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The Role of Microfinance in Asset-Building and Poverty Reduction: The Case of Sinapi Aba Trust of Ghana

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Abstract

The paper evaluates the extent to which *Sinapi Aba Trust* has contributed to poverty reduction among rural and urban   poor especially women by supporting them with small loans to expand their businesses to generate income to build up their asset base. Using a cross-sectional data from 547 respondents, the study found that participation in the programme has enabled established clients to own savings deposits and subscribe to a client welfare scheme which serves as insurance to pay off debts in times of illness or death. Established clients were also found to be in a better position to contribute towards the education of their children and payment of healthcare for members of their households as well as contribution towards the purchase of household durables. The study noted that programmes that are financially sustainable have greater effects on participants, and that there is the need for clients' graduation to benefit most from participation in such programmes.

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Acknowledgements

Introduction

A major development issue facing many developing countries has been the need to reduce the scale and depth of poverty among the growing population. Data from the 2004 *Ghana Human Development Report* (UNDP 2005) indicate that the level of deprivation, as measured by the Human Poverty Index, had declined from 51.7 percent to 41.0 percent between 1997–78 and 2002–03. Recent data from the Ghana Living Standards Survey also estimate that poverty declined from 52 percent in 1991–92 to 28.5 percent in 2005–06 (Ghana Statistical Service, 2007). Though this represents a significant reduction, there is less optimism with the increasing growth of population. As argued by Aryeetey and McKay, (2004: 14), 'the extent and depth of poverty are generally to be seen as outcome of the absence of effort to change the structure of the economy over several decades'.

The *World Development Report 2000* also states that there are over 500 million of the world's poor people who are economically active and these people earn their living by being either self-employed or by working in micro-enterprises (World Bank, 2000). The *Ghana Human Development Report* of 2007 states that: 'including agriculture, the informal economy employs 91 percent of the economically active' (UNDP, 2007: 28). Despite the enormous contributions by these people to the Ghanaian economy, micro- and small-scale businesses, as well as poor households, are often denied access to much needed capital by the formal financial institutions. They thus tend to miss good opportunities to invest in potentially viable projects for growth, since they do not have access to financial resources, including loans, savings and insurance products. In Ghana it is estimated that only about 6 percent of the entire population have access to formal financial services, with the majority being denied access (Aryeetey, 1994, 1996; Basu et al., 2004). These individuals and enterprises therefore tend to rely largely on informal sources, including relatives, friends, suppliers and money lenders, for their financial needs (Aryeetey, 1994)

A key characteristic of poor people all over the world is that they lack assets in the form of education and healthcare, savings and insurance products, as well as physical collateral that can be used to secure loans and household durables. Evidence of the importance of asset-building for poverty reduction cannot be overemphasised. There is ample empirical evidence in the literature to support the role assets can play in changing the livelihood of poor people. According to Moser (1998), there is a strong relationship between vulnerability and asset ownership, which is of operational significance, whilst the *World Development Report* states that lacking assets is both cause and outcome of poverty (World Bank, 2000). In a study by Narayan et al. (2000: 5), they argue that: 'the poor rarely speak of income, but instead of managing assets in the form of physical, human, social and environmental as ways to cope with their vulnerability'. According to Mosley and Rock (2004: 487), 'poorer households have a lower tolerance of risk and vulnerability essentially because they possess less physical, human and social assets to protect them against it'. As their income and assets build up, their risk efficacy or risk tolerance will increase; they will be able to accept higher levels of risk and vulnerability

because they have more reserves to fall back on. A number of pathways by which microfinance can reduce vulnerability include the strengthening, building assets and 'empowering' of women (Hashemi et al., 1996; Montgomery et al., 1996; Morduch, 1998). According to Zaman (2000), an important form of self-insurance against crises is building up a household's assets, which can reduce vulnerability through sale of assets to meet immediate consumption needs; improve creditworthiness, thereby improving the household's borrowing chances during a crisis; and, finally, a larger and more diverse asset base can reduce covariate risk. To Khandker (2001: 12), 'the poverty of a household can be characterized by two general factors: physical and human capital endowments. A person is poor because he or she is poor in physical and human capital resources'.

As a result of the depth and scale of poverty levels, Ghana has focused on poverty reduction as the core of its development strategy. Since the early 1980s, the country has implemented a number of development programmes that were expected to impact positively on the livelihood of poor people and build their asset base to guard against vulnerability. For instance, the Economic Recovery Programme (ERP), which began in 1983, was backed by other programmes, including the Programme of Action to Mitigate the Social Cost of Adjustment (PAMSCAD), and later followed by Ghana Vision 2020, aimed at reducing the scale and depth of poverty in the country. However, according to Asenso-Okyere et al. (1993), some of the policy reforms adversely affected vulnerable groups, especially women, children and rural dwellers, and some were even made worse off than when the programme was launched. For instance, as a result of the introduction of the cost-sharing policies in respect of user fees in the health sector, attendance at health centres and clinics dropped, especially in the rural areas (Vogel, 1988). In a report prepared for the sixth consultative meeting of the consultative group for Ghana in May 1991, the government identified that PAMSCAD, among others, had not been too successful in targeting the poorest of the poor (Asenso-Okyere et al., 1993). Currently, the government is implementing the Ghana Poverty Reduction Strategy (GPRS), which began in 2002 (Government of Ghana, 2003b). The overall policy framework for microfinance is informed by the poverty reduction strategy, which seeks to balance growth and macroeconomic stability with human development and empowerment in such a way as to positively impact the reduction of the country's poverty levels in the medium term (Government of Ghana, 2003a, 2005).

Following the limited success achieved by these top-down policies and programmes, as well as the non-sustainability of previous government-backed credit programmes specially designed for poor people – especially those engaged in rural and agricultural ventures (see Quainoo, 1997; Steel and Andah, 2003, 2004) – Ghana has embraced microfinance as a major strategic tool to combat the severe poverty that continues to plague the country. This stems mainly from the belief that providing small loans, savings facilities, insurance products, money transfer services and skills training to poor people, and more especially women, could be a way of providing opportunities to be self-reliant and play active roles in their households and communities and the economy as a whole (Yunus, 2001). The interest in microfinance is a reflection of the successes of small-scale lending programmes in countries like Bangladesh and Bolivia, where

lending to poor people, including women's groups, by the Grameen Bank and BancoSol, respectively, had made great strides in poverty reduction. Poor people, especially women, have been targeted by most microfinance programmes as a means of assisting them to build up their asset base and, thereby, be in a position to play important roles within their households and communities.

Microfinance programmes are known to support poor individuals or households' smooth consumption during an adverse shock. Access to credit may help them to avoid distress through sales of assets, and to replace productive assets destroyed in natural disasters (World Bank, 2002). Moreover, provision of financial services helps individuals or households to better manage their existing asset base or to reduce their liabilities. Again, access to loans provides a security or fallback position if difficulties are encountered. Furthermore, access to emergency or consumption loans can enable households or individuals to meet unexpected demands for cash, without having to sell or pawn key income-generating assets or withdraw children from school. Voluntary savings may also lower the risk of savings, increase the absolute amounts saved, and enable lump sum expenditure that otherwise would not be possible (Barnes, 1996). Financial services provided on a timely basis are a way for poor people to turn many small savings into large lump sums that enable them not only to protect against risks, but also to take advantage of investment opportunities when they present themselves (Rutherford, 1999). According to Ledgerwood (1999), microfinance institutions are beginning to experiment with other products, including insurance. Insurance is a product that is likely to be offered more extensively in the future by microfinance institutions, because there is growing demand among their clients for health or loan insurance in case of death or loss of asset.

Following from the above, this paper evaluates the extent to which Sinapi Aba Trust (SAT), the largest NGO microfinance in Ghana, has contributed to poverty reduction among rural and urban poor people, especially women, by supporting them with small loans to expand their businesses, generate income and build up their asset base in the form of financial, human and physical capital. Using a cross-sectional survey, the paper analysed data from two groups of respondents, totalling 547 from nine districts in Ghana – three districts from each of the three zones of the country. The results indicate that participation in SAT's programme has enabled poor people to build savings deposits and subscribe to a client welfare scheme which serves as insurance to pay off debts in times of illness or death. Participants were also found to be in a better position to contribute towards their children's education and payment of health services, as well as contribute towards the acquisition of household assets.

The remainder of the paper is organised into four sections. Section 2 provides information on the case study microfinance institution, whilst Section 3 presents the survey design and the model for estimation. Section 4 presents the empirical results of the study, and the final section concludes the paper with some lessons learned from the study.

2. Case study institution

SAT, a partner in the Opportunity International Network and the largest non-governmental organisation (NGO) microfinance provider in Ghana, was established in 1994. The name 'Sinapi Aba' is the local language version of the biblical word 'mustard seed' and reflects its mission to serve as a mustard seed through which opportunities for enterprise development and income generation are given to the economically disadvantaged in society to transform their lives. The organsation serves as 'the bank for the poor' for over 50,000 poor clients, offering credit, savings, insurance and holistic training services, with women constituting 92 percent of the organisation's client base (SAT, 2007).

SAT is one of the few MFIs in the country which has nationwide coverage. SAT's growth since its establishment over the past 14 years has witnessed tremendous changes, which reflect expansion of the programme, lessons learned and the adoption of best practices in the microfinance industry. Potential clients normally receive training at the branch prior to formal application for a loan. They are mainly engaged in the informal sector of the economy, and are predominantly micro-entrepreneurs, the majority of whom are not able to access credit from the formal commercial banks, as a result of the perceived risks posed by this group of people and the lack of collateral to secure credit facilities granted by these banks (Aryeetey, 1994; Basu et al., 2004; Ghana Statistical Service, 2005).

SAT adopts a group-based lending methodology called 'Trust Banks', designed to reach self-employed poor people who are denied credit by the formal sector, due mainly to lack of collateral to secure loans. Conditions and procedures for extending credit to clients are more

Table 1: Key performance indicators of SAT

Indicator	2002	2003	2004	2005	2006
Operational sustainability	140	126	94	145	117
Financial sustainability	104	94	82	127	103
Arrears rate>30 days	3.9	3.0	0.9	1.2	1.0
Portfolio at risk>30 days	8.6	5.2	1.3	1.8	1.5
Cost per cedi lent	0.18	0.17	0.30	0.13	0.15
Number of clients	26,615	41,803	51,393	34,632	51,686
Percentage of women	93.50	92.02	85.00	95.00	92.00

Source: SAT (2007)

simplified and essentially include a regular cashflow from the business for which the loan is being sought, and attendance of the SAT-organised business orientation and training programme. Products and services offered by the organisation include small loans, savings

deposits, client welfare scheme[1] (CWS) and non-financial services, including business management training. SAT is a financially self-sustainable microfinance provider, as depicted by Table 1.

3. Survey design and model for estimation

(i) Survey design

The survey, which was cross-sectional in nature, was carried out from February to July, 2007. In all, 547 questionnaires were administered to two groups of respondents. Two sample groups were selected and this comprised 316 established clients, who had borrowed and utilised at least four loan facilities for periods of over two years, and 231 new clients, who had either not benefited from any loan facility from SAT before (i.e. in orientation/training) or had benefited from one loan facility which is being serviced.

Both groups of clients were selected by using a multi-stage sampling method. Since SAT has branches in all the ten regions in Ghana, the country was divided into the three main geographical zones (i.e. coastal, forest and savannah), each zone covering at least three regions. At the second stage, three branches located in the three zones were selected to make the sample representative. Following from this, separate lists of established and new clients of SAT were compiled, from which a systematic random sample of 330 established clients and 240 new clients was selected. This approach was adopted in order to avoid selecting many members from a particular group and few from other groups. Thus, the use of the method helped to generate a proportional representation of all the groups in each branch of SAT. For both groups of respondents, a second list was prepared, from which absentee clients were replaced, to ensure that the number of respondents selected were all covered in the survey. For the data analysis, questionnaires from 316 established and 231 new clients were deemed to be correct and acceptable for the purpose.

(ii) Model for estimation

According to Khandker (1998), the objective of modelling household behaviour when there is an option to participate in a group-based programme, such as the microfinance programme being implemented by SAT, is to estimate the impact of credit programmes on various household outcomes, such as savings and household assets. Thus, the level of participation in credit programmes (C_{ij}), measured by the value of programme credit, is given by:

$$C_{ij} = X_{ij}\alpha + V_{ij}\beta + Z_{ij}\gamma + \varepsilon_{ij} \qquad\qquad (1)$$

where X_{ij} is a vector of household characteristics (such as age, marital status, level of education and household size), V_{ij} is a vector of village characteristics (such as status of area, availability

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[1] The CWS is a form of insurance product and can be accessed to support clients who may not be able to repay their loans, due to illness, death or accident.

of water and road network), Z_{ij} is a set of household or village characteristics distinct from X_{ij} and V_{ij}, in that they affect C_{ij} but not other household behaviour conditional on C_{ij}, and α, β and γ are unknown parameters. ε_{ij} is a random error consisting of u_j an unobserved specific village effects; η_{ij} an unobserved household-specific effect; and e_{ij} a non-systematic error uncorrelated with the other error components or the regressors.

The conditional demand for household outcome, Y_{ij}, conditional on the level of programme participation C_{ij}, is:

$$Y_{ij} = X_{ij}\alpha + V_{ij}\beta + C_{ij}\delta + \varepsilon_{ij} \qquad (2)$$

where α, β, and δ are unknown parameters as in Equation 1 and $\varepsilon_{ij} = (\phi\mu_j + \mu_j) + (\theta\eta_{ij} + \eta_{ij}) + e_{ij}$ (where ϕ and θ are parameters corresponding to correlation coefficients), μ_j and η_{ij} are additional village and household-specific errors uncorrelated with other error components or with the regressors. If $\phi = 0$ and $\theta = 0$, the errors ε_{ij} and e_{ij} are correlated. Econometric estimation that does not take this correlation into consideration will yield biased estimates of the parameters. Correlation between ε_{ij} and e_{ij} can arise from two main sources.[2] The first is the self-selection into a microfinance programme and subsequent decision to borrow, and the second is non-random programme placement. In this study, both problems do not arise, since all respondents are members of the microfinance programme and at the same time reside in the same operational areas of the programme. Equation 2 could therefore be stated as:

$$Y_{ij} = X_{ij}\alpha + T_{ij}\delta + \varepsilon_{ij} \qquad (3)$$

where Y_{ij}, X_{ij} and ε_{ij} are defined as before. The variable T_{ij} measures availability of the programme to members who have self-selected. Following from Coleman (1999), this paper models the effect of microfinance intervention on financial capital, human capital and physical capital as follows:

$$Y_{ij} = X_{ij}\alpha + VBMos_{ij}\delta + AmtLoan_{ij}\gamma + \varepsilon_{ij} \qquad (4)$$

where Y_{ij}, X_{ij} and ε_{ij} are defined as before and α, δ, γ are unknown parameters. T_{ij} is represented by both $VBMos_{ij}$ and $AmtLoan_{ij}$. $VBMos_{ij}$ in this model represents the number of months since a participant took the first loan from SAT. This is a better measure of impact than the number of months that the programme has been in the village. $AmtLoan_{ij}$ represents the amount of loan borrowed by a participant from the programme. Thus, the effects of participation could be well

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[2] Self-selection bias arises where there are key differences between borrowers and non-borrowers that cannot be observed, measured and allowed for, with self-selection bias (that is, where those with particular characteristics choose to participate in a programme) being a key problem. Hence, whilst differences in education, age or marital status can be accounted for statistically, there could also be differences in attitude to risk or entrepreneurship, which will be basically unobservable; whilst programme placement bias arises in situations where loans go to localities or areas that are in some way favoured, such as villages and towns with better infrastructure and social services with strong demand growth.

measured if we consider both the loan amount granted to a participant and the length of time since a participant took the first loan. Under the programme, loan amounts approved for participants are exogenously determined by the credit officers, based on the assessment of the participant's cash requirements.

4. Key findings

Results of the data analysis are presented in Tables 2-4 and discussed below.

Financial capital

Poor people need financial products in the form of loans, savings and insurance to smooth out their household cash flow, deal with emergencies and other unforeseen requirements of cash, and augment income through investment in a gainful way (Rutherford, 1995). According to Sharif (1997), the challenge is to devise the right group of services for the right group of poor people. Here we considered participants' total savings deposits and contributions towards the client welfare scheme since the introduction of these two products by SAT.

(i) Savings deposits

Table 2 shows that none of the individual characteristics had any influence on the amount of savings deposits made by participants. These results are reflections of the fact that individual

Table 2. Financial capital (amount in Ghana cedis)

Dependent variable: Independent variables	Savings deposits		Client welfare scheme	
Individual characteristics				
Constant	-5,007.86	(24,011.64)	-2,647.47**	(991.48)
Age	65.45	(1,195.28)	119.07**	(49.35)
Age^2	2.25	(13.64)	-1.15**	(0.56)
Marital status	3,862.93	(2,050.37)	174.58	(213.09)
Level of education	1,789.56	(974.77)	22.90	(40.25)
Household size	-1,779.56	(1,126.77)	-30.57	(46.53)
Programme variables				
No. of months with SAT	-496.26	(258.26)	5.97	(10.66)
No. of months with SAT^2	1.91	(2.94)	-.12	(.12)
Loan amount	.11***	(.00)	.02***	(0.00)
Observations = 547	R^2 = 0.97		R^2 = 0.99	

*p< 0.10; **p< 0.05; ***p< 0.01
Source: Survey data (2007)

programme variable with a significant effect on savings deposit was the loan amount (0.11; p=0.000). One should not be surprised by this result, since there is a positive relationship between loan amount and savings deposits. Thus, all members who had benefited from loan facilities from the programme must have at least 10 percent of such loan amounts in the form of savings deposits prior to the disbursement of their loans. Indeed, for every 100 cedis increase in the loan amount, this resulted in an increase in savings deposit of 11 cedis, or 11 percent. This figure is close to the compulsory savings of 10 percent of the loan amount in addition to the voluntary savings of about 1 percent, since the majority of participants did not make any voluntary savings. This finding is further supported by the high R-squared, which implied that 97 percent of the variability in savings deposits was explained by the independent variables, of which the loan amount was the only significant one. What is surprising, however, is the length of time that individuals had been with the programme, which had a negative coefficient and was not significant (-496.26; p=0.055).

(ii) Client welfare (insurance) scheme

The client welfare scheme was introduced by SAT as a form of insurance to cover default risk in case of the death or severe illness of a participant who has an outstanding loan to settle. Prior to that, such debts were paid off by members of the Trust Banks, who had jointly and severally guaranteed such loans. As shown in Table 2, the loan amount was positive and very significant at the 1 percent level (0.02; p=0.000). Similar to the savings deposits, the premium paid towards the client welfare scheme was also positively associated with the loan amount and this is confirmed by the high R-squared of almost 100 percent. Thus, for every 100 cedis increase in the loan amount, contribution to the client welfare scheme increased by two cedis, or 2 percent. The length of time a client had been with SAT was, however, not significant in terms of contribution to the scheme (5.97; p=576). With regard to the individual characteristics, only age of the respondents was significant at the 5 percent level (119.07; p=016).

Human capital
Human capital refers to the labour available to the households in terms of its level of education, skills and health status. It is the chief asset possessed by poor people, and can be increased by investment in education and training, as well as skills acquired through pursuing one or more occupations (see Carney, 1998; Ellis, 2000). The health status of people determines their quality of life, level of productivity and longevity. Education, on the other hand, has been identified as the most important tool in providing people with the basic knowledge, skills and the competencies to improve their quality of life at all levels of development. Respondents were asked whether they contribute towards the healthcare of their household members and the education of their children, and how much.

(i) Expenditure on healthcare

Table 3 shows that individual characteristics which were significant were marital status (-128,598.21; p=0.000) and the level of education (13,753.68; p=0.017). For programme characteristics, only the loan amount recorded a positive coefficient and was significant (0.50; p=000). The programme variable which was not significant was the length of time with the programme (1,708.67; p=0.262). The results indicate that healthcare seems to be affordable to a majority of Ghanaians, including clients, with the introduction of the National Health Insurance Scheme (NHIS) by the government.

Table 3. Human capital (amount in Ghana cedis)

Dependent variable: Independent variables	Healthcare		Children's education	
Individual characteristics				
Constant	259,531.05	(141,584.67)	-1,028,898.00**	(440,214.04)
Age	-5,651.80	(7,047.96)	29,404.46	(21,913.47)
Age^2	85.40	(80.41)	-237.10	(250.01)
Marital status	128,598.20***	(30,429.80)	593,998.73***	(94,612.11)
Level of education	13,753.68**	(5,754.76)	116,063.90***	(17,870.88)
Household size	1,007.49	(6,644.02)	230,167.51***	(20,657.53)
Programme variables				
No. of months with SAT	1,708.67	(1,522.81)	-162.37	(4,734.72)
No. of months with SAT^2	-44.16**	(17.34)	-14.72	(53.92)
Current loan amount	.05***	(.01)	.05**	(.02)
Observations = 547	R^2 = 0.24		R^2=0.21	

*p< 0.10; **p< 0.05; ***p< 0.01
Source: Survey data (2007).

(ii) Expenditure on children's education

Ghanaians place high value on education and invest in their children's education. Most people prefer sending their children to private schools at very high costs compared to public schools, in order for such children to get a 'better' education. Ghana currently has a policy of free compulsory universal basic education (FCUBE). Beyond the basic school level (i.e. primary school plus three-year junior secondary school education) tuition fees must be paid, in addition to other expenses, such as uniforms, footwear, food, transportation cost, books, and special levies towards furniture replacement, computer acquisition and school buildings. The results in

Table 3 indicate that, with the exception of age, all the coefficients of the individual characteristics are positive and significant. Similar to the programme effects on healthcare, loan amount is positive and significant whilst the length of time is not significant. For every 100 cedis increase in the loan amount, expenditure on children's education increased by five cedis. On average, established clients' contribution towards their children's education per annum stood at 777,025 cedis, whilst new clients contributed 558,550 cedis during the same period. Most established clients were also in a better position to sponsor their children to private schools than new clients. Compared to public schools, expenditure on children in private schools is almost four times or more in most cases.

Physical capital
Poverty is examined in terms of household ownership of durable assets; this can be seen as an alternative measure of poverty to other measures such as consumption-based welfare. One of the merits of these asset-based indicators is the ease with which they can be measured compared to indicators based on consumption expenditures. An increase in the number of durable assets purchased for the household is regarded as a potentially strong indicator of the effect of a microfinance programme on clients. It serves as a proxy measure of the wealth of a household (Barnes, 1996). Respondents were asked about purchases they made solely or jointly with their partners. The results reveal that participation in SAT's microfinance programme is strongly associated with increased expenditure by clients for the acquisition of household durable assets. These acquisitions indicate an increase in the asset base of the household. Generally, established clients of SAT acquired more household durable assets than new clients.

(i) Expenditure on sewing machine

Table 4 shows that being a member in the programme for a longer period is not significant (62.24; p=0.833). In terms of contribution towards the acquisition of a sewing machine, there was no difference between established clients and the new clients. This situation is not surprising within the Ghanaian context, since most women normally acquire this particular asset as a productive asset to generate income for living, or to use to mend torn clothes and dresses within the household. Sometimes they are reserved for their daughters to be used in learning sewing as a trade. Even though the effect of the loan amount was significant, its coefficient was negative (-0.003; p=0.020), signifying that though established clients benefited from larger loan amounts, profits generated from business activities were often not utilised for the acquisition of sewing machines. The only individual characteristic which was significant at the 5 percent level with a positive coefficient was the level of education (2,468.92; p=0.027).

Table 4. Physical capital (amount spent in Ghana cedis)

Dependent variable: Independent variables	Sewing machine		Refrigerator	
Individual characteristics				
Constant	-24,901.05	(27,821.28)	95,820.55	(159,233.67)
Age	2,726.10	(1,363.42)	,361.19	(7,926.51)
Age^2	-32.41	(15.51)	-88.30	(90.43)
Marital status	-63.45	(2,346.77)	121,111.53***	(34,222.97)
Level of education	2,468.92**	(1,115.70)	23,936.14***	(6,464.23)
Household size	-25.26	(1,225.66)	-19,766.25	(7,472.21)
Programme variables				
No. of months with SAT	62.24	(295.40)	3,305.45	(1,712.64)
No. of months with SAT^2	1.42	(3.37)	24.81	(19.50)
Current loan amount	-.01**	(.00)	.05***	(.01)
Observations = 547	$R^2 = 0.15$		$R^2 = 0.17$	

*p< 0.10; **p< 0.05; ***p< 0.01
Source: Survey data

(ii) Expenditure on refrigerator

The ownership of a refrigerator is associated with a better standard of living. As shown in Table 4, individual and programme characteristics which played significant roles in the acquisition of refrigerators were marital status (129,111.57; p=0.000), the level of education (-27,869.69; p=0.000), size of respondent household (-19,766.25; p=0.008) and loan amount (0.05; p=0.000). It is not surprising that people with high levels of education and who are married tend to be more economical and, therefore, acquire items such as refrigerators, in order to save money through purchases of goods in bulk for storage. Loan amount also played an important role in assisting participants of the programme to contribute towards the acquisition of refrigerators to improve their living standards. However, being a member of SAT for a longer period was not a significant contributory factor towards the acquisition of refrigerators (-3,305.45; p=0.054). Thus, there was not much difference between established and new clients of SAT with respect to their contribution towards the acquisition of refrigerators for their households.

Discussions

The analyses of the data indicate that participants reaped significant benefits through participation in the programme. Overall, the results showed appreciable improvements in financial, human and physical assets. Participants managed to diversify and accumulate assets, which provide protection against risk and vulnerability for poor people. These findings are

underpinned by both external and internal factors and therefore will be discussed within those contexts. The findings are further compared and contrasted with other studies, both within Africa and in developing countries elsewhere, for consistency or otherwise.

The lives of micro- and small-scale entrepreneurs in Ghana are influenced by factors internal and external to their households and businesses. Through participation in microfinance programmes, poor people and micro-entrepreneurs benefit from small loans and acquire basic skills in business management and other forms of training. These benefits increase the choices available to them and, therefore, participation in such programmes provides certain advantages to clients, in terms of the growth and stability of their businesses, improved household wellbeing and greater empowerment. The assessment sought to identify those changes associated with programme participation, taking into account that positive changes may occur without programme participation. In this regard, evidence of positive linkages was seen as an indication that programme participation increases the probability of their occurring, rather than signalling that they will always occur (Barnes et al., 2001a, 2001b).

The findings are consistent with researchers who argue that programmes that have attained financial sustainability provide the most impacts on participants' standards of living (Hulme and Mosley, 1996). This implies non-interference by government in the determination of interest rates by MFIs to ensure full cost recovery, and the need to set up special programmes to cater for the poorest who cannot afford such rates of interest (Matin and Hulme, 2003; Amendariz de Aghion, 2005; Hashemi, 2006).

The significant effects of the programme on clients could also be explained by the fact that SAT has designed the right products and services to meet the needs of its clients in the form of savings, insurance and credit, as well as skills training. As argued by Sharif (1997), the challenge for MFIs is to devise the right type of products and services for the right group of poor people. Extremely poor households are more inclined to be in need of survival measures, which include voluntary savings mechanisms and emergency consumption credit facilities, whilst moderately poor households need protectional measures that offer relatively low-risk income-generation activities and other services, such as education and training for the building of their debt capacity. On the other hand, the vulnerable non-poor, constituted by small and medium entrepreneurs, require promotional measures, which include primarily credit, savings and insurance for income generation, as well as support for sharing some of the risks of technical innovation (Hashemi, 2001 and 2006). However, to ensure that the programme reaches the rural poor engaged in farming and other productive activities, there is a need to develop products such as micro-leasing, crop insurance and deposit services, to cater for farmers and others engaged in productive ventures (Wenner and Chalmers, 2001)

Participation in the programme reduced clients' vulnerability to crises such as critical illness and sale of assets to repay debts, by subscribing to the client welfare scheme (Ledgerwood, 1999).

It also enabled them to cultivate the savings habit. The importance of savings cannot be over-emphasised. As argued by Robinson (2001: 21):

> deposit services are more valuable than credit for poorer households. With savings, not only can households build up assets to use as collateral, but they can also better smooth seasonal consumption needs, finance major expenditures such as school fees, self-insure against major shocks, and self-finance investments.

The study also found a negative relationship between the period of participation in the programme (i.e. for clients who have been with the programme for over seven years) and most of the outcome variables. This situation could be attributed to one of these reasons:

(i)   the diminishing marginal rate of loan increment for established clients;
(ii)   the diminishing marginal returns on loan invested in the project over time; and, finally,
(iii)   the fact that the MFI might place a cap on the amount of loan granted to a participant due to the absence of collateral.

In each case, the effect of programme on the outcome variables will be minimal (see Hossain, 1988, Coleman, 1999). This situation calls for collaboration and networking among the financial service providers, governments and other players to support graduation to and from the microfinance programme, in order to ensure that clients benefit from the full effects of participation, including the absorption of some households on cash transfer and other social protection programmes into microfinance programmes (Matin, 2002; Hashemi, 2006).

The findings are also consistent with earlier studies in Africa, which argue that participation in such programmes results in enhancement of human capital such as children's education and health status (MkNelly and Dunford, 1998; Mosley and Rock, 2004). Moreover, Barnes et al. (2001a, 2001b) also argued that, in general, repeat clients have a significantly higher valued assets base of consumer durables than new clients. It must be noted that the acquisition of household durables not only indicates a higher standard of living, but also represents a store of wealth that can be rented out or sold in case of extreme financial crisis (see Sherraden, 1991; Barnes, 1996).

A striking feature of the study is the strong correlation between one's level of education and the acquisition of assets. Highly educated members normally serve as executive members of the respective groups and, therefore, benefit from larger loan amounts than their counterparts for the assumed responsibility. As noted by Hossain (1988) and Coleman (1999), well educated participants are granted larger loan amounts and are, therefore, in a position to generate higher returns from their investment to purchase these items. Again, a higher level of education is often associated with a higher standard of living and since these durable assets are proxies for high standards of living, it is not surprising that participants with higher levels of education tend to

accumulate more of these assets than their illiterate counterparts. This implies intensification of non-formal education programmes to cover a larger proportion of illiterate poor people, especially in the rural areas, to ensure full realisation of the programme effects on participants.

5. Conclusion

The main objective of this paper is to assess the effect of SAT's microfinance programme on participants in terms of asset accumulation. By using a distinct survey design that controlled for programme placement bias as well as an empirical model which controls for the bias of self-selection into programmes, the paper observes that, through participation in the programme, established clients of SAT diversified and accumulated various assets in the form of financial, human and physical capital. Thus, participation in the programme significantly improved clients' living standards through asset accumulation.

Stakeholders in the microfinance sector have important roles to play in the dissemination of microfinance as a strategy for poverty reduction. We have outlined below some lessons learnt from the study and suggested policy directions for future actions in the microfinance sector.

- *Insurance products for the poor*

Practitioners in the microfinance industry must understand that cash flow requirements are not the only burden that clients bear. Funerals for family members, as well as maintaining health status of household members and providing education for children, also place a heavy burden on clients and threaten their ability to fulfill loan repayment obligations. To address this burden, microfinance providers could collaborate with insurance companies to put in place affordable insurance products that will cover funeral costs for clients.

- *Graduation of clients to join formal institutions*

To realise the full effect of their operations on clients, microfinance providers must support and recommend their 'matured' clients to join formal institutions, in order to benefit from larger loan amounts. Data on such clients and those who voluntarily exit the programme must be kept and used by the institution and researchers for impact studies. Similarly, extremely poor clients – who are being trained under various programmes, including beneficiaries of cash transfers, to equip them with skills in entrepreneurship and business management, but who lack access to credit – could be absorbed by MFIs as clients.

- *Financial sustainability and impacts*

It has been observed that programmes that have achieved higher levels of financial sustainability make larger impacts on changes in the borrowers' standard of living. This goes to buttress the argument that pursuing full financial sustainability is the surest way to deliver the most benefits to participants. This strengthens the argument that MFIs must be allowed to charge market interest rates to remain profitable and sustainable without any governmental interference. Disbursement of micro-loans set up by governments and donors must also be the sole responsibility of the private sector in order to ensure their sustainability and, therefore, outreach.

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