

## **Effect of Microfinance on Poverty Reduction in Tanzania: A Case Study of the African Microfinance Limited**

*Joyce M. Kaseva*<sup>\*</sup>

### **Abstract**

*Microfinance is defined as the provision of financial services to low-income people, particularly women. It is an attempt to improve access to small loans for poor individuals who are neglected by formal commercial banks. Microfinance is an effective way of financial inclusion of the poor, and therefore a key driver of poverty alleviation. Using the African Microfinance Limited as a case, this study aims at assessing the effect of microfinance institutions on poverty reduction in Kinondoni District in Dar es Salaam, Tanzania. Data were collected from 115 clients who live in the district; and 3 loan officers were purposively selected and interviewed. The effectiveness of microfinancing is measured by total income generated from the enterprise. Descriptive statistics as well as ordinary least square method was then used to analyze the data. The findings reveal that individual's income increases as a result of access to loan; the latter being a function of collateral, cash inflows and education. Even though the poor were targeted as beneficiaries, only the ones with high collateral and high cash inflow; as well as those with high education appear to be the successful ones. Giving training for would-be borrowers on the fundamentals of business management would render microfinance more effective.*

### **1. Introduction**

Poverty is characterized by low per capita income, which reduces the capacity to meet basic needs (Chambers, 2006). Resource-wise, Tanzania is one of the richest nations in Africa but in terms of per capita income it is one of the poorest countries in the world. According to the 2000/01 Household Budget Survey, about 36 percent of the population lives below the poverty line (PHDR, 2007).

Microfinance institutions (MFIs) have been globally recognized as one of the prospective components that can promote enterprise in developing countries (Hulme, 2000; Befekadu, 2007). Public policy supports activities of microfinance initiatives as an integral part of the country's financial system. Tanzania supports and regulates the fast-growing number of micro-finance providers in the country. It is therefore important to have a clear view of their impact on the targeted recipients. The objective of this paper is to look into the extent microfinance institutions have contributed to poverty reduction,

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<sup>\*\*</sup> **Email:** [joykaseva@gmail.com](mailto:joykaseva@gmail.com)

The rest of the paper is organized as follows. Section two provides the problem context in Tanzania. Section three presents the conceptual framework and literature review. Section four presents the methodology of the research, while Section five presents empirical results while section six concludes the study.

## 2. The Problem and its Context

Microfinance institutions (MFIs) have become an increasingly important component of strategies to reduce poverty. They were established in Tanzania by Non-Government Organizations (NGOs) and Savings and Credit Cooperative Organizations (SACCOs) in 1995. Following the launching of the national micro-policy, microfinance was officially recognized as a tool for poverty eradication.

Which project?

**The project** is intended to serve low-income people, providing savings services, credits services and payments services, money transfer and insurance to the poor or low-income households and their enterprises (Chijoriga, 2000). Some MFIs provide non-financial services such as training, business advice, market assistance and counseling to their clients (Kessy & Urio, 2006).

The principal providers of microfinance services to low income individuals and their enterprises in Tanzania consist of licensed commercial banks, regional and rural community banks, saving and credit cooperative societies and several NGOs whose micro-credit delivery operations are funded and supported by technical assistance by international donors (Randhawa & Gallardo, 2003). The National Microfinance Bank (NMB) and the Cooperatives and Rural Development Bank (CRDB) are also big supporters of microfinance. Other organizations involved in microfinance in Tanzania also include the Foundation for International Community Assistance (FINCA), Promotion of Rural and Development Enterprise (PRIDE), and the African Microfinance Limited (AML). Although these institutions charge interest rates, which are nearly the same as market rates, they provide loans with affordable collateral requirements such as household's equipment, furniture, electronic equipment and other valuable house wares.

The African Microfinance Limited (AML) was established in 2009 with a vision of being a lending microfinance institution in Tanzania, with a mission of providing financial solution to individuals who felt denied such services by conventional banks. AML targets both male and female clients who are poor but economically active: formally employed or unemployed running micro and small enterprises. AML provides both financial and non-financial services. The financial services provided by AML are mainly in the form of loan (business loans and salary-based loans) and non-financial services, which includes financial education services such as classes in money management and business taxes and other support services to help participating businesses succeed in paying their loans.

**This paper seeks to contribute evidence on the extent to which disbursed loans can influence individual's income, in turn reducing the level of poverty of the loan beneficiaries, targeting low-income people, mainly women and other small-scale entrepreneurs.** Since formal banks and other large financial institutions are

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hardly accessible to low-income groups, the rise in the number of MFIs should be regarded as advantageous to the country. Increased access of financial services—mainly savings, credit and payments to the poor groups—enables individuals to invest, self-employ and create employment for others. In this, women stand better chances of being empowered.

There is an increasing demand for such financial services, but in the meantime, studies, like the current one, are important to know and then evaluate the factors that influence success (or failure) of these microfinance interventions. In the current study particular focus is on the impact of loans disbursed by AML. The implications of the study for policy and for the conduct of MFIs interventions are beneficial for inclusive development (since the MFIs services are targeting people who would otherwise have been left out by the larger banks because they cannot afford high-value collateral and such other conditions) – and hence, the significance of the contribution of this study.

Non-sequitors. Also, this does not say much about what necessitated this study.

### **3. Conceptual Framework and Literature Review**

One of the causes of poverty in developing economies is limited access to credit for working capital, as well as investment for small business (Obeng, 2011; Hermes and Lensink, 2007). Several studies show that there is a theoretical linkage between access to financial services and growth (or reduction of poverty), since access to financial services enable agents to invest (expand or start business) (Ellis, Lemma & Rud, 2010).

Poverty was traditionally understood primarily as material: low consumption, low income, poor nutrition, poor living conditions, and low access to health and education. These are the results of human poverty (Tiruneh, 2006). Abrunyalie (2012) further characterizes poverty as income poverty, vulnerability, and lack of empowerment. Income poverty stands for the lack of income to afford minimum basic necessities of life. Vulnerability involves the probability of risk of being in poverty today or falling deeper into poverty in the future. Empowerment is further classified into economic empowerment (economic security of oneself), social empowerment (ability to participate in decision-making in the community, including the household and non-family group), and political empowerment (ability to interact in the public sphere). Poverty is explained by individual circumstances or the characterization of poor people, such as the amount of education, skills, experience, intelligence, health and sex.

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Several MFIs have been established aiming to resolve the credit access problem of the poor, particularly to those participating in the small business (Abrunyalie, 2012). They aim at enabling clients to protect, increase their income, as well as to accumulate assets (Robinson, 2001). Women are the more preferred clients because they are more reliable and generally have greater sense of responsibility. Women

Uncorroborated statements

make up a large proportion of the poor who suffer more from poverty than men. An increase in women's income benefits the households and the community to a greater extent than equal increases in men's income would do (Ledgerwood, 1999).

Ledgerwood (1999) identifies the objectives of MFIs as:

- Reducing poverty by empowering women, or other disadvantaged population groups, to create employment,
- Helping existing businesses to grow or diversify their activities, and
- Encouraging the development of new businesses.

In general the mission of most MFI emphasizes a concern for poverty alleviation through provision of financial services to micro and small enterprises (CGAP, 2000).

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Lending methodologies differ with respect to whether loans are made to groups or individuals. Loans are structured based on client demand, capabilities of the provider, and risk management requirements (to ensure repayment). The core components of a loan disbursed are loan size, loan term, repayment terms, lending methodology and collateral or security. Loan sizes vary depending on the need of a client. Loans are designed to be re-paid in installments, matched to the borrower's cash flows—both inflows and outflows. Loan repayments are made in monthly installments depending on the loan structure (Kessy & Urrio, 2006).

Individual lending requires in-depth analysis of clients and their cash flows, collateral and close contact with clients during the term of a loan. Loan approvals and amounts are based on an applicant's eligibility and debt capacity, which in turn are dependent upon a number of factors, including personal and business characteristics such as age, gender, age of business (if applicable), and cash flows. The latter is used mainly for individual loans and focuses on the cost structure of the individual or microenterprise, which includes revenue flowing in, expenses flowing out, and available collateral (Ledgerwood et al., 2013). The use of collateral significantly increases the amount of loan because they enable borrowers, who otherwise might not qualify for loans, to leverage their movable assets to obtain credit. Borrowers with collateral get as much credit which they use it more genuine to increase their income and also benefit from longer repayment periods and lower interest rates (ibid.).

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#### 4. Research Methodology

The study was conducted at the African Microfinance Limited (AML), which is located in Kinondoni municipality, Dar es Salaam, Tanzania. The AML was selected because it is one of the MFIs that provide loans to clients, and the effect of its operations on the loan clients has not been documented.

Simply  
'clients'?

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The research work that led to this paper used a **case study design**. A case study design usually provides an in-depth study of a social unit that can be a person, a family, a social group, a process, a situation, a program, an institution, an organization or even an entire community (Kothari, 2004). This study adopted a case study design because: (i) It is more flexible in data collection; (ii) There is a possibility of having a more focused analysis since a unit under study is intensively studied; (iii) The researcher is better able to verify information on the spot through observation; and, (iv) The researcher becomes part of the unit of study. All these promise to make the approach capable of generating accurate information. A case study design provides the basis for generalization basing on the unit under study.

What is a **case study design**?

The study used a model that was adopted from Maddala (1983), and then modified to fit the study's situation. According to Maddala (ibid.), the benefits from MFIs can be estimated using the following model:

$$Y = f(X, I) \dots \dots \dots (1)$$

Where:

*Y* is the outcome, which can be defined as income, the latter is defined as the sum of business assets, profit, expenditure on children education, household expenditure on food and non-food household expenditure.

*X* is a vector of individual characteristics; while

*I* is a treatment variable. In other words we assume that more earnings from businesses that get loans from MFI are the outcomes of the loan.

According to Murray et al. (2007), the treatment variable can be expressed in different measures such as the total amount of loan, the number of months since the first loan was released, and the number of loan cycle an individual has borrowed. In order to capture the effect of loans disbursed on the reduction of poverty by income increase in Tanzania, individual characteristics such as age, sex, and education need to be incorporated.

Thus the functional form reads as:

$$Y = f(X, L) \dots \dots \dots (2)$$

Where *Y* represents individual income, *X* represents individual characteristics (age, sex, and education) and *L* represent loan disbursed.

Replacing individual characteristics in equation (2), we get the following modified equation:

$$Y = \beta_0 + \beta_1 Ag + \beta_2 Sx + \beta_3 Educa + \beta_4 L + \varepsilon \dots\dots\dots(3)$$

$$\beta_0, \beta_1, \beta_2 > 0, \beta_4 > 0$$

Where *Ag* stands for Age and *Sx* stands for sex;

This means that  $\beta_0, \beta_1$ , and  $\beta_2$  can either be positive or negative, while  $\beta_3$  and  $\beta_4$  are positive.  $\beta$ 's are the parameters. Sex is a dummy variable that captures the sex of an individual, where sex = 1 if it is a male; and 0 if it is a female.

The amount of loan disbursed (*L*) depends on the collateral and cash inflows of the individual. The modified model to be estimated is as presented as:

$$Y = \beta_0 + \beta_1 Ag + \beta_2 Sx + \beta_3 Educa + \gamma_1 C + \gamma_2 Cf + \varepsilon \dots\dots\dots(3)$$

The model assumes that poor people are economically active people running micro and small enterprises (MSEs), and aim at increasing their earnings. It also assumes that these people possess property and assets that are considered to be security or collateral. The model similarly assumes that the impact on income increase is due to the amount or size of the loan disbursed.

**4. Data sources**

This study employed purposive sampling technique, which is a type of non-probability sampling. The study selected a sample of 115 clients from a population of 37000 individuals who received loan from the AML. For validation purposes, it selected and interviewed three loan officers.

Both primary and secondary sources of data were used. Primary data was collected directly from the field through questionnaires (both structured and unstructured). Secondary data was collected from published articles, reports related to the subject area, as well as internet source, books and official documents of the AML. In this study, a questionnaire was the main tool used for data collection.

**5. Empirical Results**

The results of the estimated model are presented both in descriptive and analytical format.

### ***5.1 Descriptive Analysis***

Variables that were used in this study are individual income (Y), age (Ag), sex (Sx), education (Educa), collateral (C) and cash inflows (Cf), Tabular presentation of each is given in the appendix 1. The results suggest that the services of MFI is catered towards low income group, Also relatively young people appear to utilizes microfinance loan more when compared to middle aged individuals and that females constitute 67 percent of the borrowers; besides less educated borrowers have more access to loans to microfinance. The above attributes are characteristics of poor people and that the lending institution appear to cater for the poor The main criteria to qualify for the loan are existence of operating business and assets, which are used as collateral for the loan. The results suggest that 39 percent of individuals borrow more at low collateral. In other words, as collateral value goes high the number of borrowers' declines with the increasing value.

### ***5.3 Analytical Results and Discussion***

Table 1 presents the OLS regression results on the determinants of earnings among borrowers. The results of diagnostic testing are given in Appendix 2. The results show that the model has a relatively good fit.

From the above results, the following conclusions may be highlighted:

- The most important and significant variables that affect income from micro financed enterprises is the amount of collateral and cash inflow of the small business enterprise.

**Table 1: Determinants of Earnings from Micro financed Businesses**

<b>Variables</b>	<b>Coef.</b>	<b>Std. Error</b>	<b>t</b>	<b>P &gt;  t </b>
Inage	-0.0760093	0.0643511	-1.18	0.240
sex	0.0256472	0.0397405	0.65	0.520
Ineduca	0.1346132	0.0688351	1.96	0.053
Incollateral	0.363172	0.0890492	4.08	0.000
Incashinflow	0.6870139	0.0830714	8.27	0.000
s				
Constant	-1.255	0.456	-2.750	0.07
R <sup>2</sup>		0.9290		
Adjusted R <sup>2</sup>		0.9260		
F(1, 109)		286.23		
Prob>F		0.000		
N		115		

- People who have high collateral and cash inflow are likely to be the beneficiaries of higher income generated from loans.

- While preferential treatment in lending is given to the needy (see descriptive statistics), people with high collateral and high income flow (less poor) are likely to be the ones who are generating more income.
- The poor may not have benefited from micro finance.
- As expected, more educated borrowers appear to earn more from their small enterprises
- Age and sex/gender do not appear to be an important or significant explanatory variable.
- The fact that the constant term is significant suggests that there may be other variables such as unobservable attributes that affect the performance of the businesses.

## 6. Conclusion and Policy Implications

This study was influenced by the ability of MFIs to contribute to the reduction of income poverty. The empirical findings have shown that collateral and cash inflow significantly increases the income generated by a small business that is financed by MFI.

Cf. study objectives

Given that MFIs have contributed towards poverty reduction in Kinondoni District, specifically in terms of income, the government should strengthen policies and programmes that create environment for growth and development of strong microfinance institutions. Policy makers should be informed on the implication of microfinance institution as economic activities continue to grow and expand. Finding from this study showed that business persons with high collateral and good cash inflows are at higher advantage to acquire loans from MFIs. Thus, efforts to increase individual participation would require enabling individual have access to collateral and possessing good cash inflow. The results also suggest that giving training to low income business owners on the fundamentals of running a business will enable the latter to maximize hi/her earnings.

Where is this shown? For clarity, and to serve the main purpose of the paper, the tables in the Appendix should be incorporated and discussed in the main text.

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### Appendix 1: Descriptive Statistics

**Table A1: Individuals income (Y)**

Range of individual income (TZS)	Frequency	Percentage (%)
100,000-450,000	50	43
500,000-950,000	44	38
1,000,000-1,450,000	9	8
1,500,000-1,950,000	8	7
2,000,000-2,450,000	3	3
2,500,000-2,950,000	1	1
<b>Total</b>	<b>115</b>	<b>100</b>

Source: Field survey data (2014)

**Table A2: Age of Individuals (Ag)**

Age (Years)	Frequency	Percentage (%)
18-28	43	37.39
29-38	30	26.09
39-48	29	25.22
49-58	13	11.30
<b>Total</b>	<b>115</b>	<b>100</b>

**Table A3: Education of individuals**

Education	Number of individuals	Percentage (%)
7 years	47	41
11 years	41	36
13 years	21	18
16 years	6	5
<b>Total</b>	<b>115</b>	<b>100</b>

**Table A4: Value of Collateral**

Value of Collateral (TZS)	Frequency	Percentage (%)
200,000-1,000,000	45	39
1,100,000-2,000,000	44	38
2,100,000-3,000,000	17	15

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3,100,000-4,000,000	5	4
4,100,000-5,000,000	3	3
5,100,000-6,000,000	1	1
<b>Total</b>	<b>115</b>	<b>100</b>

## Appendix 2: Regression Diagnostics

### 1. Normality Test

It is necessary to perform a normality test on the data so as to determine if a data set is normally distributed as a condition for running OLS. In this case Skewness/Kurtosis test for normality is conducted and the probability of all variables obtained (except *educa*) were less than 0.1 that is,  $\text{Pr}(\text{Skewness}) < 0.1$  indicating the absence of normality for the data used therefore all variables were transformed into log form in order to normalize the data and the results of that transformation are as indicated in Table A6.

**Table A6: Transformed Skewness/Kurtosis Tests for Normality**

Variable	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
<b>Logincome</b>	0.805	0.125	2.47	0.2911
<b>Logage</b>	0.896	0.000	27.24	0.0000
<b>Logeduca</b>	0.953	0.000	.	0.0000
<b>Logcollateral</b>	0.915	0.508	0.46	0.7963
<b>Logcashinflows</b>	0.939	0.166	1.97	0.3734

**Note:** *Logincome* = Log of income, *Logage* = Log of age, *Logeduca* = log of education, *Logcollateral* = Log of collateral, *Logcashinflows* = Log of cash inflows.

Table A7 shows that after transformation of the variables from level to logarithm, the skewness test shows that all the probabilities of the transformed variables obtained are greater than 0.1, that is,  $(\text{Pr}(\text{Skewness}) > 0.1)$ ; indicating that now the data are normally distributed ready to be used to run the ordinary least square method.

### 2. Multicollinearity

**Table A7: Variance Inflator Factor (VIF)**

Variable	VIF	1/VIF
<b>Lncollateral</b>	9.46	0.105682
<b>Lncashinflows</b>	9.36	0.106884
<b>Lneduca</b>	1.10	0.908050
<b>Lnage</b>	1.05	0.956849
<b>sex</b>	1.04	0.957721
<b>Mean VIF</b>	<b>4.40</b>	

### 3. Heteroscedasticity

Heteroscedasticity is said to occur when the variance of the unobservable error term conditional on independent variables, is not constant. One of the common tests for heteroscedasticity is Breusch-pagan test and this is what this study used. Breusch-Pagan / Cook-Weisberg test the null hypothesis that the variance of the residual is homogenous (Homoscedastic) against the alternative hypothesis that residual is not homogenous (Heteroscedastic). The results for the test

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showed that probability of chi-square is 0.3551, which mean that it is insignificant and therefore the null hypothesis that variance of the residual is homoscedastic is accepted.