



**UNIVERSITY OF RWANDA – GIKONDO CAMPUS  
COLLEGE OF BUSINESS AND ECONOMICS**

**IMPACT OF CREDIT ON WELFARE  
IMPROVEMENT IN RWANDA.**

**CASE STUDY: KORUTEGANYA UMURENGE SACCO OF NYAMABUYE**

*By:*

**MUVUNA Mediatrice**

***Reg. Number: 214003065***

**Supervisor: Prof. Murty. S. Kopparthi**

**KIGALI, July, 2017**

## **DECLARATION AND RECOMMENDATION**

### **DECLARATION**

This thesis is my original work and has not been presented for an award of a degree, diploma or certificate in this or any other University.

Signature: ..... Date: .....

Muvuna Médiatrice

### **RECOMMENDATION**

This thesis is submitted with my approval as University Supervisor

Signature: ..... Date: .....

Prof. Murty. S. Kopparthi

School of Business

## **DEDICATION**

I dedicate this thesis to my husband Kabanda Richard, daughter Sheja K. Kenzy and son Cyungura K. Gawen for their patience and moral support.

## **AKNOWLEDGEMENTS**

This thesis is an end of my journey to obtain a Master degree in Finance. In pursuing this study, I am highly indebted to several people. I would like to express my sincere gratitude to my supervisor Prof. Murthy. S. Kopparthi for diligently supervised the whole of my research work, his guidance and support are highly appreciated. I gratefully acknowledge the direction I got from Dr. Kabanda Richard in the early stage of the thesis and guidance to statistical package use. My gratitude goes to the Post graduate studies direction for the assistance and orientation from the beginning of the Master program. I would also like to thank Koruteganya Umurenge SACCO (KUSACCO) for having timely availed to me the data I needed. I also extend my gratitude to my colleagues at the University of Rwanda, especially in the Master Program of Finance for their collaboration and encouragement during my study journey.

## **ABSTRACT**

In recent years, governmental and nongovernmental organizations in many low-income countries have introduced financial inclusion programs, whereby the poor are the most targeted. However, most of the targeted people, including the poor have limited access to labour income, and consequently are credit constrained. In addition, constraints in age, bank regulations, lack of knowledge of the members, and infrastructures are hindering the efforts to financial inclusion. This study set out to determine the effect of credit on welfare improvement of KUSACCO members. It aimed at identifying the contribution of loan granted by KUSACCO to the improvement of wealth, education, and health of the KUSACCO members.

Primary data on the selected respondents were collected using a structured interview schedule and secondary data were obtained from the Umurenge SACCO Headquarters. The effect of credit is obtained by comparing the level of wealth, education, and health during the period before and after credit is granted to the members. In addition, to ensure that the effect is significant, the ANOVA test was performed, and results confirm the positive effect of credit on income of the members. Future studies on welfare improvement effect of credit should include all other determinants of w, and also at the whole country level.

## TABLE OF CONTENTS

DECLARATION AND RECOMMENDATION-----	1
DECLARATION-----	1
RECOMMENDATION-----	1
DEDICATION-----	2
AKNOWLEDGEMENTS-----	3
ABSTRACT-----	4
TABLE OF CONTENTS-----	5
LIST OF TABLES-----	8
ABBREVIATIONS AND ACRONYMS-----	9
CHAPTER ONE-----	1
GENERAL INTRODUCTON-----	1
1.1. Background of the study-----	1
1.2. Problem Statement-----	3
1.3. Research Questions-----	4
1.4. Hypothesis-----	4
1.5. Objectives-----	4
1.5.1 General Objective-----	4
1.5.2 Specific objectives are:-----	4
1.6 Research Methodology-----	5
1.7 Signifiante of the study-----	5
1.8. Limitations of the study-----	5
1.9. Organization of the study-----	6
CHAPTER TWO-----	7

LITERATURE REVIEW -----	7
2. 1 Theoretical literature Review-----	7
2.1.1 Impact of Credit on welfare Improvement -----	7
2.1.4 Indicators of Welfare Improvement-----	8
2.1.5 Link between Financial Development, Financial Inclusion and poverty reduction-----	8
2.2 Empirical Literature Review -----	9
Conclusion-----	10
CHAPTER THREE -----	11
RESEARCH METHODOLOGY -----	11
3.1. Introduction -----	11
3.2 Research Design -----	11
3.3 Study population -----	11
3.4 Sample size -----	12
3.5 Data Collection-----	13
3.5.1 Instrument Development -----	13
3.6 Data analysis -----	13
3.6.1 Analytical method -----	13
3.6.2 Comparative Analysis -----	14
3.7 Limitation of the study -----	14
Conclusion-----	14
CHAPTER FOUR-----	15
IMPACT OF CREDIT ON WELFAREIMPROVEMENT OF KORUTEGANYA UMURENGE SACCO MEMBERS-----	15
4.1 Introduction-----	15
4.2 Demographic characteristics of respondents-----	15

4.3 Impact of Credit on wealth improvement of KUSACCO members -----	17
4.3.1 Distribution of income for KUSACCO members before and after use of loan granting----	17
4.3.2 Distribution of investment for KUSACCO members before and after use of loan granting	18
4.3.3 Distribution of savings for KUSACCO members before and after use of loan granting ---	19
4.4 Impact of Credit on health improvement of KUSACCO members-----	20
4.5 Impact of Credit on Education improvement of KUSACCO members-----	22
4.6 Analysis of Variance for household income of KUSACCO members-----	23
4.7 Impact of Credit to household expenditures -----	24
Conclusion-----	25
CHAPTER FIVE -----	26
CONCLUSIONS AND RECOMMENDATIONS -----	26
5.1 Conclusions-----	26
5.2 Recommendations -----	26
REFERENCES -----	27
APPENDIX -----	a



## LIST OF TABLES

Table 4.1: Demographic characteristics patterns (Age, and Gender) -----	16
Table 4.2 Distribution of financial income before and after financial inclusion -----	17
Table 4.3 Distribution of Income before and after financial inclusion -----	18
Table 4.4 Distribution of money savings before and after financial inclusion -----	19
Table 4.5 Distribution of KUSACCO members to health insurance institutions before and after financial inclusion -----	21
Table 4.6 Distribution of KUSACCO members to Education features before and after financial inclusion -----	22
Table 4.7 Mean and Standard Deviation of KUSACCO members income before and after loan granting -----	23
Table 4.8 Analysis of variance of income for KUSACCO members before and after loan granting -----	24

## **ABBREVIATIONS AND ACRONYMS**

AFI: Alliance Finance Inclusion

ANNOVA: Analysis of Variance

BCR: Banque Commerciale du Rwanda

BK: Bank of Kigali

BNR: Banque Nationale du Rwanda

EAC: East African Community

FI: Financial Inclusion

GoR: Government of Rwanda

KCB: Kenya Commercial Bank

KUSACCO: Koruteganya Umurenge Sacco

MFI: Microfinance Institution

MIS: Medical Insurance Scheme

MMI: Military Medical Insurance

RAMA: Rwandaise d'Assurance Malady

SACCO: Saving and Credit Cooperative

UNCDF: United Nations Capital Development Fund

UR: University of Rwanda

# CHAPTER ONE

## GENERAL INTRODUCTON

### **1.1. Background of the study**

During the last decade, the objective of Financial Inclusion worldwide was to ensure that everyone has access to good quality and affordable financial services. As defined by the Global financial Development Report (2014), financial inclusion is the share of individuals and firms that use financial services. According to McKinsey (2010) the working poor needs and can afford the services of formal financial systems. Also, that more than 60% of the populations living in Africa, Asia, Latin America and the Middle East do not use formal banks or microfinance institutions when they borrow and save money.

Banks began operations in Rwanda in the 1960's upon the creation of Banque Nationale du Rwanda (BNR), with some of the oldest banks being Banque Commerciale du Rwanda (BCR), and Bank de Kigali (BK). There has been a steady growth of financial service providers since the early 2000's with the entry of a number of new players from East Africa and other African countries. EAC banks include the Kenya Commercial Bank (KCB), Equity Bank and Crane Bank which entered the Rwandan banking sector through their expansion plans. Other regional players such as Ecobank, I & M Bank, GT Bank, and Access Bank have recently joined the growing number of regional brands by way of mergers and acquisitions. The number of licensed banks in Rwanda currently stands at 12 and is complimented by 5 microfinance banks in 2015, 480 SACCOs in 2013, and many other microfinance institutions (MFIs) and non-bank financial institutions.

New trends in the telecommunications industry have recently introduced and greatly enhanced use of mobile financial services and are playing a very crucial role in financial development and financial inclusion. Mobile financial services are among the most promising mobile applicable in developing the world and are transforming entire economics mostly especially in commerce, health care and agriculture. In Rwanda, the number of mobile financial services providers keeps increasing.

They include MTN mobile money, Tigo Cash, Airtel Money, BPR mobile, Mobi cash, Irembo, among others. Similarly elsewhere in Africa the trends are promising. M-Pesa, a product of Safaricom in Kenya, continues to dominate the mobile money industry in Africa and is operational in many countries in Africa including Rwanda.

Financial Inclusion (FI) is important in the development of a country and more inclusive growth. It has been confirmed that access to finance enhances innovation, job creation and economic growth. It also helps the poor households to benefit more in savings as it reduces immediate spending temptations.

It is commonly agreed that poor people have a significant capacity to save, proven by the existence of various informal savings mechanisms found throughout the world and by a few recent empirical studies. It is further understood that many people, particularly in rural households, are obliged to save during certain times of year, such as harvest, in order to compensate for periods when their income is drastically reduced, such as the dry season. Finally, it is widely accepted that though only a certain number of people will need credit at any given time, virtually all people need to save at any given time.

“Rwanda’s economic development agenda can’t be achieved without a financial sector that is effective, in particular that is capable to expand access to credit and financial services, and to enhance saving mobilization and to mobilize long-term capital for investment. No economic development will be possible as long as the current situation will persist with domestic savings consistently negative and more than 50% of the population totally excluded from financial services even from informal ones” (Government of Rwanda 2009, 3). To address the issues hindering the development of financial sector, the GoR adopted a very ambitious Financial Sector Development Plan which is currently at a very advanced level of implementation. Despite this, the level of domestic savings remain very low and the financial exclusion highly alarming, reasons there was a recommendation of the creation of at least one SACCO at the level of each Administrative Sector (UMURENGE). According to Alliance Financial Inclusion: AFI (2014), after their introduction in 2009, Umurenge SACCOs attracted a large number of population up to 1.6 million, allowing 90% of Rwanda citizens to live within a radius of 5km of their financial services point.

## 1.2. Problem Statement

During the last decade, Financial Inclusion was considered as the main objective of developing nations. Financial Inclusion remains a major concern of government authorities to economic development and consequently a necessary ingredient for fostering inclusive growth as well as a major hindrance to social inclusion. Researchers show that 75% of the world's poor do not have a bank account due to a number of challenges such as poverty, illiteracy, prohibitively high interest rate, bureaucracy, geographical distance to bank or other financial institutions, restrictive regulation, governance failures, lack of infrastructure and suitable products that are tailored to the needs of poor people (Kunt, and Klapper, 2012).

Financial development has a big part to play in a success of Financial Inclusion and should be backed by government participation. One of the objectives of the financial inclusion is to provide a conducive environment for a wide range of service providers that is competitive enough to facilitate the populations to access financial services at the lowest possible cost. The target of the Government of Rwanda is to increase the financial inclusion to 80% by 2017. The findings from the Finscope Rwanda 2012 survey revealed that 72% of Rwandan adults were financially included. 42% were formally served (23% served by commercial banks and 33% served by non-bank formal institutions) and 58% used informal financial mechanisms.

However, creating new bank account does not always translate into regular use. In Rwanda, some banks regulations are source of financial exclusion in the sense that they don't allow access of their services to people under the age of 18years, and also limited opportunities to non-prominent people above the age of 65 to contracting a loan Sterling Life Limited (2014). Particular emphasis is also made on limitation in loan grating to farmers whose activity is perceived as non-professional (Klaus, 2014). Other financial inclusion challenges relate to limited access to financial services by people in village because of the large distance they have to walk, given that many banks and microfinance institutions are based in town centres (Mahmud & Tulla, 2015). This is supplemented by insignificant number of Automated Teller Machines (ATMs) as measured at 5.26 per 100,000 adults against 43.97 in the world in 2014.

Lower income people do not access loan because the amount they request is low while the cost for the process for treating a loan by a financial institution is relatively high. Furthermore, SACCOs money is kept in their accounts held by commercial banks, with possibility of benefiting commercial banks customers (non-SACCOs members), and hence reducing the benefits of members.

Hence, this study is initiated to investigate the impact of credit on welfare improvement.

### **1.3. Research Questions**

This thesis set out to answer the following questions:

1. Does credit have an Impact on welfare improvement of KUSACCO customers?
2. Does credit contribute on income, saving and investment improvement of KUSACCO members?
3. Does credit have an influence on health, and education of KUSACCO members?

### **1.4. Hypothesis**

This work verifies the following two hypotheses:

Credit has an impact on Welfare Improvement of KUSACCO customers.

Credit contribute on Income, Saving and Investment improvement of KUSSACCO

Credit have an influence on health,education of KUSSACCO members.

### **1.5. Objectives**

#### **1.5.1 General Objective**

The General objective is to study the impact of credit on Welfare Improvement of KUSACCO customers.

#### **1.5.2 Specific objectives are:**

1. To analyse the contribution of credit on income, saving and investment of KUSACCO members.
2. To analyse the influence of credit on health, and education of KUSACCO members.

## **1.6 Research Methodology**

In order to achieve the objectives the study used different techniques and methods. Techniques include documentary, observation, sampling, interview, and questionnaire. Methods include statistical methods, comparative method, and analytical methods. To gather information related to welfare improvement of KUSACCO members, a sample population was determined using simple random sampling technique. A questionnaire was developed and includes questions related to change in income, health care services, and quantity and quality in education due to use of credit granted by KUSACCO. On the other hand, tables, and statistical moments and statistical tests are developed and analyzed to provide conclusions on change of the welfare improvement indicators.

## **1.7 Significance of the study**

Financial inclusion is a new concern for development. Investigating the contribution of credit to welfare improvement for a developing country like Rwanda could be a significant contribution given the objective of Rwanda to achieve a middle income per capita by year 2020. This research is important in a way it informs the Government of Rwanda about challenges related to financial inclusion and welfare of Rwandan citizens. It also contributes in informing banks and telecommunication companies about opportunities available so that they can extend their services. The research opens other new paths of research that can be exploited by future researchers.

## **1.8. Limitations of the study**

This study falls in financial analysis studies for the period from 2014 to 2017. However, in a particular case regarding welfare improvement, the study is limited to Muhanga District. The reason for this period is that it is the period whereby loan granted can be used and generate more income that can affect the welfare of the members. This period is also judged satisfactory for analysis.

## **1.9. Organization of the study**

This thesis is organized as follows: Chapter one presents the introduction of the study. Chapter two is the literature review. The chapter summarizes the theoretical and empirical literature in line with the topic of the research. Chapter three focuses on the methodology. This includes techniques and methods used. Chapter four is concerned with analysis. In this chapter are provided appropriate elements to verify the hypothesis of the study. Finally, chapter five presents conclusions and suggestions.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2. 1 Theoretical literature Review**

##### **2.1.1 Impact of Credit on welfare Improvement**

Research shows that 2.5 billion people around the world don't have formal financial services such as credit, savings account, insurance and payment services (Kunt and Klapper, 2012). It has also confirmed that more than 80 percent in most of Africa are financially excluded (Chibba 2009).

Credit, Savings and Insurance are seen as fundamental tools for Financial Inclusion. Access to credit deeply improves the financing welfare and helps in smoothing income in the face of household, and overcomes shocks like illness and gives the opportunities to increase productivity. In addition, access to credit encourages entrepreneurial activity by attenuating investment constraint and making it easier for small business to grow beyond subsistence (Global Financial Development Report, 2014).

Saving is important for households to weather difficult times, like drought, damages and fire, to plan for future. However, poor households often have risk, low yield informal savings, in the form of livestock, cash, and deposit in rotating savings and credit associations (UNCDF 2006). Hence, when the financial system functions properly, it enables household to diversify their deposits, bond markets, and stock market with attractive yields.

According to Finscope Rwanda (2008) Medical Insurance in Rwanda covers 82 percent, where 80 percent of population use "Mutuel de santé" and the remaining 2% use other medical insurance products such as MMI, RAMA, MIS UR, among others.

When there are ideal insurance markets, people need not to suffer from unavoidable risks. Shocks can have a severe impact on poor household's welfare, since they often do not have any other cushion of assets. Besides by using financial insurance products, middle- and upper-income households are more likely to be able to mitigate shocks by self-insurance mechanisms such as borrowings, savings, or selling off easily transferable assets such as car, machine... (Morduck 2004).

#### **2.1.4 Indicators of Welfare Improvement**

Indicators of welfare improvement can be shown by income, education, health, housing, free time and leisure, working life, political resource, and security (Gosta, 2000). World Bank (1993) has also shown that income and education have a big impact on welfare improvement.

**Income includes:** standard income and income data by individual and household, wealth, savings, including information of resources of income, information of a cute and lasting income shortfalls, debt, and margins of income available.

**Health includes:** frequency of headache, circulatory problems, hospitalisations, sick days, capacity to move, work and function normally, mental stress, and fatigue.

**Education Includes:** Standard educational attainment data, participation in adult education, training and informal education, and some data on utilization.

**Housing includes:** Housing standards (indoor plumbing, heating, size, access to neighbourhood services, distances to work and shopping, physical isolation (Gosta, 2000).

The World Bank shows that income has a big impact on health, particularly of the mother. This also has a significant impact in life expectancy and child mortality. Research shows that in a sample of 58 developing countries, 10 percent increase in income reduced infant and child mortality at a rate of 2-3.5 percent

#### **2.1.5 Link between Financial Development, Financial Inclusion and poverty reduction**

It has been shown that not only financial development benefit the rich, also the poor can benefit while the financial inclusion improves. Research shows that the poor specifically can benefit substantially when financial sector performance improves (Stijn2006). According to world development indicators (2005), financial development indicators and poverty indicators are revealed to be inversely related.

According to Serrao et al. (2012) theories on the financial growth advocate that financial development creates a productive environment for growth through supply leading or demand-following effect. Theories also perceive that lack of access to finance is a critical factor responsible for persistent income inequality as well as slower growth. Therefore access to safe, easy and affordable source of finance is recognized as a pre-condition for accelerating growth and reducing income disparities and poverty which creates equal opportunities, enables

economically and socially excluded people integrate better into the economy and actively contribute to development and protect themselves against economic shocks.

For the world group bank, financial inclusion can significantly reduce poverty and boost shared prosperity, but efforts to foster inclusion must be well designed. For example creating bank account and ending up lying dormant has little impact and policies that promote credit for all at any cost can actually exacerbate financial and economic development (global financial development report, 2014). Research highlighted that financial inclusion matters in economic development and poverty reduction. Ranges of theoretical models demonstrate that a lack of access to finance can lead to poverty traps and inequality (global financial development, 2014). Financial development helps reduce poverty indirectly by stimulating growth and directly by facilitating transactions and allow the poor to benefits from financial services(primary savings, product) that increase their income (through interest earned) and enhance the ability to undertake profitability investment and other activity (Datt& Ravallion, 1992).

According to economic rabobank.com, in developing countries, 60-80% of the populations live in rural areas which are widely dispersed. Physical and IT Infrastructures are hardly developed and wage and education levels are low. Only a small number of firms are commercially oriented, the greater part consists of subsistence and semi-subsistence farms.

## **2.2 Empirical Literature Review**

The Empirical literature review critically assesses various studies conducted in the area of credit and welfare. Remenyi et al., (2010)as well as Kipngetich (2009) found that incomes of families with access to credit are significantly higher than incomes for comparable families without access to credit. Lwanga (2015) studies the relation between Financial Inclusion and individual welfare, in South Africa. They used two measure of welfare; first is self-reported well-being, second is wealth and then uses the recentered influence function decomposition approach to investigate the gap at different quantiles of welfare distribution of users and non-users of formal financial services. The result showed that when using the self-reported well – being measure, there is a small difference between the welfare of these two groups, accounted by the composition effect. However the wealth disparity is significant and larger in the middle and at the top-end than at the botton disparity.

Dermiguc et al. (2012) consider a host of other country – level characteristics and policies as potential determinants of account use. Their analysis focuses on three indicators of account use. First is ownership of an account, second is use of an account to save, and third is frequency of using an account. The findings are that these three indicators are mostly associated with better enabling environment for accessing financial services, such as low banking cost, greater proximity to financial providers, and fewer documentation requirements to open an account.

Burgess and Pande (2005) provide further evidence showing that opening branches of commercial banks through state- led policies was associated with poverty reduction in rural unbanked locations for India. Despite being insightful, this study did not look at the usage of the products or services but merely the presence of bank branches, which does not give a complete picture of credit. The study does not depict the channel through which increased bank presence reduced poverty.

Honohan (2003) provides evidence that financial development is linked with a lower poverty ratio. The study shows a negative relationship between financial development and poverty. A 10 percentage point increase in ratio of private credit to GDP reduces poverty ratio by 2.5-3 percent.

## **Conclusion**

Several researchers have attempted to assess the contribution of access to financial services on welfare improvement of low income people. However, results were conflicting in that some studies obtained positive effect: Honohan (2003), Burgess and Pande (2005), among others, while other studies including Lwanga (2015) found weak relationship. Most of the studies analysed the relationship, considering two categories of individuals, while the current study seeks to assess the relationship using the case of Umurenge SACCO by assessing the welfare of the same individuals before and after they get credit. This approach will allow to apprehend the true relationship as the changes in welfare are observed and declared by the same individual, hence accuracy in assessing the effect.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1. Introduction**

Methodology is a systematic approach to explain a problem, theoretical analysis of the methods applied to a field of study, or the theoretical analysis of the body of methods and principles associated with a branch of knowledge. It typically encompasses concepts such as paradigm, theoretical model, phases and quantitative or qualitative techniques. ([www.nrf.ac.za/yenza/research/internet.htm](http://www.nrf.ac.za/yenza/research/internet.htm) accessed on 18<sup>th</sup> August 2016). It offers the theoretical underpinning for understanding which method, set of methods or so called “best practices” can be applied to a specific case.

#### **3.2 Research Design**

Credit contribution on welfare improvement in this study is measured using Qualitative and Quantitative approach. Qualitative approach allows the research to gather the significant data and find a deep understanding of the research area (Bryman, 1992; Mason, 2002).

In scientific research, qualitative approach is a process of analysis, interpretation, and report writing from different traditional of survey that explore a human problem or social (Creswell, 1998).

The study presents the population, and the sample size on which the analysis was based. Data was collected collected using questionnaire and analysed using different methods including the annalysis of variance.

#### **3.3 Study population**

The population is defined as the total of the person or objectives with which a study is concerned. The population of the study concerns all KUSACCO members who have been granted a loan for the first time for the period between January and December 2014, and is equal to 128.

### 3.4 Sample size

Due to the limitations of financial resources and time to conducting this research, it was not possible to study the whole population of KUSACCO. Therefore, a sample of a few members was considered, and results were generalized for the whole KUSACCO members. The sample size ‘n’ was determined by the following formula.

$$n = \frac{(Z^{\alpha/2})^2 [p(1-p)]^2}{\varepsilon^2}$$

Where  $\varepsilon$  the margin of error, is the maximum difference between the observed sample mean  $\bar{x}$  and the true value of the population mean  $\mu$ .

$$\varepsilon = Z^{\alpha/2} \frac{\sigma}{\sqrt{n}}$$

$Z$  is known as the critical value, the positive  $Z$  value that is at the vertical boundary for the area of  $\alpha/2$  in the right tail of the standard normal distribution. In this study, the desired confidence level considered is 95% and margin of error of 5%, corresponding to the  $Z$  value of 1.96;  $\sigma$  is the population standard deviation given by  $\sigma = \sqrt{p(1-p)}$ ; One can still use this formula even when  $\sigma$  is not known, by assuming  $p = 0.5$ ;  $p$  is the percentage picking a choice. It reflects how skewed the respondents are on a topic. In the survey world it is almost always safest to stick with a 50% distribution, which is the most conservative. <http://fluidsurveys.com/university/calculating-right-survey-sample-size/> accessed on 14<sup>th</sup> January 2017.

The true sample size is given by

$$n^* = \frac{n * N}{n + N - 1}$$

Whereby  $N$  is the population that is surveyed. <http://fluidsurveys.com/university/calculating-right-survey-sample-size/> accessed on 14<sup>th</sup> January 2017.

Applying the above formula, the adjusted sample size equals 96. When the questionnaire was distributed to the respondents, only 50 questionnaires were availed and collected.

### **3.5 Data Collection**

Data is collected on KUSACCO members who have been granted a loan for the first time for the period between January and December 2014.

#### **3.5.1 Instrument Development**

- **Questionnaire**

This refers to list of questions formed to get fact. In order to gather information related to welfare improvement of KUSACCO members, a sample population was determined using simple random sampling technique. A questionnaire was developed and includes questions related to change in income, health care services, and quantity and quality in education due to use of financial services granted by KUSACCO. Formulated questions were relatively short and easy to respond. The questionnaire was formulated in English and later translated in Kinyarwanda by experts in translation. In order to insure that translation was properly done, two translators were hired and worked separately. Results were satisfactory in that the two translated documents were similar. Further to that, the same questionnaire was translated in English, and the later was compared to the initial one, whereby minor differences observed were adjusted. The questionnaire in Appendix A, contains questions on credit obtaining, and those of welfare improvement.

### **3.6 Data analysis**

In this study, analysis is done through analytical method, and comparative method.

#### **3.6.1 Analytical method**

In order to find out the effect of credit on welfare improvement, a statistical test is employed to show the statistical significance of the relationship.

- **Analysis of Variance**

Analysis of Variance (ANOVA) is a statistical method used to test differences between two or more means. It is an analysis tool that splits the aggregate variability found inside a data set into two parts: systematic factors and random factors. The systematic factors have a statistical influence on the given data set, but the random factors do not. <http://www.investopedia.com/terms/a/anova.asp#ixzz4ijQmiJlr> accessed on 5<sup>th</sup> May 2017.

To determine the difference in income, a univariate ANOVA for independence of means was used to compare the two situations (i.e. income before and after loan), and an F test at 95% confidence level was used.

### **3.6.2 Comparative Analysis**

In order to assess the contribution of access to credit on welfare, a comparative analysis is employed whereby, the level of welfare indicators such as wealth, health, and education is evaluated and compared for the period before and after credit was granted to the members.

### **3.7 Limitation of the study**

The researcher faced a number of issues, which would have affected the results therefore, had they not been greatly mitigated by remedies developed. These are the hindrances that were encountered during the period of carrying out the study. These issues faced are as follows: Some respondents were reluctant on giving out the requested information. Most of them claimed to be busy and had no sufficient time to attend to the questionnaires or interview, hence the researcher arranged to meet them after working hours. In addition, research is time consuming and expensive. It is difficult to gather sufficient funds to meet the demands of the research work like telephone costs, transport costs printing costs etc.

### **Conclusion**

The methodology is mainly based on two major approaches. The assessment of change in welfare is made firstly by comparing all the welfare indicators before and after a member has obtained a credit, as stated by the member himself. Secondly, the approach assesses the relationship by using the ANOVA test to find the difference between the mean values of income before and after credit is granted to the members.



**CHAPTER FOUR**  
**IMPACT OF CREDIT ON WELFAREIMPROVEMENT OF KORUTEGANYA**  
**UMURENGE SACCO MEMBERS**

**4.1 Introduction**

In order to assess the effect of credit on welfare improvement, some theoretical indicators of welfare were developed in chapter two, and are taken into consideration in chapter four. These involve wealth (comprising income, saving, and investment), health care, and education. The approach in chapter four is to show how each of the welfare indicators changed after the surveyed person used the obtained credit. The period from 2014 to 2017 is chosen by considering that this period of time is relatively significant to get clear results about the use of the loan.

**4.2 Demographic characteristics of respondents**

Demographic data regarding the labor force considered in this study is presented in the table below. Two main variables, namely age, and gender discussed as they indicate demographic characteristics of KUSACCO members.

**Table 4.1: Demographic characteristics patterns (Age, and Gender)**

Age	Number of respondents (and percentage)	Gender in percentage		Marital status in percentage			
		Male	Female	Married	Single	Separated	Widowed
18 – 30	9 (18%)	5 (10%)	4 (8%)	3 (6%)	6 (12%)	0 (0%)	0 (0%)
31 – 43	30 (60%)	21 (42%)	9 (18%)	22 (44%)	5 (10%)	1 (2%)	2 (4%)
44 - 56	8 (16%)	5 (10%)	3 (6%)	6 (12%)	0 (0%)	0 (0%)	2 (4%)
57 and above	3 (6%)	2 (4%)	1 (2%)	1 (2%)	0 ((0%)	0 (0%)	2 (4%)
Total	50 (100%)	33 (66%)	17 (34%)	32 (64%)	11 (22%)	1 (2%)	6 (12%)

Table 4.1 indicates that a large number of respondents (60%) were between 31 and 43 years old. The economic benefit of this variable (age) is that the large number of respondents is in accordance with the working age, defined by the International Labor Organization (ILO) of between 15 to 65 years. Having a large number of people who are physically active is expected to lead to higher productivity of the loan and also effect is displayed to large number of people, taking into account that most of them are responsible for families. Interlinking age and gender variables, results show that male members represent large portion (42%) for the age between 31 and 43, as compared to female representing only (18%). Considering the overall respondents, findings reveal that male and female respondents represent 66% against 34% respectively.

In addition to age and gender variables, this study also assessed the marital status of the respondent to investigate the impact of loan on welfare of the members. The majority (64%) revealed that they were married while 22 % were single, 2% separated and 12% widowed. This informs on one hand on the credibility the cooperative attaches to the client in granting a loan, and on the other hand, reduction in moral hazard behavior given that being married requires more responsibility, hence use of loan for the true purpose, resulting in high return of the loan.

### 4.3 Impact of Credit on wealth improvement of KUSACCO members

The aim in this section is to find out how the use of credit induced a change in income, saving, investment of the members. This is achieved by gathering and analysing the information obtained by the KUSACCO members that are surveyed.

#### 4.3.1 Distribution of income for KUSACCO members before and after use of loan granting

This section is set out to investigate the contribution of loan granted by KUSACCO on the members' income. Table 4.2 shows changes in income of members after a loan is granted to them.

*Table 4.2 Distribution of financial income before and after credit*

Category	Income in Rwf/ month	Numberof members Before loan	Percentage	Income in Rwf/ month	Number of members After loan	Percentage
Category 1	1,000 - 30,000	15	30	1,000 - 30,000	6	12
Category 2	30,001- 60,000	17	34	30,001- 60,000	21	42
Category 3	60,001- 90,000	9	18	60,001- 90,000	12	24
Category 4	90,001-120,000	6	12	90,001- 120,000	7	14
Category 5	120,001 and above	3	6	120,001 and above	4	8

Table 4.2 indicates that 30% of members had a loan ranging between 1,000 and 30,000. After loan was granted, only 12% remained in the same range while the remainder saw their income increasing beyond that range. Similarly, other ranges increased to ranges above. For instance, members who had an income between 30,001- 60,000 moved to upper levels of income after

they were granted a loan. Among 9 members who moved from category one, 8 of them went to category 2, while one of them to category 3. At the same time, 4 members from category 2 moved to category 3. In total, 5 members (comprising one from category 1 and 4 from category 2) moved to category 3, while at the same time 2 members moved from category 3 to category 4, leaving category 3 with 12 members. One member from category 4 moved to category 5, leaving group 4 with 7 members, and group 5 with 4 members.

Respondents state that increase in income from different categories is the result of loan use. After members were granted a loan, they allocated the money in different income generating activities that induced an increase in income. Income generating activities include among others, shops, livestock farming, and renting houses that they built from loan. Table 4.3 shows the distribution of investment for three categories after the loan is granted to the members.

#### **4.3.2 Distribution of investment for KUSACCO members before and after use of loan granting**

Increase in investment is one of the indicators of wealth improvement. An acquisition of a new firm or new house indicates an increase in the asset of a member that increases the value of assets held by the member, hence an increase of his wealth.

***Table 4.3 Distribution of Investement before and after credit***

Category	Amount of investment in Rwf	Number of members Before loan	Percen Tage	Amount of investment in Rwf	Number of members After loan	Percentage
Category 1	0 - 100,000	25	50	0 - 100,000	13	26
Category 2	100,001-300,000	16	32	100,001-300,000	24	48
Category 3	300,001 and above	9	18	300,001 and above	13	26

Table 4.3 indicate that the number of KUSACCO members from category 1 decreased from 50% to 26 % after the loan was granted to them.

On the other hand, the number of members in category 2 increased from 32% to 48%. This increase is mainly explained by the shift of some members from category 1 counting for 22% who moved to category 2. The remaining 2% represent a member who moved straight from category 1 to category 3. The increase in category 3 is explained by the shift of one member from category 1 and three members from category 2 who joined category 3, leaving it with a total increase of 8%.

Members of KUSACCO revealed that when the loan was granted to them, they spent it in income generating activities that raised their incomes. This induced an increase in their savings, which allowed generating more investment. Table 4.4 shows the distribution of savings for three categories after the loan was granted to the members.

#### **4.3.3 Distribution of savings for KUSACCO members before and after use of loan granting**

Savings were also identified as component of wealth. This is because they are defined as future consumption. If saving is used to purchase investment goods, this can generate new income, and hence increases member's wealth.

***Table 4.4 Distribution of money savings before and after credit***

Category	Amount of saving in Rwf	Number of members Before loan	Percentage	Amount of saving in Rwf	Number of members After loan	Percentage
Category 1	0 - 50,000	38	76	0 - 50,000	23	46
Category 2	50,001- 100,000	9	18	50,001- 100,000	16	32
Category 3	100,001 and above	3	6	100,001 and above	11	22

Table 4.4 reveals that the number of KUSACCO members from category 1 decreased from 76% to 46 % after the loan was granted to them. On the other hand, the number of members in category 2 increased from 18% to 32%, partly owing from the shift of thirteen members from category 1 counting for 26% who moved to category 2.

The remaining 4% represent two members who moved straight from category 1 to category 3. The increase in category 3 is explained by the shift of two members (4 percent) from category 1 and six members from category 2 who joined category 3, leaving category with a total increase of 16%. Members of KUSACCO state that when the loan was granted to them, they spent it in income generating activities that raised their incomes that induced an increase in their savings.

#### **4.4 Impact of Credit on health improvement of KUSACCO members**

This section shows how the use of credit induced a change of the health of KUSACCO members. This is achieved by gathering and analysing the information obtained by the KUSACCO members that are surveyed. Change in health is assessed through change in facility in healthcare services access, and quality of health treatment. Facility in access and quality of healthcare services are captured by whether the KUSACCO member is a member of a health insurance institution, and the type of the insurance institution. The type of insurance institution in this study is important given that the type of hospital (clinic) that a patient visits without being transferred highly depends on the type of health insurance institution he belongs to. Table 4.5 reveals the proportion of KUSACCO members who are registered for health insurance during the survey period. It is worth noting that all the members in the sample belong to the social classes that pay health insurance by themselves without any intervention of the government.

**Table 4.5 Distribution of KUSACCO members to health insurance institutions before and after credit**

Category	Type of health insurance	Number of members Before loan	Percentage	Type of health insurance	Number of members After loan	Percentage
Category 1	No insurance	15	30	No insurance	5	10
Category 2	“Mutuelle de Santé”	33	66	“Mutuelle de Santé”	39	78
Category 3	Other health insurance <sup>1</sup>	2	4	Other health insurance	6	12

Table 4.5 indicates that the number of KUSACCO members without membership to health insurance before the loan was granted represented 30 %, but decreased to be 10% after loan was granted. The 20% difference became members of “mutuelle de santé”. A detailed explanation reveals that eleven people moved from category 1 to category 2, but at the same time there was one member of category 2 who shifted to category 1 making a balance of 10 people representing 20%. While these shifts were taking place, four members of “mutuelle de santé” were moving to other health insurance (category 3) leaving “mutuelle de santé” with a total of 39 members representing 78%, and other health insurance with 12% from 4%.

KUSACCO members state that when loan was granted to them, they allocated it in different activities that generated more income that enabled them to register for health insurance membership with “mutuelle de santé” and other health insurance institutions.

---

<sup>1</sup>Other health insurance stands for other health insurances rather than “mutuelle de santé”, are expensive, and provide access to hospitals with relatively better quality as compared to “mutuelle de santé”.

#### 4.5 Impact of Credit on Education improvement of KUSACCO members

One of the indicators of wellbeing is education. It includes among others, standard education, Adult education, and training and informal education. The analysis in this section focuses on showing whether loan granting has affected each of these components of education.

*Table 4.6 Distribution of KUSACCO members to Education features before and credit*

Education features	Number of members Before loan (in percentage)	Number of members After loan (in percentage)
Standard education by children	94	98
Adult education	16	24
Training and informal education	14	28

Table 4.6 displays the distribution of education features before and after loan. The standard education which is dominated by children of the KUSACCO members increased from 94% to 98% due to loan granted. The KUSACCO members state that though there is effort by the Government of Rwanda through sensitisation and support to education for child, there was a big role played by loan in increasing the number of children sent to school. Although some support can be granted by the government to reduce school fees, parents still need money to buy uniform, school materials, and allowance for teachers. When parents fail to meet these other requirements, they choose to keep their children home doing different home activities rather sending them to school.

On the other hand, loan granting allowed KUSACCO members to improve their level of education. A significant increase from 16% to 24% is observed after loan is granted. The members whose education level increased state that once the loan was granted to them, they managed to start micro enterprises that allowed them to start university education through the money generated by the projects. They confirm to have chosen go to school in order to improve their capacity in project management, and innovation skills for the better future of their firms.

A large number of KUSACCO members who chose to improve their capacity through education, are those who chose to do it through training and informal education.



After loan was granted, the number of KUSACCO members who did training and informal education doubled, to reach 28 percent from 14 percent. Members indicate that once the loan was granted to them, a large number decided to buy gardens, start small shops, and microenterprises that required farming skills, knowledge related to counting and calculating, and other related skills and competencies that they believed could be obtained through training and informal education.

The changes in the features of education were possible due to loan that was utilised to the point to generating income that allowed the members to obtain school fees, school equipment, and in some cases means of transport from home or work place to school.

#### **4.6 Analysis of Variance for household income of KUSACCO members**

Effect of Credit on household income has been a common benchmark on which welfare status is evaluated. Hence analysis of variance (ANOVA) was used as a tool to analyse the difference of household income for KUSACCO members before and after loan was granted to them. The foundation of the analysis was that credit is usually used as a policy tool in the procurement and use of productive inputs expected to induce increased production and consequently increased income. Members were then expected to procure and utilise more of such inputs after obtaining loan and therefore realize higher returns compared to the period before loan obtaining. Factors such as crop and animal protection chemicals, and fertilizers, livestock feeds and labour can be easy to get when farmers are less cash constrained.

Consequently, increased income is likely to positively improve the level and quality of education, and easy access to healthcare services.

***Table 4.7 Mean and Standard Deviation of KUSACCO members income before and after loan granting***

<b>Time Period</b>	<b>Mean</b>	<b>Standard Deviation</b>
Before Loan	10.678	0.766
After Loan	10.964	0.648
Total	10.821	0.720

*Source:* Survey data.

Table 4.7 indicates that mean income after loan (10.964) is larger than income before loan granting (10.67). Therefore, one can infer that loan access increases income through income generating projects. The analysis of variance test is performed in table 4.8 to confirm the difference in mean income obtained in table 4.7

**Table 4.8 Analysis of variance of income for KUSACCO members before and after loan granting**

<b>Source of Variation</b>	<b>Df</b>	<b>Sum of Squares</b>	<b>Mean Squares</b>	<b>F</b>	<b>Prob</b>
Between groups	1	2.042	2.042	4.059	0.047
Within groups	98	49.314	0.503		
Total	99	51.357	0.518		

*Source:* Survey data

The income of the KUSACCO members is found to be higher during the period after loan was granted than the period before loan is granted. These findings are in line with those of Remenyi et al., and those of Kipngetich (2009) that incomes of families without access to credit are significantly lesser than incomes for comparable families with access to credit.

#### **4.7 Impact of Credit to household expenditures**

One of the objectives that this study is set to verify is the influence of credit to household consumption expenditures. This is mainly due to the fact that malnutrition is a factor that can harm the health of an individual and yet health is one of the indicators for welfare. Another reason for consumption expenditure is the information in terms of improvement in income, given that any increase in initial low income should be followed by increase in consumption spending. Expenditure here is composed of food and non - food household expenses. These are expenses on consumable items.

## **Conclusion**

Chapter four analysed the effect of credit on welfare effect of KUSACCO members. Comparing the wealth, as well as health, and education levels of the KUSACCO members before and after credit granting, results indicated that there was an improvement in the level of the three indicators during the period after credit granting. Likewise, the ANOVA test confirmed the results indicating that the mean income level during the period before and after credit granting were different.

## **CHAPTER FIVE**

### **CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Conclusions**

This study set out to assess the effect of credit on welfare improvement of KUSACCO members. This was achieved by assessing improvement of indicators of welfare such as wealth that includes financial income, saving, investment, but also health and education. Findings confirmed that credit contributes to welfare improvement of members, through increase in the considered welfare indicators. In addition, findings also showed that there is a significant difference in financial income of KUSACCO members before and after the loan was granted to them. The fact that the second approach whereby ANOVA was used confirmed the previous results on income increase as observed in the data, implies that credit raised the financial income of the members, results that are in line with Remenyi et al., (2000), and those of Kipngetich (2009) incomes of families with access to credit are significantly higher than incomes for comparable families without access to credit. Hence access to credit facility offers opportunity for access to other additional services which permit the members to improve on their farming skills and therefore improved production. Furthermore, increased income enables easy access of health care services, as well as improves education of the members.

#### **5.2 Recommendations**

The study suggests that policies which help households to smooth income can dramatically reduce poverty. credit program should be expanded and target even the most vulnerable groups such as female headed households in order to tackle rural poverty, women empowerment. In addition, credit programs should be extended to allow increased assets, savings, investment, and food security. Some but very few of the KUSACCO members managed to efficiently use the credit, and hence their income considerably increased. Therefore, intervention of KUSACCO in assisting customers with project management would highly increase income of the large number of the customers.

## REFERENCES

1. Alliance for Financial Inclusion (2011). Financial Inclusion data working Group, Measuring Financial Inclusion; core set of financial Inclusion indicators”. Available at: <http://www.afi-globa.org/sites/default/files/afi%20fidwg%20report.pdf?op=Download>.
2. Alliance for Financial Inclusion (2014), Rwanda’s Financial Inclusion Success Story: Umurenge Saccos, available at [http://www.afiglobal.org/sites/default/files/publications/afi\\_case\\_study\\_rwanda\\_finalweb.pdf](http://www.afiglobal.org/sites/default/files/publications/afi_case_study_rwanda_finalweb.pdf)
3. Bryman. A., (1992)”quantitative and qualitative research: further reflection on their integration;in J.Branner (ed) mixing methods: qualitative and quantitative Research, *Aldershort; Averbury*
4. Burguess,R.,& Rohini P., (2005). “Do rural banks matter? Evidence from the India Social Banking Experiment.” *The American Economic Review*(95)3:780-95
5. Chakrabarty, K. C. (2010), Financial Inclusion and Banks: Issues and Perspectives, *Reserve Bank of India*.
6. Chibba, M., (2009), Financial Inclusion,Poverty Reduction and the millennium Development Goals,European Journal of Development Research,213-230.*Sinclair S,McHard F, Dobbie L,*
7. Creswell, J.W. (1998). Qualitative inquiry and research design: Choosing among five traditions designs. *Thousand Oaks, C.A: sage*.
8. Datt, G. & M. Ravallion (1992) Growth and Redistribution Components ofChanges in Poverty Measures: *A Decomposition with Applications to Brazil and India in the 1980s*.
9. Demirguc-kunt,A. & Klapper, L. (2012), Measurement of financial inclusion:The Global Findex database. *World Bank 2012*.
10. FinScope Rwanda (2008), Making Financial Markets Work for the Poor, *FinMarkTrust, Marshall Town*.
11. Gitman, L. J. (1997), Principals of Managerial Finance, Eight edition, *Longman Publishing Group, New York*.
12. Global financial Development Report (2014), Financial Inclusion: Importance, Key facts, abd Drivers, International Bank for Reconstruction and Development/ *The World Bank, Washington DC*.

13. Gosta, E. A., (2000), Social Indicators and Welfare Monitoring: *UNRISD/Geneva*
14. Government of Rwanda (2008). *Umurenge SACCOs Strategy, Kigali*
15. Government of Rwanda (2009). *Umurenge Saccos Strategy, Kigali*
16. Hanning, A., & Jansen, S.(2009), Financial Inclusion and Financial Stability. Current Policy issues. ADBI Working Paper 259, Tokyo:Asian Development Bank Institute, available at <http://www.adbi.org/workingpaper/2010/2/21/4272.financial.inclusion.stability:Policy.policy.issues>.
17. Hanning, A., & S.Jansen.(2010).Financial Inclusion and Financial Stability: *current product issues*
18. Honohan, P. (2003), Financial Development, Growth and Poverty: How close are the link?*World Bank Policy Research Working Paper 3203*.
19. Journal of Development Economics, 38, 275–295.
20. Kipngetch, L. J., (2009), Effect of Credit on Household Welfare: The Case of “Village Bank” Model in Bomet District, Kenya, available at <file:///C:/Jackson%20Langat%20Thesis.pdf>.
21. Klaus M. (2014). Where Is the Risk? Is Agricultural Banking Really More Difficult than Other Sectors? Available at [https://link.springer.com/content/pdf/10.1007%2F978-3-642-54034-9\\_7.pdf](https://link.springer.com/content/pdf/10.1007%2F978-3-642-54034-9_7.pdf)
22. Levine, R (1997), Financial Development & Economic Growth: Views & Agenda, *Journal of Economic Literature*, Vol. XXXV, pp. 688–726
23. Lwanga, E. N., (2015), Financial Inclusion and Individual welfare, *The case of Post-Apartheid South Africa*.
24. Mahmud, U. A., & Tulla, A. F. (2015). Geography of Rural Enterprise Banking and Microfinance Institutions in Bangladesh, Documents d’Anàlisi Geogràfica, vol. 61/2325-350
25. Mason J., (2002) qualitative researching, *2nd edition, London*
26. Mc Kinsey & Company (2010). *Global Financial Inclusion, Washington DC*.
27. Miller, F. A., & Katz, J. H. (2002). The inclusion breakthrough: Unleashing the real power of diversity. San Francisco: *Berrett-Koehler*.
28. Morduck, J. (2004). ”Micro-insurance: Insurance The next evolution.” In A. Banerjee and others. What have we learn about Poverty? *Oxford University Press, forthcoming*.

29. Moser, C., and G. Kalton. 1971. *Survey Methods in Social Investigation*. London: *Heinemann Educational Books Limited*.
30. Remenyi, J., Gibbons, D., Quinones, B., and Seibel, D. (2000), *Microfinance For and By the Poor: Lessons from Experience*, in Joe Remenyi and Benjamin Quinones, Jr. (eds), *Microfinance and Poverty Alleviation: Case Studies from Asia and the Pacific*, pp.253-269, *Pinter, Continuum Press, London and New York*.
31. Research Methodology in Yenza, <http://www.mnf.ac.za?yenza/research/internet.htm>.
32. Serrao M, Pierelli F, Ranavolo A, Draicchio F, Conte C, and Don R., (2012), Gait pattern in inherited cerebellar ataxias. *Cerebellum*;11(1):194–211.
33. Sterling Life Limited (2014) Cuna Mutual’s Loan Protection Group Life Insurance Scheme Policy Document, West Mallin, Available at [www.fca.org.uk](http://www.fca.org.uk)
34. Stijn, C. and Feijen, E., (2006).” Finance and Hunger: Empirical Evidence for the agricultural Productivity Channel.” *World Bank*.
35. Stijn, C., (2006), Financial sector Development and the millennium development Goals, *World Bank Working paper No.89*
36. United Nations Capital Development Fund (UNCDF). 2006. [www.uncdf.org](http://www.uncdf.org)
37. World Bank (1993), *World Development Report 1993: Investing in Health*. New York: *Oxford University Press*.

## APPENDIX

### Appendix A

#### Questionnaire for Credit and Welfare Improvement for KUSACCO members (Reviewed after pilot study)

##### *I. Identification of respondent*

##### **1.1 Age group**

1	18 – 30	
2	31 – 43	
3	44 – 56	
4	57	

##### **1.2 Gender**

1	Female	
2	Male	

##### **1.3 Marital status**

1	Single
2	Married
3	Separated
4	Widowed

##### **1.4 Educational level**

1	Primary
2	Secondary
3	Tertiary
4	Other (specify)



***II. Information on relationship with financial institutions***

**2.1 When were you granted loan for the first time by KUSACCO**

N°	Year
1	2011
2	2012
3	2013
4	2014
5	2015

**2.2 How many loans did you obtain from any financial institution after your first loan in 2015?**

1	0
2	1
3	1
4	3
5	Other

***III. Information on employment***

**3.1 What is your main activity?**

1	Farmer
2	Primary teacher
3	High school teacher
4	Other private sector employee
5	Other public sector employee
6	Other (specify)

### 3.2 How many workers do you employ in your business?

1	1-5
2	6-10
3	11-15
4	16

#### *IV. Information on Income, Saving, and Investment*

4.1 For the last six months (December 2016 - May 2017) what was your average monthly income, saving, and investment (in Thousands of Rwandan Francs)?

4.2 For the last six months preceding loan obtaining what was your average monthly income, saving, and investment (in Thousands of Rwandan Francs)?

#### *V. Information on spending*

5.1 Which % of your income do you spend on average (from December 2016-May 2017) per month on the following items?

N°	Item/%	1-25%	26-50%	51-75%	76-100%
1	Staples				
2	Non-Fresh food Items				
3	Non-food Items				
4	Non-staple fresh food				

5.2 Which % of your income before receiving loan from KUSACCO you were spending per month on the following items?

N°	Item/%	1-25%	26-50%	51-75%	76-100%
1	Staples				
2	Non-Fresh food Items				
3	Non-food Items				
4	Non-staple fresh food				

5.3 How many people including domestic workers depend on your income?

1	1-3
2	4-6
3	7-9
4	10

5.4 Are you a beneficiary of any health insurance? If yes, what type of health insurance do you currently use?

5.5 Before obtaining KUSACCO loan, were you a beneficiary of any health insurance? If yes, what type of health insurance were you using?

5.6 How many of your children are currently enrolled with standard education?

5.7 Before obtaining KUSACCO loan, how many of your children were enrolled with standard education?

5.8 Are you enrolled with adult education?

5.9 Before obtaining KUSACCO loan, were you enrolled with adult education?

5.10 Are you currently enrolled with training and/or informal education?

5.11 Before obtaining KUSACCO loan, were you enrolled with training and/ or informal education?

## Appendix B

### ➤ Definition of concepts

The literature review presented in this chapter focuses mainly on the definition of major concepts, financial inclusion and welfare improvement relationship, and the indicators of welfare improvement.

### ➤ Finance

Finance maybe defined as '*the art and science of managing money*' (Gitman1997)

Websterster's 9<sup>th</sup> New Collegiate Dictionary defines finance as '*the science of study of the management of funds*' and the management of funds as '*systems that include the circulation of money, the granting of credit, the making of investment and provision of banking facilities*'.

The word finance has two major parts: the first one is Managerial Finance which is concerned with the task of the finance manager in a business firm. The second part is Financial Services, which is an area that involves design and delivery of financial products and services to businesses, institutions and individuals through financial planning, investment advice, real estate and insurance (Gitman, 1997).

### ➤ Financial Development

Financial development could be defined as a process that involves incremental changes in quality, volume and efficiency of financial services. It includes policies, activities and on-going institutional developments that define the prevailing efficiencies and effectiveness of a particular financial market. Strong financial systems are characterised by effective capital allocation and risk diversification and are associated with strong economic growth. (Levine, 1997)

Financial development is an important force in economic welfare in that it leads to improved income, a reduction in poverty and improved nutrition as well as helping foster competition and innovation. As much as financial development does not necessarily imply inclusive economic growth nor lead to increase in income disparities, the general consensus is that development of

the financial sector within a particular economy is strongly correlated to a reduction in earning inequalities and reduced poverty. ( Claessens and feijen,2006)

### ➤ **Inclusion**

According to Oxford Advanced Learners Dictionary, inclusion is the ‘*action or state of including or of being included within a group or structure*’.

It is described by some as the practice of ensuring that people feel they belong, are engaged and connected. It is a universal human right whose aim is to embrace all people, irrespective of race, gender, disability or other attributes which can be perceived as different. It is about valuing all individuals, giving equal access and opportunity to all and removing discrimination and other barriers to involvement.

Miller and Katz (2002) defined inclusion as: “*a sense of belonging: feeling respected, valued for who you are; feeling a level of supportive energy and commitment from others so that you can do your best*”.

### ➤ **Financial Inclusion**

In broad terms, Financial Inclusion can be defined as the procedure of ensuring access to appropriate range of financial product and services wanted by all segments of the society in common; this can be a weaker sections and low income segment which the mainstream of financial institutions does not have an affordable cost, or the section is not full enough for transparency (chakrabarty, 2010).

Financial inclusion is defined as there are no obstacles of price in the use of financial services. In addition, the goal of financial inclusion is the improvement of financial service available to a reasonable price (Hanning and Jansen, 2010). Financial Inclusion is fundamental for enhancing shares prosperity. The poor benefits greatly from basic payments, savings and insurance services.

➤ **Unbanked**

Unbanked people are those referred as poor and don't have bank account, and any access to formal financial institutions ([www.gsma.com](http://www.gsma.com),2010)

➤ **Welfare Improvement**

Welfare refers to happiness, health, prosperity and well-being in general. Welfare improvement means all effort and strategies employed to ensure populations get better live hoods than the state they are in.

➤ **Mobile phone**

Mobile phones can be used to provide and access market information including but not limited to commodity process, fluctuations of food and agricultural produce, and therefore target the right market for selling and buying, through mass short message services otherwise known as sms's ([www.gsma.com](http://www.gsma.com),2010).

➤ **Mobile Money**

A mobile money can be define as service used by mobile phone in order to access financial services ([www.gsma.com](http://www.gsma.com),2010).

The mobile money service system grew mainly from Kenyan M-PESA mobile money system, where mobile telephone services are used to do financial transactions as well as access a number of other services such as online buying of goods and services.

Mobile phones are also used to transfer funds between banks or accounts, deposit or withdraw funds, or pay bills. In Rwanda, electricity, water, Television bills, can be paid using mobile money system. Money can also be transferred or switched from phones to bank accounts depending on which service you want to access. This system is protected by having an electronic account on the phone linked to specific SIM (also known as a subscriber identity module) card.

One big advantage of this system is that it can be used on the basic phone handsets not necessarily having internet capability and therefore having the potential of reaching the masses in remote and rural areas thus extending financial services to populations not served by traditional banking sector (Kunt and klapper, 2012).

➤ **Automated teller machine**

Automated teller machine otherwise known as Automated banking machines or cash machine are machine placed in accessible public areas for clients of banks to access cash at any time without the need of bank officers (cashiers, teller, and clerks).

Each client has a specific identification number (PIN) that protects his money from other people. ATM Service helps individual to access cash without much time and paper works in the banks and less transport cost of going to banks. Money can be moved from ATMs and credit the mobile money accounts and vice versa.

➤ **Bank**

Bank is known as an establishment authorized by a government to accept deposits, pay interest, clear checks, make loans, act as an intermediary in financial transactions, and provide other financial services to its customers ([www.business dictionary .com](http://www.businessdictionary.com)). Financial services are services provided to individuals and firms by the financial system. Financial system in a country is defined to include financial institutions (banks, insurance companies, and other nonbank financial institutions) and financial markets (such as those in stocks, bonds, and financial derivatives). It also encompasses the financial infrastructure (for example, credit information sharing systems and payments and settlement systems). Formal financial institution is a commercial bank, insurance company, or any other financial Institution that is regulated by the state.

➤ **Indicators of financial inclusion**

Researchers show that Financial Inclusion could be measured through four licences such as, access to financial services (the access show the availability of formal service and regulated financial services), product formal institutions, the quality of the product needed by the consumers (the quality will show the appropriate segmentation to develop product of all income level and if the products are well tailored to client needs), the usage of these financial services, the usage will speak how frequently client use product, and the impact of these financial services (Hanning and Jansen 2010).

Through Alliance for Financial Inclusion (2011), Core Indicators of access will be demonstrated by the number of access point per 10,000 per adult at national level and segmented by type and relevant administrative units, percentage of administrative unit with at least one transaction point and by percentage of total population living in administrative units with at least one access point. The core indicators of usage will be shown by percentage of adults with at least one type of regulated deposit account and percentage of adults with at least one type regulated credit account.

According to Conrad, et al. (2008) the indicators of financial inclusion can be represented by number of bank Account per adult, Demographic Bank penetration, Geographic Bank penetration, Demographic penetration of ATM, Geographic penetration of ATM, Demographic loan penetration, Low income ratio, Demographic deposit penetration, Deposit income ratio, Cash deposit ratio.