



RESEARCH ARTICLE

DETERMINANTS OF LOAN REPAYMENT IN MICRO CREDIT, THE CASE OF GHANAIAN-DANISH COMMUNITY DEVELOPMENT PROGRAMME (GDPC) IN SAVELUGU/NANTONG DISTRICT OF NORTHERN REGION OF GHANA

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ABSTRACT

This paper discusses the major Determinants of loan Repayments of GDPC micro credit scheme. Levels of poverty in the northern part of Ghana have been so alarming therefore many non-governmental organizations have intervened to ameliorate the situation. Most of these non-governmental efforts at alleviating poverty are directed at micro credit to the poor and vulnerable in society. The repayment performance of credits granted by the microfinance institutions determines the sustainability or otherwise of such programmes. Structured questionnaire was used to elicit primary information from respondents (microcredit beneficiaries). Secondary data was obtained from financial reports of the microfinance institution via the loan officers. Linear regression model was used to evaluate the major determinants of loan repayment under the micro credit scheme. The study reveals that interest payments on loans and values of output which capture the effect of changes in income on loan repayment were significant at 5% significance level. Thus, increase in income has positive impact on loan repayment. On the other hand, levels of education of micro credit beneficiaries have no significant effect on loan repayment because of the solidarity group methodology applied by the microfinance institution. Though illiterates, microfinance beneficiaries record high loan repayment in contravention of the a priori expectation.

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INTRODUCTION

Microfinance has evolved as an economic development approach intended to benefit low-income women and men. Microfinance refers to the provision of financial services to low-income clients, including the self-employed (Ledgerwood, 1998). Over the years, African governments in particular have become aware of the negative effects, which high interest rates and the devaluation of currency have had on business establishments, particularly the small and medium scale enterprises (SMEs). In view of that, the use of the rural banking scheme (started in 1976) and micro credit programmes as sources of credit to SMEs was introduced in Ghana and continue to be encouraged. Microfinance arose in the 1980s as a response to doubts and research findings about State delivery of subsidized credit to poor farmers. In the 1990s, government agencies dominated the provision of productive credit to those with no previous access to credit facilities and who had been forced to pay usurious interest rates or were subject to rent seeking behavior of private money lenders. Governments and international donors saw that the poor required cheap credit

and identified microfinance as a way of promoting agricultural production by small landholders. In addition to providing subsidized agricultural credits, donors set up credit unions to focus mainly on savings mobilization in rural areas in an attempt to "teach poor farmers how to save" (Ledgerwood, 1998).

Microfinance institutions consist of organizations and agents that engage in relatively small financial transactions using specialized, character-based methodologies to serve low-income households, small-scale farmers and others who lack access to the traditional banking system. These microfinance institutions may be informal, semi-formal (i.e legally registered but not under the Central Bank regulations) or formal financial intermediaries (Steel 1998). The range of financial products commonly provided by micro credit institutions to clients includes credit, savings and guarantee schemes (insurance). In addition, some micro credit institutions provide enterprise development services (non-financial) such as skills training and basic business training comprising book keeping, marketing, and production including social services such as health care, nutrition, personal hygiene, education and literacy training, among others. Freedom from Hunger, an international NON-governmental Organisation (NGO) believes that micro credits are unlikely to relieve most of the burdens of poverty without

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important economic, social, medical, and nutritional changes in participants' behaviour. The basic premise of the organization is that very poor people especially women in rural areas face tremendous obstacles to becoming good financial services clients. The reasons include; social isolation, lack of self-confidence, limited entrepreneurial experience and major health and nutritional problems. In view of the reasons listed above, those poor people need educational services in addition to credit assistance that specifically address these obstacles and that provide a framework for solutions (Freedom from Hunger, 1996). Freedom from Hunger therefore uses the "credit with education" approach to extend group-based credit to the poor. Poverty reduction has been identified as the overarching long-term goal for most of the development intervention in Africa, and more recently crystallized in the Millennium Development Goals (MDGs) and the New Partnership for Africa's Development (NEPAD).

Several factors have led to heightening interest in microfinance and micro enterprise development in promoting economic growth with greater equity. There has been a growth in the recognition of the importance of empowering all people (particularly women) by increasing their access to all the factors of production including credit. Micro enterprise development particularly in rural areas is perceived as being a participatory strategy that can potentially reduce poverty by including the excluded in the development process. According to Yunus (1998) credit is a human right and that everyone has the legitimate right to borrow money or other forms of assistance for improving his/her livelihood if only the loan conditions are satisfied. Yunus, (1998) reiterated the point that access of women to credit not only increases income but also improves household food nutrition and health thereby ensuring right to live with dignity for children and themselves. Microfinance is seen as efforts to counter the adverse effects of credit markets failure that result in fragmentation and the exclusion of many potential borrowers from financial market.

### Statement of problem

During the 1970s and 1980s, studies conducted by the United Nations Development Programme (UNDP) revealed the alarming degree of poverty and the increasing inability of people especially rural population to meet their basic needs. Income generating projects for poor people became the chief strategy of NGOs, governments and donor agencies. The conventional banks avoid banking with the poor for a plethora of reason including high transactions costs and risk involved, lack of effective collateral from the poor and difficulty of loan supervision. Loan requirements of SMEs are small, so the costs of processing the loans tend to be high relative to the loan amounts. It is also difficult for financial institutions to obtain the information necessary to assess the risks of new unproven ventures. This is partly due to the fact that most microfinance clients are often too far, and it takes too long to visit their farms or businesses. Nonetheless, local institutions must be built and nurtured, and the skills and confidence of clients developed to serve as mechanisms to bridge the gaps created by poverty, illiteracy, gender, and remoteness.

Additionally, micro and small-scale businesses lack collateral security and the probability of failure for new small ventures are considered to be high. A study by the International Fund for agricultural Development (IFAD) has confirmed that complicated loan procedures and paper work, combined with a lack of accounting experience, limit poor people's access to formal sources of credit. Collateral requirements, complex procedures, poor communication and inadequate banking network are all important factors which restrict the availability of institutional credit to the majority of households in northern region, Nsiah-Gyabah *et al.* (1992).

Due to the inability of micro and small-scale businesses to obtain credit from the conventional banks, Decree No 46 of 1992 entitled community Banks Decree, 1992, was an important government policy directed at creating a new source of credit easily accessible to the micro and small-scale businesses. They are supposed to serve as catalysts in promoting the saving habits of the majority of low-income earners within the community and thereby enhance the savings mobilization and capital formation potentials of the country. On the Grammen Bank, probably the best known of such schemes, it has been noted that a basic assumption of the program is that the lack of capital was the major constraint on the poor. Thus, if they were provided with the capital, they could generate self-employment and improve their living standards. GDCP is expected to play an important role in alleviating poverty at least in its catchment areas by bridging the credit gap created by the traditional banking institutions.

The difficult economic situation in the twenty first century is still not very different. More than 1.5 billion people still live in poverty and the per capita income in the World least developed countries average \$410, UNDP (2002). More than 40% of Africa's 750 million people live below the internationally recognized poverty line of \$1 a day and the evidence is even more worrying for Sub-Saharan Africa (UNDP, 2001). In Ghana, five out of ten (10) regions had more than 40% of their population living in poverty in 1999 (Republic of Ghana 2002/04). The worst affected being the three (3) Northern savanna regions (The Upper East, Upper West, and Northern regions). Nine (9) out of ten (10) in Upper East, eight (8) out of ten (10) in Upper West, seven (7) out of ten (10) in Northern region and five (5) out to ten (10) in central and Eastern regions were classified as poor in 1999 (Republic of Ghana 2002/04). The level of poverty at national level which stands at 43% (GSS-4) is lower compared to the three northern regions but it is quite high as compared to other developing and developed countries around the world. The extreme poverty in the northern part of the country threatens household food and nutrition security.

### Poverty alleviation interventions

It has become clear that macroeconomic openness and liberalization do not automatically benefit the poor. These development crises have led some development practitioners to recommend 'participatory' poverty reduction strategies which identify the 'client' and not the 'policy' as an important stepping stone in addressing the social, economic and political needs of the poor. The role of microfinance services in the

development of micro and small- scale industries and for that matter poverty reduction in Ghana cannot be over stressed. A large number of summits have been organized at international levels to mobilise support, both financially and technically to confront the age long problem of poverty and deprivation. In February 1997, representatives from Non-Governmental Organisations [NGOs] and donor agencies around the globe convened for the first micro credit summit as a way out of poverty. At the summit, a goal was made to provide 100 million of the world's poorest families with credit for self-employment and other financial services by the year 2005. The micro credit summit Declaration (1997) states, 'micro credit programmes extend small loans to poor people for self-employment projects that generate income, allowing them to care for themselves and their families'. The 1997 micro credit summit in Washington, D.C for the first time brought worldwide attention for micro credit programmes by convening public, private, and non-profit organizations to discuss micro credit as a tool in the fight against poverty. The summit offered seven main points in support of micro credit programmes. The first is that the poor are a good credit risk and have demonstrated high repayment rates. Second, micro credit programmes can achieve long-term sustainability as profit –generating organization; several organizations have already done so. Third, micro credit programmes are easily replicable. Fourth, they can grow to serve a very large number of people. Fifth, micro credits help borrowers work their way out of poverty by offering a permanent revenue source that decreases reliance on subsidies. The sixth point is that programmes can promote savings and asset accumulation. Finally, micro credit programmes become stepping-stones for greater social developments (e.g. advancement of women's right). Since February, 1997 to date many more of such summits have been organized to draw the attention of the whole world to the issues of poverty and the way forward through coordinated efforts. The latest micro credit summit was held in the Philippines in October 2013 under the theme ‘‘ Partnership against poverty: Government, Business, Finance and civil society’’.

Almost all the micro credit summits underscore the importance of improving access to credit for small rural or urban producers, landless farmers and other people with low levels of income. Governments were called upon to review national legal, regulatory and institutional framework that restrict the access of people living in poverty, especially women, to credit, providing incentives for improving access to and strengthening the capacity of organized credit systems to deliver credit and related services to people living in poverty and vulnerable groups, and to expand financial networks in promoting attractive opportunities for savings and ensuing equitable access to credit at the local levels.

Although public and private sponsorship of small-scale entrepreneur activities have been documented in the development literature for well over half a century, it was only after the report cases of the Grameen Bank in Bangladesh that micro enterprise development programmes began to gain international support. With this international support emerging, Non –governmental organization adopted micro enterprise financing as a tool for poverty reduction in rural areas to

supplement the efforts of rural banks. One of such NGOs is the Ghanaian- Danish community development programme (GDCP) a local NGO operating in the northern region. The establishment of the Ghana Microfinance Network (GHAMFIN) is a manifestation of the new institutional support for microfinance. A comprehensive study of successful programmes for reaching the poor carried out by Christen, Rhyme and Vogel (2004) suggest that techniques for lending out to small borrowers with a view to minimizing risk have seen significant improvement in the last decade. It is possible to reach small borrowers cost-effectively, taking into account existing risk profiles of such borrowers.

Accessibility of micro credit services by the poor can contribute to the creation of self-employment; increase income and general improvement in the socio-economic conditions of the poor. So important is credit in any agricultural development, that several countries have considered it in their development programme. Microfinance institutions including Ghanaian-Danish Community Development Programme are perceived as being more capable of reaching the poor with financial services because of their understanding of the felt needs of the rural population and women in particular.

Generally, most micro credit programs and specifically micro-credit targeted at women, aim to reduce poverty for women and also empower them by enabling them to have their own income and capital. However there is very little empirical evidence that micro-credit will directly empower women. During the 1990s micro-credit was seen a successful amongst female clients because of high repayment rates and savings capacities. Many NGOs and donors were dictated by gender policies which specifically called for increased micro-credit outreach to women. These micro-credit programs did not limit their desired impact to poverty reduction only but extended it to achieve women's empowerment in terms of self confidence and leadership skills, Khanker (1998)

### **Data Sources**

Data was solicited from both primary and secondary sources. Primary data was obtained from GDCP micro credit beneficiaries within the catchment area through a structured questionnaire. Secondary data was obtained from staff of GDCP in the study area.

### **Sampling**

First and foremost a reconnaissance survey of the area of study was undertaken. Loan officials of GDCP in the study area were interviewed. Request was made for a list of districts and villages covered by the micro credit scheme following an evaluation of a local community credit needs. Simple random sampling was used to select sample of micro credit beneficiaries of GDCP. In all, one hundred (100) GDCP microfinance beneficiaries were interviewed. To really examine whether participation in a microfinance programme leads to improvements in socio-economic welfare of beneficiaries households, a control group of sixty (60) non-micro credit clients were interviewed.

### Determinants of repayment in micro credit

Assessment of the achievements of microfinance programmes is centred on repayment rates. Loan repayment measures the amount of payments received by a micro credit institution with respect to the amount due. It is useful for projecting future cash flow because it indicates what percentage of the amount due is expected to be received, based on past experiences. According to Njoku and Obasi (1998) cited in Musah (2010), a number of factors influence the repayment of micro credit, prominent among them are: amount of money borrowed, interest payable on loan, household size of borrowers, educational status of borrowers, borrowers occupation, duration of loan, amount of loan outstanding, output levels of borrowers and asset ownership of borrowers. They indicated that the positive correlation between loan default and the amounts borrowed stem from the fact that, when farmers (enterprises) are given loans in excess of normal enterprise requirements, they tend to divert the excess to unproductive ventures such as funerals, multiple marriages (among polygamous families), and other luxurious ways of life which result to inability to repay the credit. Similarly, high interest rate, which is a cost, reduces loan repayment. According to the authors, household size was however negatively related to loan default. This was contrary to a priori expectation of using loans to feed so many dependants of the borrower. The authors did not find a statistically significant effect of educational status of the borrowers. Borrower's occupation and duration of loan repayment were not also statistically significant.

Njoku and Odii (1999) also applied the multiple regression model to estimate the relationship between loan default among micro credit institutions and variables such as amount borrowed, loan outstanding, interest charge on loan, household size, formal education of borrowers, work experience of borrowers, borrowers farm sizes, output levels of borrowers, value asset ownership of borrowers and duration of loans. Their findings were that loan default was negatively affected by loan volume, household size, interest charge on loans and level of education of borrowers. On the contrary, work experience, output levels of borrowers, duration of loan and values of assets were positively correlated to loan default.

A study of group lending in Burkina Faso by Paxton (1996b) examined the influences of group dynamics on loan repayment in 140 lending groups of Sahel Action. In that study, a number of variables depicted positive influence on successful loan repayment. These variables included group solidarity (helping a group member in need), borrowers level of output and location of borrowers (urban out-performed rural). The group solidarity argument reinforces the success story of the Grameen Banks credit-delivery system. It is reported that the regular group meetings in the open reinforce a culture of discipline, routine payments and accountability. Other micro credit institutions such as Bank Rakyat of Indonesia rely on the group solidarity in place of physical collateral security.

### Loan Recovery Rate

Loan recovery rate is measured as:  $\frac{AR}{AD} * 100 \%$

Where AR = Amount of money Repaid

AD = Amount of money Due for repayment

Data from field officials of GDCP on total amounts of monies disbursed, total amount of money due for repayment and total amount of money recovered (sampled beneficiaries) within the period was used to compute loan recovery rate. For the purpose of this study, all loans in non-cash (tools, insecticides, fertilizer etc) were converted to money, using the prevailing market prices of the items at the time of the loan. Percentage was employed to assess loan recovery rate.

### Specification of Model for Measurement of Determinants of Loan Repayment

The Ordinary Least Square (OLS) method of estimation was employed to assess the determinants of loan repayment.

The general model is,

$$Y = f(z_1 \dots z_n u)$$

Where

Y = Dependent variable (loan repayment)

Z<sub>1</sub>, Z<sub>2</sub>, ..., Z<sub>n</sub> = Explanatory variables

U = the error term.

The specific model is,

$$RPT = b_0 + b_1 AMB + b_2 INTPD + b_3 GEND + b_4 H/HSZ + b_5 VALOT + b_6 VALASS + b_7 TR + b_8 FASZ + U.$$

Where

RPT = Loan Repayment (cedis)

AMB = Loan amount borrowed (cedis)

INTPD = Interest charge on loan

GEND = Borrowers Gender (male = 1, female = 0)

H/HSZ = Household size (number of dependants)

VALOT = Value of Output (cedis)

VALASS = Value of Borrowers Assets (cedis)

TR = Training (years of working experience) and

FASZ = Borrowers Farm size (hectars)

### FINDINGS AND DISCUSSION

A priori expectations were that loan amount borrowed, household size and interest charged on loans would exert negative influence on loan repayment.

**Table 1. Estimates of the Determinants of Loan Repayment (Linear Regression Model)**

Dependant Variable 1: Loan repayment Method: Least squares Included Observations: 140				
Variable	Coefficient	Std. Error	t. Statistic	Prob.
EDULEV	-0.015125	0.013626	-1.109981	0.2690
GENDER	0.132329	0.138684	0.954179	0.3417
INTPD	0.20E-07	8.48E-08	2.597167	0.0104
VALASS	2.01E-08	5.39E-08	0.372234	0.7103
VALOT	9.96E-08	5.83E-08	1.706997	0.0901
C	13.27102	0.051658	256.9034	0.0000
R-squared	0.097949	Mean dependent	13.35701	
Adjusted R-squared	0.064290	S. D. dependent var.	0.241635	
S. E of regression	0.233738	Akaike info creation	-0.027317	
Sum squared resid	7.320905	Schwarz criterion	0.098753	
Log likelihood	7.912206	F. statistic	2.910063	

Source; field survey, 2013

On the other hand, level of education, training (work experience), farmsize, value of output and value of borrowers' assets were expected to exert positive effect on loan repayment (Njoku and Odii 1999).

The results of the determinants of loan repayment using a linear regression model are presented in Table 1.

By the probability values of the coefficients, some of the variables in the model did not conform to the a priori expectations. First and foremost, the level of education variable was not statistically significant coupled with the fact that it did not show the expected positive sign. This observation contrasts sharply with general trends in loan repayment (Njoku and Obasi 1998, Njoku and Odii, 1999), however the non-conformity to the a priori expectation observed in this study is not surprising because over 95% of microfinance clients interviewed were illiterates, so level of education was not a crucial factor in this regard. Though illiterates, the solidarity group methodology allowed for high loan repayment. The non-conformity of the level of education to the a priori expectation could be due to limited variation in the educational level of the people covered in this study. The interest payment variable though significant at 5% significance level did not show the expected sign. It is not the first of its kind as Robinson (1998) observed that microcredit borrowers have shown that they will pay the full costs that enable financing institutions to achieve full cost recovery and to earn profit if the products and services offered to them are appropriate for their needs. This scenario also explains the opposite side of the coin where most subsidized credit recorded very poor repayment rates (Robinson1998). The value of output variable, which captures the effect of an increase in income, was found to be positive and significant at the 5% level of significance. This implies that increases in income have positive impact on loan repayment. Thus, at higher level of income loan repayment is high.

### Loan Recovery Performance

Loan recovery to a greater extent determines the sustainability or otherwise of a micro credit schemes. Most micro credit schemes expect loan beneficiaries to make good their indebtedness so that client coverage could widen.

From Table 1 below, the default rates appear to be low or nearly non-existent because of the strategies employed by GDCP, particularly the solidarity group approach, efficient loan monitoring systems, and the mandatory savings of the borrowers.

The loan recovery performance of GDCP is summarized in tables 1a and 1b below;

**Table 1a (Group Loans)**

Period (year)	Loan Repayment Rate (%)
2003	98
2004	97.5
2005	96
2006	97
2007	97
2008	96.5
2009	96
2010	96
2011	98
2012	97

**Table 1b (Individual Loans)**

Period (year)	Loan Repayment Rate (%)
2003	78
2004	69
2005	81
2006	79
2007	83
2008	82
2009	80
2010	81.5
2011	85
2012	83

GDCP group-based loans include those for Shea butter processing, rice and groundnut oil extraction. With the group loans, no member of a group can move to the next borrowing cycle until all members of that group have repaid their respective loans, hence the high repayment rates. Each member's ability to borrow and the timing of her/his loans are a function of the entire groups conduct and credit worthiness. The group-based loans usually experience a splendid repayment performance of between 96% and 100% as shown in Table 1a.

In contrast to the group-based loans, the individual loans comprising non-cash loans of bulls, plough, bicycles, seeds and fertilizers, and Dagbon Ninneesim Karongzong (DNK) loans record high default rate. From table 1b, in 2004, the individual loans recorded a default rate of as high as 31%. This result is consistent with Paxton (1996) observation that group solidarity (helping a group member in need) has positive influence on successful loan repayment.

To minimise the default rate, GDCP adopts criteria in the client selection. Potential clientele must meet the following conditions:

- The formation of a credit group
- The credit group must consist of individual members who owns and operates business that produces at least weekly cash flows.
- The individuals members must live below an average of GHC1a day
- The entire group guarantees the loan made to each member of the group.
- The use of an interest rate that supports the administrative costs of the micro credit institution.
- A mandatory periodic savings requirements and a mandatory weekly/monthly group meeting for loan repayment.
- Using the loans for the intended proposes.
- Loan beneficiaries are required to repay the loan in flat periodic instalments. GDCP clients have a grace-period of three months after which the total loan is spread evenly over nine (9) months..
- Clients are encouraged to keep a specified amount as mandatory savings (loan insurance fund). This mandatory savings is withdraw able only if all loans of all members of the group have been completely repaid (Hulme 1995). GDCP also encourage clients to add voluntary savings to this payment, and each client can access their voluntary savings as needed.
- Groups are formed based on economic activities, eg Shea butter processing, farming, groundnut oil processing etc.

It is important to note that due to limited resources on the part of GDCP in meeting the loan demands of all applicants some individuals may possess the above mentioned socio-economic characteristics without benefiting from any of the micro credit facilities of the organisation.

### **Conclusion**

The study reveals that interest charges on loans do not significantly prohibit loan beneficiaries from accessing credit from microfinance institutions especially when such credit products are carefully tailored to meet their needs. Loan repayment is influenced by changes in income level arising from the usage of the credit facility (value of output). The group lending methodology of GDCP allows group members to impose penalties on individuals who default in payment. Staggered disbursement to group members is highly dependent on the repayment performance of the group members.

The good performance of loan repayment of GDCP in successive years could also be attributable to the efficient loan monitoring system in place and the screening out of bad risks as loan sizes increase sequentially.

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