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Does Group-based Lending Scheme Outperform Individual-based Lending Scheme at Reducing Poverty? Evidence from Nigeria

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Abstract

This study examined the effects of microfinance on poverty level of different types of borrowers who accessed micro-finance services. The study was propelled by the need to justify the increased emphasis on group-based lending scheme by development agencies and microfinance institutions in Nigeria as a better way of reducing poverty. The area of study was Anambra State where 400 microenterprise who accessed credit from regulated micro-finance institutions from 2006 – 2012 were selected as the sample. Findings from the study showed that individual-based lending scheme performed better than group-based scheme in reducing poverty among micro-enterprise owners.

Introduction

Poverty is a pervasive problem in our society. Spanning across the world, poverty exists in different levels and various forms. At the current threshold of $1.25 a day, the World Bank estimates that around 25% of the population in developing regions lives below the poverty line. This figure translates to 1.3 billion people living in poverty, or about 20% of the global population (World Bank, 2010).As the World Bank broadly defines it, poverty is a “pronounced deprivation in well-being,” (as cited in Khandker & Haughton, 2009). The poor lack basic necessities of life, such as food, shelter, clothing, and clean drinking water. They also lack access to health care, quality education, and employment opportunities that are important in improving their human capital and facilitating social mobility.

Nigeria over the past five decades has embarked on various health, economic, educational, political, cultural and social reforms that are either home initiated or as a response to internationally agreed terms on poverty reduction. Despite government efforts, the incidence of poverty in Nigeria has been galloping since the 1980s (Agba et al, 2009). Statistics show that poverty level on Nigeria moved from 28.1 percent in 1980 to 46.3 percent in 1985; it escalated to 65.6 percent in 1996 and 71.3 percent in 2005 (Central Bank of Nigeria, 2005; Akanji, 2001). Plethora of literature continue to show that over 70 percent of Nigerians live on less than one US Dollar per day, only better than Mali 73 percent, compared to Ghana (45 percent) and Brazil (8 percent). In 2002, according to Aigbokhan (2011), over 70 percent of Nigerians were still living below the international poverty line despite government’s multiple poverty alleviation programs.

Consequently, on December 15, 2005, the Federal Government of Nigeria launched the '**Microfinance Program**" as a milestone towards eradicating poverty in the country. The scheme was introduced under the microfinance policy regulatory and supervisory framework as a potent tool of poverty reduction. Microfinance scheme formed a vital component of already existing poverty reduction programs. Microfinance Program was introduced to create universal access to loan for a significant number of low-income persons as well as stimulate and sustain their socioeconomic wellbeing (Nwigwe, Omonona & Okoruwa, 2012; Nwankwo et.al, 2010). The program serves as the gateway through which low-income households get easy access to financial assets in the country. Microfinance credit scheme mediate the delivery of small credits, low interests and non-collateral loans to poor households in many developing countries (Alemu, 2006). It is a strategic plan in building global financial system that meets the financial and developmental needs of a vast majority of poor people across the world. It is a potent tool for solving multiple socio-economic problems that challenge the survival of poor persons in Nigeria (Nwigwe, Omonona & Okoruwa, 2012).

Much remains unclear about whether, and how, microcredit can help the poor to improve their lives. Answering these questions is even more important now that the microcredit industry is changing in various ways. In particular, increased scale and professionalization has led a number of leading MFIs to move from group or joint-liability lending, as pioneered by the Bangladeshi Grameen bank in the 1970s, to individual micro lending (Diop, Haillenkamp and Servet, 2001). In the early 2000s, an important shift in microfinance was made. Grameen and other leading microfinance organizations, such as BancoSol of Bolivia and ASA in Bangladesh abandoned the group-lending scheme and began to move their portfolios out of the solidarity group (joint-liability, group-lending) method to individual contracts. In fact, liability individualization is at the core of "Grameen Bank II". Morduch (1998) shows that joint-liability lenders tend to service poorer households than individual-liability lenders and argued in favour of individual based-lending.

Chowdhury (2005) discovered that emphasis is shifting from group lending to individual lending because of the onerous burden of group lending. The potential downside of group lending is that it often involves time consuming meetings, social pressure, additional risks and most times higher default rate and general penalty of being denied future loans. As Dellien et.al (2005) observed, lending institutions offer group loans when loan size is large, refinancing costs are high and competition between lending institutions is low. Otherwise, individual loans are offered. She also discovered that individual lending scheme will gain preeminence when lending institutions get access to capital markets and competition further increases among lending institutions.

This paradigm shift has given rise to several questions: Which of these lending schemes have performed more in lifting borrowers out of poverty? Are there reasons why borrowers who have built credit history should still use group lending scheme? Are there other benefits of group loans apart from giving access to vulnerable borrowers? Are there impacts of group loan that individual lending scheme may not offer? The need to provide answers to these questions is germane because of many reasons. Firstly, the rate at which government and donor agencies in Nigeria use group lending scheme is on the increase whereas the rate is decreasing in other developing countries (Diop et. al, 2001; Bateman, 2010). If government should use more of group lending scheme in the fight against poverty and if Nigerian Microfinance Institutions should move most of their loan portfolio to individual lending, there is the need to provide empirical evidence that the shift is justifiable. Secondly, the different impacts of group and individual lending schemes on poverty level of borrowers and their household have not been studied in detail despite being a question of first-order. To the best of our knowledge, there is limited study in the public domain on the merits of both lending schemes from the borrowers' perspective. Earlier studies such as Khandker and Pitt (1998) and Khandker (2005) focused on the development of microcredit study either individual or group, not both in the same framework. There is the need to measure and compare the impacts of both scheme on poverty reduction indicators such as increase in income, household vulnerability to hunger and lacks, entrepreneurship, social empowerment, household consumption and dealing with economic shocks like sickness and death of breadwinners.

Specifically, the study compares the poverty levels of cooperative group borrowers and individual-based borrowers few years after benefiting from microfinance services in order to determine which methodology performed better at reducing poverty.

Review of Related Literature

The Concept of Microfinance

Microfinance is defined as the provision of financial services to the poor, aiming at empowering low-income populations by providing them with access to credit and other financial services (CBN,2005). Through microfinance institutions (MFIs), the poor can obtain collateral-free loans at relatively low interest rates and use the money for creating microenterprises (small businesses owned by poor people), funding children's education, and improving homes, among others. Aside from microcredit (small loans to the poor), MFIs have also developed numerous financial products, such as micro-insurance and micro-mortgage that are designed to accommodate the poor's financial needs. Most of these institutions have also required their clients to open savings accounts, which could be used for emergency and investment purposes (Maiangwa, 2012). Indeed, microfinance has so much to offer to the poor that it has now become a global phenomenon. The microfinance revolution has changed attitudes towards helping the poor in many countries and in some has provided substantial flows of credit, often to very low-income groups or households, who would normally be excluded by conventional financial institutions. Bangladesh is the starkest example of a very poor country, where currently roughly one quarter of rural households are direct beneficiaries of these programs (Khandker, 2005).

Micro-finance has the tendency to reduce rural poverty by accelerating employment rate, improving labor productivity and increased wages. In poorer countries where microfinance programs were implemented, micro-finance successfully opened economic opportunities and improved the socio-economic conditions of the poor people in rural communities. Countries like India, Pakistan, Philippines, Uganda and Bangladesh have all recorded successes in the micro-finance poverty intervention scheme. Furthermore, success of micro-finance could lead to trickle-down effects such as increase in income rate, control over such income, opportunity to enhance skills, household welfare, access to education and health and participation in communities (Imai et.al, 2010).

Lending Methodologies

There is increasing research on how credit delivery can help people especially the poor to improve their lives. This has led to a surge in the number of credit delivery methods. Two major approaches stand out: the cooperative group-based lending method and the individual-based lending method (Goldberg, 2005; Maiangwa, 2012) The group lending model has dominated literature since 1970s following the success of the Grammen Bank in Bangladesh. In fact, microfinance as known today is associated with group lending. This approach makes lending to the poor viable even though the borrowers lack collateral and credit history. Individual- based lending on the other hand involves treating the borrower as an individual client.

Group lending scheme also referred to as joint liability lending scheme uses social capital in place of collateral. Loans are given to group of small individuals who are responsible for the repayment of each others' loan. All group members are treated as being in default when at least one of them does not pay. Because co-borrowers act as guarantors, they screen and monitor each other and in so doing reduce agency problem between the borrowers and the lending institutions. In group scheme, the role of monitoring is transferred to the borrower. However, in individual lending scheme, the job is left for the lending institution. It exempts borrowers from the negative effects of group lending such as additional risks, time consuming meetings and privacy (Kono, 2006)

The Group Model's basic philosophy lies in the fact that shortcomings and weaknesses at the individual level are overcome by the collective responsibility and security afforded by the formation of a group of such individuals. The collective coming together of individual members is used for a number of purposes: educating and awareness building, collective bargaining power and peer pressure (Ghatak & Guinanne, 1999).Individual methodology is a straight forward credit lending model where micro loans are given directly to the borrower. It does not include the formation of groups, or generating peer pressures to ensure repayment. The individual model is, in many cases, a part of a larger 'credit plus' program, where other socio-economic services such as skill development, education, and other outreach services are provided.

A Comparative Analysis of Individual and Group Lending Schemes

Dellien et al. (2005) discussed key differences between the group lending and individual lending programs. First, because time and effort are invested in building social networks that enable groups to select members who are creditworthy under group lending, the role of loan officers is to provide structure, training on loan processes and administrative support. Under individual lending, loan officers bear principal responsibility for loan decisions; they screen, and monitor their clients as well as come up with mechanisms of enforcing repayment. Second, the principal incentives for repayment of group loans is joint liability, group reputation, credit rating and future access to credit for each member, all of which are directly contingent on each member upholding their obligations. On the other hand, individual lending programs use a variety of incentives such as collateral requirements, co-signers and guarantors to promote repayment and repayment discipline is created by strict enforcement of contracts.

Each of the two lending programs has its strengths and weaknesses. Armendáriz and Morduch (2000) observe that group meetings facilitate education and training useful for clients with small experience and improve financial performance of their businesses. Other researchers such as Madajewicz (2008) argue that group lending helps mitigate the risks associated with information asymmetry: for instance, because group borrowers are linked by joint liability, if one of them switches from safe to risky project (moral hazard), the probability that her partner will have to pay the liability rises. This gives group members the incentive to monitor each other. The reduction in group members' default through peer pressure and social ties has also been discussed. Karlan and Zinman (2011) points out that group monitoring may be rendered ineffective where social ties are loose and the cost of monitoring each other high.

Group lending is not without setbacks. Wydick (2001) argues that group lending is associated with additional costs including group formation costs, training borrowers on group procedures, higher degree of supervision and a higher frequency of installment payments. These costs increase interest rates of such microcredit loans leading to enhanced repayment risk. Other researchers argue that joint liability in group lending penalizes good credit risk customers (Giné and Karlan, 2006). It could hinder optimal utilization of borrowed funds by clients (Madajewicz, 2008) and might even jeopardize repayment since the incentive of future credit is no longer present in the event that one member fails to pay (Altanasio et.al, 2011).

Individual lending programs also present several benefits. For instance, Armendáriz and Morduch (2005) find that the guarantor exerts sufficient social pressure on the client to repay MFI loans in Russia and Eastern Europe. However, Madajewicz (2008) argue that the guarantee mechanism, especially personal guarantees, is only meaningful if the borrower has assets that can be pledged as surety, if the institutional framework permits the actual transfer of ownership of the pledge from the borrower to the creditor easily and if the pledged assets are not very liquid. The duo contends that these three conditions are not met in many developing countries. In particular, Kenya has a rigid judicial system with a large number of pending cases which may hinder timely transfer of pledge and most MFI borrowers may not even have "that small collateral". Another benefit of individual lending is that it spares borrowers the negative effects such as time spent in group meetings and loss of privacy when they discuss their financial situation and investment projects with the peers who could oppose such projects in the process impeding their individual growth (Giné and Karlan, 2006).
Given the strong arguments advanced in favor of both individual and group lending, MFIs find it confusing making a choice between the two lending programs

Microfinance and Poverty Reduction
Asemelash (2003) conducted a study in Ethiopia and observed that microfinance provided to the poor has brought a positive impact on the life of the clients as compared to those who did not get access to these microfinance services. He showed that microfinance has brought a positive impact on income, asset building, and access to schools and medical facilities in the study area. Alemu (2006) using a sample of 500 households from five different zones in the Amhara Region observed that the poor have smoothed their income in the study area. However, there was fungibility in the sense that clients were using the loan for unintended purposes. Rajendran and Raja (2010) using a sample of 180 randomly selected leaders of self help groups in Vellore district, India observed that microfinance and self help groups are effective in reducing poverty, empowering women, creating awareness and ensure sustainability of environment which finally results in sustainable development of the nation. Imai, Arun and Annim (2010) used a sample of 20 Small Industries Development Bank of India partner microfinance institutions and 5260 households using descriptive statistics and Tobit regression model and discovered that loans for productive purposes were more important for poverty reduction in rural than urban areas. They also observed that there was significant positive effect of microfinance institution productive loans on multi-dimensional welfare indicators. Khandker and Pitt (1998) did Intensive survey study on the impacts of microfinance on borrowers from 87 villages in 29 randomly selected sub-districts in rural Bangladesh. They observed that credit is a significant determinant of household behavior. Microfinance increases per capita consumption of the poor and asset holding of women. Khandker (2005) studied whether the Word Bank 1996 investment of $115million in a Bangladesh microfinance project was worthwhile in spite of the fact that only 5% of borrowers lift

themselves out of poverty every year. It was discovered that microfinance participants do better than non-participants in per capita income, per capita expenditure, household net worth, levelling off consumption, building asset and in stimulating entrepreneurship. Morduch and Roodman (2009) evaluated the studies of Khandker (2005) above and observed that Borrowers' self employment rarely generate jobs for others. Microfinance do not necessarily increase household consumption level however, it provides consumption smoothing (better balancing of spending and savings during different seasons of the year). Mosley and Rock (2004) Studied six African microfinance institutions and their clients to determine the benefits of the program to the poor and they observed that benefits come via indirect route than through direct impact. Microfinance creates jobs, improves households' risk management, builds up social networks, stabilizes village income and reduces vulnerability of the poorest.

Theoretical Framework for the Study

A great number of theories attempt to explain causes, consequences and way out of poverty. An attempt is made here to review some of them. **Social Structural Failure Theory of Poverty (SSFTP)** This theory was propounded by Mark R. Rank, Hong-Sik Yoom and Thomas A. Herschl in 2003. *Social structural failure theory of poverty* emerges as a result of criticism against *Personal Traits Theory of Poverty* (PTTP). SSFTP opposed the opinion that a person is poor because of personal traits they possess. SSTFTP present a contrary view that opposed the idea that personal trait such as laziness, educational attainment and other traits account for why people are poor.

The main thrust of SSFTP revolves around the idea that social structural failure is the major cause of poverty in society. Poverty is a product of failing at the structural level. Failure of social and economic structures contributes heavily to the incidence of poverty in society. For instance, the failure of the job market to provide adequate jobs with high pay, enough to cater for the welbeing of households could result to poverty (Rank, Yoom and Herschl, 2003). SSFTP posits that minimal net of social insecurity in society is caused by social structural failure, and this is a significant major contributor to poverty. It suggests that, poverty can be reduced in society by strengthening institutions that create high pay jobs. It includes the establishment and maintenance of social safety framework that provides welfare services to members of society (Rank, Yoom and Herschl, 2003).

Restriction of Opportunities Theory of Poverty (ROTP)

ROTP was pioneered by Appadurai in 2004 and improved upon by Dipkanar Chakravarti in 2006. ROTP posits that poverty is caused by unstable environmental conditions and lack of social and economic capital. The theory emphasized the influence of human environment on people's daily lives; and since people's lives are conditioned by their environment, the individual's daily decisions/actions are dependent upon what is present or what is not in the environment. As the poor continue to navigate within the environment of poverty, he/she develops fluency within the environment, but a near illiterate in the larger society or environment (Chakravarti, 2006).Lack of capacities could cause an individual to enter the environment of poverty. This implies that, an individual who is poor lacks adequate capacities with which to change his/her position. The capacity to inspire is paramount in this regard; the individual through social interactions develops aspirations that would change his/her socio-economic environment. It suggests that, a person's aspiration is conditioned by his/her environment. It therefore holds that, the better one is placed in his/her environment, the more chances he/she has to not only aspire but to fulfill his/her aspiration (Appadurai, 2004).

ROTP posit that the capacity to aspire required practice in a stable environment; and since the environment of poverty is unstable. The unstable life of poverty as defined by unstable environment, often limits the poor's aspiration to basic necessities of life such as food, cloth and shelter; and this reinforces lowered aspiration levels and could significantly obstruct change of environment or condition. It implies that the way out of poverty is to expand the aspiration horizon of the poor, to escape the reinforcement that perpetuates the poor in the environment of poverty. It entails creating programmes or making policies that provide the poor with an arena that enables he/she to practice and boost his/her aspiration. It includes designing schemes that enables the poor to meet his/her basic needs; and motivate him/her to higher aspirations (Appadurai, 2004; Chakravarti, 2006).

The Contract Theory

In economics, contract theory studies how economic actors can and do construct contractual arrangements, generally in the presence of asymmetric information. The first formal treatment of this topic was given by Kenneth Arrow in the 1960s (Jakiels, Karlan and Murdoch, 2010). A standard practice in the microeconomics of contract theory is to represent the behavior of a decision maker under certain numerical utility structures, and then apply an optimization algorithm to identify optimal decisions. Such a procedure has been used in the contract theory framework to several typical situations, labeled *moral hazard*, *adverse selection* and *signaling*. Contract theory looks into how individuals and businesses construct and develop legal agreements. Contract theory analyzes how parties to a contract make decisions under uncertain conditions, and when there is asymmetric information. It draws upon principles of financial and economic behavior, as principals and agents often have different incentives to perform or not perform actions.

Contract theory is closely related to game theory, which looks at the decision-making process followed by individuals and businesses. Contracts can be incentivized in order to promote certain outcomes, but can also contain a level of moral hazard stemming from the distance between the principle and agent

Asymmetric information as Karlan and Zinman (2011) creates incentive problems of two kinds:

- Hidden Information (Adverse Selection): Agents may not reveal the state truthfully. A contract in these circumstances tries to elicit agents' information.
- Hidden Action (Moral Hazard): Agents may not deliver on their promises due to imperfect monitoring.

In moral hazard models, the information asymmetry is the principal's inability to observe and/or verify the agent's action. Performance-based contracts that depend on observable and verifiable output can often be employed to create incentives for the agent to act in the principal's interest. In adverse selection models, the principal is not informed about a certain characteristic of the agent. For example, health insurance is more likely to be purchased by people who are more likely to get sick

Methodology

The area of study was Anambra State, located in Southeastern Nigeria. 400 micro business owners and their households who accessed credit from regulated microfinance institutions (200 group-based and 200 individual-based borrowers) between 2006-2012 were randomly selected. Structured questionnaire was used to elicit data from the respondents on their socio-economic profile. Twelve independent variables were used in the study. The variables were poverty indicators developed by international agencies fighting poverty as ways of assessing the level of poverty. The indicators are grouped under 3 main subgroups: human capital indicators, asset indicators and vulnerability indicators. (Henry et.al, 2003)

Human capital indicators include:

a. Literacy level of household (literacy) measured by the highest educational qualification attained by 70% of household members.
b. Health condition of household members (dlosik) measured by the number of days lost to sickness in the last 3 months.
c. Quality of dwelling (arent) measured by the amount of rent paid annually for the household.
d. Level of comfort experienced by the household (acloth) measured by amount of money spent on clothing/foot-wears annually per person.

Asset indicators include

a. Savings accumulated by the household measured by annual savings by the MBOs
b. Wealth of the household (Valhos) measured by the value of income yielding assets owned by the household
c. Entrepreneurial level of the MBOs(newentr) measured by the number of value-added activities/income generating activities that were established within the period of study
d. Income of MBOs measured by the annual income generated by the MBOs from agriculture-related and non agriculture activities annually.

Vulnerability indicators include

a. Stability of income (stincom) measured by the extent to which the monthly income of the micro-entrepreneurs could be predicted. The income could be very unstable, fairly unstable, fairly stable and very stable.
b. Household welfare (hexfod) measured by the household expenditure on food monthly
c. Quality of household nutrition (infod) measured by the number of times inferior food was served in a week
d. Level of household hunger(hupisod) measured by the number of times the household could not find what to eat in a week.

Presentation of Data

Table i. Mean Comparison of the Poverty Indicators of Individual and Group-based Borrowers

Poverty Indicators	**Individual-based borrowers**	**Group-based borrowers**
Literacy level of household	2.99	2.31
Number of days lost to sickness in 3 months	4.96	4.66
Annual house rent of household	3.62	2.49
Amount spent on clothing annually	4.88	4.26
Hunger episode on the last 7 days	4.09	3.58
Number of days inferior food served in a month	3.49	3.14
Stability of income	3.10	2.65
Household expenditure on food monthly	4.11	3.84
Annual income	4.25	2.86
Annual savings	1.12	2.15
Number of new income streams established	1.20	1.22
Value of household assets	3.48	2.16

S**ource:** Authors computation

This table compared the state of poverty between the microentreprenurs who adopted individual-based scheme and group-based scheme using the means score across 12 poverty indicators. It was discovered that individual-based scheme outperformed cooperative-based scheme on ten poverty indicators while group-based scheme outperformed individual-based on two indicators (annual savings and number of new enterprises established). This result was in line with findings which revealed that individual-based scheme performed better than group-based scheme at reducing poverty. For instance, annual income for individual-based borrowers was 4.25 (Between 200,000 – 500,000) while for group-based, it was 2.86 (Between 100,000 – 200,000). Value of household asset for individual-based scheme was 3.48 (100,000-200,000) while for group-based, it was 2.16 (50,000 – 100,000). For literacy level of household, it was 2.99 (70% of household members had secondary education) for individual-based borrowers and 2.31 (70% of household members attended primary school) for group-based borrowers

Table II. ANOVA Test Table Showing Whether Difference exists in the human capital indicators of cooperative group-based borrowers and individual-based borrowers

Tests of Between-Subjects Effects

Dependent Variable: Lending scheme adopted

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	69.179[a]	163	.424	3.250	.000
Intercept	182.325	1	182.325	1396.207	.000
Litracy	2.318	3	.773	5.918	.001
Dlosik	.916	4	.229	1.754	.139
Arent	5.389	4	1.347	10.316	.000
Acloth	1.224	4	.306	2.343	.056
litracy * Dlosik * Arent * Acloth	.891	4	.223	1.705	.150
Error	30.818	236	.131		
Total	1003.000	400			
Corrected Total	99.997	399			

a. R Squared = .692 (Adjusted R Squared = .479)

The results of the analysis of variance indicated a significant difference in the performance of human capital indicators of borrowers and non-borrowers. The dependent variable was divided into two groups '1' for individual-based borrowers and '2' for cooperative group-based borrowers. An assessment of individual effects showed that the effect of all the indicators were significant at 5 percent level of significance except number of days lost to sickness and annual expenditure on clothe. Annual household rent had the greatest individual effect (10.316) followed by literacy level of household. The combined effect of all the indicators was not significant but the corrected model which had an F-Value of 3.250 was very significant even at 1 percent level of significance.

Decision: Since the corrected model was statistically significant and that the calculated value (3.250) was more than the table value (1.003), we reject the null hypothesis and accept the alternate. We therefore conclude that there was a statistical difference in the human capital indicators of individual-based and cooperative group-based borrowers.

Table III. ANOVA test table showing whether difference exist in the vulnerability indicators of cooperative group-based borrowers and individual-based borrowers.

Tests of Between-Subjects Effects

Dependent Variable: Lending scheme adopted

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	65.579[a]	154	.426	3.031	.000
Intercept	124.778	1	124.778	888.212	.000
Hupisod	6.951	6	1.159	8.247	.000
Infod	.715	4	.179	1.273	.281
Stincom	.942	3	.314	2.236	.085
Hexfod	.698	5	.140	.994	.422
Hupisod * Infod * Stincom * Hexfod	.466	7	.067	.474	.853
Error	34.418	245	.140		
Total	1003.000	400			
Corrected Total	99.997	399			

a. R Squared = .656 (Adjusted R Squared = .439)

The result of the analysis indicates that there was a significant difference in the vulnerability indicators of individual-based borrowers and cooperative group-based borrowers as seen by the significance level of the corrected model. An assessment of individual effects showed that only hunger episode was significant at 5 percent level of significance. Household expenditure on food, the number of days inferior food was served, and stability of income were not significant as well as their combined effects. The corrected model with F-Value of 4.219 was very significant indicating that there was a statistical difference between the two samples.

Decision: Since the corrected model was statistically significant and that the calculated value was more than the table value, we reject the null hypothesis and accept the alternate. We therefore conclude that there was a statistical difference in the vulnerability indicators of individual-based borrowers and cooperative group-based borrowers.

Table IV. ANOVA test table showing whether difference exist in the asset indicators of cooperative group-based borrowers and individual-based borrowers

Tests of Between-Subjects Effects

Dependent Variable: Lending scheme adopted

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	79.662[a]	124	.642	8.688	.000
Intercept	134.522	1	134.522	1819.201	.000
Income	2.102	5	.420	5.684	.000
Valhos	3.089	5	.618	8.356	.000
Savings	.824	3	.275	3.715	.012
Newentr	.247	4	.062	.836	.503
Income * Valhos * Savings * Newentr	.157	1	.157	2.118	.147
Error	20.335	275	.074		
Total	1003.000	400			
Corrected Total	99.997	399			

a. R Squared = .797 (Adjusted R Squared = .705)

Source: Field Survey, June 2014. Calculation done using SPSS Ver. 22

The corrected model of the analysis of variance with an F-Value of 8.688 showed that there was a very significant difference in the asset indicator of the two samples used in the study. Annual Savings, value of household assets and annual income were significant at 5 percent level of significance while the number of new enterprises were not. Value of household assets had the greatest effect (8.356) followed by income (5.684) and annual savings (3.17) Also, the combined effects of all the variables were not significant at 5 percent.

Decision: Since the corrected model was statistically significant and that the calculated value was more than the table value, we reject the null hypothesis and accept the alternate. We therefore conclude that there was a statistical difference in the asset indicators of individual-based borrowers and cooperative group-based borrowers.

Conclusion: Since the null hypotheses of the three ANOVA tables were rejected, we therefore accept the alternate hypothesis and conclude that there was a significant difference in the poverty reduction level of cooperative group-based borrowers and individual-based borrowers.

Discussion of Findings

Individual-based lending scheme proved to be a better approach to reducing poverty as could be seen from the study. Except in the area of savings and creation of new enterprises where group-based scheme was better, individual-based scheme had made more impact on the human capital indicators, vulnerability indicators and asset indicators. It has increased the literacy level of household, family standard of living, value of household asset and income in line with the observation made in Chowdhury (2005) and confirmed by Gine and Karlan (2006). The significant effect which group-based scheme had on savings and establishment of new enterprises affirms the finding that group-based scheme contributes significantly to credit mobilization and also proves that

cooperatives are important agents of self-reliance and entrepreneurship. In the views of Nwankwo et.al (2004), cooperatives owing to their nature equip people to succeed in business through education, interaction, provision of inputs and access to needed resources.
In revealing that individual-based lending scheme outperforms the group-based scheme in reducing poverty, the study will make a major contribution to the Nigerian poverty reduction framework and policy. Since 1970s, following the success of the Grammen Bank in Bangledesh, group-based lending took a centre stage as a popular lending scheme for the poor. Although after 30 years as emphasis shift in some developing countries from group-based scheme to individual-based scheme, most microfinance institutions in Nigeria and government agencies still held unto group-based approach. This study has provided justification that shifting to the individual-based scheme is the right approach especially for non-first time borrower and for young people with reasonable education. Findings from this study revealed that micro enterprise owners who adopted individual-based scheme had higher income, higher household asset value, higher household consumption value and higher household literacy level.

1. Individual-based lending scheme had more significant impact on the lives of micro-business owners than the group based scheme. There is a justifiable evidence for microfinance institutions to move a significant portion of their loan portfolio to individual-based lending scheme. The fundamental importance of group-based methodology is to provide access to finance for people who are considered 'un-bankable'. For borrowers with good credit standing, group-based scheme is a poor choice. Apart from provision of access to finance, group-based scheme has less importance from the point of view of borrowers.
2. That individual based lending scheme outperformed group based scheme in lifting people out of poverty. The level of income yielding activity, assets, household consumption and literacy level achieved within the period of study by the micro- business owners who adopted individual based scheme were significantly higher than those in the group based scheme.
3. There was a significance difference between the two lending scheme adopted and the poverty indicators of micro-business owners. Those who adopted individual based lending had higher income when compared with those in group lending.

Conclusion

Microfinance has the tendency to reduce rural poverty by accelerating employment, increasing income and general standard of living of households. In countries where this intervention program was implemented, microfinance has successfully opened economic and social opportunities for the poor. It has emerged as a veritable development approach to deal with poverty, unemployment, financial exclusion and for modernization of the informal sector. Effective implementation of microfinance package especially using individual-based methodologies facilitates a steady increase in people's standard of living. Although the impacts of microfinance on the lives of people closer to the poverty line were higher when compared to the poorest of the poor, this intervention tool can produce layers of poor people who are pulled out of poverty every year.

Recommendations

- A shift to individualization of liability should become the core of Nigerian microfinance. Microfinance institutions should adapt their lending methodology to the 'Grameen 11' model where individual-based lending is encouraged as much as possible.. Village banking model whereby borrowers are given loans individually but are asked to form a group not as a prerequisite but for accessibility, convenient operation and identification, should be adopted by microfinance institutions.

- Less emphasis should be placed on formation of cooperative groups as yardstick for accessing microfinance. Borrowers should not be coaxed into forming cooperatives or loan groups. Agba et.al (2011) observed that a number of cooperatives went moribund because borrowers were forced into groups as a prerequisite to access credit. Government, microfinance institutions and development agencies need to design mechanisms for individualizing liabilities. Every borrower should be given a choice between group-based and individual-based methodology.
- Microfinance institutions should design a platform for absorbing borrowers who did well in group-based scheme into individual-based scheme. The arrangement could be that first time borrowers who lack good credit standing should use group-based scheme while non-first time borrower should be considered for individual-based scheme.
- Effort should be intensified to reduce the onerous burdens of group lending such as incessant group meetings, use of flat rate, forced savings that exceed six months and high interest rate. Cooperatives should place more emphasis on the economic aspects of cooperative than on the social aspect if they want to be more competitive in today's market place. Professionals should be hired to manage the cooperative business in situations where members are not competent enough and members should be made to develop stronger business orientation.

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