



Contribution of Microfinance to Households' Economic Wellbeing

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Abstract

The ability of microfinance and microcredit programmes to alleviate poverty and increase household income levels is often debated and questioned. The thematic thrust of this research is to analyse the factors affecting the household income levels in Bulawayo Province, Zimbabwe for the period 2009 to 2019. Lately, the microfinance field has become popular due to the increase in businesses that are operating in the informal sector. This study investigated the effect of microfinance loans on household income in Bulawayo Province of Zimbabwe using a representative sample of 200 households. A quantitative research method was used in this study in the way of household survey questionnaires. The Tobit model was used to analyse the sample data of this study and the findings were that education level and value of household assets are the only significant variables affecting household income. The study revealed that there is a significant and positive relationship between household income and education level of the household head. Education level, and household assets also play an important role in determining the wellbeing of people. The main recommendation from this study is that the government of Zimbabwe should explore ways for improvements in the access to education for all and also improvements in quality of education.

Keywords: Microcredit, Microfinance, Bulawayo Province, Household Income, Tobit Model

Introduction

Milana & Ashta (2020) described microfinance as a system made up of various infrastructures that provide microfinance services to the part of the community that cannot access banking services. This is supported by Banerjee, Karlan, & Zinman (2015) who also indicated that microfinance involves offering financial services to small businesses. These financial services are difficult to access from the formal banking services due to the high transaction costs charged and the nature of collateral required by commercial banks.

The concept of microfinance was introduced by Mohamed Younis in 1976 when he established the Grameen Bank in Bangladesh. Since then, the concept has attracted a lot of worldwide attention from different scholars. Copying from the Grameen Bank model, the concept of microfinance has been widely replicated in many different developing countries such as India, Indonesia, Thailand and Zimbabwe. The concept of microfinance became one of the significant contributing way for achieving the goal of halving extreme poverty by 2015, under the United Nations (UN) and it was mentioned as one of the Millennium Development Goals (MDGs) (Hermes & Lensink, 2007). The importance of microfinance in socio-economic development was confirmed in practice by the United Nations' decision to name 2005 as the International Year of Microfinance.

After the end of the MDGs era in December 2015, the UN introduced the new Sustainable Development Goals (SDGs) which were announced in 2015 under the banner "The 2030 Agenda for Sustainable Development". The number one goal of the SDGs is to "End poverty in all its forms everywhere". Under this goal number one, there are specific targets which relate to poverty reduction and microfinance as follows:



Target 1.1: By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day.

Target 1.4: By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including micro finance (United Nations, 2015, p. 12).

Zimbabwe is a signatory to these SDGs which were integrated into the country's economic blue print strategy Zimbabwe Agenda for Sustainable Socio-Economic Transformation (ZIMASSET) for the period 2013 to 2018, which also stresses the need for improved liquidity and access to credit by key sectors of the economy such as agriculture as one of the key drivers of economic growth under section 3.4.1 item (i).

Zimbabwe became one of the countries among other developing countries to adopt microcredit programmes as a strategy for alleviating poverty and increasing household incomes mainly targeting the informal sector (Mago, 2013). These microcredit programmes have shown to be an efficient tool not only for reducing poverty but also as a way of women empowerment and encouraging equality within communities.

The World Bank defines poverty in absolute terms as living on less than US\$1.25 per day, and moderate poverty as less than \$2 a day (World Bank, 2010). The definition of extreme poverty was revised by the World Bank in 2015 from \$1.25 to \$1.90 in line with the new SDGs and an estimated 10% of the world's population live under this new threshold of \$1.90 per day (World Bank, 2015). As a result, this financing instrument of microcredit is perceived worldwide as a very effective means against hunger and poverty, mainly in developing countries.

The Small and Medium Enterprises (SME) sector is a key component of Zimbabwe's economy which is estimated to constitute 70% of the economic activity (Reserve Bank of Zimbabwe, 2019). In Zimbabwe, microfinance is also viewed as an important tool for poverty reduction. The introduction of the multi-currency regime in Zimbabwe in 2009 has seen the economy improve and notably the financial sector has witnessed significant growth. The economic recovery has also facilitated the increasing growth of micro finance institutions whose main mandate is to reduce poverty through the provision of micro credit to the less privileged people in the society.

According to the Reserve Bank of Zimbabwe, (RBZ) 2017 RBZ Monetary Policy statement, microfinance in Zimbabwe has been identified as an important pillar of financial inclusion which has the capacity to provide a wide array of financial services to the previously marginalized and unbanked sections of the population, through job creation, funding of SMEs, and home industries, which are largely shunned by banks (Reserve Bank of Zimbabwe, 2017). Figure 1 shows the growth of microfinance institutions registered with the RBZ in terms of numbers in Zimbabwe from 2009 to 2017:

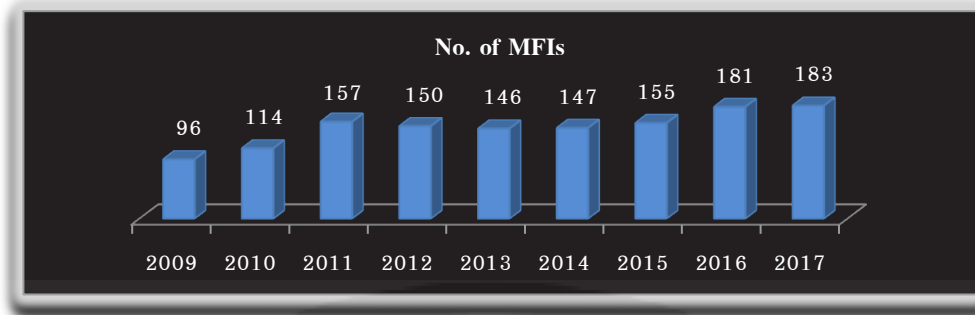


Figure 1 Number of Registered MFIs 2009–2017.

Source: RBZ Monetary Policy Statements 2009–2018.

From Figure 1, there is evidence of growth of Zimbabwe's microfinance sector as evidenced by an increase in number of registered microfinance institutions from 96 in 2009 to 183 by 2017. The percentage growth of the microfinance sector compared to the growth in GDP in Zimbabwe during multicurrency period is shown in Figure 2.

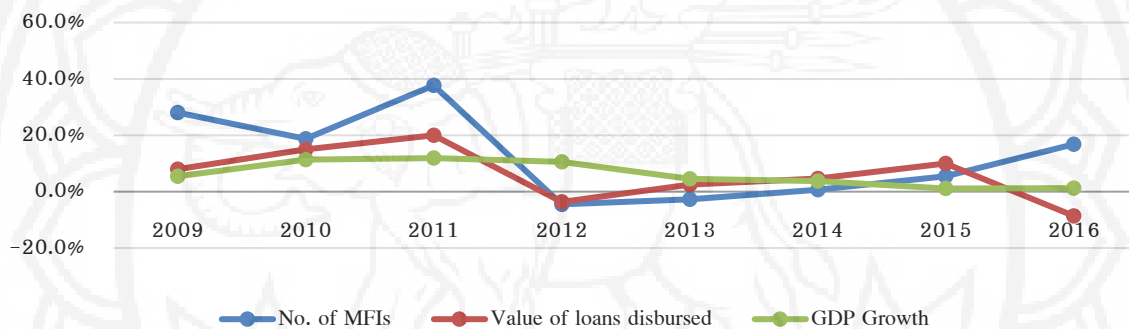


Figure 2 Trends of MFIs, Loans Disbursed and GDP Growth Rates (2009–2016).

Source: Reserve Bank of Zimbabwe, 2019.

According to United Nations Development Programme, Office of the Resident Representative (Zimbabwe) (2008), the microfinance sector in Zimbabwe experienced a phenomenal growth in 2007 in tandem to the growth of the informal sector. The UNDP's report further states that 309 microfinance institutions and micro lending institutions (MLIs) were registered with the RBZ. However, the worsening problems of the mid-2008 left approximately 150 out of 309 MFIs and MLIs operational representing about 48%. These were mainly affected by the hyperinflationary pressures that characterized the period.

The microfinance sector of Zimbabwe witnessed revival and growth from 2009 after the introduction of multiple currencies in the economy as indicated in Figure 1 and 2. Some scholars, however, argue that the growth of the microfinance industry is not due to the fact that they are bringing a positive benefit to the poor. Sharma (2000) writes that the spectacular growth of microfinance industry has been fuelled not by market forces but by conscious actions of national governments, and other development practitioners who regard microfinance as an effective tool for alleviating poverty. Regardless of this seemingly reasonable explanation, there still remains a question as to why microcredit is not producing any tangible benefits (in terms of employment creation and value addition) but there is an increase in number of clients and MFIs. Zimbabwe has

witnessed a growth in the microfinance sector over the years from 96 registered MFIs in 2009 to 183 by end of 2017 (Reserve Bank of Zimbabwe, 2018).

The trend of microfinance institutions continued to increase in numbers for both in credit-only microfinance Institutions and deposit-taking microfinance Institution as shown on table 1 though actual number declined over the quarter from 229, to 220 as some microfinance institutions ceased operations citing harsh macroeconomic conditions coupled with the lock-down protocols which limited movement and demand for microfinance loans (Reserve Bank of Zimbabwe, 2020).

Table 1 Architecture of the Microfinance Industry in Zimbabwe

Type of Institution	31 December 2018	31 December 2019	31 March 2020
Credit-only Microfinance Institutions	199	222	212
Deposit-taking Microfinance Institution	6	7	8
Total	205	229	220

Sources: <https://www.rbz.co.zw/documents/BLSS/2020/MFI-Quarterly-Industry-Report-31-March-2020.pdf>

Given the special attention that microfinance has attracted to enable financial inclusion in Zimbabwe and since microfinance has been delivered as a policy tool to alleviate poverty and promote the development of the informal and SME sector, evaluating the impact of microcredit on poverty reduction through impacting on household income level is necessary to ensure that the resources devoted to micro credit are being spent efficiently. Hence, this paper will examine the association between microcredit and poverty alleviation. Specifically, the paper tries to answer whether and to what extent credit access has helped to increase household income level in Zimbabwe.

In addition, the World Bank in 2015 indicated that it has been almost 20 years since the microfinance field has been said to be an effective tool for alleviating poverty and improving social groups, with its main targets being provision of micro lending services to the middle and lower class; which is usually under banked (World Bank, 2015). Considering the number of clients that is now billions and millions of dollars that have been devoted to the microfinance sector, it remains an area of interest to determine its effect and or benefit to the small to medium enterprise businesses and households on their social and economic wellbeing through analysis of human capital variables like education level and household asset accumulation.

Methodology

Econometric Model Specification

There are many factors that affect changes in household income levels. However, this research looked mainly at the impact of access to microcredit on household income levels.

The econometric model that was used to measure the impact of microcredit on household income was adapted from Coleman (1999) and Montgomery (2006) and is stated as follows:

$$Y_i = \beta_1 X_{ij} + \beta_2 Z_i + \beta_3 M_i + \mu$$

Where:

Y_i = Household income for household i . Income is the dependent variable used as a proxy for poverty level and is the outcome of interest.



X_{ij} = Characteristics of the individual respondents (age, education level, and gender).

Z_i = Characteristics of the household (size of household and value of household assets).

M_i = Microcredit access (dummy variable with 1 = beneficiaries and 0 = non-beneficiaries).

μ = Error term (assumed to be normally distributed with mean = 0 and variance = 1).

According to Coleman (2001); Coleman (1999) and de Aghion & Morduch (2005), the impact of microcredit on household income is measured by the coefficient of the microfinance dummy (β_3), after controlling for the effects of other factors. If this coefficient is positive and statistically significant, then it can be concluded that microcredit improves household income. If the coefficient is negative and statistically significant, then microcredit reduces household income. However, if the coefficient of the microcredit dummy is statistically insignificant irrespective of the sign of the coefficient, then the conclusion will be that microfinance has no effect on household income.

Tobit Model

Tobit Model approach was used and was complimented with maximum likelihood estimation (MLE). MLE was used for estimating the parameters of a probability distribution by maximizing a likelihood function of Tobit model used to analyse data from borrowers and non-borrowers. The Tobit Model was used because for this sample, information on the regressed was available only for some observations and it was not available for some observations. This is known as a censored sample. In this study, data about the access to microcredit was available only for borrowers and it was not available for non-borrowers. This therefore means the most appropriate model for such data is the Tobit model.

Variable Definitions and Measurement

The following variable definitions for measurement were used in this research.

Household Income (HI)

The variable was defined as annual household income from different sources such as employment income, earnings business, remittances, transfer earnings, farm income in US Dollars. Household income became the dependent variable for this model.

Age (AGE)

The age of the respondent is measured in completed years. Age is expected to have a positive effect on household income because the older the person the higher the wealth of experience which can be used to generate more income.

Education Level (EL)

This is the highest education level attained by the respondent and is captured as a continuous variable measured in years of schooling. Education level is expected to have a positive effect on household income. This is so because education is a form of human capital development which increases the productivity of labour and employment opportunities which result in higher incomes.

Gender (GN)

The gender of the household head is measured such that 0 = male and 1 = female. Gender is expected to have a positive relationship with access to microcredit.

Household Size (HS)

This represented the total number of people in a household. The effect of household size on household income is ambiguous depending on the composition of household size. If a household has a high dependency ratio (i.e. high proportion of children and the elderly), then household size will have a negative effect on household income, otherwise the reverse is true.

Household Assets (HA)

This is measured as the value of household assets in US Dollars. Household assets are expected to have a positive effect on household income. Firstly, household assets increase the credit worthiness of households and hence are more likely to borrow more money from microfinance institutions for investment purposes, which could lead to an increase in business earnings. Secondly, business assets owned by households may be used for productive purposes to earn income.

Microcredit Access

The microcredit access is a dummy variable describes the accessibility of microcredit by the household and is such that: 1 = if an individual accessed microcredit and 0 = if individual did not access microcredit. The effect of microcredit on household income may either be positive or negative.

Table 2 Definitions of Independent Variables Used in the Regression Models

Variables	Definitions
Gender	Dummy Variable Defined as = 0 if the Respondent is Male, and = 1 if Female
Age Range	Categorical = 1 if 18-30, 2 if from 31-41 years, 3 if from 41-50 years, 4 if from 51-60 years, 5 if more than 60 years old
Household Size	Categorical = 1 if 1-2, 2 if 3-5, 3 if 6-10, and 4 if above 10.
Education	Categorical = 1 if Primary, 2 if Secondary, 3 if Diploma ,4 if Degree, 5 if Post Grad
Household Assets	Dummy Variable = 1 if Movable Assets, and = 2 Immovable Assets
Microcredit Holder	Dummy Variable = 1 if the Respondent Accessed Loan, and = 0 if Respondent is Non-borrower

Multiple Correlation Analysis

Correlation is an important way of numerically quantifying the relationship between two or more variables. In this study, a sample correlation coefficient was estimated; more specifically the Pearson Product Moment correlation coefficient denoted r . The value of r ranges between -1 and $+1$ and it quantifies the direction and strength of the linear association between the variables. The correlation between two variables can be positive which means, higher levels of one variable are associated with higher levels of the other, or negative meaning that higher levels of one variable are associated with lower levels of the other.

Heteroscedasticity

Heteroscedasticity measures the dispersion of the data. It refers to data with unequal variability (scatter) across a set of second predictor variables. During regression analysis, if a regression is run and data shows heteroscedasticity, the results of that regression can be distorted. This therefore means that data needs to be checked to ensure that there is no heteroscedasticity. One of the ways of checking the data is to construct a scatter graph. If the graph produced from the scatter plot has a rough cone shape, the probability of existence of heteroscedasticity is high.



Multi-collinearity

Multi-collinearity arises when some or all of the independent variables are highly correlated with one another. In the presence of multi-collinearity, it is difficult to tell which explanatory variables is really influencing or affecting the dependent variable. Evidence of existence of multi-collinearity is when the t-statistics is very low and therefore the model will have high P-values. Wooldridge (2002) defines multi-collinearity as “the presence of a statistical linear relationship between 2 explanatory variables”. According to Cameron & Trivedi (2005) if there is multi-collinearity Stata detects the collinearity and drop one of the variables affected by multi-collinearity. If a variable is dropped from the model, then it will indicate the presence of multi-collinearity. For the purpose of this study, multi-collinearity was tested using a correlation matrix.

Research Design, Sampling Frame, Sample Procedure and Sample Size

The research used quantitative method to collect primary data from households through survey questionnaires. The research was based on surveys of two groups in the target population, the individual borrowers and those who have not accessed loans (non-borrowers). The household survey used in this research is based on Coleman (1999), whereby the control group consists of those eligible households who would be able to receive the microcredit related services when the programme expanded.

To investigate the relationship between microfinance and household income, this research tested a welfare function model in which the dependent variable is the annual per capita real income, while the independent variables include Age; Education level; Gender; Household size; Household assets and whether the individual is a borrower or non-borrower.

According to Gall, Borg, & Gall (2003), a sample is a subset of a population that is selected to take part in a research study. Sample frame is the source from which the sample will be drawn from. Therefore, this study's sampling frame is the microfinance institutions and SME businesses in Bulawayo metropolitan province of Zimbabwe.

Purposive sampling was used for loan beneficiaries, as it was necessary to obtain information from clients of different MFIs that have been getting microcredit on a regular basis. Samples of small businesses that use loans regularly were used for the study since these were the only ones that could bring out the true purpose of the study. Questionnaires for loan borrowers were distributed through the microfinance institutions and exit interviews conducted at the MFI offices as borrowers exit the offices for loan repayments or any other services. Random sampling was used to select non-borrowers or non-loan beneficiaries. This is whereby each member of the population has an equal chance of being selected as subject. The entire process of sampling was done in a single step with each subject selected independently of the other members of the population. A listing exercise was done by a team of two research assistants to determine the population size and the selection of participants was done using random tables.

The correct sample size as Cohen, Manion, & Morrison (2001) observe, depends on the purpose of the study. However, for all intents and purposes Cohen et al. argue that minimum sample size should be one, which accurately represents the population under survey. The sample consisted of respondents from the informal sector of the Zimbabwean economy; these include industrial, manufacturing, agribusiness, properties, and clothing. The other respondents were mainly company employees from 15 microfinance institutions and government departments as these are deemed to have the knowledge on the area of research. Some respondents responded to



questionnaires while some were interviewed. The smaller sample was selected because of resource constraints in terms of time and money.

According to Lucy (2006) a sample of 10% of the target population is used when the population is above 200 and 40% of the population is sampled when the population is below 200.

In this case, the researcher used a sample size of 200 households as the population was 205 for borrowers and 100 non borrowers were randomly selected for the study.

Survey Research Questionnaire

In this research a structured questionnaire survey was conducted, for the households. This is the source of primary data. Structured interviews were conducted with the survey participants as they exit the microfinance institutions or at their business premises and it was divided into two sections which are business management and the actual business implementation. This tool was used in order to collect data on different social and economic conditions of the loan holders. The tool specifically sought to get general information about the respondents, general information about the microfinance business, and accessibility of a loan from any Microfinance institution in Zimbabwe and the benefits of microfinance loan for the borrowers. This kind of structured interviews is good for quantitative research as mentioned in Bryman (2008, p. 194) it “promotes the standardization of both the asking and recording of questions”. This can reduce the error that may be caused by the variation in the questions asked and increase the accuracy in processing the participants’ answers as well. Data collection process took approximately two months from start to completion. Before data collection, a three day’s training session for the research assistants was conducted on data collection. The training involved a detailed explanation about the purpose of the research and its objectives. During the training a detailed analysis of the questionnaire was done and inconsistencies in the design of the questionnaire were uncovered and these were corrected when compiling the final draft. Further discussions took place on the nature of the people in the area of study and the cautions and ethics that should be considered in addressing them. The researchers also took time to practice and train on the questionnaire after editing it and the session was spent role playing where each one asked questions and the other acted as the respondent. Pilot testing of the questionnaire was done to ensure that the survey questions and research instruments as a whole operate well. The survey interviews were conducted with individual business holders either as exit interviews as they walk out of the various MFIs or at their place of business.

Results and Discussion

Descriptive Statistics

Table 3 present a descriptive analysis of the independent variables that were used. The descriptive statistics of these variables shows that the average age of the household head is the 31–40 years range. The average household size is within the range of 3–5 household members. All the respondents indicated that they have at least attained some formal education and the majority of them have gone up to secondary level. It also shows that 72.9% of the respondents have had access to microcredit and 27.1% are non-borrowers.

**Table 3** Descriptive Statistics for Independent Variables

Variable	Mean	S.D.	Min	Max
Gender	1.633	0.483	1	2
Age Range	2.212	0.958	1	5
Household Size	2.128	0.589	1	4
Education Level	2.559	0.932	1	5
Household Assets	1.926	0.749	1	2
Microcredit Access	0.729	0.466	0	1

Multicollinearity Test

To test for multicollinearity, the correlations between the independent variables were carried out. Different methods of testing correlation were used to test for the different types of independent variables. These different variables include the interval variables such as age and household size; the ordinal variables such as education; and the dummy variables including, gender, type of household assets and microcredit holder.

In order to examine the relationship between the dichotomous and interval or ordinal variables the Spearman's rho test was used. The Spearman's rank-order correlation is the nonparametric version of the Pearson product-moment correlation. Spearman's correlation coefficient, (ρ , also signified by r_s) measures the strength and direction of association between two ranked variables. The Spearman correlation evaluates the monotonic relationship between two continuous or ordinal variables. In a monotonic relationship, the variables tend to change together, but not necessarily at a constant rate. The Spearman correlation coefficient is based on the ranked values for each variable rather than the raw data. The Pearson correlation evaluates the linear relationship between two continuous variables. A relationship is linear when a change in one variable is associated with a proportional change in the other variable. When compared to the Person's r method, the closer the Spearman's rho coefficient is to 1 the stronger the relationship between the variables. Table 4 shows that the strongest positive significant relationship was found to be between age of the household head and household size (0.5618). This is so because older respondents have larger families, hence bigger household size than younger respondents.

Table 4 Spearman Correlation Matrix for Independent Variables

Variable	Gender	Age Range	Household Size	Education Level	Microcredit Access	Household Assets
Gender	1.0000					
Age Range	-0.0575	1.0000				
Household Size	0.0319	0.5618	1.0000			
Education Level	0.0091	-0.1091	-0.0805	1.0000		
Microcredit Access	0.0318	0.0147	0.0202	0.2850	1.0000	
Household Assets	-0.1297	-0.0738	-0.0190	0.0097	-0.1908	1.0000

Hypotheses Testing

The following proposed hypotheses in this study were tested;

H₀: There is no significant relationship between access to microcredit and household income.

H₁: There is a significant relationship between access to microcredit and household income.

The hypothesis indicates that H₀ represents whether there is a positive relationship between access to credit and household income. The test results give an $F(6, 181) = 63.96$ and $\text{Probability} > F = 0.0000$ which is less than 0.05. When the p-value is less than 0.05, we reject the null hypothesis. From the given result, the $\text{Probability} > F = 0.0000$ is less than 0.05 hence we reject the null hypothesis and conclude that there is a positive relationship between access to credit and household income. Testing H₁ reveals $F(5, 181) = 51.96$ and $\text{Probability} > F = 0.0000$. Again we reject H₁ because $\text{Probability} > F$ is less than 5% level of significance. We also conclude that it is not only access to microcredit that results in increase in household income. There are other factors that are positively related to household income besides access to microcredit.

The study therefore rejects the null hypothesis;

H₀: There is no significant relationship between access to microcredit and household income and accept the alternative hypothesis.

H₁: There is a significant relationship between access to microcredit and household income.

Heteroskedasticity Test

A test for heteroskedasticity using the Breusch-Pagan / Cook-Weisberg gives a Chi^2 of 0.01 which is an indication of high volatility in the effects of independent variables on household income. The variables used in this study were fitted values of household income. Given a $\text{probability} > \text{Chi}^2 = 0.9122$ which is bigger than 0.00, the conclusion is that there is no heteroskedasticity. This can be seen by a view of the scatter plot in Figure 4 showing dispersed residuals against fitted values.

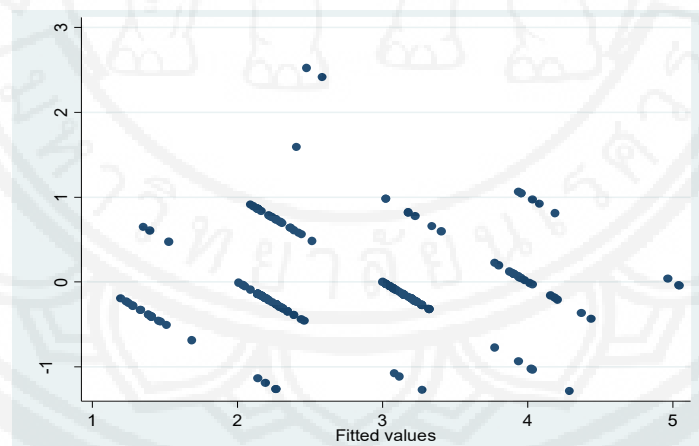


Figure 3 Heteroskedasticity Test.

Source: Research Data 2019 Log-linear Model Regression Results.

**Table 5** Log Linear Model Linear Regression Results

Household Income	Coefficient	Standard Error	T value	P > t	95% Confidence	Interval
Gender	-0.0499189	0.0905077	-0.55	0.582	-0.2285049	0.1286671
Age	-0.0311951	0.0557296	-0.56	0.076*	-0.1411585	0.0787682
Household Size	0.1313132	0.0899248	1.46	0.146	-0.0461225	0.3087489
Education	0.8836558	0.0485611	18.20	0.000*	0.7878371	0.9794744
Microcredit Access	0.0984465	0.1025986	0.96	0.339	-0.1039966	0.3008897
Household Assets	0.1253524	0.0588783	2.13	0.035*	0.0091762	0.2415287
Constant	0.0472012	0.02871838	0.16	0.870	-0.5194576	0.61386

Source: Research Data 2019. *Represent the Significant at 5% Level

Summary of Log Linear Model Linear Regression Results

Prob $\geq F = 0.00$

R-squared = 0.6795

Adjusted R- = 0.6689

Root MSE = 0.5880

Number of observations = 200

The coefficient of determination (R^2) represents the ratio of variance in the dependent variable (Household income) that can be expounded by the independent variables (gender, age, household size, education, microcredit access and household assets). Given the R^2 of 0.6795 which is based on the sample of variable chosen, the model given for this study can be deemed a good fit because it is greater than the minimum acceptable fit of 0.50. In conclusion, this implies that 67.95% of the total variation in household income is accounted for by the changes in the pointers of gender, age, household size, education, microcredit access and household assets. Also, the adjusted R^2 of 0.6689 affirms that the chosen dependent variables indicate that about 66.89% of the variability of household income is accounted for by the model; even after taking into account the number of predictor variables in the model.

The intercept of the regression equation (0.0472012) gives a p -value of 0.870 which is greater than 0.05 (5%) level of significance. This means that the intercept is not significant. On the other hand, the 0.0472012 value means that when values representing gender, age, household size, education, microcredit access and household assets are zero, the value of household income basically comes to US\$0.0472012. The p -values of gender, age, household size and microcredit access are greater than 0.05 which means that they are all statistically insignificant. However, the p -values of education and household assets are less than 0.05 which means that they are statistically significant. The p -value of the F -test is greater than 0.05 which also means that the overall model is statistically insignificant.

Education level is positively related to household income and has a significant effect on income. This result is consistent with the expected outcome. Education is essential in improving human capital development which in turn increases the human capacity of productivity thereby increasing income earning capacity. This is supported by the government of Zimbabwe's initiative of education for all in order to improve household income for all, hence reduce poverty. Chandio, Jiang, Wei, Rehman, & Liu (2017) confirms that educational level, farming experience, farm size, income, and availability of collateral have positive effect on farmers' access to credit.

The value of household assets owned also has a positive and significant effect on household income. This is so because household assets are used as means to boost productivity leading to increased income earnings for the

household. Household assets are also used as collateral and they improve credit worthiness for borrowers so that they can access more working capital to improve their businesses and improve income. This is in agreement with Kislal, Menkhoff, & Neuberger (2013) who affirm that lack of collateral contributes to restricted access to finance which is a major concern in developing financial markets.

Although the p-value of household size shows that it is statistically insignificant in affecting household income, the coefficient shows that household size is positively related to household income. The positive relationship is derived from the fact that as the household size increases; the number of productive labour also increases. More members of the family are either employed or they provide labour for the business thus increases the household income.

Results also show that gender and age of household are negatively correlated to the model. Age was expected to have a positive effect on household income because the older the person the higher the wealth of experience which can be used to generate more income. However, in this study, age was found to be negatively related to household income. This was because most of the respondents (62%) were found to be between the age group 31–40 years which is the economically active population but are still to acquire more business experience to generate more income.

Estimating Censored Regression (Tobit)

Tobit Model was used to estimate the censored data.

Table 6 Tobit Model Results

Variables	Coefficient	Standard Error	Z	P > t	95% Confidence	Interval
Gender	-0.048818	0.0929278	-0.48	0.628	-0.2270169	0.1372533
Age	-0.0193677	0.0574975	-0.34	0.073*	-0.1320607	0.0933252
Household Size	0.0972593	0.0930577	1.05	0.296	-0.0851304	0.279649
Education	0.9209909	0.0479939	19.19	0.000*	0.8269246	1.015057
Household Assets	0.1246753	0.0595513	2.09	0.036*	0.0079569	0.2413937
Constant	0.0471911	0.2899893	0.16	0.871	-0.511775	0.6155597
/sigma_u	2.39e-18	0.0730794	0.00	1.000	-0.143233	0.143233
/sigma_e	0.6938906	0.0485779	14.28	0.000	0.5986796	0.7891016
Rho	1.19e-35	7.27e-19			0	1

*Represent the Significant at 5% level

Tobit model results also shows that, the coefficients of age, education and household assets value are significant relationship between these variables and household income. The result shows a negative likelihood ratio of -172.55434.

Conclusions

The main conclusion drawn from the results is that improving on an individual's education level is a strong factor in improving the household income hence reducing poverty levels. Education remains key in improving human capital which in turns improves the human's capacity of being productive thereby increasing their earning capacity. Another conclusion is that although there is an insignificant relationship between microcredit access and household income, the relationship between these two variables is positive. Since there is a positive relationship between access to credit and household income, this means that MFIs remains an important tool in poverty



reduction because people who access loans become more productive and hence their living standards improve. It is concluded that accumulation of household assets plays an important role in wellbeing of people. Age of people is critical factor in improving the welfare of household.

Policy Recommendations

Based on the above conclusions, the following recommendations were suggested.

1. Since education is a key driver to economic development and improving household welfare, government of Zimbabwe should explore ways for improvements in the access to education for all and also improve on the quality of education.
2. The government of Zimbabwe should take steps to improve conditions for loan access so that more business people can access loans and improve their profits and income levels.

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