

Article

The Impact of Microfinance Institutions on Poverty Alleviation

Collin Chikwira ¹, Edson Vengesai ^{2,*} and Petronella Mandude ³

¹ Department of Accounting Sciences, Midlands State University, Gweru P.O. Box 9055, Zimbabwe

² Department of Economics and Finance, University of the Free State, FGG-C 3rd Floor, Room 348, P.O. Box 339, Bloemfontein 9300, South Africa

³ Department of Banking and Finance, Great Zimbabwe University, Masvingo P.O. Box 1235, Zimbabwe

* Correspondence: vengesaie@ufs.ac.za

Abstract: Microfinancing has been targeted as a tool to address Poverty through the provision of credit to the poor and marginalised economic functions. However, the main objective upon which these institutions are founded is yet to manifest primarily in developing economies. This study examined the role of microfinancing in poverty alleviation by employing a Vector Error Correction Model on quarterly time-series data. The results reveal a significant long-run relationship among the variables poverty, microfinancing, SMEs, and agricultural growth. Contrary to expectations, Microfinancing was found to increase poverty in the long run. SMEs and agricultural development were found to reduce the level of poverty in the long run. In the short run, regression results reveal that SMEs' growth alleviates poverty, and poverty increases the growth of microfinance loans in the country. The increase in SMEs is a tool for alleviating poverty, and the growth in microfinance institutions is also being driven by poverty. This suggests that continued improper microfinancing can escalate the poverty levels to undesired heights. The findings imply that the growth of microfinance loans is not being put to its intended and efficient use. These findings bring to the fore that it is not only the provision of funds that matters.



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1. Introduction and Background

Poverty is a pandemic that has attracted policymakers and researchers to postulate channels of poverty alleviation which need an immediate address so that the societies' living standards can be improved (Bent 2019). According to the World Bank, 71 million-plus people on the continent have already been pushed into extreme poverty by the outbreak of COVID 19. Millions more are teetering on the brink. Research has shown that poverty can only be destroyed if societies are equipped with the necessary resources to quick jump-start their income economic activities such as small-scale farming, small business, and sole trading (Khan et al. 2020). According to the World Bank, poverty is pronounced deprivation in wellbeing and comprises many dimensions. It includes low incomes and the inability to acquire the basic goods and services necessary for survival with dignity. Poverty also encompasses low levels of health and education, poor access to clean water and sanitation, inadequate physical security, lack of voice and insufficient capacity and opportunity to better one's life. According to the world bank, if a person lives on \$1.90 a day or less, they are living in extreme poverty. Currently, it is estimated that 767 million people in the world fall under that category (ZIMSTAT 2020). The poverty rate in rural areas is comparatively higher than that in urban. Poverty alleviation is the set of steps taken in an economic and humanitarian way to eradicate poverty in a country (Manzoor et al. 2019). Poverty alleviation, poverty reduction or poverty relief is a set of measures that raise and are intended to raise ways of enabling the poor to create wealth for themselves as a conduit of ending poverty forever (Zainal et al. 2019). Poverty reduction occurs primarily as a result of overall economic growth. Takaruva (2016) theoretically illustrated that poverty

alleviation involves improving the living conditions of already poor people. Given the diversity of causes and effects linked to poverty and its alleviation, the current study wishes to test if the microfinance institution loans impact poverty reduction in Zimbabwe.

Currently, it is estimated that 7.9 million Zimbabweans are living in extreme poverty, citing the COVID 19, which has worsened the economic crisis in the Southern African country (ZIMSTAT 2020). According to the surveys carried out in Zimbabwe by the World Bank, economic and social updates explain that almost half of the Zimbabwean population was in extreme poverty between 2011 and 2020. The World Bank report of 2020 states that 21.4 per cent of the population in Zimbabwe are living below \$1.90 budget per day, which reveals extreme levels of poverty. The poverty statistics are found to be higher among rural dwellers. Moreover, poverty is also more feminised due to their low levels of education, health, and unpaid work in the agriculture sector.

Poverty reduction was institutionalised in the mid of 19th century with the establishment of the World Bank in 1944. Its formation was aimed at granting loans to developing countries' governments and institutions through its structural adjustment programmes (Kim and Sang 2018). However, these programmes were found to be highly unsuccessful in helping poor societies and, thus, poverty reduction (Morduch 2000). The failure of the formal institutions in poverty reduction accounted for a shift in the thinking related to the development and led to the emergence of microfinance institutions (MFIs) (Abrar and Javaid 2016). Microfinance institutions are designed to provide small businesses and entrepreneurs access to capital. That is, it is a platform that businesses and individuals in which they can use to source financing for their recapitalising. Also, it can be a vehicle that can be tailor-made to suit poorly economically active people (Gassner et al. 2019). The poor-income households who cannot access the financial services provided by commercial banks can have access to finances through MFIs. MFIs serve a pivotal role in the economies by availing small packages that suit every economically active person (Zainal et al. 2019).

The provision of micro-credit to the poor, especially to youth and women in the rural, is essential in poverty reduction through empowerment. One of the most popular new technical tools for economic development and poverty reduction is microloans, made famous in 1976 by the Grameen Bank in Bangladesh. The idea is to loan small amounts of money to farmers or villages so these people can obtain the things they need to improve their economic rewards. Addae-Korankye (2020) explained that access to food and income-generating projects could make poor people self-sufficient. Access to land and inputs could improve the food security of the people. Microfinance evolved from an informal saving beginning in the eighteenth and nineteenth centuries when the theorist Lysander wrote about the benefits of small credits to entrepreneurs and farmers to alleviate people out of poverty. Thereafter, microfinance has become an essential tool for poverty reduction in many parts of the world and is found among the institutions which provide different financial services to the poor who are out of the conventional banking system, particularly in developing countries (Bent 2019). Pham and Huynh (2020) document that the availability of credit aids enterprises in purchasing superior technologies, employing competent workers, and applying new production methods to expand their business activities. With Africa's ever-increasing youth population projected to double by 2050, the need for innovative and sustainable ways to support youth employment grows in importance. While the challenge is daunting, it has also inspired many of Africa's creative and diligent young people to take charge of their own futures, coming up with innovative solutions to keep themselves employed and actively engaged.

In Zimbabwe, evidence showed that MFIs are quickly multiplying and posting supernormal profits, as exhibited by a quarterly microfinance industry report (2019) that there is an 11.7 per cent growth of registered MFIs. They managed to issue total loans amounting from \$388 million to \$633 million, which translated to 63 per cent loan growth from December 2018 to December 2019 (Bank Supervision Division 2019). The MFIs are focused on the poor societies related to the informal sector through credit provision. Globally, Microfinance institutions have a special mandate to provide small loans and other

financial services, including savings and insurance, to the poor, traditionally deprived of other formal sources of credit with the aim of poverty alleviation (Tafamel 2019). Usually, their financial services are provided to small enterprises and self-employed people of the low-income groups (Iqbal et al. 2015).

Microfinance institutions are posting exponential profits and increasing rapidly in Zimbabwe, while poverty rates are still escalating. This raises questions about the role of microfinance lending facilities. Hence the current study wishes to find the causalities between MFIs loan growth and poverty reduction. The poverty level in which the people of Zimbabwe live, especially the marginalised societies, is increasing despite the abundance of poverty alleviators, including the increase in Microfinancing that should help to alleviate poverty. The practical significance of microfinance institutions in poverty reduction is still contentious. This contradicting evidence is the main reason for this study to determine the impact of microfinance institutions on poverty reduction. The rest of the paper is organised as follows; Section 2 reviews the literature, Section 3 details the methodology adopted, Section 4 reports the study's findings, and Section 5 provides a summary and concludes the study.

2. Literature Review

There are different ways in which poverty can be eradicated. Theoretically, channels through which microfinance affects the poor have been well documented (Binswanger and Khandker 1995; Hulme 2000). In literature, many studies have revealed that microfinance institutions help to alleviate poverty through the provision of credit to marginalised societies. Availability of credit helps diversify household income and smoothens household expenditure, allowing them to absorb economic shocks and fluctuations (Samer et al. 2015). Enisan and Oni (2012) emphasised that MFIs are a vehicle through which the poor are empowered. Other studies indicate that universal public education has some roles in preparing youth for basic academic skills and many trade skills. For example, apprenticeships in celery build trade skills and help reduce poverty. If modest amounts of cash and land can be combined with a modicum of agricultural skills in a temperate climate, subsistence can give wayward modest societal wealth (Kim and Sang 2018). Also, another very important aspect of poverty reduction cited in the literature is education for women. If women are educated, this will reduce family size and a vital poverty reduction event in its own right (Khan et al. 2020). However, some studies dispute the role of microfinance in alleviating poverty. DFID (2001) affirms that experience from international microfinancing shows that MFIs are an unsuitable tool to reduce poverty. Hickson (2001) asserts that to achieve the goal of poverty reduction effectively microfinance institutions have a long way to go. Further, Srinivas (2004) indicates that through microfinancing, valuable aid money is diverted to untested and non-viable microfinance programs away from crucial activities such as education and health in need of these funds. There are diverging views surrounding the effectiveness of microfinancing in poverty alleviation.

Furthermore, Foreign Direct Investment (FDI), has been found to be a major poverty eradication tool through the creation of employment opportunities for unskilled workers and the poor (Do et al. 2021). The Heckscher-Ohlin model indicates that in taking advantage of abundant production factors in developing economies with more unskilled labour, FDI focuses on the use of unskilled labour leading to the demand of unskilled labour offering an increase in wages and directly having an impact on poverty reduction (Lee and Vivarelli 2006; Ucal et al. 2014). Klein et al. (2001) argues that in developing economies, economic growth is the most important channel for poverty reduction and economic growth is mainly promoted by FDI. Du et al. (2005) documents that FDI can have a spatially positive spill over impact on poverty reduction in developing economies. They argue that knowledge spill overs regions boost economic growth for the entire country (Holger and Strobl 2005). A number of empirical studies have examined the role of microfinancing on poverty alleviation; however, there is no consensus in the literature on the impact of microfinance on poverty reduction. Studies like Goldberg (2005), Khandker (2003) reported

a positive impact of microfinance on credit reduction. On the other hand, some found no positive effect owing to lack of education, skills, and experience among the target groups (Duong and Izumida 2002). Studies that found no positive impact of microfinance on poverty argue that microfinancing is a necessary but not a sufficient tool towards poverty alleviation (Enisan and Oni 2012). Samer et al. (2015) indicate that although microfinancing has been cited as effective poverty eradication and socio-economic development tool, its impact is still questioned and differs from one country to another and even from urban to rural areas. Given the heterogeneous impact of micro finance credit, several studies have been carried out in different countries to assess its effect on poverty and economic well-being. Imai et al. (2012) document that microfinance positively affects poverty at a macro level. Van Van Rooyen et al. (2012) reveal that microfinancing is crucial in reducing poverty and improving economic development in Sub-Saharan African countries. Ghalib et al. (2015) found a positive effect of microfinancing on economic vulnerability among poor households in Malaysia. In Pakistani Ghalib et al. (2015) found microfinancing to alleviate poverty which manifested in household income and expenditure. Khandker (2003) used panel data analysis in Bangladeshi and found a positive relationship between microfinancing and poverty reduction and household expenditure. Morris and Barnes (2005) show that microfinancing positively impacts rural households' income and assets accumulation in Uganda. Imai et al. (2012) reveals a positive impact between microfinance and income in India.

Christensson (2017) investigated the relationship between access to microfinance institutions and poverty reduction on a State level in Nigeria. The study utilised the ordinary least square regression, and their results show a negative relationship between the number of microfinance institutions and the poverty levels. Thus, the study concluded that microfinance institutions decrease the poverty levels in Nigeria. This implies that an increasing number of microfinance institutions in poor areas can reduce the poverty levels in a country. Kasali (2020) analysed the impact of microfinance loans on poverty alleviation in Southwest Nigeria using primary research. The study adopted a stratified sampling technique to collect cross-sectional data through a structured questionnaire. The Propensity Score Matching (PSM) methodology was utilised to analyse the results. The study revealed that microfinance loan has favourable contributions to poverty alleviation in the study area, but there is still a need for government aid. Governments should support the MFIs with funds that would be disbursed at concessionary interest rates. The availability of more infrastructural facilities and a more enabling environment would effectively spur the establishment of more MFIs in rural areas.

Poverty reduction in Zimbabwe has been empirically analysed through accessing smallholder farmers' access to financial services. Mhlanga et al. (2020) used simple regression analysis where financial inclusion was the basis to find if smallholders are getting funding, and access to financial institutions and credit facilities. The results showed that if farmers are financially included, there is a positive impact on poverty reduction. The study was based on smallholder farmers' values and level of financial inclusion. The study discovered that, to tackle poverty, especially among the smallholder farmers, it is vital to ensure that farmers participate in the financial sector through saving, borrowing, and taking out insurance, among other services. Even though the study notes an increase in financial inclusion, there is tenacious growth of poverty in Zimbabwe. The current study ought to incorporate the lending issue through MFIs to assess its impact on poverty eradication. Jaka and Shava (2018) examine the implementation of rural women's livelihoods towards the economic empowerment of women in the Chivi District of Zimbabwe. Using a case study approach that triangulates interviews, focus groups and documents, the article found that women faced numerous challenges, including a lack of access to credit facilities. The paper concludes that access to competitive markets and entrepreneurial education supported by adequate funding is fundamental to achieve economic empowerment through resilient rural women's livelihoods.

The majority of the studies show a positive relationship between poverty reduction and microfinancing growth in different regions. Microfinancing was founded with the intention of providing credit to the marginalised and poor to improve their socio-economic well-being and reduce poverty. However, in reality, poverty is actually increasing as these microfinance institutions increase. The growth of microfinancing in several African countries and the escalation of poverty levels in these African countries question previous findings on this relationship and the effectiveness of the intention of microfinancing. This raises questions on whether the increase in poverty could result from the recent surge in microfinancing, which warrants further investigation. Thus, this study aims to cover this gap by analysing the causality between microfinancing and poverty reduction in Zimbabwe.

3. Methodology

3.1. Data and the Variables

To examine the impact of Microfinance Institutions on poverty alleviation, the study adopted a quantitative approach using purely secondary data sourced from World Bank economic indicators, the Reserve bank of Zimbabwe and the ZIMSTATS databases. The study used quarterly time series data for the period 2009 Q1 to 2019 Q4. The year 2020 was excluded because of the COVID 19 business disruptions and complications. The study employed the poverty index sourced from the world bank data as a measure of poverty (the primary dependent variable). There are three dimensions of poverty level: education, health, and standard of living. All the three dimensions are equally weighted; each dimension makes up one-third of the index of poverty variable. Years of schooling and school attendance are education indicators. A person is considered deprived of years of schooling if no one in the household above ten has completed five years of education. A person is deemed to be denied of school attendance if any child up to the age at which they would achieve 7th grade is not attending school (ZIMSTAT 2019). Child mortality and nutrition are health indicators (ZIMSTAT 2019). The standard of living indicators are measured by access to electricity, water, assets, and floor. A person is deprived of electricity if the household has no electricity. Sanitation deprivation is defined as a household's sanitation facility not meeting the guidelines of the Millennium development goals (MDG)7 set by the UN. A person is considered deprived of water if they do not have access to drinking water according to MDG's guidelines. If a household cooks with wood, charcoal, or dung, it is considered deprived of cooking fuel. A person is considered deprived of assets if the household does not own at least one of the following assets: TV, telephone, radio, bike, motorbike, or refrigerator, and does not own a truck or a car (ZIMSTAT 2019).

The independent variables are MFIs loan growth, SMEs growth and agricultural output. Loans growth in the MFIs was used as the primary independent variable proxied by microfinancing loan growth (MFIs) in Us dollars. Félix and Belo (2019) MFIs loan growth was used because it is a tool for economic active poor and entrepreneurs with small businesses in the informal sector. It is a widely used variable in empirics (Adjei et al. 2009; Iqbal et al. 2015; Kim and Sang 2018; Addae-Korankye 2020) it captures the access of financial resources for the poor and marginalised because the MFIs are formed to provide lending to those who can't access banking loans. MFIs loan growth data was collected from the Reserve bank of Zimbabwe. SMEs growth was used as a control variable that measures the growth of Small and Medium Enterprises (Bae et al. 2012). It has been found to effectively alleviate poverty (Harber 2002) and positively correlated with income generation and welfare. The higher the loan volumes to the SMEs, the lower the risks of the households falling into poverty because more jobs are created, SMEs can employ more people, thus reducing poverty (Aigbokhan 2008). SMEs growth was used because they create jobs either through the emergence of new enterprises or expansion of existing ones, impacting employment levels. Thus, providing poor people with reasonable wages, and taking them out of poverty. Therefore, the expected results are positive on the poverty index. The SME loan variable data was obtained from the Reserve bank of Zimbabwe website statistics. Lastly, Agricultural activities impact poverty in that they contribute to nutrition

and food security. Christensson (2017) stressed that agriculture is an important variable because it is a predominant activity of the poor. Therefore, it is adopted in this study to capture the reduction in poverty if agriculture is growing. If there is growth in agriculture, poverty levels are reduced (Zezza and Tasciotti 2010). Agricultural output was measured as the aggregate agricultural produce for the country and data was extracted from ZIMSTAT. High agricultural output is expected to have a positive impact on poverty reduction.

3.2. Empirical Model Specification

The study used the time series econometrics Vector Autoregressive (VAR) model to test the causal relationships between Poverty and Microfinancing. The four dependent variables used in the VAR model are poverty alleviation (POV), microfinance loan growth (MFIL), SMEs growth (SMEs) and agricultural growth (AGR). In the VAR system, the dependent variable is a function of its lagged values and lagged values of other variables in the model. The VAR system consists of a set of linear dynamic equations whereby each variable is specified as a function of an equal number of lags (k) and all other variables in the system (Gujarati and Porter 1999). The general model specification is as follows:

$$Y_t = \delta + \sum_{i=1}^k \beta_i Y_{t-i} + \sum_{j=1}^k \varnothing_j X_{t-j} + \sum_{m=1}^k \vartheta_m R_{t-m} + \sum_{r=1}^k \lambda_r W_{t-r} + \mu_t \quad (1)$$

where, Y_t dependent variable, Y_{t-i} lagged dependent variable, (X_{t-j} , R_{t-m} , W_{t-r}) lagged independent variables, δ intercept, β_i , \varnothing_j , ϑ_m , λ_r short-run coefficients, μ_t residuals, k number of lags.

Following the VAR specified, the initial vector implication is captured in the following system of the model with specific variables to be tested. Since there are four variables, it also means there are four equations, each being a dependent variable of the other as given below,

$$InPOV_t = \varphi + \sum_{i=1}^k \beta_i InPOV_{t-1} + \sum_{j=1}^k \lambda_r InMFIL_{t-j} + \sum_{m=1}^k \vartheta_m InSMEs_{t-m} + \sum_{r=1}^k \varnothing_j InAGR_{t-r} + \mu_{1t} \quad (2)$$

$$InMFIL_t = \alpha + \sum_{i=1}^k \beta_i InPOV_{t-1} + \sum_{j=1}^k \lambda_r InMFIL_{t-j} + \sum_{m=1}^k \vartheta_m InSMEs_{t-m} + \sum_{r=1}^k \varnothing_j InAGR_{t-r} + \mu_{2t} \quad (3)$$

$$InSMEs_t = b + \sum_{i=1}^k \beta_i InPOV_{t-1} + \sum_{j=1}^k \varnothing_j InMFIL_{t-j} + \sum_{m=1}^k \vartheta_m InSMEs_{t-m} + \sum_{r=1}^k \varnothing_j InAGR_{t-r} + \mu_{3t} \quad (4)$$

$$InAGR_t = \lambda + \sum_{i=1}^k \beta_i InPOV_{t-1} + \sum_{j=1}^k \lambda_r InMFIL_{t-j} + \sum_{m=1}^k \vartheta_m InSMEs_{t-m} + \sum_{r=1}^k \varnothing_j InAGR_{t-r} + \mu_{4t} \quad (5)$$

where $InPOV$ is the poverty alleviation indicator, $InMFIL$ is the measure of growth in loans from microfinance institutions, $InSMEs$ is the measure of SMEs growth, $InAGR$ is the measure of agricultural growth, k is lag length, and β_i , \varnothing_j , ϑ_m , λ_r , are short-run dynamic coefficients of the model, $\mu_{1,2,3,4}$, residuals (stochastic error terms often called impulses or innovations or shocks).

Before estimating the models, the study employed the Argument Dick fuller test (ADF) for stationarity among the variables. Johansen’s cointegration test was used to test cointegration or determine the long-run relationship to ascertain if a VAR model is appropriate or VECM (if the variables are cointegrated). After estimating the models, for the model liability and stability, the diagnostic tests are particularly important instruments in the VAR system because they trace the model’s reliability, ensure that the model is stable, determine that the errors are not serially correlated, and review that residuals are normally distributed. The Lagrange-multiplier test was used to test for autocorrelation, the Jarque Bera test to test for residual normality in addition, heteroscedasticity tests, stability tests, and impulse response function tests were performed.

4. Empirical Results

4.1. Descriptive Statistics, Stationarity and Cointegration Results

Table 1 reports the descriptive statistics for poverty indicator (POVt), Microfinance Institution loans (MFI_t), SMEs (SME_t) and agriculture growth (AGRIC_t).

Table 1. Descriptive statistics.

Variable	Obs	Mean	Std. Dev	Min	Max
POV _t	44	8.888	0.0566	7.561	10.013
MFI _t	44	13.74	0.231	13.304	14.088
SME _t	44	1.558	0.488	0.045	2.815
AGRIC _t	44	20.499	0.503	19.312	21.227

Source: Own Author calculations.

The poverty variable had a lower standard deviation of 0.057, which shows that the data are closer to the sample mean. The lower variability of the poverty variable also suggests a consistent poverty level in Zimbabwe over the sample period. Suggesting that there is no significant change in poverty levels in Zimbabwe. All variables have lower standard deviations relative to the mean, indicating that the data have less deviation and clustered closely around the sample mean and thus more reliable.

Table 2, upper part, shows that the test statistics of level variables are lower than the 5% critical values; therefore, the null hypothesis of the unit root was accepted, meaning the data is non-stationary in levels. Furthermore, the variables were converted to the first difference I (1), as depicted in the second part of the table. The test statistics values of all the variables are greater than the 5% critical values, indicating that the series is stationary at the first difference, which means that the series are integrated of order one. Hence, Johansen's cointegration test was used to establish if there is a long-run relationship. Cointegration implies that there is evidence of a long-run relationship among variables, that is, poverty, microfinance loans, SMEs, and agriculture.

Table 2. Stationarity Test Results.

	ADF TEST Z(t)	5% Critical Value
H0: The level of the variable is non-stationary		
POV _t	1.0900	2.9610
MFI _t	1.1550	2.9610
SME _t	1.2190	2.9610
AGRIC _t	2.9600	2.9610
H0: The first difference of the variable is non-stationary		
POV _{t_1}	3.8650	2.9640
MFI _{t_1}	3.2570	2.9640
SME _{t_1}	3.0430	2.9640
AGRIC _{t_1}	3.1180	2.9640

Source: ADF estimates from sample data.

Table 3 shows the results of the Johansen cointegration test. As shown on the table at maximum ranks 0, the trace and max statistics values are greater than the 5% critical values, meaning there are no cointegration equations. At a maximum rank of 1, the trace and max values are lower than the 5% critical values. Therefore, there is one cointegrating equation among the variables. Based on the results of the Johansen cointegration test, the researchers conclude that there is a long-run cointegration relationship between poverty, microfinancing, SMEs, and agriculture, implying that a VECM model must be estimated to test the causality among the variables.

Table 3. Johansen cointegration test results.

Maximum Rank	Trace Statistics	Max Statistics	5% Critical Value (Trace)	5% Critical Value (Max)
0	47.6360	22.6742	47.2100	27.0700
1	24.9617	13.7857	29.6800	20.9700
2	11.1600	7.6671	15.4100	14.0700
3	3.5089	3.5089	3.7600	3.7600

Source: Johansen estimates from sample data.

4.2. Regression Results

A VECM model was estimated because the variables had a cointegration relationship. Table 4 depicts the results of the four estimated VECM models.

Table 4. VECM Estimates-Long Run effects of MFIs on Poverty.

Variables	D_POVt Model 1	D_MFIt Model 2	D_SMEt Model 3	D_AGRICt Model 4
L_cel	−0.698 *** (0.222)	−0.0325 ** (0.0129)	−0.0841 (0.359)	−0.193 (0.186)
LD. POVt	−0.0295 (0.182)	0.0197 * (0.0106)	−0.0236 (0.295)	−0.0526 (0.153)
LD. MFIt	−3.069 (3.007)	−0.438 ** (0.175)	5.28 (4.869)	1.045 (2.525)
LD. SMEt	−0.295 ** (0.123)	0.005 (0.00716)	−0.558 *** (0.199)	−0.0107 (0.103)
LD. AGRICt	−0.0568 (0.198)	0.00443 (0.0115)	−0.331 (0.321)	−0.147 (0.167)
Constant	0.0041 (0.0734)	0.0213 *** (0.00427)	−0.0294 (0.119)	−0.00562 (0.0616)
Observations	42	42	42	42

Standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

From the regression results in Table 4, L_cel (the error correction term (ECT)) is the lagged value of the residuals obtained from the cointegrating regression, which estimates the long-run relationship and causality effect among the variables. For a good model, L_cel should have a negative sign. From the results in Table 4, the L_cel is negative for all four models confirming that the models are correctly estimated. The coefficient of L_cel (−0.6948) for Model 1 (Poverty dependent variable) is negative so that it can restore to equilibrium and statistically significant, showing that POVt, as an indicator of Poverty, has a long-run relationship with microfinancing, SMEs growth and agriculture growth in Zimbabwe. The ECT (−0.6948), which is the speed of adjustment, is statistically significant at 1% level, suggesting that the previous year’s errors (the deviations from the long run equilibrium) are corrected for within the current quarter at a convergence speed of 69% which is very high (Winarno et al. 2021). This information shows that the dynamic changes of microfinance, SMEs and agriculture influence current poverty reduction in the short term, and it will quickly return to its equilibrium, as depicted by the high error correction term. The model depicts that the overall poverty levels of a nation in the long term are impacted by the growth of Microfinancing, SMEs, and agriculture. These findings are consistent with Christensson (2017), who found that microfinance institutions decrease the poverty levels. Simatele and Kabange (2022), also indicates that financial inclusion is key in fighting poverty. In model 2, where microfinance loan growth (D_MFIs) is a dependent variable, the negative and statistically significant L_cel reveals a long-run relationship among the variables, the ECT is (−0.0325), which implies that it will slowly adjust to equilibrium. The Poverty, SMEs and AGRIC current changes influence the microfinancing while the coefficient of the error correction term is low; therefore, they will take time to influence within the quarterly period. In models 3 and 4, the long-run equation is not statistically

significant, implying that SMEs growth and agriculture are not influenced by poverty and microfinancing in the long run.

In the short run, for model 1, the coefficient of SMEs is negative and statistically significant, implying that the growth of SMEs reduces the level of poverty in a country over the short term. Khan et al. (2020) document that productive loans to SMEs are essential in poverty reduction since most people in developing economies are employed in this sector; as the SMEs become productive, more people are bailed out of poverty. The coefficient of poverty in model 2 is positive and statistically significant, indicating that an increase in poverty leads to a rise in microfinancing as people seek ways to survive scarceness. The more people become poor, the more they cannot access the banking channels and resort to microfinance institutions. In the short run, we found no significant relationship between poverty and the other two independent variables, microfinancing, and agriculture growth, as shown in model 1 results. For other models, all other variables in the short run are not statistically significant, as depicted in the regression models in Table 4.

The long-run equation was examined using the Johansen normalisation restriction reported in Table 5. The restriction was placed on POV_t , the target variable in this study. The results reflect the ECT cointegration equation, generating the error correction term. Microfinance, SMEs and agriculture coefficients are all statistically significant; however, when interpreting the coefficients, the signs are reversed (Khan et al. 2020). Thus, in the long run, both SME_t and agriculture ($AGRIC_t$) negatively affect poverty, and microfinancing has a positive impact on poverty. The extract of ECT (long-run information) shows that an increase in the growth of microfinance institutions’ loans increases poverty. Furthermore, an increase in SMEs and agriculture growth leads to a decline in poverty. This is consistent with Oshora et al. (2021) who argues that a well-functioning and sustainable financial system that provides financing to SMEs helps eradicate poverty. In summary, the growth in microfinance loans directly increases poverty levels, and the growth of SMEs and agriculture output alleviates poverty in Zimbabwe in the long run.

Table 5. Extract of ECT from Stata (Error correction equation).

Beta	Coefficient	Std. Err	Z	$p > z $	95% Conf.
ECT					
POV_t	1				
MFI_t	−2.686	0.355	−7.6	0.000	−3.832
SME_t	0.152	0.175	−2.9	0.000	0.167
$AGRIC_t$	0.51	0.162	3.39	0.000	0.231

Source: Extract from Stata estimates.

4.3. Post Estimation Diagnostic Tests

After estimating the models, the results were diagnostically tested for autocorrelation, stability, and reliability for robustness checks. The diagnostic results showed that the null hypothesis of no autocorrelation cannot be rejected, showing that there is no autocorrelation; therefore, the model is desirable. The Jarque-Bera test was used to check if residuals are normally distributed (Jarque and Bera 1987). The target variable was POV_t ; its p -value is 0.393 which is above the 5% critical value. Therefore, the null hypothesis is accepted. The model is desirable because the residual is normally distributed. All the variables are normally distributed. Therefore, the model is accepted. Granger/Wald Causality Test: The Wald/Granger causality test was performed in line with Matzana et al. (2022) to understand the causal relationship among the variables further. The Granger causality Wald test was estimated to observe the direction of the causal relationship between microfinance loan growth and poverty reduction. The results are presented in Table 6, firstly, we observe a unidirectional causality between MFIs and POV_t running from POV_t to MFIs in the short-run, implying that poverty influences more lending by MFIs but with no effect in the opposite direction. SMEs and poverty reduction indicated a bidirectional causality. Also, in

the short run, agriculture output does not influence poverty. Poverty, SMEs and agriculture do not affect the microfinance institutions in the short run.

Table 6. Granger causality test.

NULL Hypothesis	chi ²
POVt does not cause MFI _t	1.04 *
POVt does not cause SME _t	5.76 *
POVt does not cause AGRIC _t	0.08
MFI _t does not cause POV _t	3.43
MFI _t does not cause SME _t	0.49
MFI _t does not cause AGRIC _t	0.15
SME _t does not cause POV _t	0.01 **
SME _t does not cause MFI _t	1.18
SME _t does not cause AGRIC _t	1.06
AGRIC _t does not cause POV _t	0.12
AGRIC _t do not cause SME _t	0.17
AGRIC _t does not cause MFI _t	0.01

Source: Author estimates from STATA Standard errors in parentheses ** $p < 0.05$, * $p < 0.1$.

5. Summary and Conclusions

The study was motivated by the continued increase of Poverty in Zimbabwe and many African countries, while there is an accelerated growth in microfinance institutions lending targeted at reducing poverty. The research employed a VECM model on quarterly time series datasets stretching from 2009 to 2019 to investigate the relationship between microfinance loan growth and poverty alleviation. The results indicate a significant relationship between poverty and microfinance loan growth. In the long run, microfinance loan growth is also influenced by poverty, SMEs, and agriculture in the long run. In the short run, regression results reveal that SME growth alleviates poverty, and poverty increases the growth of microfinance loans in the country. All other variables in the short run were found not to be statistically significant. The study also found a bidirectional relationship between the growth of microfinance institutions and SMEs’ growth in the short run. Thus, increase in SMEs leads to an increase in MFI loans, and more MFI established push the drive of SMEs establishment.

The long-run model showed that poverty can be alleviated by the growth of SMEs and agriculture output in the long run. Small and medium enterprises are the largest businesses in an economy and account for around 80% of employment; therefore, the growth of this sector means more people are employed, and the poverty levels are reduced. MFI loan growth was found to increase poverty in the long run. Theoretically, the growth of lending should reduce poverty levels in an economy since more access to finance enables SMEs to resuscitate and employ the poor, decreasing poverty. This study found contracting evidence that MFIs are unstoppable, registering enormous profits ([Bank Supervision Department 2018](#)), while the 2019 World bank report on poverty shows that poverty is increasing ([ZIMSTAT 2019](#)). This implies that MFIs and policymakers should look into the nature of lending, use and productivity of loans issued by these MFIs to increase the efficiency and achieve the desired objectives of these institutions.

Based on the results found in this study, for successful and better ways of reducing poverty levels, policymakers and regulators must ensure that borrowers, SMEs, and the marginalised are equipped with the necessary skills and knowledge to run businesses and use debt finance. This will enable MFI clients to utilise their loans effectively, thus reducing the rate of default among the clients, increasing productivity, and benefiting both the clients and the MFIs and the economy at large. A skill is permeant and can be used to navigate the available options, in contrast with simply giving out loans to unskilled personnel who may end up using the monies for unintended purposes. Microfinance should be targeted at more efficient lending, which will create more opportunities, thus increasing income and economic empowerment, and reducing poverty. Further research can be carried out in

this subject area by incorporating primary data collection methods and finding out directly from the poor and marginalised societies their experiences and expectations to reduce poverty levels. The study did not examine the beneficiaries of microfinancing services and the sectors they operate; it solely looked at total loans as a whole and SMEs loans. Another limitation of the study is that Zimbabwe has a large informal sector, and the access to informal financial services cannot be measured; the study was based on publicly available data.

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