Micro financing and Poverty Alleviation: Empirical investigation from Nigerian Economy

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Abstract

Apart from macroeconomic challenges such as rising inflation and unemployment rate, another challenge that faces Nigerian economy is the rising rate of poverty and income inequality. This study examined the effect of microfinance credit on poverty alleviation in Nigeria. The objective was to ascertain the extent to which micro financing have affected the rate of poverty in Nigeria. poverty rate was proxy by absolute poverty rate and is used as dependent variable while microfinance loans to agricultural sector, manufacturing sector, real estate, transport and communication and other sectors not classified above was used as predictor variables. The study adopted the ordinary least square method of data analysis using econometrics view. Cointegration test, Granger causality test, unit root test and vector error correction estimate were used to determine the dynamic relationship between micro financing and poverty rate in Nigeria. It was found that microfinance loans to agricultural sector, manufacturing sector and real estate reduced poverty rate in Nigeria while increase in microfinance loans to transport and communication and other sectors will increase poverty rate in Nigeria. Findings also proved that the variables are stationary at first difference and a presence of long run relationship between the dependent and the independent variables. The Granger causality test detected a univariate relationship between poverty rate to microfinance loans to transport and communication and from microfinance loans to other sectors to poverty rate. We conclude weak relationship between micro financing and poverty rate in Nigeria. We therefore recommend policies that will enhance the operational efficiency of the microfinance banks in Nigeria.

Keywords: Micro financing, Poverty Alleviation, Nigerian Economy, Income Inequality, Poverty Rate

INTRODUCTION

The population of Nigeria is estimated at 200 million, 2.48% of total world population, 205 per km2, the total land area is 910802km2, 48.1% of the population is urban, the median age is 18 years and the sex ratio is 1.026 that is 1,026 male per 1000 female. The literacy rate is 56.6%, the dependency ratio is 78.8%, and child dependency ratio is 73.2%. 40.9% of the population are children under 15 years, 55.9% are between 15 and 64 years while 3.1% are 65 years and above. Apart from macroeconomic challenges such as galloping inflation, unemployment, balance of payment deficit, poor economic growth and depreciating naira value, other challenges face

significant population of the country is poverty and income inequality (Lucky and Sam, 2018). Traditionally, income distribution and poverty concerned how income was divided among the owners of business (for whom profits were the source of income), the owners of land (who receive rent) and the workers (who earned wages) (Colander, 2005). Over 70% of the populations are living in poverty level of less than 2 dollar a day.

The definition of what is meant by poverty and how it is measured and who constitute the poor are fiercely contested issues. In the poverty debate stands the question whether poverty is largely about material needs or whether it is about a much broader set of needs that permit wellbeing, Osuala (2009). Ravallion et al (1994) in Osuala (2009) refer to poverty as a lack of command over basic consumption needs, that is, a situation of inadequate level of consumption; giving rise to insufficient food, clothing and shelter. Aluko (1972) and Sen (1987) defined poverty as lack of certain capabilities, such as being able to participate with dignity in societal endeavours. Chambers (1983) in Osuala (2009) insisted that the poor are poor because they are poor, "their poverty conditions inter-lock like a web to trap people in their deprivation. Poverty is a strong determinant of others. The causes of poverty are many and must be attacked from all fronts to save the poor from the poverty trap. According to Meyer (2001), historically poverty was viewed largely as a problem of the poor earning too little income, consuming too little to attain a socially acceptable standard of living and possessing too few assets to protect themselves against unforeseen problems. Poverty alleviation strategies, therefore, have usually focused on employment creation, sometimes skill acquisition and, occasionally, redistribution of assets from the rich to the poor (Osuala, 2009).

However, the practice of microfinance in Nigeria is culturally rooted and dates back several centuries. The traditional microfinance institutions provide access to credit for the rural and urban, low-income earners. They are mainly of the informal Self-Help Groups (SHGs) or Rotating Savings and Credit Associations (ROSCAs) types. Other providers of microfinance services include savings collectors and co-operative societies. The informal financial institutions generally have limited outreach due primarily to paucity of loanable funds. In order to enhance the flow of financial services to Nigerian rural areas, Government has, in the past, initiated a series of publicly-financed micro/rural credit programmes and policies targeted at the poor. While the operational objective of micro finance bank is to meet the financial needs of the low income earners thereby reducing poverty rate, the empirical validity of this objective using sectorial loans is lacking in literature, therefore this study examined the effect of microfinance sectorial loans on poverty rate in Nigeria.

LITERATURE REVIEW

The Concept of Poverty
Poverty is defined as lack of command over basic consumption needs, that is, a situation of inadequate level of consumption; giving rise to insufficient food, clothing and shelter (Ravillion and Bodani, 1994).The phenomenon of poverty may also be defined as lack of certain capabilities, such as being able to participate with dignity in societal endeavors (Aluko, 1975). Poverty is as old and as rife in humankind. A majority of the human race has always suffered intermittent

hunger. What is not old is the fact that people all over the world are beginning to demand a betterment of their economic lot. It is this revolution in expectations‟ that is creating such ferment in the underdeveloped world. And these new attitudes are a political force that cannot be ignored (Enke, 2007).

According to the World Bank Organization, the most commonly used way to measure poverty is based on incomes. If a person's income level falls below a minimum level required to meet his basic needs, the person is considered poor. This minimum level is usually called the "poverty line". Essentially, three common definitions of poverty exist: absolute poverty, relative poverty and social exclusion. Absolute poverty can be defined as a condition of severe lack of basic human needs, such as safe drinking water, food, health, shelter, sanitation facilities, information and education. Absolute poverty is a function of not only income but also of access to services (United Nations, 1995). Relative poverty is defined as the condition characterized by lack of the minimum amount of income necessary to sustain an average standard of living. Social exclusion, a complex multi-dimensional process, is the lack/denial of goods and services resources, rights and ability to partake in normal relationships and activities accessible to the majority in the society, whether in political, social, economic or cultural arenas (Levitas, 2007).

The Concept of Microfinance
 Microfinance can be defined as a type of financial development mainly dedicated to poverty reduction via provision of financial services to the poor. The Canadian International Development Agency (2002) defined microfinance as, the provision of a wide spectrum of financial services to the low-income households and micro-enterprises that usually lack access to formal financial institutions. Though it is narrowly believed that microfinance is all about micro-credit (i.e.lending small amounts of money to the poor), microfinance is beyond that: it has a far-reaching perspective, which include transactional services, insurance, and most importantly, savings.
Microfinance institutions themselves faced funding pressures and had to allocate considerable proportions of their own resources to rapidly adapt to changing circumstances (Economics Observatory, 2020). This ultimately meant having constrained funds to simultaneously support its clients. 20 Nevertheless, various reports and studies have demonstrated the pivotal role that microfinance played in protecting impoverished individuals during these challenging times (Brickell et al., 2020; Zheng and Zhang, 2021). Microfinance institutions (MFIs) acted as a medium for governments and larger commercial organisations to reach individuals from the most rural locations and provide them with support. BNP Paribas for example launched an emergency program via these institutions to provide essential nutrition such as rice to 24,043 beneficiaries (BNP Paribas, 2021). By supplying resources and offering short-term funding for energy bills etc., MFIs were a critical lifeline in helping those who struggled to afford basic necessities to stay afloat (FINCA, 2020). Many agree that microfinance will play a more important role in a post-pandemic world (The Economist, 2020; BNP Paribas, 2021), both in terms of helping rural economies recover and supporting the social needs of its populations.

According to the Global Findex Database (2021), there are a number of reasons why some adults intentionally remain unbanked, which notably includes a lack of access due to services being too

far away. With the help of digitisation, microfinance has the potential to overcome these barriers and can simultaneously foster financial inclusion. Data analysis can allow MFIs to better understand their customers and make more informed lending decisions (CGAP, 2018). 4ToldFintech is an example of a start-up technology platform that aims to reduce the associated decision-making risk for microlenders using Artificial Intelligence (AI). Its conversational approach improves the end user experience of providing personal details and documents and uses a complex algorithm to assess this information to make automated financial solutions in real time (Mastercard, 2020). Following its analysis, it matches borrowers with the appropriate lender, and in doing so makes the approval process both faster and cheaper. The company is currently working with a subsidiary of global payment leader MasterCard in order to develop and expand its operations. This demonstrates how microfinance can become more efficient by cutting various costs using digitisation, which enables them to make a more sizeable impact.

Microfinance and Poverty Alleviation
There is a debate about whether impact assessment of microfinance projects is necessary or not. The argument is if the market gives sufficient proxies for impact, such that customers are pleased to pay for a service, then assessments are a waste of resources. However, this is too simplistic a rationale as market proxies mask the range of client responses and benefits to the MFIs. Therefore, impact assessment of microfinance interventions is necessary, not just to demonstrate to donors that their interventions are having a positive impact, but to allow for learning with MFIs so that they can improve their services and the impact of their projects (Mayoux and Simanowitz, 2001).

Poverty is beyond a lack of income. Wright and Rowe (1999) drew attention to the shortcomings of seeing increased income as the sole measure of the effect of microfinance on poverty. He argues that a significant difference exist between increased income and poverty alleviation. He argues further that by growing the incomes of the poor, microfinance institutions are not necessarily alleviating poverty. It is all a function of what these low-income people do with the money: often it is spent on gambling or on alcohol. Thus focusing merely on growing incomes is not adequate. The focus needs to be on helping the poor to have a particular quantum of well-being (Wright and Rowe, 1999) by offering them a variety of financial services tailored to their needs so that their net worth and income security can be improved. Dichter (1999) states that microfinance is a tool for poverty reduction and while arguing that the record of MFIs in microfinance is "generally well below expectation" he does concede that some positive impact do take place. After a study of a number of microfinance institutions, the findings show that redistribution of wealth and consumption smoothing effects within the household are the commonest impacts of microfinance.

Hulme and Paul (1996) in a broad survey of the usage of microfinance to fight poverty showed that ingenious microfinance programmes can enhance the incomes of the poor and can lift them out of poverty. They argued that clear evidence exists that the effect of a loan on a borrower's income is correlated with his level of income, as people with greater incomes have a wider spectrum of investment opportunities and so microfinance schemes are much more likely to be advantageous to the middle and upper poor (Hulme and Paul, 1996). However, they also show that when MFIs such as the GrameenBank and Bangladesh Rural Advancement Committee (BRAC)

provided credit to very poor households, those households were able to raise their incomes and their assets. Hulme and Paul (1996) found that when loans are correlated with rise in assets, when borrowers are motivated to participate in low-risk income-generating activities and when the extremely poor are motivated to save; the susceptibility of the extremely poor is drastically reduced and their poverty subsides. Johnson and Rogaly (1997) highlight examples where savings and credit met the needs of the poor. They argued that microfinance experts have begun to see increase in economic security, rather than increased income as the first step in the alleviation of poverty as this lessens recipients" overall vulnerability. Thus, while the debate still rages on about the effect of microfinance schemes on poverty, it is established that when microfinance institutions recognize the needs of the poor and meet those needs, microfinance schemes can have positive impacts on alleviating the susceptibility, not just for the poor, but also for the poorest in the society.

Microfinance in Nigeria

The importance of microcredit to the growth of any economy can never be overemphasized, as it is the solution to helping the poor. Micro-enterprises or small businesses are important in situations where economic and social environments have had a disappointing effect on the people, so that the poor can survive under micro-financing. Yet these small businesses play a great role in providing jobs thereby contributing positively to the GNP. Despite this, the enabling environment is still lacking in Africa to make this function well. The weakness of the enabling environment has caused untold hardship on the people. Lack of infrastructural facilities has stood on the way of small business owners. Part of the fallouts of the implications of SAP in Nigeria was that it caused varying degrees of hardship to different vulnerable groups of the population. Therefore, to give relief, improve earnings opportunities; alleviate poverty and ignorance among the poverty stricken, Better Life Programme (BLP) was launched in 1987 but later changed to Family Support Programme (FSP) Family Economic Advancement Programme (FEAP) under Abacha in1993. To benefit from microcredit scheme of BLP/FSP/FEAP, individuals must be members of cooperative societies. Since 1987, the efficacy of microcredit through the cooperative regime to alleviate poverty has come under a paucity of loanable funds, absence of support institutions in the sector, unwillingness of conventional banks to support micro enterprises, weak internal control, poor credit administration and asset quality, low management capacity and unavailability of clients. This is an important test since poverty alleviation has turned out to be a key.

Policy debate in recent development literature and Nigerian Government is fully committed to alleviating poverty among its citizens. The Nigerian economy is full of attempts at alleviating poverty especially among vulnerable groups based on cooperative ideals with large degrees of failure. According to the World Bank (1995) the Peoples Bank and Community Bank failed in achieving their goals and objectives. The failure experienced through these approaches (i.e. Peoples Bank and Community Bank) were as a result of the wrong perception by members of the unique framework of cooperatives due to poor financial management by some cooperatives, lack of understanding of the status of cooperatives by a large number of beneficiaries, among others. The view of these authors is that micro credit through cooperative does not automatically guarantee poverty alleviation. They maintained that for success to be achieved by such cooperatives they need to depend largely on loan administration, efficient cooperative management, and on whether

the organized cooperative is routed on felt needs of the citizenry rather than on undue emphasis on business orientation and profitability. In the case of Nigeria, over 80 million people (65% of the active population) remain unserved by the formal financial institutions (Central Bank of Nigeria (CBN), 2006). Hence there is a need for MFIs to reach the unreached and serve the unserved.

Theoretical Framework

The Vicious Cycle of Poverty

The vicious cycle of poverty states that the poor man is poor because he is poor or a country is underdeveloped because it is underdeveloped. The vicious cycle of poverty is a kind of curse which is feared by individuals and countries because it is said that an individual/country is poor because it is poor. The theory states that there are circular relationships known as the "vicious cycle of poverty" that tend to perpetuate the low level of development in less developed countries (LDCs). The trajectory is that poverty is caused by low income. Low income engenders low savings and this in turn leads to low investment. The latter provokes low productivity and the cycle continues. According to Jhingan (2003), the basic vicious cycle stems from the facts that in LDCs total productivity is low due to deficiency of capital, market perfections, economic backwardness and underdevelopment. Jhingan stressed that vicious cycle operates both on the demand side and supply side. On the demand side of the vicious cycle, the low level of real income leads to a low level of demand which in turn leads to a low rate of investment and hence back to deficiency of capital, low productivity and low income. On the supply side, low productivity is reflected in low real income. The low level of savings leads to low investment and to deficiency of capital. The deficiency of capital in turn leads to a low level of productivity and back to a low income. Accordingly, this theory views poverty as being self-perpetuating.

Power Theory of Poverty

The power theory of poverty is similar to the Maxists theory of poverty. This theory sees power in terms of who controls what and how in the political and economic structures of the system. In this context, the structure of political and economic power in the society is the determinant of the extent of poverty among the populace. This is basically the Maxian theory of historical materialism. According to this theory, the system of poverty determines the basic division of the society into two classes: they have and the have-nots (the property owners and the non-property owners). This view constitutes the fundamental nature of government, religion and culture in any given society. This theory further stated that the society has been dominated by the ruling class owners of properties who exploit the non-property owners, made possible by their ownership of the means of production. According to the proponents of this theory, the individual's position in the society depends on whether he owns the means of production or work for someone else. They held religion responsible for sustaining this power structure between the rich and the poor by denying the poor of any initiative to fight to improve their condition which prevails and subject them to poverty Nyong (1995). Thus, an effective poverty reduction programme should have exploitative property that could be addressed and dislodged.

The Demand-Following and Supply-Leading Hypothesis

The demand following financial theory refers to a kind of finance development that reacts positively to economic activities. The supply-leading finance on the other hand refers to the

establishment of financial institution in some areas before the demand for their service is considered. Demand-following and supply-leading financial theory are rooted in the fact that the financial system may be simultaneously growth inducing and growth induced. They both emphasized that the most relevant issues for development is the efficiency with which the financial system provides financial institutions. They linked the supply of initiatives, enterprise and finance by financial institution to be the creation, transformation and expansion of industries and other development oriented ventures.

The direction of these finance theories may interact at a point in time and overtime, there may be changes in prominence played by each type as the economy develops Hugh (2004) and Jhigan (2004). The creation of the rural banking scheme arising from the Pius Okigbo financial review committee in Nigeria (1976) was a direct response to the supply-leading finance theory and the scheme was adopted by government to decongest the urban centers of banks and promote the development of banking habits, culture and service in rural areas. The demand-following finance theory is a situation where financial institutions establish in urban centers where the demand for their service is already intact or exist. In the supply-leading finance theory, the challenges are to identify nascent firms, promote and support same to maturity in order to boost grassroots entrepreneurship. Financial institutions here stimulate effective entrepreneurial response for positive economic development. This position is anchored on the assumption that the growth of the financial sector is dependent on the growth and commercialization of other sectors. It does not encourage savings, hence it impedes development. Critics of the supply-leading finance theory posited that there are lots of idle funds lying waste when there are viable projects in the urban centers that need such funds to establish leading to the under-utilization of potentials/resources.

Financial Liberalization or Repression Hypothesis
In the 1960s and 1970s, government intervention in the financial sector was rampant. It was done through setting of interest rates, imposition of high reserves requirements as well as quantitative restrictions on credit allocation. Some authors including Mckinnon (1973) and Shaw (1973) and Gurley and Shaw (1961) observed that position explained the low savings, credit rationing and hence low investment: the so called financial repression. These authors then proposed the financial liberalization thesis which essentially involves the freeing of financial markets from government intervention and allowing the market determine the price and allocation of credit. This theory is based on the assumptions of perfect information, profit maximizing competitive behaviour by financial institutions. Several channels of transmission have been identified in the literature. Goldsmith (1963) proposes the marginal productivity of capital. In this case, if interest rate is lower than the equilibrium rate of interest, high quality projects are not undertaken. Mckinon and Shaw suggest two other channels. The first, financial repression affects how efficiently savings are allocated to investment and second, through its effects on the return to savings.

Consequently, investment suffers not only in quantity but also in quality terms since bankers ration the available funds according to the marginal productivity of investment projects but according to their own discretion. Under this condition, the financial sector will be most likely in a state of stagnation. Savers are then forced to hold their savings in the form of unproductive assets rather

than potentially productive bank deposits. In the light of the above proposition, the policy implications of the financial liberalization theory are evident. The direction is classic: remove interest rate ceilings, reduce reserve requirements and abolish direct credit programs.

Once the financial market is liberalized free market forces will determine the allocation of credit through the equilibrium real interest rate. The latter will ensure that low yielding investment projects will be eliminated so that the overall efficiency of investments would be enhanced. In addition, as the real rate of interest increases, savings and the total real supply of credit increase which will induce a higher volume of investment, hence economic growth is stimulated not only through the increase in investment but also due to an increase in the average productivity of capital. However, the theoretical background of this study is rooted in the demand-following hypothesis and the vicious cycle of poverty. This is because most microfinance banks are cited in the urban areas or semi urban areas where there already exists the demand for financial services. Thus, for these MFIs to function efficiently and effectively to break the poverty cycle, they are demand driven and not supply leading.

RESEARCH METHODS

This applies to the error correction methodology to a regression model based on the relationship between micro financing and poverty alleviation in Nigeria. The idea is to subject the variables to stationary test and subsequently remove the non- stationary trends by differencing before regressing. This removes the possibility of the so-called spurious regression not have considered the problem of unit roots. As a result, the econometric methodology used in those studies did not account for non-stationarity in the data. The analysis here is primarily based on Engle and Granger (1987), and Engle and Yoo (1987). The idea is to determine the order of integration of the variables, that is, we test whether they are stationary in their levels or whether they have to be differenced once or more before they become stationary. Testing for unit roots is earned out by using an Augmented Dickey-Fuller (ADF) test. In order to examine the relationship between the dependent and the independent variables, the model for the study is hereby specified as follows:

$$PR = \alpha_0 + \beta_1 MFLA + \beta_2 MFLM + \beta_3 MFLRE + \beta_4 MFLTC + \beta_4 MFLO + \varepsilon\acute{\imath} \qquad 1$$
$$\text{A-priori, } b_, > 0, b_3 > 0, b_3 > 0, b_4 < 0, b_5 > 0, \qquad 2$$

Where:
PR   = Nigeria poverty Rate
MFLA = Micro finance loans to agricultural sector
MFLM   =   Micro finance loans to manufacturing sector
MFLRE =   Micro finance loans to real estate
MFLTC   =   Micro finance loans to transport and communication
MFLO   = Micro finance loans to other sectors not classified above
$\varepsilon\acute{\imath}$ =   Error Term
The analysis of short-run dynamics is often done by first eliminating trends in the variables, usually by differencing. The theory of co-integration development in Granger (1981) and elaborated in Engle and Granger (1987) addressed this issue of integrating short-run dynamics with long-run

equilibrium. It is important to note that the usual starting point of ECM modeling is to assess the order of integration of both the dependent and independent variables in the model. The order of integration ascertains the number of time a variable will be differentiated to arrive at stationary. Dickey- fuller (DF), Augmented Dickey-Fuller (ADF) and Sargan -Rhargava Durban-Watson (SRDW) are the widely used test for stationary for both individual time series and residual from OLS regressions. Co-integration is based on the properties of the residuals from regression analysis when the series are individually non-stationary. The original co integration regression is specified as follows:

$$A_t = \alpha_0 + \alpha_1 \beta_1 + \ell_1 \qquad\qquad 3$$

Where A represents the dependent variables, β stands for the independent variable, and e_1 is the random error term. a_{nv} and a_j are intercept and slope coefficients respectively. To include the possibility of bi-directional causality, the reverse specification of equation 1 is considered. To provide a more defensive answer to the non-stationarity in each time series, the Dickey-Fuller (1979) regression is estimated as follows for a unit root:

$$\Delta e_t = -\lambda e_{t-1} + W_t \qquad\qquad 4$$

If X Equals zero e is non-stationary. As a result, A and B are not co-integrated. In other words, if X is significantly different from zero A and B is found integrated individually. Given the inherent weakness of the root test to distinguish between the null and the alternative hypothesis, it is desirable that the Augmented Dickey-Fuller (ADF) (1981) test be applied. The desirability is warranted because it corrects for any serial correlation by incorporating logged changes of the residuals. To be co-integrated, both A and B must have the same order of integration (Eagle and Granger, 1987 and Granger, 1986).The ADF regression is specified as follows:

$$\Delta e_t = \beta_o \ell_{t-1} + \sum_{j=i}^{m} \beta_j \Delta \ell_{t-1} + \mu_t$$

$$5$$

Where Δ the first different operator and u is the new random error term. M is the optimum number of lags needed to obtain "white noise". This is approximated when the DW value approaches 2.0 numerically. The null hypothesis of non-co-integration is rejected, if the estimated ADF statistics is found to be larger than its critical value at 1 or 5 or 10 per cent level of significance. If A, and B, arc found to be co-integrated, then there must exist an associated error-correlation Model (ECM), according to Engle and Granger (1987). The usual ECM may take the following form:

$$\Delta G_t = \sigma_o e_{t-1} + \sum_{j=1}^{T} \sigma_1 \Delta A_{t-j} + \sum_{j=1}^{T} \theta_j \Delta B_{t-j} + V_t$$

$$6$$

Where Δ denotes the different operator CM is the error correction term, T is the number of lags necessary to obtain white noise and V, is another random disturbance *term.* If a_0CM is significantly

different from zero, then A and B have long-Run relationship, the error-correction term (e_{t-1}) depicts the extent of disequilibrium between A and B The HCM, reveals further that the change in A, not only depends on lagged changes in B, but also on its own lagged changes.

RESULTS AND DISCUSSION OF FINDINGS

The following tables contain details of the relationship between microfinance lending and poverty alleviation in Nigeria. The variables were deflated using gross domestic products.

Table 1: OLS RESULTS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MFLA	-0.166833	0.270042	-0.617807	0.5440
MFLM	-0.411847	0.163348	-2.521289	0.0208
MFLRE	-0.284792	1.116681	-0.255034	0.8014
MFLTC	1.963844	7.574979	0.259254	0.7982
MFLOS	0.585448	0.323529	1.809568	0.0862
C	74.49582	6.300833	11.82317	0.0000
R-squared	0.465531	Mean dependent var		58.63462
Adjusted R-squared	0.296752	S.D. dependent var		16.05852
S.E. of regression	13.46666	Akaike info criterion		8.263115
Sum squared resid	3445.668	Schwarz criterion		8.601833
Log likelihood	-100.4205	Hannan-Quinn criter.		8.360654
F-statistic	2.758221	Durbin-Watson stat		1.915766
Prob(F-statistic)	0.042230			

Source: Computed from E-view results

In the table above, 46.5 percent variation in poverty rate in Nigeria could be traced to microfinance lending to the various sectors of the economy while the remaining 53.5 can be explained by factors not captured in the regression model. Evidence from the f-statistics and probability validates that the model is significant. The Durbin Watson statistics proved the presence of the serial autocorrelation among the variables within the time series. The beta coefficient found that microfinance lending to agricultural sector, microfinance lending to manufacturing and microfinance lending to real estate have negative relationship with poverty rate in Nigeria. this implies that increase in microfinance lending to these sectors will lead to 0.16 percent, 0.41 percent and 0.28 percent decrease in poverty rate in Nigeria this finding confirm the a-priori expectation of the results and the objective of reforms in microfinance banks as well as the objective of establishing microfinance banks which is to meet the financial needs of the low income earners. However, microfinance lending to transport and communication and microfinance lending to other sectors not classified has positive relationship with poverty rate in Nigeria. The finding is contrary to our expectation and could be blamed on the poor performance of the sectors which does not attract investment of microfinance banks.

Table 2: Diagnostics test

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
MFLA	0.072922	7.069483	4.113726
MFLM	0.026682	9.467999	2.285291
MFLRE	1.246977	5.902410	2.933145
MFLTC	57.38030	13.51643	4.618623
MFLOS	0.104671	2.372718	1.477016
C	39.70050	5.691797	NA

Source: Computed from E-view results

The tolerance level is the amount of variability of the selected independent variable not explained by the other independent variable while the variance inflation factor indicates how the variance is inflated. A large VIF value, threshold of 10.0 corresponds with .10 of tolerance. Conventionally, VIF is not expected to be less than 4 and more than 10 (Gujurati and Deporta, 2005). From the above table, the VIF coefficient for the variables are less than 5.00 except MFLTC, this implies the presence of perfect autocorrelation among the variables.

Table 3: Stationarity Test at Level

VARIABLE	ADF	1%	5%	10%	PROB	Integration	Conclusion
MFLA	-2.652108	-3.724070	-2.986225	-2.632604	0.0964	1(0)	Not stationary
MFLM	-2.383311	-3.724070	-2.986225	-2.632604	0.1562	1(0)	Not stationary
MFLRE	-3.296903	-3.724070	-2.986225	-2.632604	0.0260	1(0)	Not stationary
MFLTC	-2.128090	-3.724070	-2.986225	-2.632604	0.2360	1(0)	Not stationary
MFLOS	-2.642275	-3.724070	-2.986225	-2.632604	0.0982	1(0)	Not stationary

Stationarity Test at First Difference

VARIABLE	ADF	1%	5%	10%	PROB	Integration	Conclusion
MFLA	-4.208767	-3.769597	-3.004861	-3.004861	0.0038	1(I)	Stationary
MFLM	-5.217530	-3.737853	-2.991878	-2.635542	0.0003	1(I)	Stationary

MFLRE	-7.067863	-3.752946	-2.998064	-2.638752	0.0000	**1(I)**	Stationary
MFLTC	-5.391352	-3.737853	-2.991878	-2.635542	0.0002	**1(I)**	Stationary
MFLOS	-6.063050	-3.737853	-2.991878	-2.635542	0.0000	**1(I)**	Stationary

Source: Computed from E-view results

In testing the stationarity of the variables, the study adopted the Augmented Dickey fuller unit test. From the table above, it is evidenced that the variables are not stationary at level but stationary at first difference. The stationary at first difference proved that the variables are integrated in the order of 1(1). This enables us to test for cointegration using the Johansen cointegration test.

Table 4: Cointegration
Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.999687	387.2043	125.6154	0.0000
At most 1 *	0.990377	193.5455	95.75366	0.0000
At most 2 *	0.851261	82.09822	69.81889	0.0038
At most 3	0.627225	36.36477	47.85613	0.3782
At most 4	0.284270	12.68207	29.79707	0.9055
At most 5	0.131050	4.655229	15.49471	0.8443

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.999687	193.6587	46.23142	0.0000
At most 1 *	0.990377	111.4473	40.07757	0.0000
At most 2 *	0.851261	45.73345	33.87687	0.0013
At most 3	0.627225	23.68270	27.58434	0.1462
At most 4	0.284270	8.026845	21.13162	0.9020
At most 5	0.131050	3.371262	14.26460	0.9190

Source: Computed from E-view results

From the cointegration test, the result found the presence of two cointegrating equation from trace statistics and maximum Eigen. Therefore, the study concludes the presence of long run relationship between the dependent and the independent variables.

Table 5: Normalized Cointegration Test

PR	MFLA	MFLM	MFLRE	MFLTC	MFLO
1.000000	1.197987	0.375936	-1.273314	-25.81922	-0.404199
	(0.01009)	(0.00549)	(0.05643)	(0.27964)	(0.01503)

Source: Computed from E-view results

The cointegration test presented in table 4 above, failed to prove the direction of long run relationship that exist between the dependent and the independent variable. The normalized cointegration test above found that microfinance lending to real estate, micro finance lending to transport and communication and microfinance lending to other sectors of the economy not classified have negative long run relationship while microfinance lending to agricultural sector have positive long run relationship with poverty rate in Nigeria.

Table 6: Error Correction Estimate

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.946408	1.450032	-1.342320	0.2163
D(RGDP(-1))	-0.344466	0.187508	-1.837074	0.1035
D(OL_GDP(-1))	0.050505	0.325677	0.155077	0.8806
D(OL_GDP(-2))	-0.009304	0.127551	-0.072939	0.9436
D(OL_GDP(-3))	0.777127	0.137950	5.633383	0.0005
D(LTC_GDP(-1))	-0.632768	0.188299	-3.360437	0.0099
D(LTC_GDP(-2))	0.060182	0.141627	0.424937	0.6821
D(LREC_GDP(-2))	0.820419	1.219721	0.672628	0.5201
D(LREC_GDP(-3))	-2.024775	0.885391	-2.286870	0.0515
D(LMG_GDP(-1))	-3.526028	4.826918	-0.730493	0.4859
D(LMG_GDP(-2))	13.95488	3.623271	3.851458	0.0049
D(LMFP_GDP(-1))	0.400003	0.150683	2.654589	0.0290
D(LAF_GDP(-1))	0.846460	0.171936	4.923106	0.0012
ECM(-1)	-0.030753	0.286064	-0.107506	0.9170
R-squared	0.934379	Mean dependent var		-1.136364
Adjusted R-squared	0.827746	S.D. dependent var		15.91776
S.E. of regression	6.606429	Akaike info criterion		6.875090
Sum squared resid	349.1592	Schwarz criterion		7.569390
Log likelihood	-61.62599	Hannan-Quinn criter.		7.038646
F-statistic	8.762537	Durbin-Watson stat		1.243520
Prob(F-statistic)	0.002264			

Source: Computed from E-view results

The estimated error correction model found that 93.4 percent variation on the dependent variable can be explained by the independent variables. This is further justified by the validity of the F-statistics and the F-probability. The Durbin Watson statistics is greater than 1.00 but less than 1.50 this shows the absence of serial autocorrelation. The error correction coefficient is negatively signed and proved that the variables could be adjusted by 3.0 percent annually.

Table 7: Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
MFLA does not Granger Cause PR	24	0.31381	0.7344
PR does not Granger Cause MFLA		2.26888	0.1307
MFLM does not Granger Cause PR	24	2.03741	0.1579
PR does not Granger Cause MFLM		0.95052	0.4042
MFLRE does not Granger Cause PR	24	0.90235	0.4223
PR does not Granger Cause MFLRE		0.01063	0.9894
MFLTC does not Granger Cause PR	24	0.58951	0.5644
PR does not Granger Cause MFLTC		3.41147	0.0542
MFLO does not Granger Cause PR	24	3.12325	0.0672
PR does not Granger Cause MFLO		0.60138	0.5582

Source: Computed from E-view results

The causality test presented in table 7 above found a univariate causality from poverty rate to microfinance lending to transport and communication and a univariate relationship from microfinance lending to other sectors to poverty rate while other variables have no casual relationship.

Discussion of findings

The problem of poverty alleviation actually starts with the proper identifications of the poor. Over the years the issue of poverty has assumed a global status both in dimension and efforts to reduce it. The World Bank estimates that just less than half of the population of sub-Saharan Africa lives below $1.25/day (World Bank, 2010). According to the Report, Poverty is more prominent in SubSaharan African countries than anywhere else in the World. In a report on Poverty and Human Development in Africa, released by the UNDP (2011) Nigeria is ranked 32nd among the 42 poorest nations of the world.   Recently, Nigeria has overtaken India as the country with the largest number of people living in extreme poverty, according to a new report by the world poverty clock, 2018. The report says extreme poverty in Nigeria is growing by six people every minute, the highest number in the world. At the end of May, 2018, the survey showed that Nigeria had an estimated 87 million people in extreme poverty compared to Indian 73 million In a similar development, the World Bank study on poverty in Nigeria in 2015 identified that poverty in rural communities are related to poor facilities, food insecurity, obsolete agricultural facilities, poor nutrient values, little

access to savings and credit and general inability to meet basic needs. The findings of the studies and surveys conducted in Nigeria correlate with those of the international bodies. If poverty is characterized by hunger, ill health, inadequate or poor housing, illiteracy, malnutrition and unemployment, then there is no doubt that majority of Nigerians are living below the poverty line as set out by the World Bank in 1990. The findings of this study proved that operation of micro finance has weak extent to which it effect poverty alleviation in Nigeria. This evidence as the relationship between the dependent and the independent variables are not significant. The weak explained variation of micro finance credit on poverty alleviation is contrary to the expectation of the result and the objective of micro finance. The weak explained variation could be traced to marginal operational inability of the institutions to reach the rural communities, low capital base, stringent condition for borrowers and poor orientation of the relevance micro credit on the growth of small and medium scale enterprises.

CONCLUSION AND RECOMMENDATIONS

The existence of poverty in Nigeria is not an exaggeration but its dimension is not comfortable at all, especially if one realizes the fact that robust economic growth cannot be achieved without putting in place well focused programme to reduce poverty at all levels through empowering the people by increasing their access to factors of production, especially credit. The successive Nigerian governments have at various times initiated and implemented various poverty alleviation programmes, but these have not actually achieved their goals. The findings of this study proved weak relationship between micro financing and poverty alleviation in Nigeria.

Recommendations

i. Microfinance banks and institutions that lack appropriate orientation, institutional preparedness, technical capacity, capital base and other necessary prerequisites should be given a time frame within which to amend their strategies, failing which they should be liquidated and microfinance banks which show signs of low capital base, insolvency and illiquidity should be given the support and encouragement to restructure through mergers and acquisitions.

ii. Furthermore, the issue of capacity building for stakeholders should be addressed head long by the banks, regulators, development partners, as this will put the institutions in a good standing to practically achieve their original mission and regulators should fully enforce necessary compliance with the prescribed guidelines and impose sanctions where necessary to create sanity in the system. In this regard, Central Bank of Nigeria should update the microfinance Policy and Regulatory Guidelines to reflect international best practices.

iii. Regulatory authorities need to increase their capacity to deal with unregistered money lenders, specifically those who exploit borrowers by charging unusually high interest rates and alternative means could be used as collateral for small business borrowers such as group and traditional rulers' guarantees should be encouraged as sufficient collateral security.

iv.   The operators of microfinance banks should endeavour to be gender sensitive, that is, by allowing women and other vulnerable persons to take advantage of this facility to improve their lots and to encourage microfinance banks to extend their services (savings and credit) to remote rural areas where the poorest of the poor are, there should be incentive mechanism such as tax waiver on profits of the year for a certain period of time, for upward of five years. The government should put in place a credit guarantee scheme to provide additional support to credits granted by microfinance banks in the rural areas in case of default in repayment.

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