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# Determinants of Loan Repayment by Borrowers from Micro-Financial Institutions in Nakuru County Kenya

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**Abstract:** Many financial institutions in developing countries provide financial services such as saving and Credit to aid several smallholder enterprises including farmers. This is an effort in line with the Millennium development goals which seeks to reduce poverty by 50% by the year 2015. However, the sustainability and continuity of the financial institutions to increase the volume of credit to stimulate the poverty reduction goal depends on the repayment rates. However many of the financial institutions have not been able to carry out these services effectively perhaps because of loan defaults of previous advances. The study used descriptive type of design. This is the design whose purpose is to provide a description of affairs as they are. The main objective of the research was to identify the determinant of loan repayment by borrowers in micro financial institutions in Nakuru County. Specific objectives were to determine the significance of level of education, level of income and age of borrowers as a determinant of loan repayment in Micro Financial Institutions in Nakuru County. The target population comprised a total of 590 loan borrowers and employees of Micro Financial institutions out of which a sample of 10% was picked using stratified random sampling on each stratum out of which a simple random was done to pick the respondent from the list of borrowers and employees, which enable every member of the population have an equal and independent chance of being selected as respondents and also simplest, most convenient and bias free selection method. The cross sectional data was collected by use of questionnaire. The data was analyzed using linear multiple regression model which quantified the determinants while the descriptive statistics was analyzed by use of frequency tables and percentages pie charts. The results showed that education level, income level and age negative were significant determinants of loan repayment. The study recommends that borrowers with low levels of income and education should be encouraged to take up loan since they are associated with loan repayment than their counterparts respectively. The study from the sample also recommends that youths should be taken serious because they are also associated with loan repayment. Nevertheless Most MFLs were going concern.

**Keywords:** Loan Repayment, Micro Financial Institutions, Nakuru County Kenya

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## 1. Introduction

The micro finance industry in Kenya has developed over since the 1970s when group lending methodology was adapted by most of the institutions as a way of empowering the local rural; community both for leadership development and access to financial services. The initiative was dominated by the faith-based organizations and international NGOs who used credit to start and group their enterprises as either group projects e.g. for women groups or as individuals of entrepreneurs. This stage in the development of microfinance in the country significantly changed the model of community development from purely relying on grants to credit financing. it

helped develop individual's entrepreneurs business skills while providing services needed for the local levels. It's at this stage that some entrepreneur's group e.g. voi women group started a bakery and Githuguri women group among other such as Kiambaa women group started large business in transport and poultry keeping respectively. This stage had many challenge due to the loose way groups were formed funded and managed. Later in the 80s professional microfinance institutions were started e.g from Corporative of Assistance and Relief Everywhere (CARE), the National Council of Churches of Kenya (NCCCK) and World Vision international Association of Microfinance Institutions of Kenya (Ministry of Trade Kenya, 2013).

Despite this change the legal framework was weak, business environment challenging and hence growth in microfinance sector had a great change by entry of serious microfinance to full-fledged microfinance institutions either as subsidiary or stand-alone MFIs. It is at this stage in the development of microfinance that institutions such as KWFT which has now transformed to a bank, Faulu, Smep, Bimas, Sisdo and many others which played a major role in contributing towards poverty alleviations in rural and peri-urban areas in Kenya. Their contribution was far significant that almost every rural town in the village had associated with micro finance institutions. It's at this stage that due to lack of legal framework, MFIs experienced high loan defaults and poor governance (Ministry of Trade Kenya, 2013).

In 1990s the microfinance institutions started the process of having a network to champion the interest of the fast growing microfinance industry. The initiative culminated with the formation of the Association of Microfinance Institutions of Kenya AMFI-K in 1999. Since its inception AMFI-K has continued to play a major role in the development of industry. The broader mandate of the association is to promote conducive environment for the development of MFIs clients and the business environment at large.

AMFI-K broadly focuses on triple bottom on financial sustainability, social impact on clients, environment impact and standard reporting. AMFI-K has lobbied MFIs participation in credit information sharing through credit bureaus. The project is to assist the sectors manage its loan book of while supporting their clients. It is anticipated that the loan book of microfinance will improve by identifying those clients' credit data, multiple loan defaulters and nonpayment of loans will reduce significantly thus reducing the cost of lending (Ministry of Trade Kenya, 2013).

However for MFIs to be effective on reducing loan defaults they should be able to find a way of identifying the determinants of loan repayment, hence this research attempts to fill this gap by identifying the determinants of loan repayment in micro financial institutions with a case study of Nakuru County in Kenya.

Micro-finance can be defined as financial instruments, such as loans, savings, insurance and other financial products that are tailored to the low income in the community. Microfinance is established in the economy for the economic benefit the low income group in the society who cannot be able to access the formal institutions that have many conditions regarding access to credit facilities. It is also established for purposes of alleviating poverty in the country. Micro-loan is the lending side of microfinance. Micro-loans help the poor to be involved in income generating activities that allow them to accumulate capital and improve their standard of living. As quoted by the late Milton Friedman, Nobel Prize winner in the Economics 1976, "The poor stay poor not because they are lazy but because they have no access to capital" (Smith & Thurman, 2007). Many practitioners have a strong belief that micro finance can contribute positively in the lives of low income households (Armendariz & Morduch, 2007).

### 1.1. Statement of the Problem

Many financial institutions in developing countries provide financial services such as saving and Credit to aid several smallholder enterprises. This is an effort in line with the Millennium development goals which seeks to reduce poverty by 50% by the year 2015. However, the sustainability and continuity of the financial institutions to increase the volume of credit to stimulate the poverty reduction goal depends on the repayment rates. High repayment rates allow the institutions to lower the interest rates and processing costs and consequently increase patronage of loans. Repayment performance thus serves as a positive signal for increasing the volume of credit availability to various sectors of the economy (Acquah & Addo, 2011).

Awunyo (2012) has reported in empirical studies that large rate of default has been a major problem in smallholder enterprise credit delivery and sustainability, consequently large proportion of formal financial institution has suspended smallholder enterprise credit. Thus a key issue in the sustainability of smallholder enterprise credit delivery hinges on improved loan repayment. It is therefore, important for the financial institutions to devise means to reduce the levels of loan default within economic sectors.

Inability of borrowers to repay amount of loans collected is detrimental for the long-term sustenance of the credit institutions. This will lead to high interest rate and high processing cost being charged to cover the bad debts which intern will lead to more loan defaults.

### 1.2. Study Objectives

- i. To determine the role of education level in loan repayment in MFIs in Nakuru County.
- ii. To determine the role of income level in loan repayment in MFIs in Nakuru County.
- iii. To establish the role of age of borrowers in loan repayment in MFIs in Nakuru County.

### 1.3. Research Hypotheses

H01: level of education is not a determinant of loan repayment in micro financial institutions.

H02: level of income is not a determinant of loan repayment in micro financial institutions

H03: age of borrowers is not a determinant of loan repayment in micro financial institution.

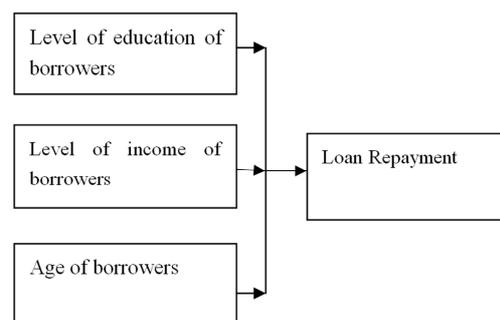


Figure 1. Conceptual Framework.

## 2. Literature Review

### 2.1. Step Wise Elimination Theory

Chirwa (2011) specified a probity model to assess the determinants of the probability of credit repayment among smallholders in Malawi. The model allows for analysis of borrowers as being defaulters or non-defaulters. Various specifications of the X-vector were explored by step-wise elimination. The explanatory power of the model is plausible with the log likelihood statistically significant at 1- percent. Four independent variables gender, amount of loan, club experience and household size were not statistically significant in various specifications. The theory is relevant to this study in that the loan repayment by the borrower is dependent on various aspects such as the interest rate, Age, level of education, level of income, and corporate membership.

### 2.2. Loan Repayment and Defaults in Micro Finance

The typical repayment schedule offered by an MFI consists of weekly repayment starting one to two weeks after loan disbursement. Weekly collection of repayment installments by bank personnel is one of the key features of microfinance that is believed to reduce default risk in the absence of collateral and make lending to the poor viable (Vogelge, 2003). In addition, frequent meetings with a loan officer may improve client trust in loan officers and their willingness to stay on track with repayments. The problem of default affects credit institutions as it affects their financial viability and erodes the value of loan portfolio in addition to reducing the number of potential loanees.

In extreme cases default in loan repayment can lead to collapse of financial services provider. In Kenya the catholic Diocese of isiolo sponsored credit programme was terminated on account of default in loan repayment. The ACK diocese of Maseno south discontinued its credit programme because of loaned capital fund was eliminated as a results of defaults (Mutura, 2006) in any case defaults in loan repayment is as a result of bad loan and not bad borrowers. Abad loan is one that the borrower repays with a lot of hardships.

### 2.3. Level of Income

An individual's level of income has important effect on his/her behavior of loan repayment (Nyandemo & Singh, 2003) defined demand as that quantity of a commodity which consumers are willing and able to purchase at a given price over a period of time. Small-scale industry is mostly operated by people with low income who have many needs but have limited purchasing power. Classical theory as the need for credit is there, the sector operators may not be able to demand credit. Mudida (2003) pointed out that if income increases, the demand for most goods will increase. Small-scale investors tend to cluster and limit their business activities to similar products mostly of low quality that target low income earners. This leads to low business returns that cannot empower the business owners to repay

their loan in time hence others may default.

### 2.4. Level of Education

Authors have found out that education level affects loan repayment to a significant level (Oladeebo & Oladeebo, 2008). Educational level is an important element that has a positive impact on a small-scale entrepreneur's demand for credit. Though learning theory the strength of its impact is shown to increase with educational attainment so that entrepreneurs with higher education will be more inclined to seek for external funds.

A major reason why formal lending institutions perceive MSEs as high risk borrowers is usually the difficulty involved in obtaining adequate information from their bookkeeping on which the lenders can base assessments. Since financial statements are a key requirement by formal credit institutions, presumably MSE operators with higher education level, accounting knowledge, better business management skills, and capability of absorption and adoption of technology give them an added advantage when it comes to credit borrowing.

### 2.5. Age of Borrowers

Mpuga (2004) analyzed demand for credit in rural Uganda. Using the household surveys data for 1992/93 and 1999/2000, a profit estimation model on demand for credit showed that individual characteristics have important implications on demand for credit. Age of an individual is positively related to the decision to apply for credit and the amount of credit applied for. Following the life-cycle hypothesis, the young and energetic individuals with ambitions to earn higher incomes are expected to be more active in terms of saving in order to accumulate wealth.

The young may tend to save or borrow more for investment while the old may be less inclined to save and borrow. The life-cycle hypothesis predicts that the old are likely to rely more on their past savings and accumulated wealth for consumption. Those at intermediate ages (18-40 years) have positive and significant demand, while the old are less inclined to demand for credit, particularly from the formal and the semiformal sources. Other characteristics such as level of education, value of household assets owned by household and other dwelling characteristics strongly influenced demand for credit (Wangai, 2011).

## 3. Research Methodology

The study used descriptive type of design. This is the design whose purpose is to provide a description of affairs as they are (Kothari 2008). A descriptive study used questionnaires to collect data, in this case cross sectional data was collected that determined the status of the independent variables on the dependent variables. The study adopted a linear multiple regression model that was used to ascertain the size of the coefficient and how the explanatory variable were significant and insignificant for the study

(Oladebo, 2008). The research variables were measured as presented in table 1.

*Table 1. Measurement of Variable.*

VARIABLES	MEASUREMENT OF VARIABLES	HYPOTHESIS (Directional relationship with loan repayment)
Loan repayment (LR)	The variable was measured using amount in KSHs. The variable was measured using a dummy variable.	Positive
Level of Education(E)	0= primary level of education 1=secondary level of education 2=post-secondary level of education	Negative
Level of log income (Y)	The variable was measured using amount in KSHs. YES or NO response was solicited to the question. The effect towards the dependent variable was known through the use of a likert scale.	Negative
Age (A)	The variable was measured using number of years. 1.18—29 youths	Negative
Age squared (A) <sup>2</sup>	2.30—59 middle age 3.60> Aged	

The study used stratified random sampling method. The four MFIs were the strata while sampling of 10% was done on each stratum (borrowers and employees of each MFIs) where by simple random sampling was done to pick the individual under study from the borrowers and employees lists, four amongst others MFIs were chosen because through observation the four had activate borrowers who regularly visited the institutions for guidance.

This ensured proper representation of the targeted population of 590 employees and borrowers. The research ensured that the sample was free from bias by gathering much information. To justify that the choice of 10% researchers has indicated that a representation sample is one which is at least 10% of the target population (Mugenda and Mugenda, 2003). For every n from N picked one respondent randomly until nth respondent was reached. Where N=population n=sample size nth=total sample size.

Primary data was collected using questionnaires which were administered to the selected respondents to fill them in MFIs. The questionnaires included both close-ended and open-ended questions, it also used likert scale in some variables; this ensured that a wider range of respondents'

perception is captured in the collection of primary data from the respondent. Research findings were resented using tables.

## 4. Findings and Recommendations

### 4.1. Findings

Regression analysis was conducted to achieve the objective of the study. The findings were as resented in table 2 and discussed as shown in this section.

*Table 2. Regression Analysis.*

R-squared	0.7853
Root MSE	.05749

The coefficient of determination ( $R^2$ ) is a measure of strength of relationship/association between dependent variable and explanatory variables. It measures the proportion of variation in Y that can be attributed to explanatory variables. The model explains 79% of the variations in loan repayment as shown by the value of R-squared. The rest 21% is explained by other variables not in the model.

*Table 3. Table of coefficients.*

Loan Repayment	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	Robust
Education (sec edu)	-.1057588	.0259469	-4.08	0.000*	-.1578495	-.0536682
Education (post sec edu)	-.1852246	.0248168	-7.46	0.000*	-.2350465	-.1354027
Age	-.0088303	.0034964	2.53	0.015	.001811	.0158496
Age squared	-.0001369	.0000414	-3.31	0.002*	-.00022	-.0000538
Income	-.09613	.0161658	-5.95	0.000*	-.1285843	-.0636758
Cons	1.630979	.2111623	7.72	0.000	1.207053	2.054905

The marks (\*) indicates significance at 1% (\*\*) indicates significance at 5% (\*\*\*) indicates significance at 10%. In multiple linear regression as in the case of the study the magnitude of coefficient of an independent variable gives the size of the partial impact on the dependent variable due to a unit change in the independent variable holding all other independent variable constant. The sign in front of the coefficient of an independent variable indicates of the

direction of the impact:

Probability value shows the likelihood that the observed outcome (relationship) is purely due to chance. This is used for hypothesis test; if the probability (P) value is greater than 0.05 or 5% level of significance we cannot reject the null hypothesis that the particular coefficient is equal to zero. If the probability value associated with a coefficient ( $\beta_n$ ) is greater than 0.05, we cannot reject the null hypothesis that the coefficient is statistically different from Zero. This means

the independent variable associated with that coefficient has no impact on loan repayment (dependent variable). But if the probability value associated with a coefficient ( $\beta_n$ ) is less than 0.05, we reject the null hypothesis that the coefficient is statistically different from Zero. This means the independent variable associated with that coefficient has an impact on loan repayment (dependent variable) Education level, age and income level they are all significant at 1% with a P-value < 0.05 0.000, 0.002 and 0.000 respectively hence we reject the stated hypothesis. All the three independent variable are negatively but statistically significant for the study hence they are determinants of loan repayment.

Education level has a negative coefficient but statistically significant at 1% thus it's a determinant of loan repayment since p-value < 0.05 as shown in the regression table above. Borrowers with secondary and post-secondary education have lower loan repayment rates of 0.1057588 and 0.1852246 respectively than borrowers with primary level of education. This result indicates that the higher the level of education the lower the repayment rate as per the sample. Business owners who possess secondary or post-secondary education have lower repayment rates than those business owners who have primary level of education, holding other factors constant. This means that having more education is associated with slows repayment rate in the sample. The primary education holders seem more committed to their repayment schedule than their more educated counterparts.

From the sample income level is negatively but statistically significant at 1% thus it is a determinant of loan repayment since p-value < 0.05 as shown in the regression table above. An increase in income by 1 per cent is associated with a decrease in the repayment rate by  $[\ln(101/100) * -0.09613] = 0.0009$  ] this is like saying the repayment rate reduced by 0.09 per cent, an increase in one unit of income is associated with a 0.9613 decrease in loan repayment; increase in income is associated with loan decrease in loan repayment as per the sample From the sample business people with larger income tend to invest most in the capital intensive project hoping that in due time its returns will be sufficient to service the loan in turn, but to his surprise the business project fails to break even thus being unable to repay the loan taken to boost his project.

Age was negatively but statistically significant at 1% significant level thus age is a determinant of loan repayment; this implies that the more people age up the commitment of repaying loan reduces thus defaults. On age of borrowers, age squared was seen to be associated with 0.088303 increases in loan repayment. This means that a unit increase in age is associated with a 0.88303 increase in loan repayment, the increase continues until a turning point where increase in one unit of age is associated with a 0.001369 decrease in loan repayment. Youths are associated with loan repayment than their old counterparts.

The repayment rate increases with age, but starts decreasing at the age of 32 years (this is called a turning point). This implies that people with less than 32 years of age are on average likely to repay their loans faster than their older

counterparts. This could be due to few family responsibilities associated with the young (below 32 years).

The turning point is calculated as follows (this how I have got the 32 years I am discussing above)

$$-\frac{0.0088303}{2(-0.0001369)}$$
 note that I have just taken the coefficients of age and agesquared straight from the regression

#### 4.2. Conclusions

The study concluded by observing that level of education, level of income and age of borrowers are determinants of loan repayment and is associated with loan repayment to a significant degree. From the sample the results showed that many borrowers have low education levels and yet they are associated with loan repayment better than those educated counterparts. The results reveal that age of borrowers is a determinant of loan repayment since increase in age is associated with increase in loan repayment. The study analyzed that the reviewed variables were determinants in a way associated with loan repayment in micro financial institutions.

#### 4.3. Recommendations

The study recommends that borrowers with low levels of education should be encourage to take up loan since they are more committed and serious and are associated with loan repayment also the study recommended for some basic tutorials on financial principals should be employed. Borrowers with low level of income should be encouraged to take up loan since from the sample low income is associated with loan repayment than their counterparts, they should also be taught how to save and boost their income levels also learn how to diversify their portfolio to generate more income, more specific they should be taught how to manage the strategic business unit SBUs i.e. they should know when to build, hold, harvest and divest their business.

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