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Microfinance and Poverty Reduction Nexus among Rural Women in Selected Districts in the Upper West Region of Ghana

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Abstract
It is argued that access to such credit enhances the consumption levels of poor households, increases their income levels, empowers and helps them build assets to reduce their vulnerability to poverty and poverty itself. This study uses changes in asset score as a proxy of well-being. To do this, data on basic assets owned by women in the selected districts were gathered from a sample of 200 women using questionnaires. A logit model was estimated with change in asset score as the dependent variable and access to microfinance and some characteristics of women, and that of their household's heads as the explanatory variables. The results of this test were complemented with predicted probability scores for a positive change in access score. The results indicate that access to microfinance can help women acquire and accumulate assets thereby enabling them improve their well-being. The study also identified is a positive relationship between asset acquisition and educational level, on one hand, and between asset acquisition and marital status on the other hand. Unfortunately, a negative relationship was established between assets acquisition and the number of dependents in a household. The study thus concludes that women should be encouraged to involve themselves in microfinance to enable them become financial independent and contribute positively towards their families and communities as well.
Keyword: Microfinance, Poverty Reduction, rural Women, women empowerment

Background

Since the adoption of the Beijing Platform for Action (1995), the gender dimensions of poverty have become increasingly recognized with the need for specific strategies in support of women living in poverty. Among these is to increase women's access to and the use of microcredit and microfinance schemes as a means of improving their livelihoods. Microfinance institutions (MFIs) have experienced significant development all over the world. Microfinance institution can be said to be institutions established to provide assistance to the economically active poor, especially women, whose control of the modest increases of income and savings is assumed to empower them to improve the conditions of life for themselves and their children (Woller, 2001). The typical microfinance clients are low-income persons that do not have access to formal financial institutions. They are poor and vulnerable non-poor entrepreneurs who engage in activities such as farming, food processing and petty trade. Such people have relatively low stable source of income of which majority of them are women (UN, 1995). Microfinance in various forms is a significant source of financial services for many women in developing countries. Microfinance programmes offer savings facilities and small loans that suit women's needs without requiring collateral or posing other conditions typical of the formal banking system. Microfinance programmes often combine financial services with other services, including areas of education, health, or entrepreneurial skills development that enhance users' capabilities and facilitate their empowerment.

This rapid increase of MFIs is due to the success story of microfinance in providing financial services, which are basically credit and savings to a large number of poor clients who are unable to access formal financial institutions and these are mostly found in developing countries. As research on development-related issues broadens, both donors and lenders have become increasingly conscious of the non-income aspects associated with poverty. Tackling poverty has taken a new and broader dimension which advocates that increasing income and savings and helping build assets are not the only means to combat poverty. The World Bank (Rawson, 2001) defines poverty as 'a condition of life so characterized by malnutrition, illiteracy, and disease as to be beneath any reasonable definition of human decency'. Quite evidently, this definition does not mention anything about material gains, income, savings or assets; it focuses more on the state of poverty: it refers to human rather than income poverty, which points to a multidimensional concept going beyond the mere shortage in income, unemployment or scarcity of resources, but extends to deprivations in areas of essential healthcare, sanitation and basic hygiene, gender weakness and repression, illiteracy, infant mortality, food and malnutrition, etc. The most commonly used definition of global poverty is the absolute poverty line set by the World Bank. Poverty is set at an income of \$2 a day or less, and extreme poverty is set at \$1 a day or less. This line was first created in 1990 when the World Bank published its World Development Report and found that most developing countries set their poverty lines at \$1 a day. Microfinance as a developmental tool provides financial services for poor and deprived communities to enable them undertake household economic and income generating activities, which can go a long way to reducing their vulnerability. These income generating activities enable them to accumulate

capital and hold valuable assets, thus empowering the people and the community as a whole.
In another perspective, microfinance provides an avenue for micro entrepreneurs to expand their businesses to the point of becoming viable business and eligible for credit from commercial banks. In the quest to providing better financial services to millions of poor people, MFIs have advanced greatly by helping poor people to save cash in a secure and convenient manner, finance small scale firms, provide loans for purchasing land and acquiring other assets, pay utility bills, and provide money transfer services, furthermore, insuring the poor and vulnerable against risk. In 1995, the United Nations expert group on women and finance estimated that 70 percent of the world's population who live on below a dollar a day are women, but most of these women are engaged in some form of economic activity in one way or the other. Women producers and entrepreneurs play critical roles in the economy, however the value of these roles is often undervalued in society and they lack the necessary resources to earn higher levels of income. Women thus need and deserve access to information, financial services, and markets (U.N., 1995). Therefore, access to credit and other financial services are necessary to provide low-income women with opportunities to increase their incomes and their assets. The World Bank (2001) reported that countries/societies with high levels of gender inequality experience higher levels of poverty, slower economic growth, weak systems of governance, and a lower standard of living. There are also many reports suggesting that men contribute an average of 50-68 percent of their income to the general funds of the household, while it is a woman's income that is utilized in covering most household expenses (Chant, 1997). Thus, putting working capital into the hands of a woman may have an effect on her economic and social empowerment, and may also have a positive impact on the health, education, and quality of life of her entire family. There is therefore the need for countries to promote gender equality not just for women to be able to pull themselves out of poverty but also play their crucial role in the developmental process in developing economies.

Women and Microfinance

A woman's role in the economy is an important determinant of her ability to provide health care services, education and safe housing for herself and her family. It also has an impact on her decision-making power, as well as her ability to speak and act against inequalities, injustice, and violence in her home as well as in the community (Mayoux, 2002) The ownership of working capital is a means to building a woman's confidence, self-respect, and the capacity to use her voice to shape her life and the lives of her family members (U.N., 1995). Microfinance has over the years been seen to prove successful in targeting women when it comes to providing working capital for them. The premises behind such targeting are twofold: that microfinance is an effective tool in improving women's status, and that overall household welfare is likely to be higher when microfinance is provided to women rather than men.Women's status, household welfare, and microfinance interact in the following ways: A woman's status in a household is linked to how well she can enforce command over available resources. Increased ability to tap financial resources independently enhances her control, and, therefore, her influence in household decision-making processes (Cheston and Khun, 2001). Microenterprises financed by MFIs open up an important social platform for women to interact with markets and other social institutions outside the household, enabling them to gain useful knowledge and social capital. Many microfinance programs organize women into groups, not just to reduce transactions costs in credit delivery, but also to assist women in building and making effective use of these opportunities.
Women's preferences regarding household business management and household consumption goals differ from men's, particularly in societies with severe gender bias. In such situations, placing additional resources in the hands of women is not a mere equalizer: it also materially affects both the quality of investments financed by the microfinance programs and how extra income is spent. International Food Policy Research Institute (IFPRI) study on women and their control of resources have underlined the importance of women's control of resources in achieving better welfare outcomes in food, nutrition, education, and other health statuses of children and their families. Women are seen as better borrowers than men, timely repayment of loans is more likely to take place when women borrow. IFPRI in 1997 for example, showed that in Bangladeshi, groups with a higher proportion of women had significantly better repayment rates. Loans are not simple handouts. If microfinance programs are designed to cover all costs, a potential win-win situation emerges. Development goals related to women's empowerment and improved household welfare are self-financing and no subsidies are required. Unfortunately, positive empowerment effects cannot be unconditionally guaranteed. In some male-dominated societies, men may use the agency of the woman to gain access to microfinance funds, diminishing women's role to being mere conduits of cash. Even if women can maintain autonomy in how they access and use microfinance services, their management of newly financed enterprises and shouldering of all attendant risks may alter inter household dynamics. Since loans have to be repaid even if the project fails, new activities may increase exposure to financial risks and may impose additional pressures on the already overburdened woman. Finally, in societies following the practice of female seclusion, the new pressures to interact in the marketplace may initially involve

a difficult learning period and trigger negative responses. Project failures may lead to serious reprimand and additional negative sanctions against the woman, especially if household resources have to be diverted to repay outstanding debt.

Objectives

The study generally seeks establish a link between microfinance and poverty reduction among rural women in Upper West Region. Specifically, the study seeks;

- To determine the relationship between poverty and microfinance targeted at women.
- To find out whether microfinance can help women acquire assets.
- To examine other determinants of poverty in the district.

Research Questions

- Is there a relationship between welfare and microfinance targeted at women?
- Can microfinance help women acquire assets?
- What are the other determinants of poverty?

INFORMAL FINANCIAL SYSTEM AND MICROFINANCE IN GHANA

The Informal Financial Sector

In Africa, the vast majority of financial transactions occur outside the boundaries of the regulated banking sector (Aryeetey and Udry, 1995). It is estimated that 55% of the money supply in Ghana is for instance outside the formal banking sector (Aryeetey and Gockel, 1991). Informal lenders provide more credit and attract a larger volume of savings than the formal sector in sub-Saharan Africa (Nissanke and Aryeetey, 1998). It is important to understand how the informal financial sector works for effective policy making. Three types of informal units have been identified in Africa; including savings mobilization units with little or no lending; lending units that do not engage in any savings; and savings mobilization and lending units (Aryeetey and Udry, 1997). The informal financial sector is an unregulated market and hence very flexible with respect to structuring credit arrangements. It is therefore not guided by stringent rules and regulations such as the formal sector. Also, the informal sector is characterized by a strong working relationship between borrowers and lenders, and is more responsive to market conditions. It is also common to see individuals and businesses participating in both the formal and informal sectors. This is particularly true among enterprises, a number of which are controlled and managed by families, friends and relatives with full access to formal sector capital markets.

The sector functions outside the purview of regulations imposed on the formal sector in respect to capital, reserve and liquidity requirements, ceilings on lending and deposit rates, mandatory credit targets, and audit reporting requirements (Waldron, 1995). As evidence of both its heterogeneity and cross-over role, the informal financial sector serves the inter-corporate funds market, formal and informal finance companies, local money lenders, wholesalers, formal and informal credit unions, small farmers, retailers, entrepreneurs, and individual borrowers and lenders from nearly every walk of life. The informal financial sector tends to provide funds for short term purposes, although both intermediate and longer term financing is frequently arranged. Correspondingly, informal lenders may rely entirely on their own funds, serve as intermediaries by accepting deposits, or lending may occur on a group basis through rotating savings and credit associations. Whatever the basis, informal borrowing and lending tends to be characterized by face to face transactions and flexibility with respect to the structure of debt, interest rates, collateral requirements, rescheduling maturity periods and the qualification process.

When judged in terms of the number of transactions, intermittent lenders tend to make more but smaller loans than other sector participants. Much of this activity is between friends and relatives (Aryeetey and Udry, 1995). A significant portion of intermittent lending also arises among firms, where the informal inter-corporate market for funds is extremely well developed. Lending by regular lenders may be either tied or untied. Those who extend untied or pure credit are primarily engaged in lending and, as a consequence, are frequently referred to as "specialist" lenders. Alternatively, tied credit transactions occur between borrowers and lenders involved in an essential way with simultaneous transactions in other markets. The activity in another market is accepted by the lender as a substitute for collateral in the credit transaction. The informal financial sector is also characterized by high degree heterogeneity. Perhaps the most important distinction is between credit extended by separate entities, either individuals or institutions, and credit extended on a group basis. Informal credit extended by entities tends to be intermittent or regular, and may be tied to other transactions such as marketing, or be untied and pure in nature. A distinction that transcends both tied and untied credit is that between lending based on the lenders own resources and lending based on deposits where the lender functions as an intermediary. Intermittent lenders by definition lend only from their own funds while regular lenders may rely on their own funds, deposits from others, or on funds borrowed in the formal sector. Correspondingly, group finance generally occurs on a regular basis and is a primary method by which the informal sector accomplishes intermediation. Groups of individuals or businesses pool their savings which may be recycled to members, loaned to non-members, or invested in the

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formal or informal sectors.

Microfinance in Ghana
Ghana lacks data on microfinance even for the formal and semi-formal sectors (Bank of Ghana, 2007). Microfinance however encompasses the provision of financial services and the management of small amounts of money through a range of products and a system of intermediary functions that are targeted at low income clients (UN, 2000). It includes loans, savings, insurance, transfer services and other financial products and services. Microcredit is thus one of the critical dimensions of the broad range of financial tools for the poor, and its increasing role in development has emanated from a number of key factors that include: The fact that the poor need access to productive resources, with financial services being a key resource, if they are to be able to improve their conditions of life; The realization that the poor have the capacity to use loans effectively for income-generation, to save and re-pay loans; Microfinance in the formal (and semi-formal) is affected by a number of policies and programmes. These include - the Financial Sector Improvement Project, Financial Sector Strategic Plan (FINSSP), the Rural Financial Services Project (RFSP), the United Nations Development Programme (UNDP) Microfinance Project, the Social Investment Fund (SIF), the Community Based Rural Development Programme (CBRDP), Rural Enterprise Project (REP), and Agricultural Services Investment Project (ASSIP).
Despite the policies and an expanding formal sector, only 5% of households are reached. The remaining 95% are excluded by high minimum deposit requirements (Steel and Andah, 2004). There is also a wide regional disparity in the distribution of these formal sector financial institutions. Thus the informal financial sector plays a very important role in meeting the financial needs of the majority of Ghanaians. For instance, in 1998/99, of the 39% of Ghanaians who borrowed money, only 3% of them used formal institutions (GLSS 4). Table 2.1 below shows the population-branch ratio (PBR) of RCBs in the country. It shows that the most rural and deprived administrative regions (Northern, Upper West and Upper East) have the highest PBR.

Table 2.1: Population-branch ratio for RBCs

Region[1]	Branches	Population[2]	PBR[3]
Ashanti	111	3,600,358	32,435.66
Brong Ahafo	69	1,798,058	26,058.81
Central	68	1,593,888	23,439.53
Eastern	85	2,101,650	24,725.29
Northern	3	1,805,428	601,809.33
Upper East	10	919,549	91,954.90
Upper West	3	575,579	191,859.67
Volta	22	1,630,254	74,102.45
Western	55	1,916,748	34,849.96

Source: ARB Apex Bank and 2000 Population Census

Within the semi-formal sector, one of the largest providers of MF is the Ghana Co-Operative Credit Unions Association (GCCUA) Limited. The Ghana Co-operative Credit Unions Association (CUA) Ltd was established in 1968 as the apex body of the credit union movement in Ghana. Currently, there are 262 active credit unions in Ghana, with a total membership of over 160,000.

Table 2. Summary of credit Unions Annual Performance

	Members	Deposits[4] (in billions ¢)	Loans[5] (in Billions ¢)	Total Assets[6] (in Billions ¢)
2001	96,052	84.6	59.4	98.6
2002	125,000	150.2	88.3	200.0
2003	132,000	206.0	142.0	250
2004	163,860	354.7	216.6	423.8
2005	174,026	425.3	315.2	50.7
2006	202,390	584.2	396.5	702.1

Source: Ministry of Finance and Economic Planning, 2010

[1] Greater Accra has been left because it is largely urban and given that RCBs target rural communities
[2] Based on 2000 Population and Housing Census
[3] PBR gives a ratio of Population to RCBs branches
[4] In billions of Cedis (GH¢1=¢10,000)
[5] In billions of Cedis (GH¢1=¢10,000)
[6] In billions of Cedis (GH¢1=¢10,000)

Another group of institutions within the semi-formal sector is non-bank financial institutions (NBFIs). Credit advanced to borrowers by the group has been increasing steadily since 2001. For instance, total credit advanced was GH¢39.64 million in 2001 and rose to GH¢50.97 million in 2002; indicating about 28.6% growth. This increased consistently to GH¢160.47 million in 2006. The World Bank (1999) studied the degree to which the Co-operative Credit Union Association was meeting the credit needs of Ghana's female members. The study made the following observations, many of which apply to credit programs in general: Women do not have the same access to credit as men in the credit union do, and the loans that women were given were too small to meet their needs. The policies of the revolving loan fund were too rigid to meet women's needs. Most women lack financial management and business planning skills and many women know very little about credit union operations and cooperative principles. In mixed credit unions (and most were mixed), women seldom occupied decision-making positions. Fear of borrowing and being in debt was a problem for women in some areas. They asked for less than they needed, and therefore could only buy too little input to improve their businesses. In some credit unions, it was found that men did not allow women to apply for "women-in-development" loans (funds set aside specifically for women members).

THEORETICAL FRAMEWORK

The aim of this section is to provide the theoretical framework of this study, the consumption model, and show its links to the study on microfinance, women and poverty. The chapter begins by giving a brief overview of the consumption model. Finally, the link between the consumption model and the study on microfinance, women and poverty is shown. The standard microeconomic model of individual behaviour is based on the concept of utility. Even though utility cannot be directly compared across different individuals under certain assumptions, it is possible to express the decisions of the individuals and the corresponding utility in terms of an expenditure function. In this study, the expenditure function is the individual's total asset expenditure, which is a measure of welfare. Consider a simple model in which each period t, an individual derives satisfaction from the consumption of a composite good X_t. The individual is faced with the decision on how to allocate its resources over the time period t=1,...,T. The utility is assumed to be additively separable and time invariant with a discount factor of α and is given by:

$$U\left[\left(X_t\right)_{t=1}^{t=T}\right] = \sum_{t=1}^{t=T} \alpha^t \mu\left(X_t\right) \qquad (1)$$

Where the marginal utility of consumption approaches infinity as consumption approaches zero. U represents utility and is assumed to possess all other standard properties. Now assuming that before each period t the household decides how to allocate its available asset, between consumption, X_t, production inputs, I_t, and liquid assets, A_t. The liquid assets could be cash or near cash and is assumed to have a rate of return equal to zeroLet the production function which relates production inputs committed in period t to output in period t+1, Q_{t+1}, for the individual be specified as follows

$$Q_{t+1} = F\left(I_t, E_{t+1}, \varepsilon_{t+1}\right) \qquad (2)$$

Where e_{t+1} is a random variable whose outcome is unknown in period t, and captures the risk associated with the production of the output Q_{t+1}. E_t represents exogenous factors influencing the production process, and I_t is the production inputs committed in period t. It is further assumed that, the individual will decide both to invest in production and hold the liquid asset if there is a risk of the output falling below the threshold for minimum consumption.

METHODOLOGY

Based on the discussion in the previous chapter, the general specification of the econometric model to be used in the study is of the form:

$$ASS = \alpha + \beta X_i + \varepsilon_i \qquad (3)$$

Where:

ASS= change in asset score

α= the constant term

β= a vector of coefficients of the explanatory variables

X= a vector of the potential determinants of change in asset score

ε= the error term

i= the ith individual in the sample.

The model to be estimated is of the form:

$$ASS = \beta_0 + \beta_1 MF + \beta_2 AGEW + \beta_3 EDUW + \beta_4 OCCW + \beta_5 SECOCCW + \beta_6 AGEH/H + \beta_7 EDUH/H$$

$$+ \beta_8 OCCH/H + \beta_9 ND + \beta_{10}\ MS + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots \text{Equation 4.2}$$

Where:
ASS= change in asset score
MF= access to microfinance
AGEW=age of the woman
EDUW=educational level of the woman
OCCW=occupation of woman
SECOCCW= secondary occupation of woman
AGEH/H =age of the household head
EDUH/H=educational level of the household head
OCCH/H=occupation of household head
ND=number of dependants
MS= marital status of woman
ε=error term
β_i= coefficients of the independent variables

Construction of an Asset Index

Due to difficulties in obtaining comprehensive data on household income and expenditure, this study uses individual's asset index to evaluate living standards of women in the Kassena Nankana district. I expect that the asset index would be used as either an alternative or a complementary measure of women's socio-economic position, especially in wealth-related surveys when income and expenditure data are unavailable. This study deviates from the conventional money-metric poverty measures and adopts a non money-metric approach (assets), to measure poverty. Following Filmer and Pritchett (2001), Sahn and Stifel (2000), and Asselin (2002), a composite poverty indicator or asset index is created from selected variables. The construction of the asset index was based on binary indicators on 23 household assets as well as other financial assets, namely the presence or absence of a cow, sheep, goat, chicken, guinea fowl, donkey, motorbike, bicycle, fridge, deep freezer, TV, fan, iron, cooking utensils, land (agricultural land), non agricultural land, houses, other non-residential buildings, furniture, cloth, jewellery, grinding mills, lantern and any others. Information on financial assets such as savings in the bank, savings with a friend, monies loaned out and t-bills was also gathered.

Sampling Data Collection Techniques

For the purposes of this research, a resident is defined as any woman who has been resident in the upper west region for at least three years. Since the study aims at verifying the link between microcredit and the socio-economic wellbeing of beneficiaries, the unit of analysis is the woman benefiting from microcredit. Because resources for the completion of this research, time and finances are limited, the sample size of 200 women was selected. To study the effects of a policy or program and to link the observed changes to that program, most reviewed studies use what statisticians call a treatment group, in this case, women benefiting from the microcredit and a control group, women who do not benefit from the microcredit but who are otherwise similar to the members of the treatment group. The sample is divided equally in two groups: The experimental or treatment group: containing about 100 women benefiting from the microcredit for at least 3 years to make sure that it had the time to have impact on their lives (if any). The comparison group: containing about 100 women who are not beneficiaries from the program in order to make sure that they have the requested similarities with the treatment group. Data collection for the study took place in March, 2010. Women were randomly selected from different households and interviewed through a structured questionnaire. With the help of microfinance institutions in the district, beneficiaries of microcredit were traced. The objective for the selection of non-participants as stated initially is to provide a control group for comparison with participants. The communities from which data was collected are Wa, Nadowli, Jirapa, Lawra, Nandom and Lambussie. A pretest was carried out before the main survey, 15 women participated with 10 of them being beneficiaries of microfinance and the remaining 5 were not. This enabled the structuring of the questionnaire to capture all relevant assets owned by women in the area. The questionnaire captured information on the following; household characteristics of respondents, credit information, asset information, including the value of the assets, and consumption information.

RESULTS

Socio-economic Characteristics of Respondents

The survey targeted only women because poverty is high among them. In all, 200 women were interviewed. The mean age recorded was 36.3 with minimum of 21 and maximum of 67. Of the 200 respondents, only 13 of the women interviewed have never married, constituting 6.53%, reflecting the importance of marriage within rural communities. All respondents were found to engage in at least one economic activity with over 90% being self-employed. The main area of economic activity for women is trading (91.46%), with a frequency of 182. Farming is a secondary occupation (72.34%), with a frequency of 136. This is as a result of the seasonal nature of farming in the district. Only 6% of respondents keep to only one economic activity. Table 1 below shows some variables and their percentages.

Table 1: showing some variables and their percentages.

Variable	Percentage
Access to credit	50.00
Improved asset score	55.00
Never married	6.53
Divorced/separated	3.02
Widowed	9.05
Married	81.41
Women who have ever attended school	68.84
Woman who are traders as main occupation	91.46
Women who are traders as secondary occupation	23.94
Women who are farmers as main occupation	4.52
Women who are farmers as secondary occupation	72.34
Household heads who have ever attended school	20.3

Source: Field Survey 2010

The data shows that most women attended school before, stressing the importance of education in the region. Only 31.16% of respondents have never been to school. 31.66% of respondents have completed primary school and as many as 37.18% have completed at least junior high school. Education has also been observed to impact positively on mothers and children's reproductive health behaviors (GDHS 2003).

Credit Issues in the Region

The Upper west region has a number of formal as well as informal financial institutions. When respondents were asked about the sources of credit available to people in the district, 75% of respondents identified credit unions. The banks, friends and relatives were also mentioned. Only 3.42% mentioned the district assembly as a source of microcredit. Table 4 shows the various sources of credit identified within the three year period and the percentage of women who received the loan.

Table 3: Source of credit and percentage of women who received the loan

Institution	2007	2008	2009
Bank	44.74	40.43	37.5
Credit union	21.05	19.15	32.5
Money lender	0.00	2.13	5.00
Susu group	10.53	21.28	17.5
NGO	5.26	8.51	0.00
Relative	10.53	2.13	7.50
Friend	7.89	6.38	0.00
Total	100	100	100

Source: Field Survey 2010

The survey also revealed that as many as 84.55% of those who received credit either used the money to set up a new business or to expand existing businesses. The table below shows reasons and the corresponding percentages of respondents.

Table 4: Reasons for applying for loan

Reasons for applying for a loan	Freq	Percent	Cum
Purchase agric land or equipment	2	1.63	1.63
To purchase agric input	4	3.25	4.88
To set up a business	24	19.51	24.39
To expand business	80	65.04	89.43
Housing	7	5.69	95.12
To pay school own fees	3	2.44	97.56
To pay child's school fees	3	2.44	100
Total	**123**	**100**	

Source: Field Survey 2010

It is also important to note reasons why people did not apply for credit. The main reasons given were fear of not being able to pay back (22.02%), interest rates are too high (42.2%), no collateral (23.33%) and "not in financial need" (5.56%). This reflects a disturbing situation since most of those who did not apply for credit did so because of the high interest rates and the fear of not being able to pay back. These reasons eliminate respondents naturally out of the credit market.

Impact on Business

Working capital plays a crucial role in the activities of women entrepreneurs. The introduction of MF has made it possible for women who hitherto were denied access to credit facilities to have financial support. The survey conducted in the KN district indicated that 62% of women who hitherto had working capital as low as GH¢ 100-GH¢200 can now increase working capital to GH¢500 as a result of increased access to MF. There has also been an upward shift in terms of profit as reflected in the current capital base. This is likely to translate into her lifestyle since she can now participate or have a say in family as well as her community. A large number (60%) of respondents spend their revenue generated from the business to support their families, either through consumption or through the education of their children. Part of the income from the business is also used to expand the business. About 84% of women consider expansion of their business as a priority. However, most these women do not save with the banks but rather prefer to save or loan out monies to their friends and relatives. It can be deduced that the few who save with the banks in a way are increasing their chances of having access to greater financial assistance from the banks in the near future.

Assets Ownership in the Upper West Region

Asset, which is used as a proxy of well-being of the household, is very crucial in this study. As part of this study, one of the objectives is to measure the impact of microfinance on assets acquisition of participants of microfinance vis-à-vis non participants. This is what necessitated the collection of information on assets that are commonly owned in the district. On the whole it was found out that participants of microfinance had a positive change in assets over the past three years compared to non participants. Change in women's asset position is one of the impact indicators of microfinance interventions at the individual level. Ownership of assets is also an indicator of improvement in the woman's wealth. The assumption is that microfinance services increase her income and they may have the capacity to purchase household assets. From the survey, when it comes to asset (property) acquisition, about 83% of the women can own assets in their names. They can also decide on their own which assets to buy or sell. This in a way shows the level of empowerment women have when it comes to property acquisition. The data reveals that most women had modest value household assets such as animals. Few women had owned some assets such television, furniture and refrigerator. Cooking utensils and animals are the most common (94%) household assets followed by bicycle ownership (92.9%), while very few women own non- agricultural land and houses. The results of the survey show that, ownership of household assets has increased after respondents joined the microfinance program. For instance, Television and Refrigerator ownership increased from 21 % to 35.7 %, 32 % to 43% and 33 % to 38 % respectively. The assets used in this analysis include only assets which were purchased by women with their own monies, gifts and inherited assets are excluded.

Meals intake

The condition of nutrition used in the household is an indicator of the household's well being. The assumption is that participants in the MF program will improve their household diet and are less vulnerable to food shortage and shocks than the non-participants. The responses of participants and non-participants of microfinance about their diet condition are indicated in table below. The large majority of respondents reported that their household had eaten meals at a minimum of three times in a day. Less than 21% of women reported that their families take meals less than three times a day. Few respondents reported that the frequency of taking meals in a day increased after they took the loan.

Regression

A logit model is estimated using the maximum likelihood estimation technique. The base model will first be estimated, this is the model which includes the entire sample and a dummy capturing whether the woman is a household head or not. Another model will be estimated with a sample which does not include those who are household heads but includes the characteristics of the household heads. The results for the regression with a dummy capturing whether the woman is a household head or not are shown below:

Table 5: Regression results-dependent variable, change in asset score

Change in asset score	Odds ratio	Std. Error	P > |t|
Credit	5.39***	2.91	0.001
Age of woman	2.46***	0.75	0.003
Edu. level of woman	2.82*	0.79	0.095
Occ. Of woman	1.22	0.35	0.486
Sec. occ. of woman	1.50	0.45	0.172
No of dependants	0.77**	0.04	0.026
Marital status	2.54**	1.07	0.027
Dummy	1.06*	0.22	0.073

*** 1% significance level, **5% significance level, * 10% significance level

N =200, Prob > chi2 = 0.0068 F (8, 191) = 2.73

The regression above shows that of the 8 explanatory variables only two are statistically insignificant even at 10 percent. These are the main and secondary occupation of the woman. The odds ratio of credit, 5.39, means that the odds of a woman who has access to credit having an increase in assets score is 5.39 times that of a woman who does not have access to credit. The working hypothesis is that having access to credit has a significant positive effect on the asset score of a woman. The odds ratio of 2.46 for the age of a woman means that as the woman's age increases, odds of her having a positive asset score is 2.46. This is significant at 1 percent. The odd of the educational level of a woman is 2.82 at 10 percent level of significance. The means that women who have attended school have an odds of about three times more than that of women who have never attended school. The number of dependants has a negative effect on the asset score, with odds of 0.77. Marital status and the dummy which captures whether the woman is a household head or not both have positive effects on asset score. The model as a whole does fairly well as shown by the F value of 2.73. The p value for the F statistics is 0.0068 meaning that we reject the null hypothesis that the coefficients are jointly equal to zero. Table 8 below shows a regression of a sample of women who are not household heads. From the data, 17 women were household heads**.** These women are either widowed (10) divorced (6) or never married (1). The sample above excludes these women.

Table 6: Regression results of a sample of women who are not household heads

Change in asset score	Odds Ratio	Std. Error	P > |t|
Credit	5.41***	0.16	0.001
Age of woman	2.26***	0.70	0.008
Education Of woman	1.08**	0.04	0.048
Occupation Of woman	2.67***	1.09	0.017
Secondary occupation Of woman	0.98	0.12	0.989
Age of household head	0.27***	0.13	0.007
Education of household head	1.15***	0.10	0.004
Occupation of household head	0.88	0.07	0.102
Number of dependants	0.55**	1.07	0.003
Marital status	2.28***	0.69	0.007

*** 1% significance level, **5% significance level, * 10% significance level

N = 183, Prob > chi2 = 0.0008, F (10,176) = 3.18

In the above regression, all the variables are significant. Credit is significant at 1 percent with an odds ratio of 5.41. The significance of the woman's age at 1 percent shows that the age of a woman is an important determinant on the amount of assets she accumulates. The effect of the education of the woman has been found to be positive and significant. This is consistent to our expectation. An odds of 2.67 means that the odds of a woman who is a trader as her main occupation having a positive assets score is about twice that of a woman who does not have trading as her main occupation. The secondary occupation of the woman and the age of the household head though significant, both have a negative effect on the asset score. Table 9 shows the probability of having a positive change in asset score, considering access to credit only, holding all the other variables constant at their mean. Zero refers to women who have never acquired credit and one if otherwise. The table shows that women who have never acquired credit have a 58 percent chance of having a positive asset score compared to 82 percent for women who have had some form of credit. The difference between them is 24 percent this is found to be statistically significant.

Discussion

The results show that the variables credit, age of the woman, education of woman, occupation of woman, age of the household head, education of household head, number of dependents and marital status are significant determinants of the asset score in the KN district. Contrary to expectations, the secondary occupation of the woman and the occupation of the household head do not have a significant effect. The odds ratio of credit in both regressions ranges from 5.39 to 5.41 meaning that women who have taken credit have odds five times that of women who have not acquired credit of any form. Access to MF can therefore be said to have a positive effect on the welfare of women in the KN district. Increased access to MF will help them acquire or accumulate assets and in the long run help reduce poverty among women in the district. This positive relationship as expected conforms to theory and the works of Mayoux (2002), Diagne &Zeller (2001) and Sharma &Zeller (1998). The age of the woman has a positive effect on the change in asset score. The age of the household head has a negative effect on her assets score. The square of the age is sometimes used to capture the concavity of age and asset score. All things being equal, as the woman increases in age, she acquires more assets, reaches a point where the amount of assets remains constant and later declines. Hence the effect of age on assets score could not be predicted before running the regression. The age of the woman is significant at 1 percent with odds ratio ranging from 2.26-2.46 from both models. The age of the household head though negative is also significant at 1 percent with an odds ratio of 0.27. The level of education of the woman has been found to be positively related to the change in asset score. In other words, educated women have a higher probability of having a positive change in asset score. According to research conducted by Appleton (2003) cited in Assefa (2004), education can lift people out of poverty. A study by Aoki et al. (2002) cited in Assefa (2004) confirmed that the lack of educational opportunities is strongly correlated with income inequalities. The provision of relevant education significantly contributes to any poverty reduction exercise. Evidence from Assefa's (2004) study revealed that educated farmers are more likely to adopt new technologies and get higher return on their land. This variable is a dummy variable. As expected, people with some level of education will have a positive asset score compared to those who have never been to school at all. Women with relatively higher education tend to be involved in well paid jobs or huge capital businesses which generate higher income. The level of education of women also helps in the management of their businesses. It also enlightens them about the need to have assets of their own. The odds of education of a woman range from 1.08 to 2.82.

Another important variable is the occupation of the woman. The type of work a woman does is very important in the determination of the amount of assets she acquires and accumulates. If a woman is engaged in a job which provides her enough to feed herself and her family and still have extra, there is a high probability of channeling the extra income in acquiring assets either physically and financially. The results above indicated a positive relationship between a woman's occupation and her asset score. Both occupation and secondary occupation are dummy variables. The results show that compared with non traders, women who have trading as their main occupation have a positive relationship with the change in assets score with an odds ranging from 1.22 to 2.26. The predicted probability is 0.76 meaning that women traders as main occupation have a 76 percent change of having a positive change in asset score compared to non traders. Women who have farming as their secondary occupation do not have a significant odds ratio ranging from 0.98 to 1.50. This means that the secondary occupation of a woman does not affect her asset score. This can be due to the fact that there is no variation in the secondary occupation. Most women are farmers in their secondary occupation. The number of dependants has a negative effect on the woman's asset score. It is significant at 5 percent with odds ranging from 0.55 to 0.77. This negative effect is confirmed by the works of Hashemi et al., 1996; Sinha, 1998. The odds of marital status ranges from 2.28 to 2.54 meaning that married women have odds about twice of unmarried women in having a positive change in asset score. The predicted probability is 0.82 for married women and 0.63 for unmarried women. This means that, a married woman has 82 percent probability of having a positive change in asset score, while an unmarried woman has 63 percent chance of having a positive asset score.

Conclusion

By their exclusion from credit markets women generally lack the resources to either simply refinance their businesses or start new ones. Fortunately, one source of informal finance, microfinance, has long existed among women in Ghana and contributed towards their credit needs. This study has empirically proven that indeed microfinance can help women acquire and accumulate assets and subsequently improve their well-being by assuring members of credit that is regular and consistent although small.

Policy Recommendations

Based on this outcome, more women should be encouraged to involve themselves in microfinance to help them become financially independent and contribute positively towards themselves, their families and their communities as well. As a result, all stakeholders of both microfinance and women empowerment groups should give a second look at the crucial role microfinance play in empowering low income women in the society. Effort must be made to ensure that microfinance institutions are efficient, well resourced and structured in order to sustain the institution. The study revealed that illiteracy and education achievements are generally low among women in the area. Meanwhile there seems to be a positive relationship between education of the woman and the amount of assets amassed. The girl-child education promotion should be intensified in the area. "Education-for-food" programmes should be considered. This programme gives some specified quantity of food to the household of the girl-child depending on how long she stayed in school within a term. The Government of Ghana has been trying to reduce poverty over the years. This study has demonstrated that improving the poor's access to a consistent source of credit could indeed be a great tool to reducing the vulnerabilities among the poor if not reducing poverty. Credit programmes in the country aimed at the poor are often unfortunately either a one time thing or they just lack consistency. The participation of women and the poor generally in credit markets would also go a long way to improving the rather low savings rate in the country since by default microcredit directly or indirectly requires one to save. Government should therefore encourage women's participation by giving them more incentives. One observation which also emerged from our analysis suggests that the average woman in rural areas never actually apply for credit; yet, financial institutions are often blamed for not supporting the poor but active with credit. There is therefore the need to find mechanisms that would enhance access since left on their own, some women for diverse reasons would never apply for credit. Again, contrary to some findings in other parts of the world that credit from informal sources is often used in consumption, this study has shown that the majority of women borrow because they need credit to start or expand their businesses. There is therefore the need to re-examine informal financial markets to see those that encourage consumption and those that do not.

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