MICROFINANCE AND POVERTY REDUCTION IN RURAL NIGERIA

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Abstract

There is extensive experience in microfinance provision in Africa, but relatively few empirical studies on the social and economic benefits to clients. This paper draws on original surveys of 281 rural households in Southern Nigeria, some of which are served by two microfinance programs but have not received any loans. The statistical tests show that households with access to programs do have more substantial social and economic benefits than those without access. The evaluation holds important lessons for studies on other programs in many African countries.

JEL classification: G2, G21, N27

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1. INTRODUCTION

> The ultimate test of any institution is not whether it exists or sustains itself, but whether it manages to do something useful.
>
> Hulme and Mosley, 1996, Pg. 86

In 2006, the microfinance movement suddenly improved when the Grameen Bank, the movement's flagship, and its founder Muhammad Yusuf won the Nobel Peace Prize for their pioneering efforts to provide financial services to the poor to foster small-scale entrepreneurial activities (usually in the informal sector) and improve their quality of life. Replications of the

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Grameen model have now spread in many parts of Africa including Nigeria, offering small loans to the poor[2]. While this strategy of reducing poverty appears promising, evidence of the social and economic impact on the poor remains scarce[3]. Thus, the primary goal of this paper, captured by Hulme and Mosley's quote, is to investigate whether microfinance programs improve the living conditions of the poor.

Using evidence from original surveys conducted in 2006-07 of 281 rural households in Southern Nigeria, some of which are served by two microfinance programs, the Lift Above Poverty Organization (LAPO), and the Nigeria Agricultural Cooperative and Rural Development Bank (NACRDB), some of which have access to programs but have not received any loans, this paper presents statistical test of the impact of programs on the income and livelihood of program beneficiaries. Simple test of impacts show clear achievements. Households with access to programs do have substantial social and economic benefits than those without access.

Data for this paper were obtained partly from the statistical records of LAPO and NACRDB, partly from a pre-coded questionnaire of a representative sample of program beneficiaries (identified by number), and partly from structured but not pre-coded interviews of borrowers and lenders, as well as from personal observations. The survey method is described in section 3.1 below.

LAPO and the NACRDB are situated in two rural communities of Egor (pop. 33,000) and Uselu (pop. 102,000). These communities are located in the Niger-Delta region, one of the most poverty stricken areas where residents are primarily petty traders and farmers with persistently low incomes. In these respects, they are representative of Nigeria's poor population who live on less that US$1.00 per day. Both LAPO and NACRDB are registered microfinance organizations established to mobilize funds and render financial services to resource-constrained borrowers. These two institutions replicate other poverty alleviation programs in Nigeria, since they aim to provide

[2] Grameen Bank (GB) has reversed the conventional banking practice by removing the need for collateral and has created a banking system based on mutual trust, accountability, participation and creativity. GB provides credit to the poorest of the poor in rural Bangladesh, without any collateral. At GB, credit is a cost effective weapon to fight poverty and serves as a catalyst in the overall development of socio-economic conditions of the poor who have been kept outside the banking orbit on the ground that they are poor and hence not bankable.

[3] The exceptions are Hulme D. and P. Mosley (Eds.) 1996, *Finance Against Poverty,* Vols. I & II, Routledge Publishers, New York and Copestake J.S. Bhalotra and S. Johnson, 2001, "Assessing the Impact of Microcredit: A Zambian Case Study", *The Journal of Development Studies*, Vol. 37, No. 4, pp. 81-100.

credit for the economic advancement of the poor. The target group consists of households below the poverty line (i.e., with an annual household income of N16544 or $330 at 1990 prices for a family of five)[4]. Priority is given to those with incomes up to N13500 or $270US. This subset comprises mostly small and marginal farmers, petty traders and artisans or those whose activities are largely in the informal sector of the economy. These requirements were determined at the inception of these two programs, and have not changed as at the time of fieldwork for this paper.

This paper is structured as follows. Section 2 is an overview of the existing scholarly literature on the effects of microfinance on poverty reduction. Section 3 describes the methodology and survey design upon which this paper is based. Section 4 present results of the social and economic benefits of microfinance programs on poor households. Some conclusions are drawn in section 5.

2. WHAT IS KNOWN ABOUT THE EFFECTS OF MICROFINANCE ON POVERTY?

The number of studies on the impact of microfinance on poverty reduction has grown considerably, especially in the past few years, spurred in part by the growth of microfinance institutions in many developing countries. A focused review conducted to evaluate earlier and recent publications concludes that there is a wide range of evidence that microfinance programs can increase incomes, lead to significant growth in business profits, decrease vulnerability and lift families out of poverty. In addition, access to microfinance can improve children's nutrition and increase school enrollment rates, among other outcomes.

Despite differences in methodology and data, much of the existing scholarly and practitioner literature points to several specific conclusions about the effects of microfinance on poverty reduction. Hulme and Mosley's comprehensive analysis (1996) of the practical results of microfinance in seven countries is indicative of much of the scholarly literature. They find evidence that most of the cases they surveyed had positive effects on incomes and poverty, and indirect and positive effects on other financial providers working with the poor, but had little effect on employment and technology.

[4] This amount is deliberately set by the two agencies as Nigeria does not have an official poverty line. The official exchange rate in 1991-92 was 50 Naira (N50.00) to the dollar. During fieldwork for this paper in 2006, it was approximately N136.00 to the dollar.

Using panel data from Bangladesh, Shahidur Khandker's work takes us a little further into the poverty impact of microfinance on poverty reduction for both borrowers and society as a whole. The results suggest that access to microfinance contributes to poverty reduction especially for female participants, and to overall poverty reduction at the village level. Microfinance thus helps not only the poor participants but also the local economy (Khandker 2005). In earlier joint studies with the World Bank and the Bangladesh Institute of Development Studies (BIDS), Khandker (1998) and Pitt and Khandker (1998) find strong evidence that microfinance programs help the poor through consumption smoothing and asset building. The findings support the claim that microfinance programs promote investment in human capital such as schooling, and raise awareness of reproductive health issues among poor families (Khandker, 1998: 12). In their study, Pitt and Khandker estimate that the marginal impact of microfinance on consumption was 18% for women and 11% for men (Pitt and Khandker, 1998: 958-96).

Copestake, Bhalotra and Johnson's work in Zambia picks up from and develops aspects of Khandker's argument by estimating the impact of urban credit program on business performance and on a range of indicators of wellbeing. Like Khandker, they conclude that borrowers who obtained a second loan experienced significantly higher average growth in business profits and household incomes. They also reached the conclusion that inflexible group enforcement of loan obligations resulted in some borrowers being made worse off (Copestake, Bhalotra and Johnson, 2001: 81-100).

Two problems, such as the ones reviewed above, present themselves. First, there the question of the actual impact of microfinance on the poor. Do these studies really capture the impact of microfinance or the abilities of the participants? This question is valid because impact studies are sensitive to the methods applied, time and accessibility (Khandker 2005). As a result, impact assessments should not neglect issues of rigor, timeliness, cost and accessibility. A second problem in efforts to assess the impact of microfinance programs is bias through program placement and participation, which can lead to mistaken conclusions (Khandker 2005). In substantiating these findings, the cases presented here correct these problems by adopting an alternative survey method suggested by Coleman (1999) and measuring indirectly the socioeconomic outcomes of participation in microfinance programs. This is the subject of the next section.

3. METHODOLOGICAL ISSUES

Most studies attempting to measure the impact of poverty reduction programs and micro-finance in particular, often neglect the issues of self-selection and non-random program placement, thus leading to biased estimates and conclusions of impact of credit on poverty[5].

According to Coleman (1999), self-selection bias affects the estimate of program benefits because households with more entrepreneurial capability are more likely to join the programs. In the same way, the non-random program placement also biases our test of program benefits if programs are implemented in those areas that have more business opportunities, better communication infrastructure, more dynamic leaders or are poorer.

To avoid these sources of bias, Coleman (1999) suggests adopting an alternative survey method. He considers two groups of members of a newly established village bank, program members who have received a loan and members of a comparison (or control) group who have not received any loan until the survey period. Since the comparison group members are also self-selected like the program members, the bias arising from self-selecting in testing the benefits of programs disappears.

Using this alternative method, this study assesses program impacts by randomly selecting two centers in the same branch in each of the programs (LAPO and NACRDB), as a comparison branch and program branch respectively. The comparison group also known as non-borrowers or control group is selected to be as similar as possible to the program or borrower group, except for the characteristic of not having received a loan from a case study institution during the survey period. The validity of using this non-borrower group as a control group depends partly on the assumption that their economic status is comparable to the previous positions of the borrower group before taking any program loans. What this study did, was to select a control group of people who had been approved for, but had not yet received the physical cash from the two case study institutions. Surveys were then conducted of these two groups.

A detailed household questionnaire and interview schedule was designed to collect information on income, education, consumption, asset ownership, savings, children's schooling and health. While there is no difference in access and availability of these goods for both groups, there are however, differences in their consumption, which is attributable to loan access. The study expects

[5] Coleman B.T., 1999, "The Impact of group lending in Northeast Thailand", Journal *of Development Economics*, Vol. 60, No. 1, pp. 105-41.

better status of program households in terms of basic needs, living standards and poverty compared to comparison households. Accordingly, the null hypothesis for this study states that there is no difference between the two means on the impact of loan usage on both the treatment and control group.

3.1. Survey Design

A non-experimental design was created to test the impact of loan usage on the poverty of households. The survey design covers two groups of households. The first group (the program households) is composed of those who have already received more than one loan from the microfinance programs. The second group consists of households that have received no loan from the programs (the comparison households).

A five-stage random sampling technique was applied in selecting program households and comparison households. In the first stage, one district had been randomly selected out of eight districts for LAPO and two regional offices for NACRDB in Southern Nigeria. In the second stage, one branch was selected from LAPO and NACRDB respectively. In the third stage, four centers were selected from each program. In the fourth stage, two centers were randomly selected from each program. One center was selected for program households (program centre) and the other for comparison households (comparison centre) with similar demographic characteristics. In the fifth and final stage, the study randomly selected one hundred members from each center in the fourth stage as program and comparison households.

In total, the study collected information from two hundred members of the comparison households. However, during the examination of the completed questionnaires, some questionnaires could not be used because they contained incomplete answers. This left us with ninety-nine useable questionnaires from the comparison branches. In terms of program distribution, this study was able to use seventy-two questionnaires from the LAPO comparison center and twenty-seven from the NACRDB comparison center.

This study grouped all members randomly selected into two groups (3-4 years, and 5 years and above) on the basis of length of participation in the program. During the examination of the completed questionnaires, some questionnaires had incomplete answers and were dropped. The study finally found one hundred and thirty four 3-4 years group filled in the questionnaires, forty eight 5 years and above filled in the questionnaires completely, giving a total of one hundred and eighty two. When broken down into the two programs, the LAPO program centre produced eighty-nine questionnaires and ninety-three from the NACRDB program centre.

4. RESULTS

This section presents the results of the impact of microfinance on some important well-being indicators of borrowing households within two microfinance programs in southern Nigeria.

The poor participate in microfinance programs in the expectation that borrowing will increase welfare gains, income and net worth of household. Determining if credit provision to the poor does in fact reduce poverty on a sustained basis can be determined indirectly, by measuring changes in socioeconomic outcomes such as children schooling and access to health facilities and better shelter among others.

4.1. Impact of Microfinance on Education

The ideal indirect socioeconomic measure of the impact of borrowing from a microfinance program on borrowers will be the access to education, which Obadan (2002) argues correlates clearly with economic and social status in Nigeria. The direction of causality could be established to the extent that financial benefits accruing from business ventures entered into with the credit may be used to provide better education for the children of loan beneficiaries.

The impacts of microfinance on education have been assessed through comparison of different indicators related to education of program households with those of comparison households. To evaluate the education status of program and comparison households, four indicators related to education were tested. These four indicators are (a) the number of children age 6-13 years who are in private school, which is controlled for (**CPS**)[6], (b) the ability to purchase school uniforms for children in school (**SU**), (c) the ability to provide text and notebooks for children in school (**TN**) and (d) the average expenses on education (**ASE**).

The distribution in Table 1 in the appendix shows that all children between 6-13 years in 57.3% of program households in the LAPO program attend private schools. In contrast, all children between 6-13 years in 38.9% of comparison households attend private schools. The same table shows that all children age 6-13 years in 84.9% of program households in the NACRDB program attend private schools compared to 7.4% of comparison households who attend private schools.

[6] Due to the near total collapse of public schools in Nigeria, most households now strive to send their children to private schools. Sending children to a private school is also seen as a status symbol, which for the poor is an indicator of material progress.

Table 2 below shows the null hypothesis test results on variables related to education of program and comparison households.

Table 2: Test Results on Variables Related to Literacy and Education

Variables[7]	Count	Mean	df	Value	Probability
ASECL	72	**3.639**	159	**6.750**	0.000
ASEPL	89	**5.180**			
ASECN	27	**2.741**	118	**2.744**	0.007
ASEPN	93	**3.269**			
CPSCL	72	**1.500**	159	**2.368**	0.019
CPSPL	89	**1.775**			
CPSCN	27	**1.185**	118	**7.329**	0.000
CPSPN	93	**1.892**			
TNCL	72	**3.111**	159	**6.934**	0.000
TNPL	89	**4.663**			
TNCN	27	**2.556**	118	**4.347**	0.000
TNPN	93	**3.194**			
SUCL	72	**1.167**	159	**3.318**	0.001
SUPL	89	**1.022**			
SUCN	27	**1.778**	118	**7.659**	0.000
SUPN	93	**1.151**			

Source: Survey of LAPO and NACRDB lenders

The t-test results which are significant at the 1% level rejects the null hypothesis on all four variables, namely; ability to send children to private school (**CPS**), ability to purchase uniforms (**SU**), ability to buy text and notebooks (**TN**) and average yearly spending on education (**ASE**). It means that access to credit and the attending benefits from its profitable usage increases entitlement of program households on education through increasing capability to spend more on education of children when compared to the comparison households.

The frequency distribution on annual spending on children's education for both program and comparison households is presented in Table 3 in the

[7] CL denotes comparison group and PL program group for LAPO, while CN and PN denote comparison and programs groups for NACRDB.

appendix. The table shows that the yearly expenditure of program households averages between N9000 ($69) and N10000 ($76), while the average yearly educational expenditure of comparison households is between N8000 ($62) and N9000 ($69).

Table 4 in the appendix shows the distribution of responses to the question of ability of households to afford school uniforms for their children every school year. The answer of households was either "yes" or "no". 97.8% of program households in LAPO, are able to afford school uniforms for their children every school year. In the comparison households, 83.3% are able to afford school uniforms for their children every school year.

Both program and comparison households in the NACRDB program show the same pattern as those of LAPO. 84.9% of program households in NACRDB are able to afford school uniforms for their children every school year. In contrast, 22.2% of comparison households are able to afford school uniforms for their children every school year.

The responses of program and comparison groups on their ability to purchase recommended text and notebooks for school age children are presented in Table 5 in the appendix. Seventy five percent of households in both programs are able to afford all recommended text and notebooks for children. In contrast, only 8% in comparison households are able to afford all recommended text and notebooks for their children.

4.2. Food Related Impact

In this section, the study compares the nutritional well being of program households with comparison households to perceive impacts of microfinance. The validity of using this indicator on borrowers' welfare follows the perspective that credit can facilitate higher income activities which translate into high consumption of food and non-food items. Because individual level data on food and nonfood consumption for adult members of households were not readily available, the impact of borrowing on food consumption was assessed using data on availability of food, and the frequency of food consumption.

For food consumption status, three variables of nutritional wellbeing of program and comparison households were tested. These are (a) regularity of daily feeding (**FF**), (b) frequency of special food (**FSF**)[8] and (c) average weekly expenditure on food consumption (**AWEF**).

The distribution of regularity of daily feeding of households in Table 6

[8] Meat, eggs and milk are considered special food, if consumed by the poor.

(see appendix) shows a better outcome for program households. In the LAPO program, 51.4% of comparison households have food deficit, while 12.4% of program households have a food deficit[9]. In the NACRDB program, 33.3% of comparison households have a food deficit compared to 8.6% of program households.

In Table 7 (see appendix) the distribution on the frequency of special food of households are presented. As in Table 6, program households report better outcomes.

In the LAPO program, 18.0% of program household can afford special food when they want to, compared to 7.0% of comparison household. In the NACRDB program, 9.7% of program households compared to 3.7% of comparison households can afford special food when they want to. It is suffice to say that loans may not be used for food.

The survey response of the weekly expenditure on food consumption of households is presented in Table 8 in the appendix. On all three thresholds of weekly spending, program households spend more on food weekly than the comparison households in both programs.

The null hypothesis test results on variables related to the nutritional well being for comparison and program households of both programs are presented in Table 9 below. The t-test values at the 1% level do not reject the null hypothesis on two of the variables for the LAPO program. It shows that there is no significant difference between program and comparison households on the average weekly expenditure on food consumption (**AWEF**), and the frequency of special food (**FSF**). This result most probably can be explained by the self-production of some of the food staples consumed by both groups. Also, what is considered special food, like consumption of meat, eggs and milk, are affordable these days by most families because many households now have smaller family size. The results are, however, significant on the regularity of daily feeding (**FF**). Based on these results, we can conclude that access to credit may not have any effect on program households' ability to spend more on food consumption when compared to the comparison households in the LAPO program.

For the NACRDB, the t-test results reject the null hypothesis on two variables, the average weekly expenditure on food consumption (**AWEF**) and regularity of daily feeding (**FF**). There is, however, no significant difference between comparison and program households on the frequency of special food (**FSF**). This means that for program households in the NACRDB, access to microfinance increases entitlement to food consumption.

[9] Food deficit refers to irregular daily feeding, which is two meals or less per day.

Table 9: Test Results on Variables Related to Food Consumption

Variable	Count	Mean	df	Value	Probability
AWEFCL	72	**5.819**	159	**1.362**	0.175
AWEFPL	89	**5.697**			
AWEFCN	27	**5.259**	118	**4.816**	0.000
AWEFPN	93	**5.828**			
FSFCL	72	**3.208**	159	**0.365**	0.715
FSFPL	89	**3.258**			
FSFCN	27	**3.074**	118	**1.292**	0.199
FSFPN	93	**3.269**			
FFCL	72	**2.500**	159	**5.612**	0.000
FFPL	89	**2.933**			
FFCN	27	**2.704**	118	**3.941**	0.000
FFPN	93	**3.194**			

Source: Survey of LAPO and NACRDB lenders

4.3. Impact of Microfinance on Health

Another important household welfare gain from participation in a microfinance program for the poor will be improved access to health. Two variables have been used for assessing the impacts of microfinance on the health of borrowing households. These variables are (a) yearly medical expenditure of household (**AYME**) and (b) the immediate last medical visit/advice (**ILMA**).

In the appendix, Table 10 shows that on average, yearly medical expenditure of program households is between N8000 ($62) and N9000 ($69), while the average yearly medical expenditure of comparison households is between N7000 ($54) and N8000 ($62).

Frequency distribution of the types of medical advice households have used during the last illness of a member of the household is presented in Table 11 (see appendix). In the LAPO program, 84.3% of program households took medical advice from a qualified medical practitioner. In the LAPO programs, 80.5% of comparison households took medical advice from a qualified medical practitioner. The table also shows that in 93.0% of program households in the NACRDB the most immediate medical advice was sought from a qualified medical practitioner. In contrast, 62.0% of comparison households took medical advice from a qualified medical practitioner.

The t-test results at the 1% level in table 12 rejects the null hypothesis on

medical expenditure, thus there is a significant difference between the comparison households and program households in terms of annual medical expenditure (**AYME**) in both LAPO and the NACRDB programs. This result reveals that program households are able to afford better healthcare than comparison households. In regards to the last immediate medical advice (**ILMA**) taken by the household, the results show that there is no difference between program and comparison households in both programs.

Table 12: Test Results on Variables Related to Health

Variable	Count	Mean	df	Value	Probability
AYMECL	72	**3.764**	159	**6.187**	0.000
AYMEPL	89	**4.876**			
AYMECN	27	**3.593**	118	**12.238**	0.000
AYMEPN	93	**5.462**			
ILMACL	72	**1.167**	159	**1.075**	0.284
IMLAPL	89	**1.079**			
ILMACN	27	**1.074**	118	**0.901**	0.370
ILMAPN	93	**0.978**			

Source: Survey of LAPO and NACRDB lenders

4.4. Impact of Microfinance on Shelter

Most of the income of poor people goes in finding food followed by shelter. Those with extremely low incomes are homeless or in many cases live in very poor conditions. Profits accruing from credit usage may provide the opportunity for most poor people to have access to a decent shelter. The impacts of credit on shelter have been assessed by comparing three indicators linked to shelter of program households with those of comparison households. These indicators are (a) residential building type (**RBT**), (b) housing condition (interior and exterior condition of dwelling house **HC**) and (c) type of toilet facility available in the home (**TFA**)[10].

In the appendix, Table 13 presents the survey response on the type of dwelling houses of program as well as comparison households. In the LAPO program, 54.0% of the program households live in a two or more bedroom

[10] This element is missing in most homes in Nigeria, which results in unsanitary conditions leading to the spread of infectious diseases. Accordingly, the existence of clean toilet facilities protects against diseases and leads to healthy living for the poor.

apartment building. On the other hand, 18.1% of comparison households reside in the same building type. The table also shows that 28.1% of program households and 68.1% of comparison households reside in a one room apartment. In the category of household residing in their family homes, 17.9% of program households reside in a family house, while 13.8% of comparison households reside in their family homes.

In the NACRDB program, 57.0% of the households reside in a two or more bedroom apartment. 3.7% of comparison households lives in a two or more bedroom apartment. In the one room apartment residential category, 28.0% of the total reside in a one room apartment, while 81.5% of comparison households reside in a one room apartment. 15.0% of program households reside in family house compared to 14.8% of comparison households who reside in the same building type.

Survey response on the condition of dwelling houses (interior and exterior condition of dwelling house) of program and comparison households is presented in Table 14 in the appendix. It shows that program households have better status in terms of the condition of interior and exterior walls and flooring of their homes than that of comparison households. While 28.1% of program households in the LAPO program have carpet in their homes, the percentage share decreases to 11.1% for comparison households. Other measures of housing conditions appear to be mixed for both groups. In the program households, 66.3% have their floors and walls paved with cement compared to 66.7% of comparison households. The table also shows that 28.1% of program household have all floors and walls in their homes paved compared to 18.1% of comparison households.

In the NACRDB program, 43% of program households compared to 3.7% of comparison households have carpets in their homes. The percentage share decreases on other measures for the program households, for example, 35.3% of program households have paved walls and floors compared to 44.4% of the comparison group. The table also shows that 21.5% of program households have all floors and walls paved compared to 40.8% of comparison households.

Table 15 in the appendix shows the types of toilet facilities available in the homes of program and comparison households. In the LAPO program, 88.8% of program households shared or owned their own flush toilet facilities compared to 87.5% of comparison households. The distribution is about the same for each group. In the NACRDB program, 91.4% of program households shared or owned their flush toilet facilities compared to 63% of comparison households.

The null hypothesis test results on the three variables on shelter are pre-

sented in Table 16 below. In the LAPO program, at the 1% level, t-test results are significant in the case of residential building type (**RBT**), and housing condition (interior and exterior condition of dwelling house **HC**). In the case of toilet facilities (**TFA**), program households do not have higher means compared to comparison households. In the NACRDB program, test results are significant on all three variables. This means that the program households are significantly different from the comparison households with respect to residential building type, housing condition (interior and exterior condition of dwelling house) and type of toilet facilities available in the home. The rejection of the null hypothesis on these variables demonstrates the fact that access to credit may have positive impact on the housing conditions of program households compared to comparison households.

Table 16: Shelter Test of Hypothesis

Variable	Count	Mean	df	Value	Probability
HCCL	72	**3.847**	159	**4.083**	0.000
HCPL	89	**4.236**			
HCCN	27	**3.407**	118	**4.789**	0.000
HCPN	93	**4.215**			
RBTCL	72	**2.042**	159	**2.815**	0.006
RBTPL	89	**2.348**			
RBTCN	27	**1.889**	118	**3.544**	0.001
RBTPN	93	**2.419**			
TFACL	72	**2.972**	159	**0.469**	0.640
TFAPL	89	**2.921**			
TFACN	27	**2.556**	118	**3.297**	0.001
TFAPN	93	**2.978**			

Source: Survey of LAPO and NACRDB lenders

4.5. Impact of Microfinance on Income

In this section, the analysis focuses on the impact of microfinance on household income. The most important effect of borrowing from participation in this form of credit program is its impact in raising the overall household income arising from the activities to which the loan has been put[11]. The

[11] Household income does not include the loan itself.

impact on income has been assessed by examining three variables: the stability of household income (**HI**), changes in household income in the six months prior to this survey (**CII**), and the operation of a savings bank account (**BA**)[12].

Table 17 in the appendix shows that in the LAPO program, 22.5% of program households reported a steady income, while 64% of the same group reported having a somewhat steady income. In the comparison group, 12.5% of households reported a steady income and 36.1% reported having a somewhat steady income. In the other response categories, 13.5% of program households reported having a somewhat unsteady income compared to 44.4% of comparison household who provided the same response. 7% of comparison households reported an unsteady household income or no income in the program households.

In the NACRDB program, 35.4% of program households report having a steady source of income, 11.1% of comparison households reported having a steady household income. The table also shows that 56% of program households reported having a somewhat steady income compared to 44.4% of comparison households reporting a somewhat steady income. 8.65% in the program households reported having a somewhat unsteady income. In the comparison group, 22.2% of households reported having a somewhat unsteady income. Also 22.2% of the comparison households reported having unsteady income compared to none in the program households.

Survey response to changes in income of program as well as comparison households is presented in Table 18 (in appendix). The distribution shows that program households have higher incomes compared to the comparison households. In the LAPO program, 30.6% of comparison households and 8.9% of program households, reported having a somewhat lower income in the six months prior to this survey. In the NACRDB program, 29.6% of comparison households and 8.9% of program households, report having a somewhat lower income in the six months prior to this survey. 16.9% of program households in the LAPO program, report having a much higher income compared to 5.5% of comparison households who report having a much higher income as well. 59.6% of program households report having a somewhat higher income compared to 15.3% of comparison households reporting the same outcome.

[12] This measure is used in this study as in some others to determine if microfinance increases income to the level that leads households to open a bank account with a commercial bank. See Chowdhury M.J., 2002, "The Impact of Micro-credit on Poverty: Evidence from Bangladesh", Discussion paper No. 02/1, Department of Economics, University of Stirling, Stirling, UK.

The next indicator of the impact of microfinance on income shows whether access to credit increases the propensity of borrowing households to save[13] by opening a bank account with a formal sector commercial bank. Table 19 in the appendix, shows that 72% of program households have a bank account in a formal sector commercial bank in the LAPO program. On the other hand, 36.5% of households in the comparison group have a bank account in a formal sector commercial bank. In the NACRDB program, 80.6% of program households have savings in a formal commercial bank while 19.4% of comparison households have a bank account in a formal commercial bank.

In table 20, results of the test of hypothesis on all income variables were significant at the 1% level, thus rejecting the null hypotheses that program households have significantly higher incomes compared to those of the comparison households.

Table 20: Income Test of Hypothesis

Variable	Count	Mean	df	Value	Probability
BACL	72	**1.625**	159	**4.637**	0.000
BAPL	89	**1.281**			
BACN	27	**1.630**	118	**4.750**	0.000
BAPN	93	**1.194**			
CIICL	89	**3.112**	176	**5.412**	0.000
CIIPL	89	**3.820**			
CIICN	27	**2.741**	118	**5.720**	0.000
CIIPN	93	**3.806**			
HICL	72	**3.472**	159	**4.815**	0.000
HIPL	89	**4.079**			
HICN	27	**3.444**	118	**5.199**	0.000
HIPN	93	**4.258**			

Source: Survey of LAPO and NACRDB lenders

4.6. Impact of Micro-credit on Assets

Studies have shown that microfinance may increase the consumption level of the poor, but such impact could be short-lived unless enhanced income

[13] A key attribute of the activities of the two case studies is that all borrowers are required to undertake compulsory weekly savings.

from borrowing supports assets accumulation[14]. This study examined this relationship by comparing the current assets of program and comparison household.

The impact of microfinance on the assets of borrowing households has been assessed through comparison between program and comparison households with respect to the possession of some important household goods (**MAO**). Of eleven major assets used for this survey, seven were considered important household goods because of the low income status of the groups under consideration. These goods are: bicycles, refrigerators, blenders, wheel barrows, sewing machines, farmland and coolers.

Table 21 in the appendix shows the distribution of the household goods possession of program as well as comparison households. It shows that program households have more household goods possession bundle compared to comparison households, except in the possession of wheel barrows where the comparison groups in both programs have more.

The t-test results of program and comparison households with respect to major assets owned (**MAO**) is presented in Table 22 below. Results are significant at the 1% level, which means that program households in both LAPO and the NACRDB programs have acquired more assets compared to the comparison households because of their participation in microfinance programs.

Table 22: Test Results on Major Assets Owned

Variable	Count	Mean	df	Value	Probability
MAOCL	72	**3.792**	159	**4.836**	0.000
MAOPL	89	**5.135**			
MAOCN	27	**4.333**	118	**3.544**	0.001
MAOPN	93	**5.763**			

Source: Survey of LAPO and NACRDB lenders

5. CONCLUSION

Taking sources of bias into account, this paper assessed the socioeconomic impacts of microfinance on borrowing households through comparison between program and non-program households. The simple test results show that program households have made some welfare gains in income and net

[14] Khandker S., 1998, Fighting *Poverty with Micro-credit: Experience in Bangladesh*, Oxford University Press, New York.

worth of household assets. All income and asset variables were significant at the 1% level in the LAPO and the NACRDB programs. The results also show a significant impact on schooling of children, improved nutritional status of borrowing households and better housing. The results on access to health appears inconclusive as only one of two health variables in both programs was significant, thus suggesting that there is no significant difference between program and comparison households on this measure of the impact of microfinance.

The impact assessment demonstrates that credit provision to the poor does yield positive outcomes in the midst of the potential sources of failure in the Nigerian context. However, the findings are open to a lot of questions; mainly on their applicability across the country as the factors causing poverty in a country are region, state, and district specific. Likewise, poverty reduction strategies, and conclusions from studies as this., must be regarded as region, state, and district specific.

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Appendix

Table 1: Number of Children age 6-13 Years in Private School

How many of your children age 6-13 years are in private school?								
MFI	**LAPO**				**NACRDB**			
Response	PH	%	CH	%	PH	%	CH	%
None	38	42.7	44	66.1	14	15.1	23	85.2
1-5	33	37.1	20	27.8	75	80.6	3	3.7
6-10	18	20.2	8	11.1	4	4.3	1	3.7
11 and Above	0	0	0	0	0	0	0	0
Total	89	100	72	100	93	100	27	100

Source: Survey of LAPO and NACRDB lenders

Table 3: Average Yearly Educational Expenditure

On average, how much do you spend on your children's education every school year?								
MFI	**LAPO**				**NACRDB**			
Response	PH	%	CH	%	PH	%	CH	%
N10,000 and Above[15]	53	59.7	14	19.4	40	43.0	0	0
N8,000 – N10,000	18	20.2	11	15.3	35	37.6	3	11.1
N6,000 – N8,000	6	6.7	7	9.7	8	8.6	5	18.5
N4,000 – N6,000	6	6.7	23	32.0	2	2.2	9	33.3
N2,000 – N4,000	5	5.6	9	12.5	5	5.4	2	7.5
Less than N2,000	1	1.1	8	11.1	3	3.2	8	29.6
Total	89	100	72	100	93	100	27	100

Source: Survey of LAPO and NACRDB lenders

[15] Note: the local currency (Naira) is used here. In US dollars, this translates to 136 Naira to $1.00 in 2006.

Table 4: Ability to Purchase School Uniforms Every School Year

Do you normally buy school uniforms for your children every school year?								
MFI	LAPO				NACRDB			
Response	PH	%	CH	%	PH	%	CH	%
Yes	87	97.8	60	83.3	79	84.9	6	22.2
No	2	2.2	12	16.7	14	15.1	21	77.8
Total	89	100	72	100	93	100	27	100

Source: Survey of LAPO and NACRDB lenders

Table 5: Ability to Purchase Recommended Textbooks for Children

At the beginning of this school session, how many of your children's recommended text or notebooks were you able to buy?								
MFI	LAPO				NACRDB			
Response	PH	%	CH	%	PH	%	CH	%
None	0	0	0	0	0	0	0	0
Some Notebooks only	12	13.5	38	52.8	23	24.7	18	66.7
All required notebooks only	8	9.0	11	15.3	6	6.5	5	18.5
Math & English textbooks & notebooks only	14	15.7	6	8.3	9	9.7	2	7.4
Some recommended textbooks only	20	22.5	11	15.3	22	23.6	2	7.4
All recommended textbooks & notebooks	35	39.3	6	8.3	33	35.5	0	0
Total	89	100	72	100	93	100	27	100

Source: Survey of LAPO and NACRDB lenders

Table 6: Regularity of Daily Feeding

How regular is the daily feeding of your household?								
MFI	LAPO				NACRDB			
Response	PH	%	CH	%	PH	%	CH	%
Regular 3-4 meals a day	6	6.7	2	2.8	26	28.0	1	3.7
Somewhat regular 3 meals only	72	80.9	33	45.8	59	63.4	17	63.0
Two meals a day	11	12.4	37	51.4	8	8.6	9	33.3
One meal a day	0	0	0	0	0	0	0	0
Total	89	100	72	100	93	100	27	100

Source: Survey of LAPO and NACRDB lenders

Table 7: Frequency of Special Food

How often do you cook special food for your household?								
MFI	**LAPO**				**NACRDB**			
Response	PH	%	CH	%	PH	%	CH	%
When I want	16	18.0	5	7.0	9	9.7	1	3.7
Once in four days	8	8.9	13	18.0	9	9.7	5	18.5
Once a week	48	54.0	52	72.2	72	77.4	16	59.3
Occasionally	17	19.1	2	2.8	3	3.2	5	18.5
Total	89	100	72	100	93	100	27	100

Source: Survey of LAPO and NACRDB lenders

Table 8: Average Weekly Expenditure on Food Consumption

On average, how much do you spend on food every week?																
MFI	N1000 & above				N800-N1000				N600-N800				N400-N600			
Response	PH	%	CH	%	PH	%	CH	%	PH	%	CH	%	PH	%	CH	%
LAPO	72	80.9	59	82.0	7	7.9	12	16.7	10	11.2	1	1.3	0	0	0	0
NACRDB	84	90.3	9	33.3	4	4.3	16	59.3	5	5.4	2	7.4	0	0	0	0
TOTAL	156		68		11		28		15		3		0	0	0	0

Source: Survey of LAPO and NACRDB lenders

Table 10: Average Yearly Medical Expenditure

What is the yearly medical expenditure of your household?																
MFI	N10,000 & above				N8000-N10,000				N6000-N8000				N4000-N6000			
	PH	%	CH	%	PH	%	CH	%	PH	%	CH	%	PH	%	CH	%
LAPO	36	40.4	5	6.9	25	28.1	13	18.1	8	9.0	19	26.4	20	22.5	35	48.6
NACRDB	49	52.7	2	7.4	38	40.8	2	7.4	6	6.5	6	22.2	0	0	17	63.0
TOTAL	85		7		63		15		14		25		20	0	52	

Source: Survey of LAPO and NACRDB lenders

Table 11: Immediate Last Medical Advice

In the most recent times when a member of your household was sick, particularly your children, whom did you take medical advice from?				
Response	PH	%	CH	%
LAPO: Qualified medical practitioner	70	84.3	58	80.5
Traditional/unqualified medical practitioner	13	15.7	11	26.4
NACRDB: Qualified medical practitioner	79	93.0	13	62.0
Traditional/unqualified medical practitioner	6	7.0	8	38.0
Total	168		90	

Source: Survey of LAPO and NACRDB lenders

Table 13: Residential Building Type

What type of apartment is your family currently residing?												
BUILDING TYPE	Two or more bedroom apartment				A room apartment with shared facilities				Family House			
MFI	PH	%	CH	%	PH	%	CH	%	PH	%	CH	%
LAPO	48	54.0	13	18.1	25	28.1	49	68.1	16	17.9	10	13.8
NACRDB	53	57.0	1	3.7	26	28.0	22	81.5	14	15.0	4	14.8
TOTAL	101		14		51		71		30		14	

Source: Survey of LAPO and NACRDB lenders

Table 14: Housing Condition[16]

What is the interior and exterior walls/flooring condition of your dwelling house?																
MFI	Floored with Carpet				Floored with Cement and Walls Painted				All floors and Walls are Cemented and Plastered				Floored but Walls not Plastered			
	PH	%	CH	%	PH	%	CH	%	PH	%	CH	%	PH	%	CH	%
LAPO	25	28.1	8	11.1	59	66.3	48	66.7	5	28.1	13	18.1	0	0	3	4.2
NACRDB	40	43.0	1	3.7	33	35.5	12	44.4	20	21.5	11	40.8	0	0	3	11.1
TOTAL	65		9		92		60		25		24				6	

Source: Survey of LAPO and NACRDB lenders

[16] Interior and exterior walls and floor.

Table 15: Toilet Facilities Available in Home

What type of toilet facility is available in your home?																
Response	Shared, Ventilated Improved Pit Facility				Own Improved Pit Facility				Flush Toilet but Shared				Own Flush Toilet			
MFI	PH	%	CH	%	PH	%	CH	%	PH	%	CH	%	PH	%	CH	%
LAPO	6	6.7	6	8.3	4	4.5	3	4.2	71	79.8	50	69.4	8	9.0	13	18.1
NACRDB	4	4.3	2	7.4	4	4.3	8	29.6	75	80.6	17	63.0	10	10.8	0	0
TOTAL	10		8		8		11		146		67		18		13	

Source: Survey of LAPO and NACRDB lenders

Table 17: Household Income

How steady is your household income from month to month?				
Response				
LAPO	PH	%	CH	%
Steady	20	22.5	9	12.5
Somewhat Steady	57	64.0	26	36.1
Somewhat Unsteady	12	13.5	32	44.4
Unsteady	0	0	5	7.0
NACRDB				
Steady	33	35.4	3	11.1
Somewhat Steady	52	56.0	12	44.4
Somewhat Unsteady	8	8.6	6	22.2
Unsteady	0	0	6	22.2
Total	182		99	

Source: Survey of LAPO and NACRDB lenders

Table 18: Changes in Household Income

What changes did you experience in your income in the last six months?				
Response				
LAPO	PH	%	CH	%
Much Higher	15	16.9	4	5.5
Somewhat Higher	53	59.6	11	15.3
About Same	12	13.5	35	48.6
Somewhat Lower	8	8.9	22	30.6
Much Lower	1	1.1	0	0
NACRDB				
Much Higher	19	20.4	0	0
Somewhat Higher	46	49.5	3	11.1
About Same	20	21.6	15	55.6
Somewhat Lower	7	7.5	8	29.6
Much Lower	1	1.0	1	3.2
Total	182		99	

Source: Survey of LAPO and NACRDB lenders

Table 19: Bank Account with Formal Commercial Bank

Do you have any other savings other than the savings with LAPO/NACRDB?								
MFI	YES				NO			
LAPO	PH	%	CH	%	PH	%	CH	%
	64	72.0	27	37.5	25	28.0	45	62.5
NACRDB	75	80.6	10	37.0	18	19.4	17	63.0
TOTAL	139		37		43		62	

Source: Survey of LAPO and NACRDB lenders

Table 21: Major Assets Owned

Which of the following major household good do you own?								
MFI	**LAPO**				**NACRDB**			
Response	PH	%	CH	%	PH	%	CH	%
Furniture	89	100	72	100	93	100	27	100
Musical set (radio)	89	100	72	100	93	100	27	100
Car	0	0	0	0	0	0	0	0
Motorcycle	1	1.1	0	0	3	3.2	0	0
Bicycle	23	26.0	0	0	34	36.5	1	3.7
Refrigerator	27	30.3	18	25.0	33	35.5	12	44.4
Blender	10	11.2	6	8.3	6	6.5	1	3.7
Wheel barrow	10	11.2	37	51.4	4	4.3	10	37.1
Sewing machine	8	9.0	4	5.5	6	6.5	0	0
Farmland	6	6.7	3	4.2	3	3.2	0	0
Coolers	4	4.5	4	5.6	4	4.3	3	11.1

Source: Survey of LAPO and NACRDB lenders

Résumé

Il y a une expérience vaste dans l'offre de microfinance en Afrique, mais il y a relativement peu d'études empiriques qui touchent les avantages sociales et économiques pour les clients. Cet exposé utilise 281 enquêtes de ménages ruraux, dont certains qui ont accès à deux programmes de microfinance au Sud Nigeria mais qui n'ont pas reçu de prêts. Les tests statistiques montrent que les ménages qui ont accès aux programmes ont des avantages économiques importants par rapport à ceux qui n'y ont pas accès. Cette évaluation contient des leçons importantes pour des études d'autres programmes dans plusieurs pays Africains.