

AN ASSESSMENT OF MICROFINANCE AS A TOOL FOR POVERTY REDUCTION AND SOCIAL CAPITAL FORMATION: EVIDENCE ON NIGERIA¹

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ABSTRACT

There has been consensus in the development literature that the poor have inadequate access to credit from the formal financial sector. This is because the sector rates the poor as risky borrowers on account of their lack of suitable collateral. This has, therefore, provided the rationale for the policy stance of promoting the microfinance sector to enhance increased access to credit by the poor. Microfinance is expected to alleviate poverty through increased household incomes. Household incomes are expected to increase because of the removal of credit constraints which enables poor households with little or no savings to acquire production inputs, including technology, and to start up micro and small-scale enterprises. It is also believed that microfinance would lead to increased women empowerment.

There is no consensus on the impact of microfinance on the welfare of poor households. While some argue that microfinance has a positive and significant impact on welfare outcomes, others argue that there is no significant positive impact and that at times the impact is adverse. This paper seeks to contribute to this debate. It does this through investigation of the impact of microfinance on household poverty status. The paper used cross-sectional data to assess the relationship between household poverty status on the one hand and their socio-economic characteristics and microfinance access on the other. Stratified random sampling design was used to generate a sample of 500 household from Edo and Delta States of Nigeria who are clients to Lift Above Poverty (LAPO) microfinance scheme.

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Logit regression model is used to estimate relationship between microfinance and household demographic variables and household poverty status. Results show that selected microfinance variables, namely, loan cycle, cumulative loan, volume of last loan taken, experience with LAPO, and Education all have positive significant impact on clients' poverty status.

This evidence thus contributes support to the "positive impact" side of the debate, as well as provides some guide as to what should be the direction of policy reform to enhance the performance of the microfinance sector in Nigeria, particularly at a time the Central Bank of Nigeria is introducing policy reforms for the sector.

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I. INTRODUCTION

Poverty, measured by the proportion of population living below the poverty line, is observed to be quite high in Nigeria in recent years. The percentage of poor people living below the national poverty line rose from 28.1% in 1980 to 46.3% in 1985. After a decline to 42.2% in 1992, it rose to 65.6% in 1996. It is estimated to have declined to 54.4% in 2004 (NBS 2005). In its efforts to reduce the prevalence of poverty in the country, government introduced as one of its strategies the microfinance scheme, implemented through designated public and private financial institutions.

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The paper used cross-sectional data to assess the relationship between household poverty status on the one hand and their socio-economic characteristics and microfinance access on the other. Stratified random sampling design was used to generate a sample of 500 household from Edo and Delta States of Nigeria who are clients to Lift Above Poverty (LAPO) microfinance scheme.

In the rest of the paper, section two briefly reviews theoretical and empirical literature on impact of microfinance on poverty reduction, section three reviews governments' initiatives on microfinance. The section also identified LAPO as one of the private sector microfinance institutions (MFIs), a non-governmental organization, engaged in the microfinance scheme. Section four presents the econometric model applied and results of analysis. Section five concludes the paper.

II. THEORETICAL AND EMPIRICAL PERSPECTIVES ON MICROFINANCE AND POVERTY REDUCTION

The professed goal of microcredit is to improve the welfare of the poor as a result of better access to small loans (Navajas et al, 2000). Access to credit affects welfare outcomes by alleviating the capital constraints on poor households for their agricultural and micro- and small scale non-agricultural enterprises. Access to credit also increases the poor households' risk-bearing and risk-coping abilities and enables consumption smoothing over time.

Zeller and Sharma (1998) argue that microfinance can help to establish or expand family enterprises, potentially making a difference between grinding poverty and economically secure life. Burger (1989) observed that microfinance tends to stabilize rather than increase income and tends to preserve rather than create jobs. Mosley and Hulme (1998) in their study of 13 MFIs in seven developing countries concluded that household income tended to increase, but at a decreasing rate, as the debtors income and asset position improved.

Some other studies suggest non-significant impact. Based on a study on 300 households in Kenya, 160 households in Malawi, and 150 households in Ghana, Buckley (1997) observed that there was little evidence to suggest any significant and sustained impact of microfinance on beneficiaries in terms of micro-entrepreneurs graduating to higher operations, increased income flows or level of employment. Diagne and Zeller (2001) also suggested in their study on Malawi that microfinance did not have any significance effect on household income. Coleman (1999), using a sample of 445 households from Northeast Thailand, observed that the village bank credit did not have any significant impact on physical asset accumulation, production and expenditure on education. In other words, credit on its own is not an effective tool for helping the poor to enhance their economic conditions, unless, for example, there is access to markets and other inequalities are removed.

Kondo (2007) and Kondo et al (2008), using a model similar to Coleman (1999) and with some extensions, found in the case of rural households in the Philippines that microfinance has significant impact on welfare outcomes and thereby on poverty alleviation. Similarly, Imai and Arun (2009) found "*significantly positive effects of the MFIs*".

Thus, it could be concluded that the debate is yet inconclusive on the impact of microfinance on poverty reduction. It should be mentioned, though, that the varying conclusions in the literature with respect to the impact of access to microfinance may be accounted for by differences in the methods used for impact measurement, failure to control for selection bias and other biases.

III. MICROCREDIT INITIATIVES OF GOVERNMENT

In recognition of lack of access to credit as one of the factors in poverty prevalence in the country, government in Nigeria has since the 1980s implemented various initiatives to make microcredit more accessible to the poor. The first major initiative was the establishment of the Peoples' Bank in 1988. The bank had as its mandate to make small credit available to low income borrowers. Amount as low as N2,000 was granted as loan. The bank had its headquarters in Lagos and branch offices in selected state capitals. The sole source of its fund being from government, it soon became apparent that the scheme was not sustainable.

Government in 1990 came up with another initiative which was the establishment of Community Banks, to be promoted by communities on government approval. The first of such banks was licensed in 1991. The modest required capital base of N250,000 encouraged many promoters, with the result that the number of community banks peaked in 1996 at 1,368. The capital base was later raised to N3 million in 2002 and to N5million in 2005. The number of banks dropped to 753 in 2005, as many of the existing banks could not meet the new requirements.

In a bid to reposition the remaining community banks for greater effectiveness, the Central Bank of Nigeria (CBN) in late 2005 directed that they convert to microfinance banks, as provided for in the National Microfinance Policy, Regulatory and Supervisory Framework which was launched in December 2005. All licensed community banks were required to convert into microfinance banks in either of two categories within 24 months of approval of the policy. The two categories are: Microfinance banks that are licensed to operate as unit banks are to be community based and have a minimum paid-up capital of N20 million for each branch. Those licensed to operate in a state, and thus have more than one branch, are to have a paid-up capital of N1 billion.

To ensure their financial sustainability, the policy states that the 10% of the Small and Medium Enterprises Equity Investment Scheme (SMEEIS) fund meant for microcredit would be available for intermediation by microfinance banks. Also, states and local governments are encouraged to devote at least 1% of their annual budgets to microcredit initiatives and this will be administered through the microfinance banks. Also, government parastatals like the National Poverty Eradication Programme (NAPEP), Nigerian Agricultural Cooperative and Rural Development Bank, and foreign donor agencies can now use microfinance banks as intermediaries in their support for poverty alleviation (CBN, 2006).

NAPEP was established by the federal government in 2000 as the main agency for its poverty alleviation programmes. Microcredit scheme was introduced by NAPEP as one of its poverty alleviation strategies. The scheme was implemented by the agency's state offices. These offices in turn appoint designated microfinance banks to disburse micro credit to poor clients.

In Edo State, Lift Above Poverty (LAPO) is one of the non-governmental organizations (NGO) microfinance bank engaged by NAPEP for its micro credit scheme. LAPO operations cover a number of states in the country. For the purpose of this paper, data was collected from its operations in Edo and Delta States.

IV. MODEL ESTIMATION AND RESULTS

A. Data Used

A stratified random sampling technique was used to generate a sample size of 500 clients of LAPO in Edo and Delta States of Nigeria. The 500 clients comprises of both treatment and control groups. 350 of the clients are treatment group and 150 control group; both groups were selected from LAPO using the organization loan registration and participation form in determining their eligibility to participate in the programme. Using the eligibility participation and registration form reduced selection bias, because both groups have similar observable characteristics as portrayed by the poverty score at the point of registration. The non -random placement was controlled by choosing both treatment and control groups from members from the same organization and communities. The dropout bias was controlled for by including 50 ex-clients of LAPO in the study as treatment group as recommended in Karlan (2001). However, the poverty scores of clients were used to identify poor clients. The poverty scores as recorded in the loan registration and application forms were derived from evaluation of selected poverty indicators supplied by the clients on the forms. The poverty scores were calibrated as follows: Least Poor (0 - 27), Less Poor (28 - 45), Average Poor (46 - 63), Poor (64 - 82), Poorest (83 - 100). Poverty score difference is used to determine the poverty status of the client.

B. Model Specification

The estimation of the logit model shows the mathematical representation of the impact of microfinance using Ordinary Least Square (OLS) equation to estimate the odd ratio and is given as

$$P(y_i/1 - y_i) = a + b_1 x_1 \dots + b_n x_n$$

where

P = Poverty Status (probability of being non-poor)

x_1 = Household Asset

x_2 = Business Assets

x_3 = Experience with LAPO

x_4 = Loan Cycle

x_5 = Cumulative Loan

x_6 = Amount Saved

x_7 = Access to their Financial Services

x_8 = Gender

x_9 = Age

x_{10} = Education

x_{11} = Marital Status

x_{12} = Household Size

x_{13} = Location

x_{14} = Business Status

x_{15} = Volume of Least Loan

C. Interpretation of Result

The results of logistic regression are presented in Table 1.1. It shows the effect of selected variables on respondents' likelihood of being non-poor. The Hosmer and

Lemeshow test ($X^2 = 5.97$, $df = 8$) is not significant at the 5% level implying that the model is appropriate for analysis. The Omnibus Tests of model coefficients ($X^2 = 397.27$, $df = 15$) is significant at the 1% level (critical $X^2 = 2.576$). This implies that the model is better or appropriate in explaining the outcome variable (i.e. poverty level) with the given explanatory variables. The pseudo R^2 value (0.815) implies that 81.5% variation in respondents' likelihood of being non-poor is explained or accounted for by the explanatory variables. This suggests that the major factors affecting respondents' likelihood of being poor were captured in the model. The overall correct percentage prediction is 92.4%, which implies that the model predicts or correctly classifies the respondents into the poverty classes (poor or non-poor) by up to 92.4%.

Table 1. Relationships between Respondent Characteristics and Poverty Status (Logistic Regression)

Explanatory Variables	B	t-ratio	Sig.	Odd Ratio
Household Assets	0.153	0.933	0.353	1.165
Business Assets	0.162	0.900	0.368	1.176
Experience with LAPO	2.231	2.207	0.021	9.309
Loan Cycle	0.520	2.430	0.015	1.683
Cumulative Loan	-5.69E-05	-2.448	0.014	1.200
Amount Saved	-2.53E-05	-0.733	0.464	1.000
Access to other Financial Sources	0.969	1.785	0.074	2.635
Gender	-0.221	.0378	0.705	0.801
Age	-0.004	-0.133	0.890	0.996
Education	0.101	2.149	0.030	1.106
Marital Status	-0.263	-0.383	0.701	0.768
Household Size	0.063	0.630	0.524	1.066
Location	0.103	0.248	0.805	1.108
Business Status	0.501	0.998	0.318	1.650
Volume of Last Loan	2.352	3.630	0.000	10.508
Intercept	-24.713	-0.008	0.994	0.000

The t-test results for the individual variables reveal that five of the explanatory variables were significant in explaining respondents' likelihood of being non-poor. These are; experience with LAPO, loan cycle, cumulative loan, educational qualification and volume of last loan received by respondents.

The result for experience with LAPO ($b = 2.231$) was positively significant, which means experience with the LAPO has a significant effect on poverty reduction. The result is significant at the 5% level since the calculated t (2.207) is greater than the critical t (1.96). However, the positive relationship indicates that the treatment group were more likely to be non-poor compared with the control group. This suggests the positive impact of LAPO in reducing poverty. The odd ratio (9.3) indicates that after controlling for other variables, the treatment group i.e. respondents who have gotten loan from LAPO are nine times more likely to be non-poor or live above poverty line than those clients who have not been given treatment loan or if given at all they are on their first stage loan.

Loan cycle ($b = 0.520$) is significant with an odd ratio of 1.68. This suggest that the number of loans taken increases the chances of the respondents being non-poor i.e. living above poverty line. The odd ratio of 1.68 implies that a unit increase in loan increases the odd or likelihood of respondents living above poverty by 68%, holding other variables constant. The result indicates that loan cycle had a positive influence on the probability of the respondents being non-poor. This result is significant at the 5% level since the calculated t (2.430) is greater than the critical t (1.96). Result of microfinance impact on rural household poverty status in Philippines shows that the relationship between loan cycle and poverty status was non-significant (Kondo et al, 2008). In addition, Khandker (1998) study in Bangladesh using Grameen and BRAC found that 5% of participant households are removed from poverty annually, meaning that access to credit has a positive relationship with poverty which is in line with the findings in this study.

Hosmer & Lemeshow Test ($X^2 = 5.97$; $df = 8$)

Pseudo R Square = 0.815

Model $X^2 = 397.27$; $df = 15$

Cumulative loan ($b = -5.688E-5$) is significant, which means that cumulative loan received by respondents had a negative and significant effect on poverty reduction. The odd ratio (1.20) implies that a unit increase in cumulative loan will increase the odd of living above poverty by 20%. The result indicates that cumulative loan had a negative relationship on the probability of the respondents being poor. This suggests that the cumulative loan taken increases the chances of the respondents being non-poor i.e. living above the poverty line. The result also suggests that the loan given to clients by LAPO is large enough to enable the respondents' breakout of poverty in a significant way. This result is significant at the 5% level since the calculated t (-2.448) is greater than the critical t (1.96). The result of microfinance impact on rural household in Philippines shows that the cumulative loan was non-significant (Kondo et al 2008).

Volume of last loan ($b = 2.352$) has a positive and significant effect on poverty reduction. The positive result indicates that the volume of loan taken increases the chances of the respondents being non-poor i.e. living above poverty line. It's odd ratio (10.50) suggests respondents with higher loan are about ten (10) times more of living above poverty by about 50%. This result is significant at the 1% level since the calculated t (3.360) is greater than the critical t (2.576). Chen et al (2001) in India a study on (SEWA

bank) found change in incidence of poverty, but substantial movement above and below poverty line which is in line with our findings in this study.

Education ($b = 0.101$) was also positively related to respondents probability of being non-poor. The positive result implies that the higher the educational attainment of the respondents the higher their probability of being non-poor or living above poverty. The odd ratio of 1.10 indicates that a unit increase in educational level will increase respondents' odds or likelihood of living above poverty by about 10% when other variables are controlled for. The result is significant at the 5% level (Critical $t = 1.96$). The positive effect of education may be explained by the fact that education increases economic opportunities of a person and also the capability to manage a fund and business. The result disagrees with that of Niranjana (2007) who found that education had a negative and significant impact on the welfare and poverty status of clients. Wodon (1997) measured poverty in Bangladesh across socio-economic and sectoral (urban and rural) groups. His findings showed education, land ownership and occupation to be significant determinants of poverty.

D. Social Capital Formation. Implications of the results

Group-based microfinance programmes usually favour the very poor without collateral. It is seen to have significant benefits for women, contributing not only to poverty alleviation, but also to women's empowerment. It is argued that savings and credit provision in itself is assumed to contribute to a process of individual economic empowerment through enabling women to decide about savings and credit use. At all these levels, group-based programmes are assumed to build "social capital" through developing and strengthening women's economic and social networks. Social capital is therefore seen as simultaneously contributing to financial sustainability, poverty targeting and women's empowerment. In LAPO group members, often 15 to 30 in number organize themselves into groups that offer joint liability for member loans.

Forming group lending and joint liability helps the clients to reduce the problem of asymmetric information which is a major factor that may lead to the failure of microfinance markets, if appropriate techniques are not applied, since it can cause the problems of adverse selection and moral hazard of which both required collaterals as solutions. Providing microfinance to poor clients requires innovative operating methods to manage risk and reduce transaction costs. Poor households do not usually have physical assets to offer as collateral for loans, so micro finance Institutions therefore developed substitutes for collateral for loans. The most common form of substitute collateral has been the formation of groups of borrowers and the establishment of joint liability procedures where loan group members effectively guarantee one another's loans. To reduce transaction costs Micro finance Institutions deal with loan groups rather than with individual clients, and outsource certain administration tasks to the group.

Group Lending refers to arrangements by Individuals without collateral that get together and form groups with the aim of obtaining loans from a lender Morduch et al (2003). The loan given to the poorest clientele is called "*solidarity group*" loan. This type of loan is aimed at solving the problem of the absence of material sureties, the institution grants a loan to a group of some twenty people, each standing surety for the others, and if a problem arises, all are responsible for dealing with it. This system has the advantage of

allowing poor people to access credit by enabling the institution to obtain a repayment rate close to 100 percent; the clients repay their loans at bi-weekly meetings, but for LAPO the clients repay their loans at weekly meetings if in urban areas and monthly if operating in rural areas. The obligation for LAPO clients to form a group of 15 to 30 persons does not please everyone, but when a client does not repay her loan, social pressure means that the debt is paid one way or the other, but the reputation of the client suffers and leaves little opportunity for another chance

Group lending with joint liability technique was introduced by the Grameen Bank in late 1970s, this method has to do with smaller group of people, generally comprising peer groups of five unrelated members and are self - informed and incorporated into village centers of up to eight peer groups. Attendance at weekly meetings and weekly savings contributions, group fund contributions, and insurance payments are mandatory. In LAPO Savings must be contributed for four to six weeks prior to receiving a loan and must continue for the duration of the loan term. Group members mutually guarantee each other's loans and are held legally responsible for repayment by other members. No further loans are available if all members do not repay their loans on time. No collateral is required while mandatory weekly meetings include self-esteem building activities and discipline enforcement.

Kalpna(2004) confirms that group lending approach is a key feature of the innovative institutional design credited for addressing the problems of screening, incentives and enforcement at reduced transaction costs to the microfinance institutions. Accordingly, in group lending, joint-liability, peer monitoring and peer pressures are built into organizational structure and these help to address the problems of adverse selection (hidden information) and moral hazards (hidden action) emanating from informational asymmetries between lenders and borrowers.

V. CONCLUSION

Drawing on cross - sectional data from Edo and Delta states of Nigeria, this paper analyses the effect of microfinance on poverty of households, which is defined as the poverty score. The treatment effect model is employed to estimate the poverty - reducing effects of the access to microfinance and the loans used for productive purposes.

Significantly positive effects of access to microfinance on poverty reduction, or more specifically on the probability of being non-poor, as found. This suggests that microfinance institutions play a significant role in poverty reduction. Much of the loans are given out to groups- cooperatives and associations. This encourages social capital formation as individual clients come together to form groups for the purpose of accessing the loans. This engenders group or peer monitoring and supervisions as well as information sharing. This ensures effective utilization and repayment of loans. The fact that the results from this study indicate significant positive impact on poverty scores suggests that social groups effectively utilized the loans as to have produced the positive effects.

In summary, microfinance plays an important role in poverty reduction and social capital formation in Nigeria, and as such if properly positioned, microfinance institutions are useful tools for poverty reduction.

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