



Impact of microfinance on women empowerment in rural communities of Plateau State, Nigeria

S.B.A. Tende PhD^a, B.E. Barde PhD^b, G.D. Paul^{*}

^a *Entrepreneurship Development Centre (EDC), Nasarawa State University, Keffi-Nigeria*

^b *Department of Business Administration, Nasarawa State University, Keffi, Nigeria*

^{*} *Plateau State Polytechnic, Barkin Ladi, Plateau State-Nigeria*

ABSTRACT

Micro-finance institutions have made significant contributions to the empowerment of many people through the provision of financial and supporting services to the poor, especially women in rural environments. Thus, it is understood that micro-financing, as a development strategy, empowers women who were hitherto marginalized, and as such, were restricted from participating in the social, economic and political activities of their societies. This study examined the impact of micro-financing service on women's economic empowerment. Data was collected from a total of 424 rural women consisting of 328 microfinance bank Clients, 96 non Clients in program areas respectively in Plateau state. Both primary and secondary data are used in the empirical analyses: primary data are collected through a household survey using a structured questionnaire; secondary data are obtained from the Microfinance banks in Plateau state. The empirical analysis of the study was conducted using descriptive statistics, chi-square and Logit regression analysis. The results of the study indicate that micro-financing scheme has a positive impact on women's economic empowerment as measured by the increased participation of women in household decision-making. Microfinance bank programme has had a positive impact on the living conditions of its clients. The results support the wide belief in the literature that microcredit can significantly impact on five different dimensions of women empowerment ranging from economic security (i.e., control of financial resources) to decision making (e.g., children education, domestic goods). The study therefore recommends policy makers to be motivated to establish supportive regulatory environments in which the microfinance sector can gain sustainable development. It would be appropriate to legally permit non-financial institutions (NFIs) including NGOs to provide some form of financial services including microcredit.

Key words: Microfinance, Women, Empowerment, Rural Communities, Nigeria.

1. Introduction

Women's equal access to and control over economic and financial resources is critical for the achievement of gender equity and empowerment for equitable and sustainable economic growth and development. Economic resources refer to the direct factors of production such as "immoveable" assets, including land, housing, common pool resources and infrastructure, as well as "moveable" assets, such as productive equipment, technology and livestock. Financial resources refer to money-based resources, including government expenditure, private financial flows and official development assistance, as well as income, credit, savings and remittances. Both economic and financial resources have important implications for women's economic roles in sustaining household livelihoods, in labour markets and in the wider economy. Access to adequate and affordable credit for businesses remains one of the key challenges to local economic development in Nigeria despite efforts by both government and private sector organisations since independence in 1960 to address the problem.

Over the past decade, there has been ongoing intense and animated debate concerning the impact of microfinance on women's empowerment. Working women contribute to national income of the country and maintain a sustainable livelihood of the families and communities throughout the world. As they face many socio- cultural attitudes, lack of education and personal difficulties. Traditionally, women have been marginalized. They are rarely financially independent and are often more vulnerable members of the society. About 70% of world's poor are women. They have no access to credit and other financial services. Therefore, microfinance often targets women. Microfinance is a critical tool to empower women from poor household. Thus, women can benefit from microfinance institutions as many of them target only women, to empower them. Issues of availability of financial institutions, proximity to clients, effectiveness of service provision, and adequacy of loans granted as well as timeliness and cost of services provided are among factors that have been deemed critical in addressing this perennial problem.

Rural women in developing countries play a significant role in achieving economic benefits to improve their living conditions. Nigeria is no exception where rural women are involved in various spheres of economic, social and political activities. Participation of rural women in economic activities in the context of micro credit fund has provided an opportunity to improve their living conditions and increase their income. Micro credit projects are a fundamental source of providing financial assistance to rural women. The history of women micro credit dates back to the first International Women's Conference in Mexico in 1975 as part of the emerging awareness of the importance of women's productive role both for national economies, and for women's rights. This led to the setting up of the Women's World Banking network and production of manuals for women's credit provision (Mayoux, 2006).

Karubi (2006) citing Kabeer (1998) thus, concluded that micro-credit programs have become an increasingly important intervention for addressing poverty through a strategy of direct lending or of financial intermediation. Micro-finance programs not only give women and men access to savings and credit, but reach millions of people worldwide bringing them together regularly in organized groups. Although no 'magic bullet', they are potentially a very significant contribution to gender equality and women's empowerment, as well as pro-poor development and civil society strengthening (Mayoux, 2006).

The establishment of micro credit fund with participation of rural women would help deprived population and enhance their capacity and entrepreneurship potential. Hiatt and Woodworth (2006) reported that rural banking would help rural poor by providing opportunities in developing small enterprises. Purohit (2003) indicated that the aim of financial facilities is to enhance their morale and self-reliance and eventually create employment. Afrin, Nazrul and Shahid (2008) have reported that the financial management skills and the group identity of the women borrowers have significant relationship with the development of rural women entrepreneurship in Pakistan. The development of rural entrepreneurship depends on socio-economic development of the people. Once the rural women are self-sufficient, they will be able to initiate their own projects and consequently it will help them to stand on their own feet in Nigeria (Karubi, 2006).

Microfinance Institutions (MFIs) ultimately measure their success by the impact they have on their clients and their families, and on the communities in which they live. Despite a multitude of studies devoted to the topic, the impact of microfinance programs on the poor in developing countries remains an intensely debatable issue. Taken as a whole, the evidence is not conclusive, for example, Sachs (2009) in his research found that microfinance may not be appropriate in every situation especially as one-size-fits-all strategy in poverty alleviation and empowerment. He explained that the poor governance infrastructure, dispersed population in the rural areas and gender inequalities hinder the potential benefits of microfinance in Africa.

However, studies that critically assess the impact of micro-finance on women's economic empowerment are so far limited in the country. This is perhaps due to the fact that both micro-finance development and priority attention to women's economic empowerment are new, and are currently recognized as important strategies in the process of policy development in Nigeria. The issues at stake now is not about how many microfinance programmes are implemented in Nigeria or how many MFIs are found in Nigeria, is about what they are supposed to do. The issue is; are these MFIs and their programmes having any impact on the lives of people in the rural areas where they are operating? Has the poverty level reduced in those areas as has been trumpeted to be the miraculous nature of microfinance? What are the answers to these questions? It is for this reason that this study is being undertaken.

The objectives of this study are guided by the following questions:

1. Does access to micro-credit facility impact on the businesses of the rural women?
2. Does access to micro-finance facilitate women's ability to make purchases independently?

The objectives of this study are to:

1. Examine accessibility to micro-credit by rural women.
2. Assess the impact of microfinance on women's ability to make purchases independently.

In this study, four hypotheses are formulated to address the research objectives and stated in that order of their null form.

- H₀1: Micro-credit does not have significant impact on the business of rural women than none participation
- H₀2: Access to finance does not have significant impact on women's ability to make purchases independently

2. Methodology

The survey design is chosen for this study because it helps in observing sample subjects and variables without any attempt of manipulation or controlling them and aims at the impact of microfinance on women empowerment in rural communities. The study adopted a combination of two research designs, namely cross-sectional and causal-comparative designs. The study was cross-sectional in design because it involved the collection of data at one point. The causal-comparative design was considered appropriate because the study examines the differences between women supported by microfinance and a control group following an intervention on the former group of respondents.

The study was conducted covering sampled women under the microfinance and those who are not supported as a control group. The justification of using "Client versus non-Client" approach is to control for the respondents' demographic and socioeconomic characteristics in the logit regression model.

The population comprised 1850 microfinance women clients of microfinance banks licensed and prudentially regulated by the CBN in the State. The population also encompasses microfinance banks, who have been engaged in microfinance activities for at least 5 years from 2008 to 2012 and clients that live in the State. We chose the women with a long experience in microfinance activities because they are well informed and know much about the pros and cons of microfinance activities, so they can reflect better to our research.

There has been a much debate on the appropriate size of sample. Two approaches were followed which are entirely reverse of each other. The survey used cross-sectional data. Total samples of 328 women supported by microfinance and 96 those who are not supported as a control group were selected from 7 communities in the state. The selection was made by selecting 7 Local governments among the 17 local governments where Microfinance banks provide micro-finance services from 2008 to 2012 and one community each from the 7 local governments was selected. These include Vom (Jos south), Ganawuri (Riyom), Maza (Jos North), Kadarko (Wase), Kumbul (mangu), Daffo (Bokkos) and maburdi (Langtang North). The non-borrowers intended to serve as a control group.

The selection of Sample Size of the women clients of the microfinance banks was based on the formula by Selvanathan, Keller and Warrack (2007) below:

$$n = \frac{N}{1 + N(\alpha)^2}$$

where n = Sample Size

N = Total Number of Microfinance Women Clients

α = Level of Confidence is 95 percent, this was chosen because the convenient method reduced the possibility of non-response drastically.

$$\text{Therefore } n = \frac{N1850}{4.625} = 328 \text{ n}$$

3. Empirical Results

A total of (424) respondents consisting of 328 microfinance women clients of the microfinance banks 96 non-clients were sampled from the target population. Women clients sampled were those at Yeneng Microfinance Bank Limited, Dadin Kowa Microfinance Bank, Highland Microfinance Bank, Daffo Mangai Microfinance Bank, Mwaghawul Microfinance Bank, Wase Microfinance Bank and Langtang Microfinance Bank.

Descriptive statistical data collected through the survey using structured questionnaire were prepared by cleaning, coding and entering them in a computer using SPSS version 17. Categorical data analysis was adopted because background characteristics and the observed outcomes were measured categorically.

Table 1: Profile of the Respondents (Borrowers and Non -Borrowers)

		Non-Borrower		Borrower		All respondents	
		(N₁=96)		(N₂=328)		(N₃=424)	
		Count	% to N ₁	Count	% to N ₂	Sub-total	% to N ₄
		(n ₁)		(n ₂)		(N ₄ =n ₁ +n ₂)	
Self-employment							
Yes	16	18.7	87	26.5	103	24.3	
No	80	83.3	241	73.5	321	75.7	
Total		100.0		100.0		100.0	
Socio-economics							
Economic dependency ratio							
r<=1	80	83.3	254	77.4	334	78.8	
r>1	16	16.7	74	22.6	90	21.2	
Total		100.0		100.0		100.0	
Income (in naira)							
<=50,000	76	79.1	261	79.6	337	79.5	
50,001-100,000	19	19.8	56	17.1	75	17.7	
>100,000	1	0.1	11	3.3	12	2.8	
Total		100.00		100.00		100.00	

Main income sources¹

Agriculture	77	80.2	246	75.0	323	76.2
Non-agriculture	5	5.2	9	2.7	14	3.3
Both	14	14.6	73	22.3	87	20.5
Total		100.0		100.0	100.0	

Assets (in naira)

400-15,000	51	53.1	241	73.5	292	68.8
15,001-24,950	45	46.9	87	26.5	132	31.2
Total		100.0		100.0		100.0

Farm Size (in Km)

10 or less	83	86.5	233	71.0	316	74.5
More than 10	13	13.5	95	29.0	108	25.5
Total		100.0		100.0		100.0

Land Holding Status

Family land	85	88.5	304	92.7	389	91.7
Leased	11	11.5	24	7.3	35	8.3
Total		100.0		100.0		100.0

Other Characteristics**Geographic Location**

Mountainous	62	64.6	164	50.0	226	53.3
Non-mountainous	34	35.4	164	50.0	198	46.7
Total		100.0		100.0		100.0

Distance (in li)

1-10	51	53.1	205	62.5	256	60.4
11-20	30	31.3	108	32.9	138	32.5
>20	15	15.6	15	4.6	30	7.1
Total		100.0		100.0		100.0

Savings

Yes	59	61.5	849	42.4	198	46.7
No	37	38.5	189	57.6	226	53.3
Total		100.0		100.0		100.0

Table 1: Profile of the respondents (borrowers and non-borrowers) (Cont.)

	Non-Borrower		Borrower		All respondents	
	(N ₁ =96)		(N ₂ =328)		(N ₃ =424)	
	Count	% to N ₁	Count	% to N ₂	Sub-total	% to N ₄
	(n ₁)		(n ₂)		(N ₄ =n ₁ +n ₂)	

MFIs Shareholding

Yes	29	30.2	63	19.2	92	21.7
No	67	69.8	265	80.8	332	78.3
Total		100.0		100.0		100.0

Official Status

Yes	14	14.6	43	13.1	57	13.4
No	82	85.4	285	86.9	367	86.6
Total		100.0		100.0		100.0

Aversion to Debt

Yes	54	56.3	79	24.1	133	31.4
No	42	43.7	249	75.9	291	68.6
Total		100.0		100.0		100.0

Alternative Credit Source

Yes	88	91.7	188	57.3	276	65.1
No	8	8.3	140	42.7	148	34.9
Total		100.0		100.0		100.0

Source: Field survey 2013.

Our survey results reveal that only a small proportion (24.3%) of the respondents is engaged in self-employment. The results also suggest that the borrower respondents are more likely to take up self-run business compared to the non-borrower respondents (26.5% versus 18.7%) (Table 1).

The economic dependency ratio (EDR), calculated as the ratio of household members without income to household income earners, reflects the economic activity of a household. Households with higher EDRs will be more financially stressed than those with lower ratios. According to this ratio, the non-borrowing women appear to be relatively more economic active than the borrowing women because the proportion of non-borrowing households with EDRs higher than 1.0 is lower than that of the borrowing households (16.7 versus 22.6).

The annual income for most of the borrowing households, as well as the non-borrowing households, is not higher than 50,000 Naira, with 79.6% and 79.1% of group respondents respectively having income below 50,000 Naira. A total of 323 respondents (76.2%) rely on agriculture (crop farming, livestock rising, fishery, etc.) as their major source of income while only 14 of the respondents (3.3%) are engaged in non-agricultural income-generating activities. Approximately 22.3% of the borrowing households earn income from both agricultural and non-agricultural activities, whereas 14.6% of the non-borrowing households source their income from non-agricultural activities in addition to agriculture production.

Our result shows that the borrowing women tend to possess relatively low value assets since the majority (73.2%) of them own assets valued at less than 15,000 Naira. In contrast, almost half of the non-borrowing women possess assets worth more than 15,000 Naira (see Table 1).

None of the respondents owns farmland. The overwhelming majority (91.7%) of the respondents used their family land 8.3% farm on leased land. In terms of farm size, up to three quarters of the respondents work on farms no larger than 10 plots. In addition, the proportion of borrowing women who work on large farms (larger than 10 plots) is 29%, which is more than two times higher than that of the non-borrowing women (13.5%). This implies that women with larger farm sizes are more likely to become MFIs microcredit borrowers.

The geographic distribution of the respondents in Table 4.1 shows that nearly two thirds of the non-borrowing women live in mountain areas. In addition, the proportion of the borrowing women who live within 10 km from the nearest microfinance bank is higher than that of the non-borrowing women (62.5 versus 52.1) and the share of the borrowers living more than 20 km from the microfinance bank is lower compared to the non-borrowers (4.6 versus 15.6). This suggests that women who live physically closer to microfinance bank are more likely to access microfinance bank's microcredit.

Less than half of the respondents have saving accounts in microfinance bank. Compared to the borrowers, the non-borrowers appear to be more inclined to deposit money with microfinance banks (61.5% versus 42.4%). In addition, the majority (78.3%) of the respondents do not hold microfinance banks shares with a relatively higher proportion of shareholding observed in the non-borrower group. Similarly, a small portion (13.4%) of the respondents has one or more family members working as civil servant. Approximately 14.6% of the non-borrowing women have family member(s) with official status, which is slightly higher than that of the borrowing women (13.1%).

The frequency distributions of *Aversion to debt* and *Alternative credit source* in Table 1 shows that the non-borrower respondents are generally more averse to having debt and more able to access alternative credit sources when they need to borrow, compared to the borrower respondents.

Table 2 provides some general information on the micro loans obtained by the respondents from microfinance banks. With regard to the maximum amount of a single loan, all micro loans acquired by the borrowers are in small amounts. The shares of the borrowers who could borrow no more than 15,000 Naira, between 15,001 and 30,000 Naira, and between 30,001 and 60,000 Naira are almost identical (about 29%). Only a small portion (13.7%) of the borrowers obtained micro loans with a single amount above 60,000 Naira.

Table 2 also shows that no borrower has received long term micro loans. About half of the micro loans obtained by the borrowers are characterised as short term (within one year). In addition, the overwhelming majority (92.1%) of the micro loans do not require collateral (see Table 2).

In general, the microfinance bank loan processing time is short since 89.3% of the borrowers are granted micro loans within one month from their loan application submission. In addition, Table 2 shows that the main purpose of obtaining micro loans by the borrowing women is to finance their agricultural activities including farm cropping, livestock rising; produce processing, and farming tools purchases. The majority (72.6%) of the borrowers used their micro loans for agricultural purposes and 2.7% for non-agricultural purpose (such as financing self-run enterprises, household consumption, children's education, etc.). Approximately 25% of the borrowers invested the loans in both agricultural and non-agricultural activities.

Finally, most (61.3%) of the borrowers repay their loans annually and the micro loans are seldom repaid weekly (less than 2 percent). The repayment schedule of microfinance bank micro loans is established according to the type of the loan-funded activity (IFAD, 2001). Most of the micro loans in our research are invested in agricultural production and hence the repayment structure is closely linked to the production cycle. For the loans used to develop small-scale self-employed activities, the repayment period is relatively short (e.g., monthly or semi-annually) since these activities can generate income on a more flexible schedule. This finding is similar to Yehuala (2008) and Wu's (2001) studies, which found that the payment period of production loans is one year or longer, while loans for non-agricultural activities such as self-run business and handcrafts are usually repaid within less than one year on an irregular basis (for example, three months or seven months).

Table 3 exhibits the major reasons why the micro loan applications were rejected from the respondents' own perspective. Approximately, 32.3% of the 96 non-borrower respondents who had been rejected from accessing microcredit reported that their loan applications were denied because the loan officers from microfinance banks perceived them as risky in repaying loans due to low women income. Similarly, 32.3% of the respondents attributed their loan denials to the inadequate collateral or the inability to find loan guarantors. On the other hand, creditworthiness potentially influences the women's access to microcredit since about 19.8% considered their failures in securing micro loans as a result of the blemished credit history due to the previous loan defaults. Furthermore, approximately 15.6% report that the difficulty in meeting the required documents by the microfinance bank loan officers also prevented them from accessing microcredit.

Table 2: Characteristics of micro loans

	Women	Borrowers (N=328)
	Sub-total	% to N
Single Loan Amount		
<=15,000 naira	96	29.3
15,001-30,000 naira	92	28.0
30,001-60,000 naira	95	29.0
>60,000 naira	45	13.7
Total	328	100.0
Loan Term		
Short term (<=1 year)	165	50.3
Medium term (1-3 years)	163	49.7
Total	328	100.0
Collateral		
Yes	26	7.9
No	302	92.1
Total	328	100.0
Loan Processing Time		
Within 1month	293	89.3
More than 6 months	35	10.7
Total	328	100.0
Payment Frequency		
Weekly	6	1.8
Monthly	76	23.2
Semi-annually	45	13.7
Annually	201	61.3
Total	328	100.0
Loan Purpose		
Agricultural activities only	238	72.6
Non-agricultural activities only	9	2.7
Both	81	24.7
Total	328	100.0

Source: field survey 2013

Table 3 Reasons for loan rejection

Reasons	Non-borrower respondents	
	Count	% to n
1. Insufficient income to repay the loans	31	32.3
2. Bad credit history due to previous defaults	19	19.8
3. Lack of collateral or co-guarantor	31	32.3
4. Difficulty in preparing required documents	15	15.6

Source: field survey 2013

The non-borrower respondents were also asked to state whether they needed to borrow in the future and if they did, would they apply for micro loans from microfinance banks. For non-borrower respondents (n=96), 83 signalled borrowing intentions in the future. In addition, 53 of the respondents expressed that they would give priority to microfinance bank micro loans if they had credit needs. The remaining 30 respondents indicated that they would not apply for microfinance bank micro loans when they need to borrow. Table 4.4 presents the major reasons for not applying for the micro loans.

Table 4: Reasons for not applying for micro loans

Reasons	Non-Borrower Respondents (n = 96)	
	Count	% to n
1. Insufficient household income	20	66.7
2. Bad credit record	8	26.7
3. Lack of collateral	10	33.3
4. Interest rate on MFIs micro loan is too high	15	50.0
5. Difficulty in meeting the required documents	13	43.3
6. The loan application process takes too much time	8	26.7
7. Much easier to access informal lenders	15	50.0

Source: field survey 2013

Women income is a determinant of the women' future borrowing from microfinance bank microcredit programmes where 66.7% of the women would not borrow because their meagre income is not sufficient to repay loans. Interest rate is another crucial factor that restrains the women from applying micro loans since 50% voiced that the interest rate from microfinance banks is too high. Similarly, 15 non-borrower respondents prefer informal loans over microfinance bank micro loans because the former can be easily obtained. In addition, the complicated application procedure adopted by microfinance banks in terms of documentation requirements and processing time also makes the women shy away from applying for micro loans. It is worth nothing that 33.3% of non-borrower respondents would not apply for micro loans due to the lack of proper collateral. Furthermore, approximately 26.7% non-borrower respondents would not apply for micro loans in view of their poor credit records (see Table 4).

Table 5: Descriptive statistics and χ^2 table for (borrowers and non-borrowers)

	Non-Borrower		Borrower		All respondents		Statistical
	(N ₁ =96)		(N ₂ =328)		(N ₃ =424)		test
	Count	% to N ₁	Count	% to N ₂	Sub-total	% to	
	(n ₁)		(n ₂)		N ₄	N ₄	
					(N ₄ =n ₁ +n ₂)		
<i>Self-employment</i>							
							*
							2*
Yes	16	18.7	87	26.5	103	24.3	χ = 3.92
No	80	83.3	241	73.5	321	75.7	
						100.	
Total		100.0		100.0		0	

Source: Field Survey, 2013

Table 6: Coefficient Estimates of Micro Loan Variables in Empowerment Models

Microcredit variable $LOAN_i$ (denoting different loan categories)

Dependent variables (E_i)	$LOAN_1$ ($<30,000$ naira)		$LOAN_2$ ($30,000-60,000$ naira)		$LOAN_3$ ($>60,000$ naira)	
	Coefficients		S.E.Coefficients	S.E.	Coefficients	S.E.
<i>Control over financial assets</i>						
CINC	1.232	0.985	1.581 [*]	0.859	2.257 ^{**}	0.957
CSAV	1.649	1.111	2.142 ^{**}	0.979	2.364 ^{**}	1.047
<i>Mobility</i>						
CITY	1.081	1.051	1.980 ^{**}	0.877	2.202 ^{**}	0.948
PARNT	-1.431	0.996	-1.355	0.839	-0.585	0.949
<i>Purchase making ability</i>						
UTENS	0.670	0.949	1.775 ^{**}	0.796	2.244 ^{**}	0.914
CLOTH	0.588	0.955	0.981	0.816	1.434	0.904
FURNT	1.133	0.947	2.235 ^{***}	0.836	2.376 ^{**}	0.928
ELECT	0.911	1.083	1.402 [*]	0.776	1.402	0.864
LIVSK	1.240	1.232	1.737 [*]	0.893	2.869 ^{***}	1.035
FTOOLS	1.437	1.083	1.459	0.973	1.892 [*]	1.064

<i>Involvement in decision making</i>						
DESHOUS	-1.406	0.974	-1.216	0.854	-0.144	0.923
DESEDU	0.993	0.978	1.815**	0.895	2.283**	0.993
DESLAND	1.040	1.154	1.389*	0.798	1.101	0.878
DESCRP	0.989	0.923	0.759	0.781	1.474	0.905
DESLVSK	1.070	1.168	2.637**	1.043	3.122**	1229
DESETLS	1.315	1.051	1.976**	0.878	2.100***	0.982
DESCSM	1.063	0.996	1.566*	0.827	1.799*	0.939
DESACCT	2.261	1.455	2.273**	0.963	2.443**	1.053
DESBIR	-2.741**	1.065	-1.062	0.815	0.805	0.947
Total observations				328		

Note: *, **, *** represent the 10%, 5% and 1% significance level, respectively

It can be seen from Table 6 that the coefficients of loan dummy variables *LOAN1*, *LOAN2*, and *LOAN3* have the expected positive signs in most of the empowerment models except for *PARNT*, *DESHOUS*, and *DESBIR*. In the models with *PARNT* and *DESHOUS* as dependent variables, the coefficients of the three loan variables show a negative impact of microfinance bank microcredit on these two empowerment indicators. In the model with *DESBIR* as dependent variable, the coefficients are negative for *LOAN1* and *LOAN2*, but positive for *LOAN3*, implying that borrowing from microfinance bank programme has a mixed impact on this indicator. Table 6 also shows that both *LOAN2* and *LOAN3* have significant impacts on eleven empowerment indicators including *CINC*, *CSAV*, *CITY*, *UTENS*, *FURNT*, *LIVSK*, *DESEDU*, *DESLVSK*, *DESETLS*, *DESCSM*, and *DESACCT*. In addition, *LOAN2* has a significant effect on indicators such as *JEWL* and *DESLAND*, and *LOAN3* has a significant impact on indicators, such as *EQUIP*. In contrast to *LOAN2* and *LOAN3*, *LOAN1* is found to have a significant effect on indicator *DESBIR* only.

Our survey results reveal that only a small proportion (24.3%) of the respondents is engaged in self-employment. The results also suggest that the borrower respondents are more likely to take up self-run business compared to the non-borrower respondents (26.5% versus 18.7%). The χ^2 test (equals 3.92) indicates a strong association between households' access to microcredit and self-employment businesses (Table 5).

The empirical results show that the variables *Self-employment* significant at the 95% confident level. As hypothesised, the probability of accessing microcredit increases when households become involved in self-employed businesses apart from agriculture production. Since the calculated chi-square (3.92) is greater than the critical value of X^2 at 5% confidence, we reject the null hypothesis. This can be explained by the higher capital requirement for investing in self-run enterprises.

Table 5 provides the descriptive statistics of the explanatory variables used in the empirical models for both women borrowers (n=328) and women non-borrowers (n=96). The table shows a strong association (significant χ^2 value) between *family support contribution* and group type (borrower/non-borrower).

The women borrowers are more able to contribute to their family support than the women non-borrowers (76.6% versus 50.0%). This is possible since the women borrowers are expected to earn independent income through loan-supported income-generating activities, which can be used to meet family expenses. In addition, the results show that the relationship between *education attainment* and group type is not independent, indicating that the women borrowers are more likely to be educated than the non-borrowers (96.9 versus 89.3), whereas the non-borrowers tend to have achieved a higher level of education such as post-secondary education than the borrowers (14.3 versus 4.7).

Moreover, the women borrowers, on average, have more income earners (*Earners*) in their families when compared to the non-borrower women, and the t-test result shows a significant mean difference at the 10 percent level in *Earners* between the two groups. Furthermore, the frequency distribution of the communities shows that the non-borrower women are mostly concentrated in *communities 4* and *5* (28.6 and 25.0 percent respectively) where the women borrowers dwell least (4.7 and 6.3 percent respectively).

The statistical test results in Table 5 shows no significant mean difference between the two groups' women in regards to *Age*, *Annual income*, and *Household size*, and group type is independent with *Male children* and *Household occupation*.

Six 'involvement in family decision-making' indicators including *DESEDU*, *DESLAND*, *DESLVSK*, *DESEQP*, *DESCSM* and *DESACCT* are positively and significantly influenced by the microfinance bank microcredit. For example, borrowing between 30,000-60,000 naira from microfinance bank would almost triple the probability of a woman's involvement in deciding farmland lease (*DESLAND*) compared to a non-borrower and this is significant at the 10 percent level. Women who have borrowed between 30,000-60,000 naira in total are also 42 percent (significant at the 5 percent level) more likely to get involved in deciding children's education (*DESEDU*) than non-borrowers and the difference in probability rises to 51 percent (significant at the 5 percent level) when women have a total loan amount greater than 60,000 naira from microfinance bank microcredit programme. Compared to non-borrowers, women with loan sizes between 30,000-60,000 naira and greater than 60,000 naira are about 30 percent more likely to be involved in deciding what livestock to buy (*DESLVSK*) and this is significant at the 5 percent level. The probability of being involved in deciding what farming tools to buy (*DESTLS*) is very low and only 7 percent for non-borrowers. This rises to 37 percent when women have borrowed in excess of 60,000 naira and the impact is significant at the 1 percent level. Furthermore, borrowing between 30,000-60,000 naira and more than 60,000 naira significantly raises the probability of women involvement in deciding what consumer durables to buy (*DESCSM*) by 16 and 18 percent respectively compared to the non-borrowers. The probability of making joint decisions on opening saving accounts at bank (*DESACCT*) is also increased significantly when women have borrowed 30,000 naira or more but the probability varies little with loan size.

The empirical results also reveal that the microfinance bank microcredit has a negative impact on female participation in making decision on house repair/construction (*DESHOUS*) but such impact is not statistically significant at the 10 percent level. For example, the probability of such decision involvement is 30 percent lower for women with cumulative loan size below 30,000 naira than for non-borrowers. On the one hand, the probability of making joint decisions on having a child would be reduced by about 40 percent

for women with loan sizes less than 30,000 naira compared to non-borrowers, and is significant at the 5 percent level. On the other hand, such probability would be slightly higher for women who have borrowed in excess of 60,000 naira than that of non-borrowers, but this is not statistically significant. The microfinance bank micro loans do not significantly influence women's involvement in family decisions on what crops to grow (*DESCRP*) based on the empirical results.

The microfinance bank microcredit however does not influence the mobility indicators in the same direction. On the one hand, the probability of going to the city alone (*CITY*) is greater for the women borrowers than that of the non-borrowers. For example, women with cumulative loans between 30,000-60,000 naira and greater than 60,000 naira are 27 and 29 percent more likely to go to city alone than the non-borrowers respectively, and both differences are significant at the 5 percent level. On the other hand, the chance of visiting parent home without asking for consent (*PARNT*) is lower for the women borrowers than that of the non-borrowers. For example, women with total loan size less than 30,000 naira are 5 percent less likely to be able to visit their parent's home freely compared to non-borrowers. The negative impact of the micro loans is not statistically significant.

The predicted probabilities of empowerment in terms of the two mobility indicators are relatively high in our study. For example, the probability of independently travelling to the city is over 60 percent and 80 percent for the non-borrowers and borrowers respectively (see Table 5.13). This is in sharp contrast to Zaman's (1999) findings where the probability of going alone to a downtown market is lower than 15 percent for both the non-borrowers and borrowers. A possible reason for the difference in findings is that women in Hindu societies such as Bangladesh suffer from the *Purdah* norms which restrict their freedom of travelling inside and outside villages to a large extent (Hashemi et al., 1996). *Purdah* however is not a custom in modern Nigeria and there is no social criterion limiting Nigerian women's (including rural women's) mobility.

In addition to microcredit, the empirical results indicate that some dimensions of empowerment are also significantly influenced by other variables such as *AGE*, *EARNER*, *MCHILD*, and *Village* dummies. *AGE* has a significantly positive association with most 'purchase making ability' indicators including *CLOTH*, *LIVSK*, and *FTOOLS*, implying that age is a determinant in female ability to make independent purchases. In addition, *EARNER* is positive and significant in both mobility models, suggesting that women with more income earners in the families have more freedom of mobility. One possible reason is that as the number of income earners within the family increases, the probability of women's involvement in income-generating activities also rises. This may give women more opportunities to travel rather than staying at home, and thus expands women's mobility.

Moreover, *MCHILD* is positive and significant in both 'control over financial assets' models (see Appendix 4-1), suggesting that having one or more male children in the family has a positive and significant effect on a woman's ability to control her own financial assets such as income and savings. This is likely especially in families that prefer male to female children (like the patriarchal tradition). Furthermore, *community* dummy variables are significant in most of the empowerment models, indicating that the female empowerment is also significantly influenced by the geographic locations where the women reside. For example, women who live in *communities* adjacent to urban areas would

have more chances to travel to the city, and thus would be more empowered in terms of mobility, compared to women living in remote areas.

However, it is difficult to draw general conclusions for the remaining variables in the models with respect to their impacts on women empowerment because their impacts are insignificant in most of the empowerment models. These variables have minimal or no influences on the indicators within the empowerment dimensions. Overall, *cumulative borrowing* is the only variable that has significant positive impact on almost every empowerment dimension investigated.

4. Concluding Remarks

The empirical findings also imply that there is a threshold loan size beyond which microcredit can have significant effect on one or some dimensions of women empowerment. For example, in this study, for most indicators related to control over financial assets, ability to make purchase and involvement in family decision-making, the loan threshold appears to be 30,000 naira. In other words, significant impact on these indicators emerges until women's borrowings reach 30,000 naira or above.

Our empirical findings also reveal that microcredit not only has positive and significant impacts on female empowerment, such impacts also increase as the cumulative loan sizes grow larger. This finding helps to address the self-selection bias issue in the impact assessment. It is possible that women who are already relatively more empowered even in the absence of the microcredit programme tend to participate in the programme than others. However, the significant coefficients of the cumulative loan size variables on the empowerment indicators investigated suggest that the microcredit programme can further empower women who participate in it: the level of a woman's empowerment is likely to rise as she becomes more involved in the programme (reflected by the growing loan sizes), compared to her starting-level (i.e., the level of empowerment in the non-borrowing status). In other words, a true programme impact can be reflected by this upward trend in women's empowerment along with their involvement in the programme (Osmani, 2007; Hashemi et al., 1998).

Inadequate access to microcredit can be due to their poor knowledge of microfinance bank's microcredit programme. Thus, to improve women's accessibility to microcredit, there is an imperative for microfinance banks to enhance promotion of its microcredit programme among the rural women and make the women fully aware of the features of microcredit (e.g., collateral free). This can be done through village meetings (or social gatherings) and mass media such as radio and newspaper.

The strong link between repayment capacity (perceived by the women) and access to microcredit indicates that increasing women's repayment capacity helps increase their access to microcredit. Hence, it is important for microfinance banks to combine their micro loans with other services or products that help improve the efficiency of loan use, which in turn helps build up the women's confidence in repaying loans. A useful service is to provide borrowing women with an evaluation of the profitability of the loan-supported projects. Other services may include agricultural technical extension, off-farm business introduction and training in cash flow and risk management.

Policy makers, to further expand the access to credit by rural women, legislation reforms on secured-transactions in rural financial markets should be accelerated. The reforms should highlight the legally acceptable forms of collateral. Correspondingly, the reforms of the regulatory and legal system of rural land management must be promoted to increase land tenure security for farmers and formalise land transactions including transfer, rental, and leasing. This will provide lenders with formal procedures for claims against property and enforcement of financial contracts, and consequently, increase lenders' willingness to transact with rural women.

Bibliography

Afrin, S., Nazrul, I., & Shahid, U.A. (2008). A Multivariate Model of Micro Credit and Rural Women Entrepreneurship Development in Bangladesh. *International Journal of Business and Management*, 3, 169-185.

Anyanwu, C.M. (2004). Microfinance Institutions in Nigeria: Policy, Practice and Potentials, Paper presented at "G24 Workshop on Constraints to Growth in Sub-Saharan Africa". November 2004. Pretoria, South Africa

Aryeetey, E. (2008) "From Informal Financing to Formal Financing in Sub-Saharan Africa": Lessons from Linkage Efforts, Paper presented at the African Finance for the 21st Century High-Level Seminar organised by the IMF Institute in collaboration with the Joint Africa Institute, Tunis, Tunisia, March 4-5.

Central Bank of Nigeria (2005), *Microfinance Policy, Regulatory and Supervisory Framework for Nigeria*. December 2005. Abuja, Nigeria: CBN Central Bank of Nigeria 2005a, *Regulatory and Supervisory Framework for Microfinance*

Central Bank of Nigeria (2008). Guidelines and Procedures for the Establishment of Microfinance Banks in Nigeria. Central Bank of Nigeria 2000, *The Changing Structure of Nigerian Economy: Implications for Development*. Lagos: Realm Communications.

Hashemi, S. M., Schuler, S. R. & Riley, A. P. (1998). Rural credit programmes and women's empowerment in Bangladesh. *World Development*, 24 (4), 635-653.

Kabeer, N. (1998). Money Can't Buy Me Love'? Re-evaluating Gender, Credit and Empowerment in Rural Bangladesh, *Discussion Paper* No. 363, Institute of Development Studies, Brighton www.ids.ac.uk/ids/bookshop/dp/Dp363.pdf

Karubi, N.P., 2006. Development, Micro-credit and Women's Empowerment: A Case Study of Market and Rural Women in Southern Nigeria. A Thesis submitted in fulfillment of the Requirements for the Degree of

Doctor of Philosophy in Sociology in the University of Canterbury

Ledgerwood, J. (1999), *Microfinance handbook. An institutional and financial perspective*. Washington, DC: World Bank.

Malhotra Meenakshi (2004), *Empowerment of women*, Isha Books, New Delhi.

Mayoux, L. (2006), *Women's empowerment through sustainable microfinance: Rethinking best practice*. At:

Mohammad, A. K. and Mohammed, A. R. (2007) "Impact of Microfinance on Living Standards, Empowerment and Poverty Alleviation of Poor People: A Case Study of Microfinance in the Chittagong District of Bangladesh", Umeå School of Business (USB).

Morduch, J. (1999) "The Role of Subsidies in Microfinance: Evidence from the Grameen Bank Journal of Development Economics", 60:1, 229-48.

Morduch, J. (1999) "The Microfinance Promise" Journal of Economic Literature", XXXVII December, pp1569-1614

Osmani, L. N. K. (2007). A breakthrough in women's bargaining power: the impact of microcredit. *Journal of International Development*, 19, 695-716.

Otero, M. (1999). "The Evolution of Non governmental Organizations toward Financial Intermediation." ;West Hartford, CT: Kumarian Press

Purohit, S., (2003). Micro Credit and Women Empowerment. Available at: <http://www.gdre.org>

Schreiner, M. (2001). Seven Aspects of Loan Size. *Journal of Microfinance*, 3(2), 27-48.

Selvanathan, A., Selvanathan, S., Keller, G., and Warrack, B. (2007). *Australian Business Statistics*. South Melbourne, Vitoria, Australia: Nelson Australia Pty Ltd.

Sinha, S. (1998) Microcredit programme evaluation: a critical review, *IDS Bulletin*, 29.

Sinha, A. (2003). Experience of SMEs in South and South-East Asia, Washington, D.C. SEDF and World Bank.

Sita Devi.K, Ponnarasi.T & Tamil Selvi.G (2010), Impact of Microfinance Programme in Rural Development, Modern Agriculture in Central and Eastern Europe, 2010, pp.1-12.

Yehuala, S. (2008). *Determinants of smallholder farmers access to formal credit: the case of Metema Woreda, north Gondar, Ethiopia*. (Master's thesis, Haramaya University, 2008). Retrieved from <http://www.ipms>.