and control of risk are part of the process to reduce their impact from the possibility of default in loan repayments (Mc Donough, 1998). Risk management also defined as processes that can identify, analyze manage the exposure to risk. However, there is potential of default for borrowers who not respect the repayment schedule and sometimes fail completely to repay in microfinance.

When there is default, risk is incurred, the microfinance institutions, like other institutions transacting cash, have to manage the inherent risks efficiently and effectively to safeguard its customer's deposits and shareholders' equity. According to the Bank of Ethiopia (2010), if risk is not well managed, it can endanger the safety and soundness of microfinance and then lead to losses, to the failure of meeting its social and financial objectives. According to the Federal Reserve Bank, complete risk management is made by practices designed to limit risk associated with individual products lines and systematic, quantitative methods to identify, monitor and control aggregate risks across a financial institution's activities and products (Philips, 1996).

2.2 Importance of credit risk management for the microfinance institutions

Risk management is an important element in any institutions providing financial services in general and in microfinance in particular. Credit risk management is effective when a micro-finance has processes to manage their activities susceptible to create credit risks in the way to reduce the negative impact on its earnings and capital. The credit risk management is very important for the long term sustainability of microfinance institutions (Cooperman, Mills and Gardner (2000).Deferent reason can reveal the importance Credit risk management for microfinance Institutions. The is a rapid growth, the services for a big number of customers scattered on big geographic area and offering wider range of products and services, having the lending growth and being market driven, requires to the microfinance a good financial performance and avoiding unexpected losses (Microfinance network, 2005). It is also stated that because of double objectives, social and financial performance, the decision making is also challenging.

Credit risk management requires the availability of policies and procedures to identify, to analyze, to measure and to monitor in the way of mitigating or reducing the negative impact that they can have to the company. For the microfinance, when they start to operate, their services are simple and small at the setting. With its growth, from the simple microfinance to commercial or microfinance bank, dealing with credits and loans, the financial risks are there. They have to find the way of mitigating them. The setting of guidelines, policies andprocedures adapted to their current exposure, is very important. The challenge occurs when thereare difficulties of complying with the policies and procedures, the rules and regulations.

2.4The challenges facingmicrofinance institutions in credit risk management

The challenges facing the MFIs are the poor **governance**and inexperienced and skilled **resources**. These challengesinfluence the recruitment of new managers that can balance social andcommercial objectives of MFIs(Microfinance network, 2000).

Poor governance. Governance in microfinance becomes an issues managerand founders have different missions and priorities. When fulfilling their MFIs objectives may prefer other non-pecuniary rewards which lead to the agency theory. Agency theory addresses the relationship where in a contract ‘one or more persons the principal(s) engage another person the agent(s) to perform some service on their behalf which involves delegating some decision making authority to the agent. This happens because of the separation of ownership and control, when the owner of the company or the board of directors (the ‘principals’) have to employ managers (‘agents’) to run the business and need to monitor their performance to ensure they act in the owner’s interest. Managerial behavior, agency costs and ownership structure according to Jensen and Mackling (1984) helped toestablish agency theory as the dominant theoretical framework of the literature, and position shareholders as the main stakeholders (Lan & Heracleous, 2010). The governance of MFI is composed by the board of directors of MFI include Investors, creditors, management and donors. Some MFIs include also clients (Mitchel, Agle, and Wood, 1997). Normally the Board of directors has power to reduce inefficiencies in the organization. The preoccupation of donors is the outreach to sustainability while private investors focus on the profitability of their equity. Having different interest, they may influence managers, thus the Agency theory stated above.

Unexperienced and unskilled resources. Most of microfinance banks used inexperienced unskilled resources. The employee newly recruited need the induction course and training in order to be familiar with the job. A stud y conducted in Nigeria in 2014, revealed that at 76.68%, microfinance banks, failed and sometimes collapse because of poor incompetent of managers.

The study reveal also that the recruited staff do not have university education or recruit bank's dismissed staff or simply inexperienced staff. That kind of staff can affect thefinancial performance of microfinance banks by taking wrong or unjustified decisions.

2.5 Mechanisms of credit risk management in microfinance banks

Dealing with customers of rural sector with low income, microfinance banks experience the failure of bad repayment of loans, multiple credit risk mechanisms have been developed in order to mitigate and reduce the default of repayment. It includes the Five C's of credit (collateral, capital, capacity, character and conditions) the collateral substitutes, the group lending system, the dynamic incentives, the regular repayment schedule and the provision of nonfinancial services.

2.5.1 Five C´s of credit

The mechanisms of the five C's (**character, capacity, capital, conditions and collateral**) are generally used in the lending process by microfinance (Abedi, 2000). The 5C's refers to the general investigation the lender used to assess the borrower capacity and ability of repayment before taking decision of lending. Through 5 C's the lender checks the cash flow from the borrower business, the debt-to equity ratio to examine the financial risk the borrower may incur, the industry level, the payment history, business experience, the borrower educational background, check the credit reference bureau,etc.

Character. Characteris the general impression you make on the prospective borrower or investor. The lender will form a subject opinion as to whether or not you are sufficiently trust worthy to repay the loan or generate a return on funds invested in your company. Your educational background and experience in business and in your industry will be considered. The quality of your references and background and the experience levels of your employees will also be reviewed.The analysis of character helps the bank to know the stability of the borrower, his reputation of honesty, integrity and solvability.

Capacity. Capacity to repay is the most critical of the five factors, it the primary source of repayment cash. The prospective lender will want to know exactly how you intend to repay a loan. The lender will consider the cash flow of the business, the timing of the repayment, and the probability of successfully payment of the loan. Payment history on existing relationship-personnel or commercial-is considered an indicator of future payment performance. Potential lenders will want to know other source of repayment. The analysis of capacity helps the bank to ensure that the borrowers have the ability to repay back and clean their obligations as required. For example, if the historical background of the customer,he delayed or did not pay the loan given, thus he cannot receive the additional loan.

Capital. Capital is the money you personally have invested in the business and is an indication of how much you have at risk should the business fail. Interested lenders and investors will expect you to have contributed from your own assets and to have undertaken personal financial risk to establish the business before asking them to commit any funding. Analyzing capital is to know how the financial and human resources of the client's business are, whether the financial resources are matching with adequate capital.

Conditions. Conditions describe the intended purpose of the loan. Will the money be used for working capital, additional equipment or inventory? The lender will also consider the local economic conditions and the overall climate, both within your industry and another industry that could affect your business.Analyzing the condition as is to assess the borrower within the economic cycle she/he operates.

Collateral. Collateral or guarantees all are additional forms of security that you can provide to the lender. Giving a lender collateral means that you pledge the asset you own, such as you home, to the lender with the agreement that it will be the repayment source in case you cannot repay the loan. A guarantee, on the other hand is just that someone else sign a guarantee document promising to repay the loan if you cannot. Some lenders may require such a guarantee in addition to collateral as security for a loan. The collateral is the asset given to the lender as an insurance that it can sold and pay loan in case the borrower fails. It has to be analyzed with its real liquidation value.

2.5.2 Group lending system

Group lending mechanism as Armendariz and Murdoch (2005) argue that the secret to the high repayment rates on loans is tied closely to the use of the group lending contracts. Group lending refers to the type of credit where all group members are reliable each other to repay the credit, the solidarity of the group to ensure the loan repayment. It reduces the asymmetric of information, all members share the information and are known each other which increase the level of repayment.

2.5.3 Dynamic Incentives

Another practice or mechanism used to mitigate credit risk is dynamic incentives (Besley, 1995). It refers to the decision taken by microfinance to not refinance the borrowers who have default of payment. The mechanism can be applied on group lending and individuals. The mechanism has a positive impact to the borrower pretending to request another loan for the future. But nowadays, with the increasing competition, its value diminished (Morduch, 1999).

2.5.4 Collateral substitutes

Collateral substitutes,another mechanism used by lender to reduce the high risk of the loan using a kind of guarantee. The lender retains 5% for every unit borrowed as the emergency fund, which serves as guarantee in the case the borrower fails to repay (Morduch,1999). The mechanism also considersother official documents the driver's license, marriage certificate other important document for the borrower as collateral substitutes (Babu and Singh, 2007).

2.5.5Regular repayment schedule

Regular repayment schedule, disciplines imposed by lenders which increase the rate of repayment for microfinances and enhance the capacity of repayment for customers. According to Armendariz and Morduch, (2000)andMorduch, (1999).The mechanism help the microfinance to maintain the repayment rate and present main advantages to the MFIs, such as the screening out of the undisciplined borrowers at an early stage, the warning given to loan officers and peer group members about potential future problems, permits the banks to get hold of cash flows before they are consumed or otherwise diverted and requires that the borrowers have an additional income source on which to rely since the repayment process begins before investments bear fruit. These advantages permit a positive selection of clients for the lender and for diversified households (Armendariz and Morduch (2000).

2.5.6The provision of non-financial services

The provisional of nonfinancial services aretrainings, health services or other services given to customers of microfinance to develop their technical and managerial skills, toimprove and update their knowledge in their production. In addition to the services given complementing the credit and savings to the borrower to repay, the services enhance the relationship between the MFI and its customer (Edgcomb and Barton, 1998). All those mechanisms are developed and used by MFI to mitigate and reduce the credit risks and other risks associated at the same time reducing losses that can affect financial performance of MFIs.

2.5.7 Loans limits

Microfinance banks like other commercial banks apply certain conventional risk management approaches to mitigate credit risk. Such approaches include setting loan limits to mitigate risk exposure especially from new clients that have no collateral, standardized loan terms, zero tolerance to delinquency and group-based lending (Ekka et al (2011).

2.5.8 Measurement of Credit risk management

The credit risk management can be measured by the cost of bad debt the microfinance bank of financial institutions can incur when the borrowers did not repay the amount. Bad Debt Cost is incurred when MFI lends a sum of assets to a debtor and is granted to be repaid under certain agreements; in many cases, however, the debtor is unable to repay the debt at the fixed period of time by a certain date. In addition, changes in the valuation of debt currency change the effective size of the debt due to changes in market/interest rates (inflation or deflation), even though the borrower and the lender are using the same currency. Consequently, this can lead to bad debt cost. Bad debt cost includes provision of bad debt, doubtful debt,lawyer's fees, consultancy fees & commissions to auctioneers (Apps, 1996). Bad debt costs ratio can be calculated as: *BDC Ratio = Bad debt cost / Total cost*.

2.6 Financial performance

According to the business dictionary financial performance involves measuring the results of a firm's policies and operations in monetary terms. These results are reflected in the firm's return on investment, return on assets and added value. Financial performance refers to accomplishment of financial activity of the company. It explained that the financial performance is the way a firm can use its assets to generate revenues.It is also the company's ability to generate new resources from daily operations over a given period (Apps, 1996). Financial performance of MFIs depends on the corporate governance,outreach, financial sustainability and profitability(Korir, 2011).

2.7 Effect of credit risk management on the financial performance

MFIs play an important role in contributing to a country's economic development. If MFIs sector does not perform well, the effect to the economy could be huge and broad. From their empirical findings, Demirguc-Kunt and Detragiache (2000) suggested that MFI profitability is an important predictor of financial crises. The study of the determinants of the MFIs profitability is significant as it helps to understand current conditions of the MFI sector and the critical factors to consider in making decisions and creating new policies either for recovery or for improvement (Woolcock, 1999). The aim of this research is to establish how credit risk management affect the financial performance of microfinance in Rwanda. The Financial performance is viewed or expressed in terms profitability. Buffet (2005) defined the profitability of the company by its ability of earning a reasonable profit on the owners' investment. The financial performance of MFIs in terms of profitability is measured by the following ratios of Return on Equity ratios, return on assets and the net the net profit margin. Profitability is a big component of this thesis and it can be measures according to:

- **Return on equity:** The Return on Equity measures the Net Earnings in relation to the Total Stockholders Equity. The idea is that the higher the ROE, the faster the dividends will grow, and so the higher the intrinsic value. Return on Equity describes how well contributions from stockholders generated earnings for the company. A company wants to maximize its use of stockholder's equity, as it is the stockholders the company must answer to on how they spent the stockholder's money. Return on Equity basically shows how any dollars of earnings were generated per dollar of equity the stockholder's provided. Return on equity is the ratio of net income of a business during a year to its stockholders' equity during that year. It is a measure of profitability of stockholders' investments. It shows net income as percentage of shareholder equity. Return on equity is an important measure of the profitability of a company. Higher values are generally favorable meaning that the company is efficient in generating income on new investment. Investors should compare the ROE of different companies and also check the trend in ROE over time. However, relying solely on ROE for investment decisions is not safe. It can be artificially influenced by the management, for example, when debt financing is used to reduce share capital there will be an increase in ROE even if income remains constant (Christopher &Santosh , 2006). Return on Equity ratios is expressed by the Net income/Total Equity x100.

- **Return on Assets (ROA):** An indicator of how profitable a company is relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings. Calculated by dividing a company's annual earnings by its total assets, ROA is displayed as a percentage. Sometimes this is referred to as "return on investment" The assets of the company are comprised of both debt and equity. Both of these types of financing are used to fund the operations of the company. The ROA figure gives investors an idea of how effectively the company is converting the money it has to invest into net income. The higher the ROA number, the better, because the company is earning more money on less investment. An indicator of how profitable a company is relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings. Calculated by dividing a company's annual earnings by its total assets, ROA is displayed as a percentage (Damodaran, 2007).Return on assets is expressed by the Net income/Total assets x100.
- **Net profit margin**: is calculated by taking revenues and adjusting for the cost of doing business, depreciation, interest, taxes and other expenses. This number is found on a company's income statement and is an important measure of how profitable the company is over a period of time. The measure is also used to calculate earnings per share. Net profit often referred to as the bottom line, net profit is calculated by subtracting a company's total expenses from total revenue, thus showing what the company has earned (or lost) in a given period of time (usually one year), also called net income or net earnings (Ramos, 2000). Net profit margin is expressed by the net income/net sales x 100.

2.8 Research gap addressed in this thesis

Several researchers carried out their research on credit risk management on the financial performance of MFIs.Among them, Kiawa (2015) assessed a the effect of credit risk management procedures on financial performance among microfinance institutions; Korir (2011) conducted a study in Kenya in 2011,he studied the effect of credit risk management on deposit taking of MFIs.He aimed to evaluate how effective of credit risk management on performance of MFI's.

In Rwanda, many research focus on credit risk management and performance of commercial banks (Ugirase,2011), others scholars concentrated on the study of social impact and performance of MFIs. Due to the fact that bank's primary function is to act as intermediary between savers and borrowers, the barometer for measuring their earnings is interest from lending. The above studies show that, many different researches carried out on credit risk management and performanceof MFI's, but they did not focus on mechanisms used by microfinance banks to maximize their level of financial performance, thus the contribution of other research is very important.

2.9 Conceptual framework

According to Smyth (2004) a conceptual framework is an analytical tool with several variations and contexts. It is used to make conceptual distinctions and organize ideas. Strong conceptual frameworks capture something real and do this in a way that is easy to remember and apply. Conceptual framework is structured from a set of broad ideas and theories that help a researcher to properly identify the problem they are looking at, frame their questions and find suitable literature.

The study came up as shown in the table 2.1 by measuring the effects of credit risk management mechanisms with the ratios of cost of bad debt compared with the financial performance measured by the profitability ratios.

Table 2.1 Conceptual framework

Credit risk management mechanisms measurement	Financial performance measurements
Cost of bad debts ratio	**Return on asset ratio** **Return on Equityratio**

Source: researcher, June2016

CHAPTER 3: METHODOLOGY

3.1 Introduction

Research is a logical and systematic search for new and useful information on a particular topic.This chapter focuses on the research design, study population, sampling design, and research procedure used in the study. It also states data collection methods through which data was collected from both primary and secondary sources, data processing and analysis tools chosen and the limitations that the researcher encountered in conducting the present work.

3.2 Research Design

The research design is composed by the strategies used to conduct research. The study a case study that was informed by primary and secondary sources. The descriptive approachisused to explain the data collected in this case study.

3.3Population

Population refers to the complete set of individuals (subjects), objects or events having common observable characteristics in which the researcher is interested in studying (G.O., Donkor, F. and Obeng, S. (1999).Population is the mass of units of analysis (e.g. respondents) about which, the researcher will measure his or her variables (Bakkabulindi,2004).Odera (2006) defined population as all members of a well-defined group. That is, population means all the elements in a well-defined set of values. The population of this study focuses the staff of Microfinance banks existing in Rwanda, which is a total of four banks.

3.4 Convenience sampling technique

Because of the nature of the study, a convenience samplingtactic was used. Maxwell (1997:87) further defined convenience sampling as a type of sampling in which, particular settings, persons, or events are deliberately selected for the important information they can provide. In this case, all staff, officers, managers and directors working in credits, audits, risk and compliance, are selected and a small number of employees working in Operations was selected.Thus, the UOB’s headquarter and its branches in Kigali working specifically in credits, risk and compliance, audit and operations were selected as a case in this study.

3.5 The sample size under study

According to black and Champion (1967), a sample is a portion of elements taken from a population, which was considered as representative of the population. According to the areas of the study, the size was selected from the staff working in credit department, Risk and compliance, Audit and operations as follows:

Category	Sample size
Credit	45
Audit	3
Risk and compliance	4
Operations	8
Total	60

3.6Data sources

There are two data sources that are used in this study, primary data and secondary data

- **Primary Data.** This study used primary data from the original observation collected for the first time on the topic, and the sources of the data include the information collected from the employees of the UOB by using a questionnaire.

- **Secondary data.** Secondary data are based on the published sources of information, the data which had already been collected, compiled and presented earlier by others researchers and that could be used for the purposes of the investigations. The information used are reviews such as the data from publications, reports and website of the UOB and Central Bank of Rwanda, reports and publications of academic researchers and newspapers.The secondary data was used in this study to complete the knowledge on the topic and to compare the second hand information directly collected from the employees.

3.7Data collected

The primary data was collected through a questionnaire with descriptivequestions and it can be found in the appendix. The structured questionnaires were the major instruments in data collection, structured questionnaires with clear, simple and short ended questions were used to check and ensure consistency of respondents. Documentary analysis was used for secondary data whereby the researcher used financial statements of the UOB and different publications.The researcher distributed questionnaireto collect the information from respondents and wait them from three to five days. Questionnaires are formulated from the objectives. 60 questionnaires were distributed to the employees of theUOB.Respondents are given the chance to tick the most appropriate response to an item and the questionnaire items included the vital issues to provide all the necessary answers to the research questions. The structured questionnaire is administered personally to reduce the risk of failure to respond or return it without response and also ensure that relevant and accurate information is obtained from the respondents.

3.8 Data analysis

Editing of data was the first task in data processing which consisted of examining errors and omission in collecting data and making necessary corrections (Campbell, 2007). This was done to ensure that the questions were answered to avoid unnecessary and unclear responses and also to assure that information provided by the respondent was complete and relevant.Coding is used to summarize data by classifying the different responses given into categories for easy interpretation. According to Kakooza (1996:29), coding refers to assigning a symbol or a number to a response for identification purposes.

The data provided by the respondents were presented into tables including the numbers of frequencies and percentages of response to particular questions (Creswell, 2003). The researcher used both tables to show the dominance of important ideas presented or provided by respondents in response to particular question and interpreting the given information into calculated percentages. The analysis of the data was done using the statistical package for social sciences (SPSS), this helped to summarize the data in tables. In addition, Microsoft Excel also was used to presents data in figures. Data was presented according to research findings after processing mainly in form of tables. Descriptive statistics were used to describe the perception of respondents on the research topic. The correlation analysis is used to measure the relationship between credit risk management mechanisms and financial performance ratios.

3.9 Limitations of this thesis

In spite of the introduction letter form the Human resources of the UOB's headquarter, the departments and branch manager was reluctant to give the researcher full access to all requested information. Fabrication of information was another limitation to the study especially where some respondents gave out wrong information to the researcher. This was minimized by careful selection of the participants and by explaining to them very well the purpose of the study. The presentation of the authorization letter from the Human Resources department was also used when meeting the respondents.

3.10Ethical consideration

Respondent's participation was voluntary and they had the right to withdraw from the study at any time they were not interested. Confidentiality was promised and ensured, by requesting respondents not to write their names on the questionnaire. In addition, an authorized letter which explained the aim and objectives of the study accompanied each questionnaire.

CHAPTER 4: ANALYSIS AND INTERPRETATION

4.1 Introduction

In this chapter, the researcher presents the interpretation of the findings of the research. Using tables, the researcher did the presentation of the collected data while interpretation was done based on frequencies and percentages. The researcher used a sample of 60 respondents as indicated in chapter three. Those questionnaires were distributed to 60 employees of theUOBand all questionnaires were completed. This implied a participation rate of 100 % was sufficient enough to carry out this research.

4.2Background

4.2.1 MFIs context in Rwanda

The microfinance sector in Rwanda is relatively young. Although small self-help peasant organizations (such as tontines and Ibimina) have existed for some time ago, the sector started to be formalized with the creation of the first BanquesPopulaire in 1975.Following the 1994 genocide in Rwanda, the microfinance industry experienced spectacular development, with the support of international organizations involved in humanitarian assistance. These gave material assistance to the population and had many programs which involved Microcredit components. During the emergency period, loans were not, in some cases, distinguished from grants or gifts, and created confusion amongst the population. This added to the development of a culture of non-repayment, especially at BanquesPopulaire, which contributed to the non-performing loan rate of 45%. (NBR REPORT, 2000:11) As the Government moved into a development phase, several NGO’s transformed themselves into microfinance institutions, in many cases operating without professionalism.

After 1995, the Government launched the reform of the financial sector with the objective of creating an effective and efficient financial system. The major components of that reform included the strengthening of the legal and regulatory frameworks as well as the supervisory framework of the banking system, the introduction of new financial instruments, the liberalization of interest rates, and the opening up of the banking system to foreign banks. These reform measures have had a tremendous positive impact on the development of the financial system.

In 1999, NBR was assigned the responsibility to regulate and to supervise Microfinance institution. The years 2002 and 2003 were characterized by introduction of twoinstructions: one for regulating microfinance activities in general and another specificallyto regulate Savings and Credit Cooperative Societies. Under the law No 08/99 governing banks and other financial institutions, NBR has introduced two instructions for regulating micro finance activities. Those are instructions no 06/2002 and no 05/2003. (NMP, 2007:23) These instructions on microfinance considered all microfinance institutions in the same way, whatever their size or services rendered. This universal legislation and extended supervision was chosen as the best way to protect the savings of depositors is to have profitable microfinance institutions that are adequately capitalized, and whose management is healthy and prudent. Microfinance Institutions which only offer credit were regulated and controlled to avoid the risk of contagion of depletion of capital reserves (especially given the small size of Rwanda) and to help foster a good culture of credit. There was no central organ or apex organization in place, which had the mission, capacity and authority to set standards, ensure their application and punish those who did not conform. Self-regulation has more chances of success when Microfinance institutions are attached to a sound structure or agree to respect the standards set by such an apex organization.

The regulatory provisions of 2002 and 2003 have been considered as a constraint for many microfinance institutions incapable of conforming to certain conditions required to be officially recognized. Nevertheless, these NBR instructions aimed at framing the management of these institutions so as to ensure their sustainability and thus protect public deposits.

4.2.2History of Urwego Opportunity Bank

The UOB is one of the ten (10) licensed commercial banks in the Republic of Rwanda. The Urwego Opportunity Bank of Rwanda, SA, was created in July 2007, as a result of a merger between Urwego Community Banking SA (Urwego), and Opportunity International Bank of Rwanda SA (OIBR). Urwego, founded by World Relief Rwanda in 1997, was a leading microfinance institution (MFI) in Rwanda. Since 2004 Urwego had been operating as an independent and regulated MFI in the country with branches in Kigali and in the provinces. OIBR was established by Opportunity International, an international microfinance network dedicated to the development of transformational, microfinance network dedicated to the development of transformational, commercial microfinance banks in developing countries.

Since 1997 in the field of microfinance activities, (UOB, 1997) has been serving Rwandans who are economically-active but whose banking needs is underserved. As a Christian microfinance bank, the UOB seeks to provide opportunities for those in poverty to transform their lives, not only economically, but socially and spiritually. The UOB offers a full range of deposit and savings accounts that provide a safe means for storing savings and earning interest. Savings accounts allow clients to participate in investment opportunities, insure against hard times, and pay for expenses of life events such as weddings and funerals. Loan products include:

- Traditional group loans through Trust Group/Community Banking
- Group lending model, individual Micro-Business Loans, Micro-Consumer loans, and other flexible loan products.

Holistic Life Improvement (HLI) modules provide a unique service of giving specific advice to promote client transformation. The modules cover three broad areas: Business Management, Household Financial Management, and Health Management. UOB is also providing micro insurance for mitigating life risk and affordable remittances. URWEGO began its operations in July 1997 as a World Relief program to alleviate poverty by providing credit, savings, and training services that allow poor micro entrepreneurs to take advantage of economic opportunities. The word “urwego” is Kinyarwanda for “ladder to success.” Urwego aims to permanently help the poor escape poverty by becoming a self-sustainable microfinance institution that can continue without donor funding. After the merger between opportunity international bank Rwanda S.A and the UOB, the new microfinance bank is licensed by the Central Bank of Rwanda in 2007 (http:/www.uob.rw)**.**

The mission of the UOB is alleviating poverty in the name of Jesus Christ by creating a self-sustaining and indigenous microfinance institution. Furthermore, the vision of the UOB is to be a sustainable financial institution alleviating economic, social and spiritual transformational impact on the underprivileged Rwanda through the delivery of variety of financial services and related training in a way that reflect Jesus Christ's love. The UOB has the following objectives:

- To offer savings, credit, micro insurance, financial and non-financial products and services to the economically active poor,
- To expand operations in the most economically effective way with a focus on acquisitions and consolidations,
- To establish a sustainable commercial bank focused on microfinance in Rwanda,
- To provide banking services to rural and underserved areas through employing innovative technologies and delivery systems,
- To transform, empower and have a significant impact on the lives of the clients, their businesses, families and communities.

4.2.3Amount of credit given by MFI and UOP

The amount of credit given by microfinance institutions is totalizing RWF 116.5 billion as the table 4.1 indicatesin different economic sector and the amount of loan given by the UOB is RWF 14,36billion in 2015 (source financial statements 2015.

Table 4.1 MFI's Outstanding Loans by Economic Sector (FRW billion)

Economic Sector	**UMURENGE SACCOs**	**Other MFIs**	**TOTAL**
	Amount in billions	**Amount in billions**	**Amount in billions**
Agriculture, Livestock, Fishing	10.1	9.1	19.2
Public Works and Buildings	3.8	32.7	36.5
Commerce, Restaurants, Hotels	15.1	25.7	40.8
Transport, Warehouses, Communications	1.8	2.8	4.6
Others	3.2	12.2	15.4
TOTAL	**34.00**	**82.5**	**116.5**

Source: BNR, Monetary policy and financial stability statement, Feb 2016

4.2.4 Sectors that are financed by credits of MFI and UOB

According to the Urwego Opportunity Bank (UOB, 2016), many sectors of activities are financed by microfinanceinstitutions includingagriculture, fisheries and livestock, manufacturing activities, water and energy activities, mortgage industries, commercial and hotel, transport and warehousing, insurance, service sector an non classified activities.Specially, the components of the UOB financing include the*business and agriculture activities, insurance Services, remittance Services, Education/Training and transport.Agricultural Loans* affects approximately 90% of Rwanda's population. The agricultural sector, also, accounts for roughly one third of Rwanda's gross domestic product and generates approximately two thirds of Rwanda's foreign exchange. Thus, it is vital for the UOBto provide agricultural credit products and services for the agricultural sector in order to holistically transform rural communities. Agricultural lending help rural clients access the capital that they need while helping the bank achieve portfolio diversification and market expansion. The sector of activities iscovered with the loan product called individual loan/business loans which include business, consumer, housing and education loans.*Insurance activities*for microenterprises and consumers so they can secure protection against unexpected tragedies, natural disasters, and/or crop failures.*Remittance Services*for affordable channels so microenterprises and consumers can send and receive funds.*Transport* where they provide Motorcycle Loans as one of the product offered to their customers. Although Rwanda has a limited road system the use of vehicles is on the increase. People will continue to look for economical forms of personal transportation, and the most logical option for many will be the motorcycle.*Education/Training*fortheon-going education/training for microenterprises and consumers onthe household financial management, healthmanagement and business management, so they can acquireskills inmanagement and leadership and achieve social and spiritual transformation.

4.2.5Level of non-performing Assets (NPA %)

In Rwanda, the level of non-performing assets measures the non-performing loan ratio (NPLs) in the banking industry stood at 6.2% in 2015 from 6.0% in 2014 and 8% in 2011. It is a result of combined efforts of increased bank usage of credit information services and BNR's strict enforcement of prudential norms has helped to improve the asset quality of banks (BNR, Monetary policy and financial stability statement, 2016).

4.2.6Industry average of NPA's in Rwanda Measure that the MFIs and UOB uses to minimize NPAs

In Rwanda, the asset quality of microfinance institution slightly deteriorated with NPL ratio increasing from 7% in December 2014 to 7.9% in December 2015. To ensure that credit risk in microfinance institutions progressively reduce, BNR has visited different MFIs, with special attention to SACCOs, and their staff were trained on quality management of the loan portfolio (BNR, 2016).

4.3 Demographic characteristics of respondents

In this section, the researcher presents the findings of the research extracted from the data collection instruments. The researcher focused on distribution of respondents by level of education, distribution of respondents by experience and distribution of respondents by position in UOB.According to the table 4.2, the level of education of the respondents of which the research was conducted, 50 respondents who represents 83.3%, hold Bachelor's Degree, 5 respondents who represents 8.3% hold Master/PhD, 3 respondents who represents 5% have Diploma and the last are 2 respondents who represents 3% hold certificate.For the level of experience held by the respondents, 26.7% are of less than a year, 31.7% have 1-2 years of experience, 13.3% have 3-5 years of experience and 28.3% have over 5 years of experience.For the position held by the respondent, for which the research was conducted on, 45 who represent 75% of respondents, work in Credit/sales department, 8 respondents (13.3%) are in Operation and 4 respondents(6.7%) in risks and compliance and 3 respondent (5%) in Audit.

Table 4.2: Education, experience and job position of respondentsat the UOB

Education	No of respondents	Valid Percent	Experience	No of respondent	Percent	Job position	No of respondent	Percent
Certificate	31	3,3	**Less than 1Year**	16	26,7	**Credit**	45	75,0
Diploma	19	5,0	**Between 1-2 Years**	19	31,7	**Operation**	8	13,3
Bachelor's degree	9	83,3	**between 3-5 Years**	8	13,3	**Risk and compliance**	4	6,7
Masters/ PhD	1	8,3	**Over 5 years**	17	28,3	**Audit**	3	5,0
Total	60	100,0	**Total**	60	100,0	**Total**	60	100,0

Source: primary data, June2016

4.4. Credit risks experienced by UOB

The objective of this question is to identify at what extend the UOBexperience the transactional risks. The risks identified are transactional and portfolio risks.The table4.3indicates that 31.7% of respondents strongly agree that the UOB experience the transactional, the equal number of respondents 28.3% agree and 28.3% confirm that there is moderate transactional risk.

Table 4.3: Perception of respondents on the existence of transactional risks in UOB

Degree of agreement	N° of respondents	Percent
Strongly agree	19	31,7
Agree	17	28,3
Moderate	17	28,3
Disagree	5	8,3
Strongly disagree	2	3,3
Total	60	100,0

Source: primary data, June2016

The table 4.4 also indicates that there is high probability of portfolio risks. Most of respondent agreed and strongly agreed that UOB experience the portfolio risk, respectively 36.7% and 40.0%. In general, the majority of respondents agree that the UOB experience the portfolio risks. The portfolio risks are risk related to the investments the Banks is investing in.

Table4.4: Perception of respondents on the existence of portfolio risks in UOB

Degree of agreement	N° of respondents	Percent
strongly agree	22	36,7
Agree	24	40,0
Moderate	13	21,7
Strongly disagree	1	1,7
Total	60	100,0

Source: primary data, June2016

4.5 Credit Riskmanagement mechanisms used by microfinance banks

This subsection identifies the credit risk mechanisms used by microfinance banks as loaning criteria. It focuses on the use of 5C'sof credit (**character, capacity, capital, collateral and conditions)**, collateral substitutes, and group lending system, the use of Dynamics incentives, the regular repayment schedule, and the provision of non- financial services to clients.

- ***Perception of respondents on the Use of Five C's of Credit***

For the question that UOB Ltd uses and consider the 5C's of credit as a loaning criteria, a great percentage of the respondent have been strongly agreed that they use it appropriately and they are represented by 81.7% in the total of the sample of 60 respondents of this study, See the table4.5.This criterion is applicable for individual loans and consumers' loans as illustrated in the below table.

Table4.5:perception of respondents on the Use of Five C's

Degree of agreement	N^{o} of respondents	Percent
strongly agree	49	81,7
Agree	9	15,0
Moderate	1	1,7
Strongly disagree	1	1,7
Total	60	100,0

Source: primary data, June2016

- ***Perception of respondents on the request of collateral substitutes***

For the question I have asked to the respondent regarding on the fact that the UOB Ltd consider before giving the loan to the clients that they first request the client to show the collateral security that can be taken in case the clients fail to repay back the loan and become the security to the bank so that the bank cannot end-up falling into losses. According to the table 4.6,the larger number of the respondent have answered that UOB Ltd ask first the client who want to get a loan to show their collateral substitutes and 51.7% of the total respondents strongly agree with the statement and 31.7 % agree. 83.3% of respondent agreed to the use of collateral substitutes as the below table indicates.

Table 4.6:Perception of respondents on the request of collateral substitutes

Degree of agreement	N° of respondents	Percent
strongly agree	31	51,7
Agree	19	31,7
Moderate	9	15,0
Strongly disagree	1	1,7
Total	60	100,0

Source: primary data, June2016

Perception of respondents on the use of Group lending system

On the question of the use the of group lending mechanism in the UOB, as shown in the table 4.7,most respondents have strongly agreed that UOB Ltd apply Group Lending system in the process of giving loan to the clients in the group system and they represent 73.3% and 15 % agree. In general, 88.3% confirm the use of that mechanism.

Table 4.7: Perception of respondents on the use of Group Lending

Degree of agreement	N° of respondents	Percent
strongly agree	44	73,3
Agree	9	15,0
Moderate	5	8,3
Strongly disagree	2	3,3
Total	60	100,0

Source: primary data, June2016

Perception of respondents on the on the use of dynamic incentives

As table 4.8 revealed, dynamic incentives are practices used by other microfinance to retain % of loan amount as loan guarantee and is paid after the total repayment of the requested loans, most of respondents strongly disagree on the use of dynamic incentives, 38.3% strongly agree to the use that practice. But the process used is to have a certain amount of savings which stay on the account of borrower until the repayment is completely done not a percentage of the loan. Some staff denies the use this practice where 16.7% of respondents disagree and 18.3% strongly disagree. About 35% of respondents deny the use of that mechanism. The illustration is on the table below:

Table 4.8: Perception of respondents on the use of dynamic incentives

Degree of agreement	N^{o} of respondents	Percent
strongly agree	23	38,3
Agree	9	15,0
Moderate	7	11,7
Disagree	10	16,7
Strongly disagree	11	18,3
Total	60	100.0

Source: primary data, June 2016

) *Perception of respondents on the on the use of the regular repayment schedule*

For the above data regarding on the use completing the requirement of regular payment schedule for the client to respect repayment plan of the bank, 71.7% of the respondents strongly agree to the statement 20% agree, see the table 4.9. The practice is used as loaning criteria. Before giving loans credit staff examines the repayment schedule if the customer has ever borrowed in that bank and consult the credit reference bureau if the customer do not have other unsecured loans not paid to others banks.

Table 4.9:Perception of respondent on use of the regular repayment schedule

Degree of agreement	N° of respondents	Percent
Strongly agree	43	71,7
Agree	12	20,0
Moderate	4	6,7
Disagree	1	1,7
Total	60	100.0

Source: primary data, June2016

- ***Perception of respondents on provision of non-financial services to the clients***

For the statement that the UOB Ltd offers non-financial services to its clients, 41.7 % strongly agree 30% agree and to the statement. Thirdly 13.3% responded that the mechanism is used moderately. At 71.7% of respondents confirm that UOB Ltd offer non-financial services to its client as the table 4.10. UOB offer trainings about project management, spiritual life before giving the loan.

Table 4.10: Provision of non-financial services to the clients

Degree of agreement	N° of respondents	Percent
Strongly agree	25	41,7
Agree	18	30,0
Moderate	8	13,3
Disagree	8	13,3
Strongly disagree	1	1,7
Total	60	100,0

Source: primary data, June2016

4.6 Credit limits

In the lending process, there is a credit limits depending on the creditworthiness of the customer. This part explores that credit can limit considering the Credit history of the customer, the account balance and the consistency of income.For the credit history, most confirm that credit history is considered in limiting credit to be given to customer where 73.3% strongly agree, 15% agree which makes 88.3% as illustrated by the table l4.11.

Table4.11:Credit history

Degree of agreement	N^{o} of respondents	Percent
Strongly agree	44	73,3
Agree	9	15,0
Moderate	5	8,3
Disagree	2	3,3
Total	60	100,0

Source: primary data, June2016

For the account balance in the table 14.12, it is not an important thing to consider in limiting loan to grant. The big number is for respondent who indicated that this practice is used at the moderate level and 30% strongly agree, 23.3% agree, 31.7 responded that the account balance is considered at moderate level and 13.3 % deny the mechanism as the table below illustrates.

Table4.12: Account balance

Degree of agreement	N° of respondents	Percent
Strongly agree	18	30,0
Agree	14	23,3
Moderate	19	31,7
Disagree	8	13,3
Strongly disagree	1	1,7
Total	60	100,0

Source: Primary data, June 2016

The consistency of income is highly considered in limiting the amount of loan where 81.7% of respondent strongly agree, 13.3% agree and 5% moderate. As it is shown in the table 4.13, 95% confirm that it is the base of credit limit.

Table4.13: Consistency of income

Degree of agreement	N° of respondents	Percent
Strongly agree	49	81,7
Agree	8	13,3
Moderate	3	5,0
Total	60	100,0

Source: primary data, June2016

4.7 The use of credit risk management mechanisms influences loan recovery

This part explores at what extent the customers borrowed after using the above credit risks mechanisms repay the loans granted by the microfinance bank. The study explore how to credit risk management mechanisms influence the loan recovery in microfinance banks, as revealed by the table 4.14, the findings from the study established that the loan granted considering the five c's credit as shown by the mean of 4.32, the loan granted with the use of the mechanism of granting loan by requesting the collateral substitutes represented by the mean of 4.65the use of group lending mechanism as shown by the mean of 4.33, the loan granted by using the dynamic incentives represented by the mean of 3.62, the loan granted considering the regular repayment schedule represented by the mean of 4.62, the loan granted after providing the non-financial service to customer shown by the mean of 3.50. Overall the loan granted by requesting collateral substitutes and by considering regular payments schedule of customers were the two most important C's.

Table4.14: Credit risk management mechanisms influence the loan recovery

Credit risk management mechanisms	Strongly disagree	Disagree	Moderate	Agree	Strongly agree	Mean
Loan granted considering the 5 C's of credit	0	3	8	16	33	4.32
Loan granted by requesting collateral substitutes	0	1	0	18	41	4.65
Loan granted in Group lending system	0	2	13	8	37	4.33
Loan Granted with use dynamic incentives (retaining % of loan amount as loan guarantee)	0	4	23	25	8	3.62
Loan Granted by considering the Regular repayment schedule of customer	0	2	5	7	46	4.62
Loan Granted with the provision of non-financial services (offer training to customers or any kind of support when granting loans)	0	8	25	16	11	3.5

Source: primary data, June2016

4.8 Relationship between credit risk management and financial performanceof UOB – perceptions of respondents

This subsection focuses on the relationship between variables under study, such as credit risk management and profitability of UOB based on the results presented in the table4.15. This relationship has been obtained through views and opinions of UOB employees according to the research objectives.Concerning the views of respondents, as illustrated by the table below, for the statement that credit risk management help to minimize losses of UOB, most of respondent strongly agree and agree to the statement as shown by the mean 4.73.The credit risk management has no implication to the financial performance of UOB, most of respondents strongly disagree and disagree as shown by the mean of 1.28, for the statement that Credit risk management is an ongoing process rather than a onetime event, most of respondent strongly agree and agree to the statement as shown by the mean of 4.60, for the statement that there is any relationship between the Credit Risk Management and the Financial Performance of Banks, most of respondent strongly agree and agree as shown by the mean of 4.17.

Table 4.15: Influence of credit risk management on financial performance of UOB

statements	Strongly disagree	Disagree	Moderate	Agree	Strongly agree	Mean
Credit risk management helps to minimize losses to UOB	0	0	3	10	47	4.73
Credit Risk management has no implication to the financial performance of UOB	44	15	1	0	0	1.28
Credit risk management is an ongoing process rather than a onetime event	1	2	3	8	46	4.6
Do you agree there is any relationship between the Credit Risk Management and the Financial Performance of your Banks	0	0	1	16	43	4.17

Source: primary data, June2016

4.9 The UOB financial performance

In the table 4.16, thesection focuses on the ratio of financial performance measured by the profitability indicators as well as the credit risk management indicator. The profitability of the UOB is in this study, measured by the return on Asset (ROA), the return on equity (ROE). ROA is calculated by taking total income after taxes/total average assets and ROE is calculated by taking net income after taxes/total average equity.

Table 4.16: Indicators of UOB profitability since 2011– 2015

Profitability indicators \ Year	2011	2012	2013	2014	2015
Return On Asset	0.021	0.030	-0.014	-0.022	-0.003
Return On Equity	0.085	0.145	-0.059	-0.098	-0.13

Source: Secondary data

In the table 4.17, the credit risk management mechanisms is measured by level of the cost of bad debt.If the mechanisms used influence the loan recovery, the measurement of the mechanisms effect can be viewed with the level of the cost of bad debt. If the cost of bad debtis reduced (low), the financial health increase and means that there a good credit risk management in the Microfinance bank. The cost of bad debt is calculated by taking the bad debt cost/the total cost.

Table 4.17: Indicators of UOB credit risk management mechanisms since 2011 – 2015

Credit risk management indicators \ Year	2011	2012	2013	2014	2015
Cost of bad debts	0.029	0.033	0.086	0.051	-0.005

Source: Secondary data

4.7.2 Relationship between credit risk management and financial performance

The table 18 indicates relationship between the cost bad debts and the return on Asset from 2011 – 2015.Using Pearson correlation coefficient, the correlation coefficient between cost of bad debt and ROA equals to 0,244, when p >0.1 mean that there is no correlation.The correlation coefficient between cost of bad debt and ROE equals to 0,255, when p >0.1 mean that there is no correlation.These results indicate that is no significant correlation between credit risk management mechanism and the financial performance of the UOB. This indicate, the study shows that from the ratio of its financial statement, the UOB has very good credit risk management mechanisms.

Table 4.18: Relationship between credit risk management and financial performance since 2011 – 2015 – Correlations

Variables		Cost of bad debt	ROA	ROE
Cost of bad debt	Pearson Correlation	1	,244	,225
	Sig. (bilateral)		,693	,716
	N	5	5	5
ROA	Pearson Correlation	,244	1	,991**
	Sig. (bilateral)	,693		,001
	N	5	5	5
ROE	Pearson Correlation	,225	,991**	1
	Sig. (bilateral)	,716	,001	
	N	5	5	5

**. Significant level of correlation 0.01 (bilateral).

4.8 Answers to the research questions

4.8.1 What are the credit risk management mechanisms used by the UOB in Rwanda?

According to the first research objective, the study focused on the credit risk managementmechanisms used in the UOB, this study revealed that 81.7% of respondents said that they employed the5 C's of credit in the screening and, 83.4% confirm the use of collateral substitutes, 88,3% confirm the use of Group lending,53.3% confirm the use of dynamic incentives,91.7% confirm the use regular repayment schedule,71,7% confirm the provision of nonfinancial services. This meant that respondents favored the use of collateral substitutes, Group lending, and regular repayment schedules over the use of dynamic incentives. The dynamic incentives are less favoredbecause the way they use that mechanism is different to the way it stated in the question. Some responded that there is no % required and others responded that there is a certain amount retain which remains on the account until the loan is completed repaid.

4.8.2To what extent the credit risk management mechanisms influence the financial performance of the UOB in Rwanda?

The study revealed that respondents indicated that there is a relationship between credit risk management and financial performance (table 13). Respondents also agree that it helps to minimize losses of the bank.However, when using the financial statement data, the result shows that there is no positive relationship between the credit risk management mechanisms measured by the level of the cost of bad debt and the return on asset at 0.224 and return on equity at the level of 0.225. From the findings of this study, the results confirm that while the perceptions of respondents consider that the outcomes of the credit risk management mechanisms influence the financial performance of the UOB, there is no relevant effects between the cost of bad debt and ROA/ROE. This suggest that the UOB has good risk credit management mechanisms at place.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of research findings, conclusions, recommendations and Suggestions for further study.

5.2 Summary

The objective of this study was to explore the effect of credit risk management mechanisms on the financial performance of microfinance banks in Rwanda. To fulfill this goal, I conducted a case study on the credit risk management mechanisms of the UOB in Kigali, Rwanda.This study showed that the UOB consideredanalysis of the credit worthiness of potential borrowers, the system analyzes five properties of the borrower (5C's of credit) by minimizing the level of bad debts and non-performing loan to increase the financial performance; the collateral substitutes, the group lending, the dynamic incentives, the regular repayment schedule, the provision of nonfinancial services are used as credit risk management mechanisms. The cost of bad debt ratio of UOB was correlated with the financial performance indicator to verify the findings.

5.3 Conclusions

There are two objectives guiding the work in this thesis:

- **To identify the credit risk management mechanisms used in the UOBin Rwanda**.

The credit risk management mechanisms used include, the five C's, the collateral substitutes, the dynamic incentives, the regular repayment schedule and the provision of nonfinancial services offered the customer such training in the way of managing financial household, projects and businesses.According to the first research objective, the credit management mechanisms used in UOB this study revealed that the majority of the respondents (81.7%) agreed that the UOB use the 5 of C's (i.e. character, capacity, capital, collateral and conditions) before the acceptance or rejection of borrower credit offer as credit risk mechanisms. 82 % of the respondents agreed to the use of collateral substitute, 78% of respondent agreed to the use of group lending system, 53% of the respondent agreed to the use of dynamic incentives, 92% of the respondents agreed to the use of regular repayment schedule and, 72% of the respondents agreed to the use of provision of nonfinancial services. Furthermore, the study revealed that the use of credit risk mechanisms influenced the loan recovery where the loan granted considering the five c's credit influence the loan recovery. However, the study showed that they apply these credits mechanisms different depending on the circumstances.

- **To explore to what extend the credit risk management mechanisms influence the financial performance in the UOB.**

The study revealedthat while respondents perceive that there is a positive correlation between credit risk management mechanisms. When using the financial performance of the UOB measuring the credit risk management mechanisms with the cost of bad debt and the financial performance with the return on asset and return on equity ratios,the study found there is no significant correlation between cost of bad debts and ROAequals to 0,244and cost of bad debt and ROE equals to 0,255.This is the signals for good credit riskmechanisms managementat the studiedthe UOB.

5.4 Recommendations

As this research found that credit risk management mechanisms influence the loan recovery and reduce the level of bad debt. As the bad debt are reduced, also indicate the health in financial performance and the low rate of non-performing loan, since the credit risk management mechanisms influence the financial performance, the researcher recommends to the management of the UOB and other microfinance Banks to put more emphasis on the use of credit risk management mechanisms to increase their level of financial performance.

The study found that that from 2013, there is high rate of recruitment of new employees and at the same time the decrease of its financial performance with its income loss, the study found that the level of bad debt is low which should influence positively the financial performance.

Especially to the UOB, the researcher recommends to its:

- to enhance employee team by the more trainings to improve the business knowledge to ensure the effectiveness of credit risk identification and assessment before granting credits to its customer to mitigates the credit risk and improve the financial performance.
- To investigate the relationship between its financial performance losses and employees

cost.

This study called credit risk management mechanisms and financial performance of microfinance banks is limited on the following objectives credit risk management mechanisms used by UOB, and credit risk management mechanisms influence the financial performance of the UOB.Hence, the researcher suggested that future researchers should focus on these areas; the contribution of credit risk analysis to the performance of borrowers, the contribution of credit risk management to the customers' retention and lastly the impact of bad debts to the economic growth of the country.

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APPENDIX

1. Profitability Ratios

Profitability indicator/Year 1.ROA	2011 Amount in "000"	2012 Amount in "000"	2013 Amount in "000"	2014 Amount in "000"	2015 Amount in "000"
net operating income after taxes	183,292	399,387	(206,447)	(346,092)	(51,261)
total asset	11,113,689	15,488,376	14,422,398	16,809,285	19,718,522
Average total assets	8,778,254	13,301,032	14,955,387	15,615,841	18,263,904
ROA ratio	**0.0209**	**0.030**	**-0.014**	**-0.022**	**-0.003**
2.ROE					
Net operating income	183,292	399,387	(206,447)	(346,092)	(51,261)
Total equity	2,251,412	3,265,501	3,711,248	3,365,156	4,380,961
Average total equity	2,157,053	2,758,457	3,488,375	3,538,202	3,873,059
ROE ratio	**0.085**	**0.145**	**(0.059)**	**(0.098)**	**(0.013)**

Source: UOB financial statements 2010-2016

2. Cost of bad Debt ratios

Credit risk management indicators/year	2011 Amount in "000"	2012 Amount in "000"	2013 Amount in "000"	2014 Amount in "000"	2015 Amount in "000"
bad debts cost ratio (loss on credit risk)	91,108.85	141,330.15	434,892.55	265,678.12	(24,577)
provision for doubtful debt	66,766	133,891	403,117	204,772	(30,168)
losses on bad debts	24,343	7,440	31,776	60,906	5,591
Total cost (total expenses	3,126,562	4,296,083	5,067,079	5,192,348	5,390,982
Cost of bad debt ratio	**0.029**	**0.033**	**0.086**	**0.051**	**(0.005)**

Source: UOB financial statements 2010-2016

3. RESEARCH QUESTIIONNARE

Dear respondents, you have been selected to participate in this study. This study is called"**'Credit risk management mechanisms on financial performance of microfinance banks in Rwanda'**, Case Study of UOB (2012 -2015)"; this research is purely for academic purposes. The information provided will be treated with highest confidentiality. **Please rrespond by ticking the most appropriate response.**

SECTION A: Identification of Respondents

1. Your level of education

Certificate	Diploma	Bachelor's Degree	Master's Degree / PhD

2. How long did you work in UOB?

Less than 1 year	1-2 years	3-5 years	Over 5 years.

3. What is your position in UOB?

26. Credit	Operations	Risk	Audit

Section B:

Question Relatives to the research question: Credit risk types

4. **Credit risks experienced by microfinance banks institutions are transaction risk and portfolio risks.**

Rate the following types of risks depending on the existence of them in your bank

Use: 1: Strongly agree, 2: Agree, 3: moderate, 4: disagree, 5: strongly disagree.

Types of credit risks	1	2	3	4	5
1. Transaction risk					
2. Portfolio risk					

5. **The following mechanisms used by microfinance banks as loaning criteria .Does your bank apply them?**
According to your views, at what extent your institution apply them? Use: 1: **Strongly agree, 2: Agree, 3: moderate, 4: disagree, 5: strongly disagree.**

Criteria for granting loans	1	2	3	4	5
6. consider the 5 C's of credit					
7. Request collateral substitutes					
8. Group lending					
9. Use dynamic incentives (retaining % of loan amount as loan guarantee)					
10. Consider the Regular repayment schedule of customer					
11. The provision of non-financial services (offer training to customers or any kind of support when granting loans)					

3. **Among customers lent with above criteria, who experience the high rate in the loan repayment?**

According to your views, fill the following table using: **1 strongly agree, 2: Agree, 3: moderate, 4: disagree, 5: strongly disagree**

Criteria for granting loans	1	2	3	4	5
12. Loan granted consideringthe 5 C's of credit					

13. Loan granted by requesting collateral substitutes					
14. Group lending					
15. Granted with use dynamic incentives (retaining % of loan amount as loan guarantee)					
16. Granted by considering the Regular repayment schedule of customer					
17. Granted with the provision of non-financial services (offer training to customers or any kind of support when granting loans)					

4. Credit limits

According to your views, fill the following table using: 1 strongly agree, 2: Agree, 3: moderate, 4: disagree, 5: strongly disagree.

Factors which determine the credit limits (loan amount to lend a client)	1	2	3	4	5
18. Credit history					
19. Account balance					
20. Consistency of income					

1. Relationship between Credit risk management and bank performance

According to your views, fill the following table using: **1: Strongly agree, 2: Agree, 3: moderate, 4: disagree, 5: strongly disagree**

Importance of Credit risk management	1	2	3	4	5
21. Credit risk management helps to minimize losses to UOB					
22. Credit Risk management has no implication to the financial performance of UOB					

23. Credit risk management is an ongoing process rather than a onetime event					
24. 22. Do you agree that there is a relationship between the Credit Risk Management and the Financial Performance of your Bank?					