Correlates and Constraints of Effective Agricultural Loan Repayment in Cameroon

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Abstract *This study has been carried out with the objective of examining the factors influencing effective agricultural loan repayment in MFIs and constraints associated with agricultural loan acquisition in West region, Cameroon. From primary surveyed data, a probit model was used to analyze the result. We observed that farm production, training, size of farmland; male household head, married head, interest rate and the loan duration are strongly correlating with agricultural loan repayment. Inadequate agricultural funds, much expenditure on farm competition and improper interference of the third party in the decision of loan approval are the constraints associated with agricultural loan. We suggest that, the decision makers should create more specialized structures in charge of agricultural loan as well as reduce the rate of interest. This is a wise step, towards food security and increase family welfare and improved job market.*

Key Words: Correlates, Constraints, Effective Agricultural Loan, Repayment, Cameroon

Introduction

Credit is an important engine in fostering agricultural development, the reason why many governments and donors spend billions of dollars supporting credit activities in low-income countries. Steady agricultural development depends upon the continuous increase in farm investment. Most of the time, especially during the take-off stage of agricultural development, heavy investment cannot be made by the farmers out of their own funds because of their present level of incomes. Moreover, there exist no significant margins of income, which can be channel into the agricultural sector to undertake developmental activities. Thus, the use of credit has been envisaged as one way of promoting technology transfer, while the use of recommended farm inputs is regarded as a key to agricultural development (Tomoya and Takashi, 2010).

However, the lack of financial resources is one of the major problems facing poor households. Formal financial institutions are inefficient and inaccessible in providing credit facilities to the poor (Assefa, 2002). Thus, developing an alternative mechanism for providing financial services to the poor households became critical. Poor loan repayment in developing countries has become a major problem in agricultural credit administration, especially to smallholders who have limited collateral capability (Oke et al, 2007).

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Delivering productive loan to the rural poor has been a passionate pursued but problem undertaking. Providing low cost, efficient credit services and recovering a high percentage of loans granted are the ideal aims in rural finance (Tomoya and Takashi, 2010). This is because low repayment performance discourages the lender to promote and extend credit to the large and fragmented farm households. It is important to note that today microfinance is attracting a lot of interest from several investors, given the complexity of the banking sector in terms of capital requirements among other things and the high cost of banking services: such as credit, savings and health insurance that was reserve only for the rich (Godquin, 2004).

In Cameroon, microfinance presently has members among which a good proportion is farmers. The microfinance has gone a long way to support the population in setting on business and other related activities through financial means but proportion of the defaulters have been on a steady rise. Loans taken from microfinance vary from region to region, or sector to sector. But most credits of developing countries and Cameroon in particular were found to share one common characteristic: suffer from a considerable amount of default rate (the amount of loans not collected on the current and past due loans for the reference period (Kashuliza, 1993)). Improving repayment rates helps to reduce the dependency of the MFIs on subsidies, which would improve sustainability. It's also argued that high repayment rates reflect the adequacy of MFIs' services to clients' needs (Godquin, 2004). In order to maintain sustainability of MFIs, one important thing is to identify the socio-economic and institutional factors, which significantly affect the performance of loan repayment rates from different perspective.

There are many socio-economic and institutional factors influencing loan repayment rates in the MFIs. The main factors from the lender side are high frequency of collections, tight controls, and a good management of information system, loan officer incentives and good follow-up (Abafita, 2003). In addition, the size and maturity of loan, interest rate charged by the lender and timing of loan disbursement have an impact on the repayment rates (Oke et al., 2007). The main factors from the borrower side include socio-economic characteristics such as, gender, educational level, marital status and household income level and peer pressure in-group-based schemes. Presently, most MFIs are experiencing default problems as can be observed from their declining repayment rates (Abafita, 2003).

Loan default is a problem that has led to a systematic failure in implementing proper lending strategies and credible credit policies. Added to this, it discourages the financial institutions from refinancing the defaulting members, which put the defaulters once again into vicious circle of low production (Oke et al., 2007). In this perspective, the poor loan repayment in the developing countries has become a major problem in agricultural credit administration, especially to smallholders who have limited collateral capacity. The objective of this study is to examine the determinants of effective agricultural loan repayment in Cameroon, analyze the determinants of effective agricultural loan repayment by gender of borrower and to identify the various constraints associated with agricultural loan.

Literature Review

There are many factors influencing effective agricultural loan repayment, while some of the factors positively influencing others are negatively affecting. Regarding loan repayment performance of borrowers, many studies already exist elsewhere and still

sparing in the case of Cameroon. Aguilera and Gonzalez-Vega (1993) used a multinomial logit model to analyze the repayment performance of loans disbursed by a typical developing-country specialized lender in the Dominican Republic. They concluded that borrower characteristics (land tenure status and credit rating by the bank), loan characteristics (restriction on use of borrowed funds) and regulatory instruments (bank's own funds and international targeted funds) most affect client loan repayment.

The work of Soro (2014) shows that household profiles are fairly clearly separated according to the use of one or other of the sources of financing. Savings and credit cooperatives appear to be inaccessible to the workers in the agricultural and non-agricultural sector or they use less for their financial transactions. Thus, there is a substitution relationship between the different sources of funding because access to one of the sources significantly reduces the probability of access to another. Abafita (2003) conducted a study on the credit repayment problem in decentralized financial systems and guaranteed loans to small economic operators in Benin. They concluded that MFIs repayment performance is linked to both the characteristics of the funds (characteristics of the manager, adequate supervision after obtaining credit), the financial activities and the characteristics of the clients (gender, geographical proximity of the fund, type of guarantee, volume of activities, the expertise accumulated in the activity to be financed and the size of the loan).

Abafita (2003) analyzed the microfinance repayment performance of Oromia credit and saving institution in Kuyu, Ethiopia. According to his finding; sex, loan size and number of the dependents are negatively related to loan repayment. On the other hand, age was positive, while age squared turned to be negative. Income from activities financed by loan, repayment period suitability and loan supervision were positive and significantly related to loan repayment performance. Moreover, loan diversion is significant and negatively related to loan repayment rate. The negative sign implies that the use of diverted funds for non-income generating purposes. Assefa (2002) employed a logit model to estimate the effects of hypothesized explanatory variables on the repayment performance of rural women credit beneficiaries in Dire Dewa, Ethiopia. Out of the twelve variables hypothesized to influence the loan repayment performance of the borrowers: farm size, annual farm revenue, celebration of social ceremonies, loan diversion, group effect and location of borrowers from lending institution are statistically significant.

Methodology

This study was focus in the Menoua division of the west region of Cameroon where agriculture is the main activity of the local population. Data was gotten using a detailed questionnaire administered to nine MFIs administration and loan client (agricultural borrowers) in the Menoua division. In this process, we collected quantitative data that was analyze using SPSS 21.0 and equally, collected qualitative data that was interpret directly to enable us obtained robust results. The study population was made of farmers that collected loans form MFIs and MFIs personnel. The choice of two-stage random sampling method was use to select the sample respondents. The data was collected between January and May 2018 and for the purpose of this study.

Econometrically, we make used of the economic model of the family as applied by

Frijters et al (2008). Based on this author, the factors influencing agricultural loan repayment can be express in the formula:

$$LR_i = \xi + \phi_1 \chi_i + \mu_{1i} \tag{1}$$

Whereby LR_i is a binary variable representing borrower $i's$ repayment ability of loan taken from MFIs; χ_i is a vector of household characteristics such as: sex of farmers, ownership of land, place of residence, education, access to credit, etc. These are factors belief to be influencing agricultural loan repayment. Further, ε_i is a random error term whiles the coefficient, ϕ_1 is the parameter of primary interest and represents the impact that farmers' repayment capacity has on the MFIs, and ξ represent the value of the constant term. Equation (1) reports the probit estimate that measure the marginal effects of farmers' agricultural repayment. The probit estimate is an appropriate estimate in this type of a study because it attempts to capture the impact of any activity perform by the farmer in order to repay their loan from MFIs such as the total production, number of hire workers and so on.

However, this single-equation estimate may be upward or downward biased depending upon the effect that farmers ability to repay has on the microfinance and on the correlation between omitted variables and credit giving. For example, if repayment has a positive impact on the microfinance in terms of their ability to pay and re-borrow, then we would expect the probit estimate of ϕ_1 to be bias upward. To avoid this problem of endogeneity, we have seriously scrutinized our selection of variables in the loan repayment equation. This means that our model is void of any biases. Thus, these borrower's characteristics and MFIs lenders characteristic includes: loan repaid (outcome variable) the exogenous characteristics are: gender, age of respondent, level of education, marital status, borrowers' activity, agricultural training, duration, other sources of income, farming experience, interest rate paid, farm production, technical support, size of loan and land ownership.

Results and Discussion

Summary Descriptive Statistics

Table 1 relates to the quantitative variables, we observed that the age of managers varies between the first age group and the third with a standard deviation of 0.741 and with a mean of 1.81 (between the first range and second range). This could be explained by the fact that the field of finance in general needs to be viable (skill fresh ideas); then you have to be awake to be able to take action. With respect to the size of agricultural clients, the mean is 2.02 (from second range and third range) with a standard deviation of 0.608. Regarding working experience of the agents, the mean is 1.49 (between the first range and second) with a standard deviation of 0.505. Regarding the size of credit granted the mean is1.81 (between the first range and third range) with a standard deviation of 0.825.

As what concern the age of loan client from table 10 above, we observe that the age of loan clients varies between the first age group and the third with a standard deviation of 0.687 and with a mean of 2.05 (between the second range and third range). Regarding the loan demanded by the loan clients, the mean is 1.61 (between the first

range and second range) with standard deviation of 0.777. Finally, regarding working experience of loan clients the mean is 2.58 (between the second range and third range) with a standard deviation of 0.976.

Table 1. Summary Descriptive Statistics of MFIs and Agricultural Loan Clients

Variables	Mean	Standard Deviation	Min	Max
Sex of Respondent (1= male)	0.816	0.437	0	1
Marital Status (1= married)	0.772	0.672	0	1
Household Size	1.773	0372	5	12
Age of agents	1.81	0.741	<30 years	>50 years
Worker experience	1.49	0.505	<10 years	>16 years
Credit size granted	1.81	0.825	<2000USD	>5000USD
Proportion of agricultural clients	2.02	0.608	small (<15)	large (>30)
Age of agricultural loan clients	2.05	0.687	<30 years	>50 years
Amount of loan borrowed	1.61	0.777	<2000USD	>5000USD
Experience of loan client	2.58	0.976	<5 years	>20 years

Source: Author

Factors Influencing Agricultural Loan Repayment

From table 2, the variable agricultural training is positive and is statistically highly significant at 1%. This might be because the borrowers had enough training in the agricultural sectors; they will know the potential factors (type of fertilizer to use for their farm production, techniques use for their different culture they will produce). Hence, the result shows that a farmer who receives training has higher probability of repaying his/her loans successfully by 16 %.). This is consistent with the prior expectation and with the result (Oke et al., 2007).

The variable size of the farmland of borrower with a coefficient of 0.8101 is positive and statistically significant at 1%, its one of economic factors, which is positively affecting loan repayment of farmers. Any increase in the hectare of land by farmers will increase the probability of not defaulting. As more and more land is brought under cultivation, farm income is expected to increase due to the increased output. Therefore, having larger size of land enhances a borrower's capacity to repay his/her loan. This is consistent with the study result of (Rahji and Adeoti, 2010) as expected, male farmers with coefficient of 0.145 influenced positively and significantly the loan repayment performance of the households (significant at 5%). As male farmers put more effort on labor force in his activity carried out or the probability of repaying his loan is high. This result shows that households with larger force and determination in working availability more labor force for production purpose, so that the probability of defaulting is less. Therefore, male farmers with sufficient labor force are expected to successfully repay their loan.

The variable married farmers with coefficient of 0.045 influenced positively and significantly the loan repayment performance at 5%. This can be explained due to the fact that married farmers have social responsibility Vis avis the bank to repay his loan. Therefore, married farmers have the probability of effectively repaying their loan. The variable farming experience with coefficient -0.053 influence negatively and is statistically highly significant at 1%. They might be due to the fact that as the

borrowers had enough experience in the agricultural sector, they already know the potential risks that they will face in the business and able to make corrective action, this leads to enhance the loan repayment performance of the loan borrower. This can explain the fact that whatever the level of farming experience is increase by one year; the probability of being defaulter is decreased by 5.3 % (Table 2). This is in-line with the prior expectation and with the result of (Rahji and Adeoti, 2010).

Table 2: The Determinants of Agricultural Loan Repayment

Variable	Coefficient	Standard Deviation	T-Statistics
	Effective Loan Repayent		
Farmers received Agricultural training	0.1579***	0.055	2.821
Principal activity of borrower	0.3455	0.282	1.223
Size of Farm Land	0.8101***	0.162	5.001
Male farmer	0.145**	0.069	2.096
Married farmer	0.045**	0.023	1.991
Experience in farming	-0.053***	0.0143	-3.713
Interest rate	0.626*	0.366	1.712
Size of loan	0.266**	0.117	2.276
Loan duration	0.158**	0.075	2.106
Secondary education	0.930	0.633	1.470
Technical support	0.648	0.842	0.770
Farm production	1.413***	0.351	4.027
Other Sources of income	0.0972	0.325	0.299
Ownership of land	0.394	0.368	1.071
Constant	0.002**	0.001	2.114
R-Square	0.7826	N/A	N/A
Wald test	37[11 ; 0000]	N/A	N/A
Total Observation		147	

Source: *Author, N/B: *, **, ***, represent 10%, 5% and 1% percent level of significance.*

The variable married farmers with coefficient of 0.045 influenced positively and significantly the loan repayment performance at 5%. This can be explained due to the fact that married farmers have social responsibility Vis avis the bank to repay his loan. Therefore, the married farmers have the probability of effectively repaying their loan. The variable farming experience with coefficient -0.053 influence negatively and is statistically highly significant at 1%. They might be due to the fact that as the borrowers had enough experience in the agricultural sector, they already know the potential risks that they will face in the business and able to make corrective action, this leads to enhance the loan repayment performance of the loan borrower. This can explain the fact that whatever the level farming experience is increased by one year; the probability of being defaulter is decrease by 5.3% (Table 2). This is consistent with the prior expectation and with the result of (Rahji and Adeoti, 2010).

The variable Interest rate with a coefficient of 0.626 influences positively and is statistically highly significant at 10%. This due to low rate of interest on loan granted to the borrower. Hence low interest rate charge on agricultural loan to the loan farmers will lead to effective loan repayment. The variable farm production with a coefficient of 1.413 influences positively and is statistically highly significant at 1%. This can be because of high yield in the output of product that was retaining at the end

of production process in the farm. Hence, a high yield out in production of a borrower farm will lead to a successful loan repayment. The variable size of loan with a coefficient of 0.266 influences loan repayment positively and is statistically highly significant at 5%. This can be due to the fact that most borrowers that are been granted loan amount less than 2000USD compare to those between one million to 5million above as shown in table x repay their loan. This implies that the less size of loan granted to borrowers will lead to effective loan repayment.

The variable duration of loan with a coefficient of has a positive sign as expected and it is statistically highly significant at 5% as expressed in the table above. This indicates that as the borrower takes loans; i.e. repaid within the medium term of repayment, his/her capacity to repay his/her loan successfully will increase. The result indicates that as the borrower takes a loan to be repaid within the medium repayment period, his/her probability to repay his/her loan will increase by 16% (Rahji and Adeoti, 2010) also came up with similar results in their study on micro credit schemes of Malaysia.

Gender Effect of Effective Agricultural Loan Repayment

From the table below we observe that both male and female farmers receiving agricultural training have a positive coefficient 0.0204 and are highly significant at 1%. Nevertheless, that of male is higher than female. This might be as result that female borrowers were worse loan payers than male borrowers as it concerns the group-lending scheme only. It is not consistent with the prior expectation. The finding of Abafita (2003) they also reported men were most likely to repay than women supports this result. It implies that if both male and female have more training in the sector of agriculture will result to effective loan repayment. As seen from (Table 3) and table 14 female out of 24 receiving agricultural training have high capacity to repay their loan as compare to those who do not have training same as to male.

We observe from table that both male and female borrowers' principal activity have a positive coefficient0.0204 and are highly significant at 1%.and that of male is slightly higher than that of female. This might be as a result that more involve in activity pay their loan more than women do. In addition, those men can be involved in more than one activity as compare to female.

Table 3: Gender Effect and the Determinants of Effective Agricultural Loan Repayment

Variable	Male Sub Sample	Female Sub Sample
	Effective Loan Repayment	
Farmers received Agricultural training	0.0204***(5.18)	0.0240***(4.64)
Principal activity of borrower	-0.5687***(-50.66	-0.5693***(-50.69)
Size of Farm Land	0.0500***(6.03)	-0.0496***(-5.98)
Male farmer	0.0206***(16.95)	0.0205***(16.81)
Married farmer	-0.0002***(-18.02)	-0.0502***(-17.94)
Experience in farming	0.0068(0.80)	0.0093(1.05)
Interest rate	-0.0084(-0.15)	0.0082(0.15)
Size of loan	0.1731***(19.68)	0.1726***(19.62)
Loan duration	0.0096(0.83)	0.0088(0.76)
Secondary education	-0.0617***(-6.36)	0.0631***(6.45)
Technical support	0.1499***(13.56)	0.1515***(13.59)

Farm production	0.2354***(13.42)	-0.2372***(-13.47)
Other Sources of income	-0.0057***(-4.57)	0.0058***(4.64)
Ownership of land	-0.1230***(-13.67)	0.1233***(13.71)
Farmers received Agricultural training	-0.0204***(-5.18)	0.0240***(4.64)
Principal activity of borrower	0.5687***(50.66	-0.5693***(-50.69)
Size of Farm Land	0.0500***(6.03)	-0.0496***(-5.98)
Constant	0.0206***(16.95)	0.0205***(16.81)
R-Square	0.7826	N/A
Wald Test	37[14 ; 0000]	N/A
Total Observation		147

Source: Author, N/B: *, **, ***, Represent 10%, 5% and 1% Percent Level of Significance

Problems Associated with Agricultural Loan Repayment

From Table 4, we can draw several conclusions of the officials and borrowers interviewed, we realize that 66 say that production inefficiency is a challenge in loan repayment against 81 who consider it as non -challenge. The difference between these two percentages (10.2%) allows us to conclude that production inefficiency is not a challenge in the repayment of agricultural credits by borrowers of microfinance in the Menoua Division.

As to what concern the maximum use of the loan, 114 said is a challenge in loan repayment and 33 non-challenges. We can conclude from different factors that (-55%) of maximum use of loan is a challenge in the repayment of agricultural loan by the borrowers of Microfinance in the Menoua Division. We observe that the quantity of expenditure used by 125 farmers on farm has faced a challenge in loan repayment against 22 non-challenges. The different give us a percentage of 70%. We can conclude that the quantity of expenditure spend on farm by a borrower farmer is a challenge in the repayment of agricultural loan. As what concern instability on prices of farm product 47 said they faced challenge whereas 100 do not face a challenge in loan repayment. The difference gives a percentage of -53%. Concluding that, the unstable prices of farm products of the farmers are not a challenge in the repayment of agricultural loans.

In the other hand in the side of financial institution in case of follow up, we realize that 90 of agents face challenge in making follow-up in payment and 57 faced non challenge. The different between the two gives 22.44%. This implies that follow up in payment is a challenge in the in the repayment of agricultural loan by borrowers. Out of the 147 agents interviewed, we realize the 100 that has done loan management training faced challenge whereas 47 non-challenge. The different between the two gives 36%, this concludes that doing loan management training is a challenge in the loan repayment performance.

Table 4: Problems Associated with Agricultural Loan Repayment

Variable	Total Observation	Challenge	Non Challenge	Difference
On the Side of the Farmers				
Production inefficience	147(100)	66	81	-15 [-10.20%]
Maximum use of the loan	147(100)	114	33	81 [55%]
Too much expenditure on farm	147(100)	125	22	103 [70%]
Unstable prices of farm product	147(100)	47	100	-53 [-36.0%]

On the Side of the Financial Institution				
Follow up in payment	147(47)	90	57	33 [22.44%]
Loan Management Training	147(47)	100	47	53 [36%]
Low level of education of farmers	147(47)	81	66	15 [10.20%]
Group loan repayment is problematic at times	147(47)	113	34	79 [53.74%]
Lack of inadequate information from farmers	147(47)	72	75	-3 [2%]
Both Farmers and Financial Institution				
Interst Rate	147	66	81	-15 [-10.20%]
Size of the Loan	147	114	33	81 [55%]
Loan Payment period	147	125	22	103 [70%]

Source: Author

As what concern the Level of education of borrowers, 81 of borrowers faced challenge and 66 do not faced any challenge. The different between the two gives us 10.2%. This implies that the level of education of the farmers is a challenge in the effective loan repayment process. From 114 agents interview considers Group loan repayment to be problematic at times; as it is a challenge in the effective agricultural loan repayment process.agaimst 34 that group loan repayment is problematic at times to be a non-challenge. The different between these two gives us 53.74%. This can be concluded that group lending repayment is problematic at times is a challenge in the effective loan repayment.

Actually, of the 72 of the agent's interview consider lack of inadequate information from farmers as challenge against 75 that face non-challenge. The different between the two gives 2%. This result implies that inadequate of information from farmers by FMIs is not a challenge in the effective loan repayment. As what concern both farmers side and financial institution 66 respondent said interest rate is a challenge and 81 a non-challenge. The different gives -10.25. this implies that the interest rate to both farmers and financial institution is not a challenge in the effective agricultural loan repayment. As what concerns size of loan, 114 respondents noted that they face challenge and 81 non-challenges. The different gives 55%. This result concludes that size of loan to both farmers and financial institution is a challenge. About 125 respondents admitted that loan repayment period is a challenge and 22 said is not a challenge. The different gives 70%. This give a conclusion that loan payment period is a challenge in successful agricultural loan repayment.

Conclusion

This study was carryout with the objective of examining the factors influencing effective agricultural loan repayment in MFIs and constraints associated with agricultural loan acquisition in West region, Cameroon. The data was collected from 100 loan borrowers and 47 personnel of MFIs in Menoua. The sample borrowers were asked questions related to the borrowers' characteristics, agricultural loan and repayment. This data has permitted us to attain our study main objective that was to examine the determinants of effective agricultural loan repayment of MFIs in the Menoua Division.

From the primary surveyed data, a probit model was use to analyze our result. We observed that farm production, training, size of farmland; male household head, married head, interest rate and loan duration are strongly correlating with agricultural loan repayment. Inadequate agricultural funds, much expenditure on farm competition and improper interference of third party in the decision of loan approval are the constraints associated with agricultural loan. The R^2 and F-statistics shows that our result is robust.

We suggest that, the decision makers should create specialized structures in charge of agricultural loan as well as reduce the rate of interest. This is a wise step, towards food security and increase family welfare and improved job market.

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