The Expenditure Pattern of Microfinance Clients of Sinapi aba Trust in Ghana

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Abstract

The much publicised success of some microfinance institutions and their swift expansion in recent years Suggest microfinance could be a potential policy tool in poverty alleviation. Available empirical evidence from existing research shows some positive impacts made in poverty alleviation from some microfinance programmes. This paper intends to add to the existing literature on the industry by evaluating the expenditure pattern of clients who have received loans from the Sinapi Aba Trust, a Ghanaian microfinance institution. We collected data on clients of the scheme. Our data show that expenditure pattern of old clients is greater than that of new clients, even though the latter on average receive larger volumes of credit. In this study, we construct expenditure indicators, finding that years of membership duration with the SAT lending scheme matters in clients? expenditure. The results show that old clients are more likely to purchase assets and spend on food, expand their businesses, and spend larger amounts on their children?s education than new clients.

Index terms— mfis, credit, impact, assets, income jel.

Introduction 3 s a result of the success of some microfinance institutions (MFIs) such as the Grameen Bank of Bangladesh, Bank Rakyat of Indonesia, BancoSol of Bolivia in recent years, the role of MFIs as a potential policy tool for poverty reduction has increased in many countries around the world. Available results from existing empirical research indicate some optimistic outcome from some microfinance schemes (see for example Hashemi et al 1996;Pitt and Khandker, 1998;Pitt et al 2003;Pitt et al 2006;and Maldonado and Gonzales-Vega, 2008). In contrast, some studies show insignificant and even negative results, and suggest that most MFIs are concerned with only profits and aim at their financial sustainability (see Goldberg, 2005 for a review of some of these studies). Such programmes do not benefit the poorest of the poor (Amin et al 2003). In this case while some literature in the field suggests that some MFIs are making positive impact in the lives of their clients, others are not.

Even though the origin of MFIs date back in history, their popularity emerged from the success, claimed by the Grameen Bank of Bangladesh probably due to the much publicity by the bank. As indicated by **??**urduch (1999), Muhammad Yunus the founder of the Grameen Bank observed that a lot of the people from the village were not able to receive credit for business purposes. Initially, he granted tiny loan to few industrious poor women in the village closed to the University where he was working. They were able to turn their fortunes around with high repayment rate. The method used in lending to these women is known as 'group lending' where members form self selected group of five members who elect their leaders. The rules are explained to them before they receive the credit. Such rules include compulsory weekly meetings, plan for repayment in instalment and payment of group dues during meetings.

Failure to meet these 'rules' by any group member means the group will not receive further loan also known as the joint responsibility clause. Despite the cost to the borrowers who receive these small loans, they have very good repayment records as documented by most studies. Empirical evidence suggests that most MFIs are making impact in the lives of the borrowers which go a long way in reducing poverty. It is in the light of these that we add to the existing literature, the expenditure pattern of clients of SAT.

SAT is one of the biggest MFIs in Ghana; it operates in all the ten administrative regions. SAT not only uses the group lending approach, it also lends to individuals who have graduated from the solidarity group. A major deviation from known microfinance methods is that to qualify and access these individual loans, a client needs a guarantor and either two referees or two witnesses ??Sinapi Aba Trust, 2007). Like many microfinance institutions, clients of SAT form selfselected groups, but the number of group members varies from one community (group) to another as our field data will show. The communities meet either weekly or bi-weekly to discuss issues of common interest and, more importantly, to pay the weekly or bi-weekly instalment. No collateral is demanded by SAT but, in addition to weekly payments, clients pay compulsory savings or 'group dues'. These more or less replace the collateral of formal banking circles. Some clients save voluntarily during the meetings. SAT uses 'dynamic incentives' in lending practices, that is, clients' loan size is allowed to increase as they take further loans.

SAT derives its name from the biblical mustard seed of one of the parables of Jesus Christ in Matthew A 13:31-32. 'Sinapi Aba' is the Akan 4 word for mustard seed. The rationale for taking on this name is the prospective support that SAT offers its borrowers. SAT's vision is as a foundation devoted to the development of the nation, using Christian principles where the weak are not only supported by the strong to provide for their families, but are also supported by their church and their community ??Sinapi Aba Trust, 2009b). SAT meets this through the provision of financial services to poor households that earn low incomes, with the aim of transforming their lives ??Sinapi Aba Trust, 2009a). The mission of SAT is to serve as a 'mustard seed' and a channel through the provision of opportunities at least in two areas: for the development of micro-business and for regular income generation to those who are deprived economically in society. In practical terms, SAT was established to fill the gap created by formal financial providers by serving the needs of the small and microenterprises. Finally, SAT depends heavily on donors for funding. Even though SAT is a Christian organization, it does not discriminate as our data show.

This paper evaluates the expenditure pattern of SAT clients in three urban communities in Ghana before and after they had taken loans from the scheme. To effectively explore and evaluate clients expenditure pattern, data was collected between July and September 2009 from clients of SAT's lending programme. In addition to clients depicting a spirit of entrepreneurship, they appear to make prudent use of their earned income. We used the cohort approached to classify clients into two groups: old and new clients. Old clients are defined as clients that had borrowed from the Sinapi Aba Trust (SAT) more than three years and new clients as less than three years with the scheme. We collected data from clients on demographic characteristics, saving pattern, credit history, and expenditure pattern among others. This paper evaluates and discusses the expenditure section of the data. Data analysis show that even though new clients on average receive bigger loans, we find that old clients have benefited not only in income earned, but also in the degree of expenditure in the listed items.

Furthermore, by constructing expenditure indicators from the survey instrument, we found that old clients of the MFI have made greater purchases than new clients. They have greater benefits in areas such as asset ownership, increased expenditure on food and childrens' education, and improvement in business operations. We reduced some of the responses in the questionnaire to construct expenditure indicators similar to those constructed by Hashemi et al (1996); and Garikipati (2008). We used the constructed indicators as independent and dependent variables to run logistic 4 Akan is the language of the Akan tribe, the largest in Ghana; the tribe is made up of many sub-tribes including but not limited to the Asantes, the Akyems, the Kwahus, the Akwapims and the Fantis.

regression to determine the effects of the independent variables on the dependent variables. Our analysis suggests that 'old clients' have received greater impact by making more purchases than 'new clients'.

This rest of the study has been organized into as follows. The next section reviews the literature on the group lending methodology that the Sinapi Aba Trust has adopted, and some of the impacts made by MFIs in the literature, we limit our discussions to consumption smoothing and asset purchases. This is followed in Section 3 by the details of the data used for the study. Empirical results are discussed in Section 4, while concluding remarks are ventured in Section 5.

1 II. Literature Review on Impacts of Mfis Lending

'Microfinance' refers to the provision of varied financial services to people who may have no access to such financial services from formal financial institutions. Such services is not limited to providing credit only and include, training clients in entrepreneurial and vocation skills; promoting other income generating activities; educating members on the importance of technical skills in their field of operation; and providing social safety nets to poor people such as food grain subsidies, and basic health care (Rhyne and Otero, 2006; Maes and Foose, 2006).

Formal banks do not grant loans to such poor people, not least due to a lack of collateral. As a result, MFIs have provided a range of innovations in lending that decrease not only riskiness, but also provide small loans without depending on collateral (Morduch, 2000). The approaches adopted by these institutions differ from how formal banking institutions operate in offering financial services and in other ways (Morduch, 1999). These methodologies as group lending employed by MFIs to aid the provision of credit to the informal sector have proved to be efficient, lowered transaction costs; and much lower default rates compared to classical banking (on the impressive theoretical and empirical literature supporting peer lending, see Stiglitz, 1990; Besley and Coate, 1995; Ghatak, 1999; Armendáriz de Aghion and Gollier, 2000; Laffont and N'Guessan, 2000; Armendáriz de Aghion and Morduch, 2005; Bhole and Ogden, 2010). In recent years, however, due to the rigid nature of group lending, the Grameen Bank (the erstwhile great populariser of group lending) has restructured its methodology and no longer lends exclusively to groups. These studies among others have documented some of the impacts provided by some schemes a few of which we discuss below.

2 a) Some Impact made by MFIs

The goal of most microfinance programmes is to alleviate poverty, and to fundamentally transform the economic and social structures in a society by offering financial services to households with low incomes (Morduch, 1999). There abounds empirical evidence on microfinance schemes impacting positively on the lives of their clients. Among the cited studies include Pitt and Khandker (1998); Morduch (1999); Smith (2002); Pitt et al (2003); Amin et al (2003); Pitt et al (2006); Karlan (2007); and Maldonado and Gonzales-Vega (2008). Notwithstanding this, there are still inadequate studies on the impact assessments of microfinance schemes; though some have attempted to account for selection bias, the major challenge is how account for fungibility of funds (Hulme, 2000). In view of this, it is possible for impacts to be exaggerated. In this study, we ensured to minimize selection bias as much as we can.

A growing body of evidence links the provision of credit to the poor and a reduction in poverty through the creation of employment, the earning of more regular income, and consumption smoothing, these help the clients to become less vulnerable to risk. If we consider consumption smoothing, poor people who have borrowed from MFIs have benefited, and reduced their vulnerability to fluctuating incomes (Morduch, 1999). In one of the most cited studies of group-based programmes, Pitt and Khandker (1998) made a detailed study and analysed three leading MFIs in Bangladesh. They found that women borrowers had their household consumption increased by 18 taka with extra 100 taka borrowed. With the improvement in income earnings, 5 percent of borrowers in the same study moved out of poverty annually after participating in microfinance schemes. Khandker (2005) used expanded panel data to improve on Pitt and Khandker's (1998) model and corroborated these results.

According to Simanowitz and Walter (2002), the increase in income and empowerment gained from microfinance programmes directly relate to improvements in the education of children. Pitt and Khandker (1998) likewise found a strong statistical significance impact on the credit to women members of the Grameen Bank on educating girl child. A 1 percent 7 increase in lending to female clients was associated with an increase in girl child enrolment by 1.86 percent on average. Using data collected in 2000 for CRECER 5 scheme, and 2001 for the Batallas scheme (both in Bolivia), Maldonado and Gonzales-Vega (2008) found that rural household microfinance clients who received credit for more than a year were more likely to keep their children in school than clients who had just joined the programme. They found that the children of 'old clients' of both Batallas and CRECER have a lower schooling gap of about half a year and a quarter of a year respectively , as against more years in schooling gap for children of 'new clients' of these programmes.

Usually, evaluations of microfinance across the world show that female clients' participation in decision-making increased after joining such schemes. Specifically, in Nepal, Cheston and Kuhn (2002) in a study on Women's Empowerment Project (a local microfinance scheme) found that 68 percent of women increased their participation in decision-making on family planning, children's marriage, and the buying and selling of properties. In Bangladesh, empirical findings over the years support increased in women asset ownership and empowerment. Firstly, Hashemi et al (1996) found that microfinance schemes had empowered women in at least three areas - namely, making small purchases by themselves, being part of the decision making process in the family, and taking part in political activities as well as in public advocacy. In addition, they found that borrowers of microfinance schemes in Bangladesh (Grameen and BRAC clients specifically) were significantly empowered compared to non-borrowers. This was based on purchase and control of productive assets among others. Secondly, Pitt and Khandker (1998), found an increase in the nonland asset ownership by women when they received increase in credit. Clients of the BRAC, the BRDB 6 and the Grameen Bank on the average increased their asset ownership by 15, 29 and 27 taka respectively when they receive an increase in credit by 100 taka. In a more recent study, Pitt et al (2006) widened their survey coverage to 8 different microfinance programmes in Bangladesh. They found that women borrowers have been empowered in purchasing of resources, mobility and networking, and transaction management among others.

3 III.

4 The Description of Data

We carried out the field work in Ghana from July to September 2009 and interviewed 672 Sinapi Aba Trust (SAT) clients from three branches -Abeka, Tema and Kasoa. We selected clients randomly during community meetings at several centres of the branches. However, in some centres, clients attended meetings at irregular intervals, so at such centres we used systematic sampling method. The gender composition of clients in the data is 87 percent female and 13 percent male. Finally, selection bias is a major problem that researchers encounter in impact assessment of microfinance schemes. We deal with this in the following section.

5 a) Dealing with Selection Bias

Impact evaluation studies that attempt to attribute specific effects to particular interventions stumble upon difficult problems. One such problem is selection bias, because clients are not randomly selected to participate in the scheme. Maldonado and Gonzales-Vega (2008) have argued that the inclusion of clients and the selection of programme venues are some of the sources of worry in impact assessment studies. Thus, since clients are selected based on a criteria, programme members and non-members may differ in numerous ways. For example, unobserved characteristics of both clients and non-clients may account for the reasons why some people participate and others do not. Therefore, in order to avoid or minimize selection bias in any assessment study, researchers need to consider such important endogeneity issues (Pitt and Khandker, 1998; Maldonado and Gonzales-Vega, 2008). Secondly, programme officials use certain criteria used to determine programme sites. In such situations, unmeasured local factors like infrastructural services and household characteristics, could affect programme participation (Maldonado and Gonzales-Vega, 2008). Attributing differences in measured outcomes to only microfinance services under these circumstances may be erroneous; because of selection bias.

Based on the method adopted by Maldonado and Gonzales-Vega (2008), we used the group approach with outcomes analogous to spontaneous assessment to minimise the problem of selection bias, and did not interview non-clients. Instead, we grouped clients into two based on the number of years spent with the scheme. Though, Maldonado and Gonzales-Vega (2008), separated clients into those of less than one year (new clients) and more than one year (old clients), we have separated clients into less than three years (new clients), and more than three years (old clients). In grouping the sample into 'old' and 'new' clients, Maldonado and Gonzales-Vega (2008) controlled for the unobserved characteristics that influence programme participation. They contended that, after controlling for individual and local variables, differences in schooling gap between the children of the two groups of clients that emerged can be recognized as rational programme benefit. The suitability of this method, however, relies on the nonexistence of systematic differences between the two groups of clients. They tackled the problem using two approaches. Firstly, they investigated the screening criterion by the institutions, and found that programme participation by clients was determined by other group members; also programme sites were earmarked in communities with comparable challenges. Secondly, they used the data set to demonstrate that there were no significant differences between important characteristics (such as age and household size among others) of the sub-samples of the two groups.

This study uses analogous method in its analysis. To minimise any possible unobserved characteristics that may influence programme participation, we have separated the respondents into two groups of clients -old and new clients. We expect that the differences in impact of the programme between the two groups of clients in our study can be categorized as programme outcomes, on the assumption that our regression results are unbiased. We therefore expect that food purchases and asset purchases (for example), by clients would be greater for old members. We held discussions with both programme officials and clients, and found that continual screening of clientele for lending, and entry into the scheme, depends on agreements with other members in the group with simple entry criteria without any influence from the Trust. Additionally, the programmes are located in poor urban communities with similar characteristics. We have also observed that individual characteristics of the sub-sample of the two group of clients virtually the same, as can be seen in the table below. Here, there are no significant differences between individual characteristics of the two cohorts of clients. And any differences of the impact received between both groups can be reasonably be assumed to come from the effects yielded according to the number of years they have spent with the programme.

6 b) Loan Statistics

The SAT scheme undertakes progressive lending. Progressive lending refers to a situation where a borrower receives a small loan amount at first, and subsequent loan amounts increase depending on good repayment behaviour. In group lending, the peer monitoring by group members is usually combined with progressive lending arrangements. The tables below present loan amounts received by the two categories of clients, indicating SAT's progressive lending. For 'new clients' the mean loan size increased from GH¢430.11 ($301) 7 for the first loan, to GH¢1200.00 for the fifth loan, though the highest for the fourth and fifth loans are smaller than the highest for the first three loans. A critical look at the loans received by clients show that loan size increases gradually, such that by the time a client takes a fifth loan, the size might have increased by almost 10 times. A similar picture emerges when we look at loans taken by the second group of clients as presented in Table 3 below.

The two tables portray progressive lending characteristics of SAT scheme. However, the average loan for the 'new clients' is greater than the average for 'older clients' for all loans. We also selected three clients randomly from each group to analyze the loans they received from the programme (not shown here) and the trend was not different.

7 Description of Variables and Empirical Results

8 a) Description of Variables

This section investigates the impact of credit on clients using the logit model. The robustness of the logistic regression has been shown in ??ramer (2007:554), who concludes that: 'As an empirical tool, logistic regression is quite robust with respect to deviations of the disturbances distribution of the model'. He further argues that, since no one knows the specific distribution of the disturbance term during the actual filed survey, we only make assumptions that are hardly tested statistically or empirically. Moreover, the log it models with samples of individual outcomes are usually estimated using the maximum-likelihood estimation method (Amemiya, 1981;Hartarska and Nadolnyak, 2008).

More specifically, we construct expenditure indicators to evaluate the expenditure pattern of the clients and used the logit to estimate the effects of independent variables on the dependent variables. These indicators have been designed similar to the indicators used by Hashemi et al (1996); and Garikipati (2008). We discuss the four items of expenditure clients listed as they have increased amount spend on these items. We used expenditure for these items before and after they joined the scheme. They are expenditure on: asset, food, children education, and improvement in business operation.

9 i. Dependent Variables

Generally, the essential objective of microfinance schemes is to empower their clientele in numerous spheres of life to move out of poverty. Therefore, a major aim of most MFIs is to help empower clients by providing them with loans; from which clients acquire the needed capital. a) Asset Ownership (ASSETS): Great respect is attached to asset ownership in Ghana -from 'minor' personal durable properties such as clothing to 'major' properties such as a house and many more. The type of clothes one wears is linked to the level of respect one gains and, more important to our study, indicates the ability of a person to have command over resources (income and assets). In view of this, we analyzed the effect of credit on clients' asset ownership. The definition of assets here includes property of any form that a borrower purchased after he or she joined the scheme. Clients who have purchased assets of any form were coded 1 and 0 otherwise. b) Improvements in Business (IMPBUS): Clients' empowerment is also linked to the acquiring an asset for business use. We asked clients about the use(s) of asset(s) they purchased after they joined SAT. They were asked to state 5 types of assets bought after they participated in the programme, and the use of each one. Such assets purchased by clients included land, refrigerator, shipping or locally manufactured containers and kiosks, television sets, sewing machines, and hand driers. The importance of buying a refrigerator for example, is that it could be used to sell water and soft drinks; a container or a kiosk could also be used as a shop or a store. The expectation that comes with buying assets for business purposes is that it has a direct impact on growth of the business, and is a source of future income flows. However, some refrigerators (and other dual-use goods) are used for both domestic and commercial purposes; we ignored the dual purpose refrigerators, and coded only those strictly used for business purposes.

Clients who use the purchased asset for business purposes were coded 1, and 0 otherwise. c) Improvements in Food Expenditure (FDEXP): A major challenge facing most poor households in Ghana is their ability to meet their daily nutritional requirements. Households face serious risk if there are shortfalls in their food consumption and they do not meet so-called 'three square meals a day'. A client who meets this requirement is considered to have met the household's nutritional needs 8 . One point was awarded if a client had benefited by using income earned from investing with the credit to purchase food, otherwise zero. Then, this group of clients had to indicate how much they spend (in a month) on the reported food before and after they joined the credit scheme. Those who had made a greater expenditure 9 after they had joined the scheme were considered to have improved their food consumption. With a relatively higher expenditure on food, it was assumed that the client had improved his or her ability to cope with risk and therefore had become less vulnerable. One point was awarded to a client who indicated an improvement in food consumption (thus, monthly expenditure on food after they had joined the programme was greater than the expenditure before they joined). A client with a total score of 2 was assumed to have improved the household's food consumption, and was coded as 1 (otherwise zero). Thus, those coded as zero were those whose food consumption remained unchanged or were now worse, and they were probably vulnerable to risk.

d) Expenditure on education (EDUEXP): Another indicator we analyzed is the expenditure on childrens' education. We grouped schooling years into three: basic school; secondary school; and tertiary education, with the questions capturing expenditure on each education type. At the time of the survey, though public basic school had no tuition fee and required relatively small expenditures, most parents with adequate funding prefer to send their wards to private schools for better performance. A score of 1 was awarded a client with expenditure on education otherwise 0.

10 Independent Variables

We used three different types of independent variables in the regression model: loan variables; client's household characteristics; and individual personal characteristics. The last two sets are control variables; they are included because such characteristics are likely to influence the empowerment indicators (Garikipati, 2008). ??resents the effects of the three of the independent variables -ASSET, EDEXP and IMBUS-on the indicators; it reports the odds ratios, and the confidence intervals for the odds ratios. Each dependent variable estimates a separate equation.

11 1) Programme Variables

Generally, when an odds ratio of an independent variable is greater than 1, it shows a positive relationship with the dependent variable. In contrast, an odds ratio less than 1 shows a negative relationship between the variables. Statistical significance ($p < 0.05$) is shown when 1 falls outside the confidence interval of the variable (Hashemi et al 1996).

Table **??** : Effect of the Independent variables on the Expenditure Indicator, reporting odds ratio and 95 % confidence intervals from logistic regression model

12 i. Assets Ownership (ASSETS)

The odds ratio for membership duration (SATDUR) is 5.19 and it is statistically significant. This suggests that 'old clients' are 5.19 times more likely greater to own assets than 'new clients' in the sample. This result is similar to most findings in the literature where microfinance clients increase their asset ownership over the years (see Pitt and Khandker, 1998;Hashemi et al 1996;and Garikipati, 2008). It shows that old members of the scheme are 5.19 times more empowered in terms of assets ownership than new members, hence the longer the years a client borrows from the scheme, the more assets the client is likely to purchase. Again, the odds ratio of average loan received is 1.00082, and it is statistically significant. Other significant variables are average loan size, total monthly income earned, household head gender, and the age of respondents; however, the last three are negatively related.

13 ii. Improvement in Business (IMPBUS)

The major aim of MFIs is to help their clients move out of poverty as they give them credit to expand their economic activities. Positively related significant variables are membership duration and the education level of clients. Our results suggests that old member of the programme are 3.44 times more likely to improve upon their businesses than new members. Also, the results suggest that a client with high level of education who is an old member is more likely to improve his or her business than a low educated client.

14 iii. Expenditure on Children's Education (EDEXP)

With the support of MFIs, most clients the world over spend a lot more on their children's education. This comes in two ways. Either, clients make additional expenditure on children 19 who are already in school, or clients enrolled more children in school due to increased income. Significant variables positively related to this are total monthly income, membership duration, gender of household head, and household size. Pre-SAT loan and clients' age are also significant but negatively related. Central to this paper, our results show that the odds ratio for membership duration (SATDUR) is 2.43; this suggests that 'old clients' are 2.43 times more likely to spend on their childrens' education than 'new clients'. (2008) found in Bolivia. Also, the odds ratio of household head is 3.07 and statistically significant. It suggests that female household heads are 3.07 times more likely to spend on their children's education than their male counterparts.

15 iv. Food Consumption (FDEXP)

Table 6 shows the result of the log it regression with food purchases as the dependent variable. From the table, years of relationship with SAT or membership duration (SATDUR), sex of the head of household (SEXHH), and the size of client's household (HSIZE) have a positive relationship with FDEXP. They are also statistically significant. SATDUR is related to FDEXP by 1.53 times, which means that 'old clients' are 1.53 times more likely than 'new clients' to purchase food. This suggests that 'old clients' appear to have received greater impact than 'new clients'. The odds ratio for SEXHH is 2.22, suggesting that female household heads are 2.22 times more likely to spend on food than male household heads. This is consistent with other microfinance findings such as in Pitt et al., (2006) for Bangladesh. The odds ratio for household size is 1.29; thus, the size of the clients' household is suggested to determine expenditure on food. The result suggests that large families of eight members, for example, are 1.29 times more likely to spend more on food than a family of, say, five members. In contrast, the years of schooling or education, the average loan size of clients, and the age of a client, are not statistically significant. The number of years of schooling (RESEDU) is positively related (1.002 times) to FDEXP; however, it is not significant. The survey results suggest that a female client who is also the head of the household, and had participated in the programme for more than three years, is better placed to increase the household's food consumption than her colleague who had participated in the programme for less than three years.

We used two of the methods Garikipati (2008) adopted to check the robustness of the results. First, we used the 'backward stepwise regression' to test SATDUR which starts with a full model (reported), and non-significant variables illuminated in an iterative process. We tested the fitted model when a variable is illuminated. The aim was to make sure that the model fits the data adequately. Once there are no more variables to be illuminated, the analysis is 21 accomplished. We then used the likelihood ratio test to accept or reject the illuminated variables. The analysis indicated that the SATDUR coefficients were stable throughout the process, suggesting that our conclusion made on membership duration on the credit programme are robust. Second, we tested the significance of each At the individual level, we found that the important variables maintained their signs and significance.

v.

16 Conclusion

Following the success of some leading microfinance programmes, the industry has experienced speedy expansion in recent years. Most of the programmes target poor people using group lending and most have recorded high repayment rates. The group lending approach has helped ease the issues of moral hazard, high transaction costs in lending small amounts, and adverse selection. The donor community also continues to support the development of microfinance institutions. Yet, available information on most of these programmes is inadequate. In view of this, there is a need for comprehensive independent assessment studies, such as this work, which could better document the evidence of the impact of microfinance in more rigorous ways than has often been the case hitherto.

In the light of these, the paper set out to identify the expenditure pattern using a survey of SAT clients in Ghana as a case study. The study divided clients into two groups -new clients who have been with SAT for less than three years, and old clients who have been with SAT for over three years. We found that even though 'new clients' on average received larger loans, it was 'old clients' who received greater benefits. The results of the regression suggest that membership duration in the programme is an important determinant of expenditure of clients, and as seen here on assets ownership, the level of spending on a child's education, and improvements in clients' businesses and on consumption smoothing. In all these areas, old members of the programme were seen to be more likely to have received greater benefits. In this case, clients that had joined the programme for long period of time have made significant expenditure on the items listed that client that had joined the scheme for few years. In this, these findings largely concur with most others in the literature in suggesting a role for MFIs in the alleviation of poverty.

In general terms, the study found that the provision of financial services by a microfinance institution has improved the life of its beneficiaries in employment creation to generate regular income, food consumption, children's education and asset ownership. This research has provided adequate evidence in the various survey questions that we administered to suggest that 'long-time borrowers' became better off than those with less exposure to affordable credit. [1] [2] [3]

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Figure 1: 3)

[1]Créditocon. Educación Rural (CRECER) was founded in Bolivia in1999.

[2]BRDB refers to the Bangladesh Rural Development Board.

[3]Admittedly, this is highly debatable since we did not determine the nutritional contents of the bundles; instead we assumed the bundles were rich in nutrients.9 The expenditure was based on quantity and price changes.

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Figure 2: Table 1 :

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Figure 3: Table 2 :

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[Note: 7 At the time of the survey the exchange rate was US$1= GH¢1.43]

Figure 4: Table 3 :

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[Note: b) Empirical Results: Effects of Credit on theExpenditure Indicators Table]

Figure 5: Table 4 :

Independent Variables	ASSET		Dependent variables EDEXP		IMPBUS	
	Odds ratio	95% C.I*	Odds ratio	95% C.I*	Odds Ratio	95% C.I*
TOYASAT	0.9998	(0.9996, 0.99997)	1.0005	(1.0003, 1.0007)	0.9998	(0.999593, 0.999996)
SATDUR	5.1882	(3.2777, 8.2124)	2.4307	(1.5417, 3.8324)	3.4419	(2.2189, 5.3389)
AVLOAN	1.0008	(1.0002, 1.0014)	1.0005	(0.9999, 1.0011)	1.0005	(1.0000, 1.0011)
LBSAT	1.1705	(0.7838, 1.7479)	0.6274	(0.4129, 0.9535)	1.0572	(0.6849, 1.6322)
SEXHH	0.6338	(0.4205, 0.9553)	3.0670	(2.0055, 4.6996)	0.8310	(0.5355, 1.2894)
HSIZE	0.9119	(0.8161, 1.0119)	1.6290	(1.4417, 1.8405)	0.9625	(0.8537, 1.0852)
RESAGE	0.9527	(0.9311, 0.9748)	0.9701	(0.9481, 0.9927)	0.9644	(0.9407, 0.9888)
EDUCAT	1.0791	(0.8657, 1.3451)	0.9678	(0.7761, 1.2069)	1.2988	(1.0152, 1.6617)

Figure 6:

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*[Note: *Standard errors are given between parentheses. Statistical significance ($p < 0.05$) is shown when 1 falls outside the confidence intervals.]*

Figure 7: Table 6 :

[Hartarska and Nadolnyak ()] 'An impact analysis of microfinance in Bosnia and Herzegovina'. V Hartarska , D Nadolnyak . *World Development* 2008. 36 p. .

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