Loan Repayment Capacity of Small holder Cassava Farmers in Nigeria

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Abstract

Purpose: Using a cross sectional dataset from cassava farmers in Cross River State, Nigeria, the purpose of this paper is to investigate smallholder cassava farmers' capacity to repay loans. This is premised on the rising loan default rate among farmers, which has affected loan volume to agricultural sector. **Approach**: Regression analysis is use in estimating repayment capacity of the farmers and cash flow coverage gives greater insight to what percentage is committed to debt payment. **Findings**: Results reveal that with an average farm size of 1.2ha, smallholder cassava farmers used 60.60% of the returns in debt repayment. The regression result further shows that the size of the farm and gross returns are very key in boosting a farmer's capacity **Research implications/limitations:** Many financial Institutions in Nigeria do not give flex loans to agricultural enterprises which directly or indirectly affects farmers' capacity to repay loans because of the peculiarity of the sector. If more than sixty percent of gross returns is committed to debt, many farmers will certainly almost default. Therefore, rescheduling loan terms in line with production activities will strengthened farmers'net worth. However, this research is situated in Nigeria where these group of farmers may be markedly different from those outside the borders of the country and may not, therefore, apply outside the shores of the country. The use of cross sectional data, too, is limited with attendant decision problems, other datasets such as pooled may be applied subsequently. **Originality/value**: This paper investigates repayment capacity in the light of cash flow coverage. To the best of our knowledge, this is the first paper that has done this since previous studies have only researched on repayment capacity determinants.
Keywords: Loan repayment capacity, smallholder cassava farmers, Nigeria, cash flow coverage
JEL classification: G21, Q14, G23.

1 Introduction

The fluctuation that characterizes the oil market is a source of concern for oil producing countries and particularly Nigeria. As one of the major players in the market, the country's focus and source of foreign earning has been 95% oil (globaledge.msu.edu). A dip in the price of oil at any time affects the economy so much that many sectors suffer, and a rise does not help either. Matters are even worse when crude oil prices in international market rise, as refined petroleum products are usually imported. This causes a sharp increase in commodities prices, spiraling the inflation out of control. For instance, between December, 2020- April, 2021, the price of brent crude went up from $49.9 to $64.81 and inflation rate rose from 17.3% to 18.17% with a stronger rise in food prices at 22.5%. The over reliance on oil with attendant corruption has not just dwindled Nigeria's growth but has affected other natural resources with which the country is blessed with; one of which is abundant fertile land that supports diverse crops growth in many parts of the country. Many of these crops have potentials to steer the country out of doldrums in event of these oil fluctuations but have not been developed into forms that can command the needed foreign exchange if sold in international markets. Cassava is one of such crops which can earn Nigeria good foreign exchange if only it can be transformed into chips, flakes, cubes, pellets and flour. According to FMARD (2013), this transformation can bring in earnings in the region of $8.5 billion annually.

As the highest cassava producing country in the world (more than 20% of the total production in the world), transforming cassava into forms that are marketable in world markets will have enormous

impact on Nigeria as a whole and particularly the many southern and middle belt states where the crop is widely grown. However the techniques of production is still being handled by smallholders, who constitute more than 73% of the farming population and rarely use practices that are hi-tech (Olukunle, 2016). In other words, these farmers do not have the capacity to afford investments for this transformation because their resources and access to credit are limited. In increasing production and transformation of cassava into marketable forms, Nigeria's government, in 2011 initiated a policy to buoy farmers to action. The policy was to increase investment and access to credit. Unfortunately, many smallholder cassava farmers fell short of the requirements stipulated by many credit institutions through which the funds were channel. According to Kuye, Chukwu and Awoke (2015), credit institutions have borrowing requirements for different categories of borrower-farmers and usually extend short and medium term credits in addition to conditions such as, capacity to see through the contract, provision of guarantors with good social standing, and possession of farmland among others. These conditions make up the repayment capacity of each farmer and, by extension, connotes a farmer's ability to pay off his or her loan for the purpose it was obtained for within the stipulated time by the credit institution (Reddy and Ram, 2013). Expressed differently, it means the loan amount should be productive enough to repay the loan. It implies, therefore, that even when funds were earmarked for the implementation of the policy, farmers needed to fulfilled some conditions to be eligible to accessed the funds. On the other hand, the high rate of default among farmers must have pushed for these conditions. For as Awoke (2004) noted, the high rate of loan default arising from diversion and unwillingness to repay loans had threatened the sustainability of most public agricultural credit schemes in Nigeria and many credit institutions will, therefore, double checked before granting loans and often times will foot dragged in extending such credits. And,Olagunju and Adeyemo (2007), believed that agricultural sector's growth is stunted because of this problem, since financial institutions are dampened in increasing more funding to the sector.As a consequent, loanable funds to majority of eligible loan seekers are reduced as these institutions spend substantial amount of administrative time and cost trying to recover amount already in default (Udoh, 2008). It is against this backdrop that the study sought to find out loan sources available to smallholder cassava farmers in Cross River State, Nigeria, the volume of loans granted and repaid by the farmers, determinants for repayment capacity and challenges faced in demanding for loans. The state was selected for the study because it contributes more than one-third of 70% from cassava producing states in Nigeria, but the farmers have suffered greatly in recent times in accessing grants and loans to expanding production. The rest of the paper is organized as follows: Part two discusses issues on farmers' repayment capacity with highlights on theories surrounding the subject. This leads to presentation of relevant data and method used in exploring the hypothesis. Results are discussed after that, and the paper concludes with suggestions and recommendations to improve repayment ability of smallholder cassava farmers and areas for future research.

2.   Literature review and hypothesis

Loan repayment is a key index of any credit programme because it ensures the continuity of the programme. That is, loan repayment problems can significantly affect future credit acquisition of a borrower or potential borrowers. The concept of loan repayment is built on the theories of credit transaction, loan commitments and dynamic lending standards. Theory of credit transaction is centred on the framework of legal enforcement of loan terms and accordingly, considers the loan costs in extending loans. That is, if the cost of enforcing a loan term is too high, a lender might simply refuse to lend (Howard Harfords and Sey, 2008). In developing economies, the transaction costs of lending is often too high and may affect repayment of poor investors like smallholder cassava farmers. The loan commitment theory defines an agreement between a lender and a borrower on pre-specified terms with the lender retaining the rights to revoke the agreement if the borrower's credit worthiness deteriorates. The dynamic theory of lending standards, on the other hand, shows how financial institutions privately create screening standards to screen out unprofitable borrowers through tighter screening which in effect worsens the future pool of borrowers; drops the volume of lending, credit spreads, and increase default rates (Fishman, Parker and Strauts, 2020). Understanding these theories and their implication for smallholder

cassava farmers' repayment capacity is important in checking default. For instance,Kuye (2015), conducted a study on determinants of loan default and repayment rates by cassava farmers in south-south Nigeria and concluded that the default rate for small-scale, medium-scale and large-scale farmers was 15%, 8% and 3%, respectively, for borrowers with Bank of Agriculture (BOA) and, 28.34%, 21% and 19.67% for the same category of farmers with First Bank of Nigeria (FBN), and noted that BOA performed better because the lending conditions were flexible. The study also found that high default rate was a principal challenge of loan administration in the area. Essentially, repayment capacity of the farmers with BOA was better because the bank extended flex loans instead of standard loans that is the norm among commercial banks. For Olagunu and Adeyemo (2007), default problem has reduced agricultural production in Nigeria as, it has dampened financial institutions' willingness to increase lending. The study was conducted in southwestern Nigeria among smallholder farmers. According to the authors, number of visits of loan officers to borrowers, level of education, time of loan disbursement and number of household members will increase the repayment performance if the visits are more, the level of education is higher, the disbursement time is well timed and the beneficiary has lower household members. Like Olagunu and Adeyemo (2007), Onyeagocha*et al* (2012), conducted a similar study in southeast Nigeria and observed that, loan size strongly correlated with repayment performance. In other words, the higher the loan size given, the higher the repayment rate. The study, however noted that, beneficiaries would tend to delay repayment if the loan was offered by a "development oriented institution" with subsidized interest rate and with little chance of repeat loans. In analyzing loan default among beneficiaries of agricultural credit guarantee scheme in AkwaIbom State, Nigeria, with many of the beneficiaries being cassava farmers, Akpan, Udoh and Akpan (2014), were of the view that factors such as, total farm cost, loan size, farm income, loan duration, and family dependency level among others, influenced default of beneficiaries. In other parts of the world, Madole (2013), noted that small businesses fail to repay bank loans because of high interest rate, moral hazards and no moratorium. The study was conducted in Tanzania and was on microfinance Impact on Small and Medium Enterprises (SMEs) performance. Woolcock (2010) did not just study loan duration period's impact on repayment but noted the short and long run effects. According to the study, long loan period can cause a beneficiary to be wasteful and therefore, fails to pay back especially when the loan amount is small. Consequently, small loans should not be given very long repayment periods. Sharma and Zeller (1997), corroborate Woolcock (2008) findings and opined that, the dynamic lending theory impacted on loan size and as such, should increase as repayment performance increase; but in event that the loan size is negative and significant as was revealed by their study, it implied that the borrower had difficulty in repaying larger amount over a given period, say one year. Therefore, for a given duration, large amount of loans do not meet the borrower's needs and may not be suited to the local economy. In the same vein, Hanim*et al* (2007), recounted a higher probability of a loan repayment problem for borrowers on weekly loan repayment schedule. The study observed that weekly loan repayment schedule posed problems for borrowers who generated lower revenue within the cycle; and borrowers aged 46-55 were more likely in having repayment problems. Reddy and Ram (2013), reported that repayment capacity is a function of Gross returns from the enterprise for which the loan was taken,as well as the working expenses, family consumption expenditure, literacy level, management skill and social status of the beneficiary. However, according to the authors, this capacity can be affected if the size of the land holding is small, the productivity is low, prices are low or fluctuate, family expenditure becomes expensive, farm resources are poorly managed and no effort is made at improving the state of the technology. Barry, Hopkin and Baker (1983), in analyzing financial feasibility of a farm firm were of the view that, repayment capacity and loan security were important determinants of the firm's credit worthiness; while the former was the firm's ability to generate sufficient cash from product sales to repay loan plus interest according to contractual financing terms, the latter refers to availability of assets that can be pledged as collateral to the lender.

It follows, therefore, that repayment capacity from literature is driven by certain factors and from this backdrop, we proposed the study's hypothesis as:

Ho: Working expenses, family consumption expenditure, loan due, literacy level, managerial skill, returns from investment and farm size do not affect smallholder cassava farmers' loan repayment capacity.

3.   Data and methods

3.1   *Data*

Cassava is produced in 24 of Nigeria's 36 states and majorly by small holder farmers with land holding ranging from 0.1-5 hectares. The major cassava producing states in Nigeria are Anambra, Delta, Edo, Benue, Cross River, Imo, Oyo and Rivers; with Kwara and Ondo to a lesser extent. These 10 states contribute more than 70% of the total country's production and; data was collected from Cross River State which contributes more than 1/3 of this percentage (CRADP, 2020). The state is made up of three agricultural zones: Calabar, Ikom and Ogoja. Respondents were drawn based on the number of local governments in the three zones, Calabar (31), Ikom (27), and Ogoja (22). Instrument of data collection was used in eliciting necessary data from the farmers using extension officers in the different zones' Agricultural Development Projects (ADPs); whichhave a database of registered farmers; and are in constant communication with these farmers. .Data were elicited on demographic characteristics, costs and returns, credit profile, and production challenges. The total administered questionnaires were 96, but after data cleaning, 80 respondents were settled for, giving a success rate of 83.3%..Only farmers who had borrowed were interviewed.

3.2   *Methods*

The reviewed literature suggests that farmers' demographic characteristics are a factor in loan repayment. It is therefore important to analyze these characteristics noting their inferential values. Consequently, percentages and means were used in analyzing the demographics and factors influencing farmers' ability to generate sufficient cash as well as credit sources.

Challenges faced by the farmers in demanding for loan was analyzed using a 5-point Likert scale, with "strongly Agree" assigned a score of 5, "Agree" = 4, "Undecided" = 3, "Disagree"=2, and "Strongly Disagree" =1. A mean score of $\geq 3(5+4+3+2+1/5)$ indicated a challenge, and less than 3; no challenge.

To investigate loan repayment capacity of the farmers (that is, ability to generate sufficient cash to repay the loan plus interest), the repayment capacity for self- liquidating and term loans was calculated as expressed by Reddy and Ram (2013) thus:

Repayment capacity =   Gross income – (working expenses excluding crop loan+ other loans due + miscellaneous expenditure + crop loan).

And for term loans, the repayment capacity is:

Repayment capacity = Gross income – (working expenses including short term loans + family living expenses + other loans due + miscellaneous expenditure + annual instalment due for term loan.

For self-liquidating and term loans, the repayment capacity is estimated as given in the example below

Table 1 Estimating repayment capacity

	Self- liquidating loans	Amount (₦)	Term loans	Amount
1	Gross income	50,500	1. Gross Income	64,000
2	Working expenses excluding crop plan	9,300	2. Working expenses including short term loans	34,000
3	Family living expenses	11,100	3. Family living expenses	11,100
4	Other loans due	3,000	4. Other loans due	3000
5	Miscellaneous expenditure	800	Miscellaneous expenditure	800
6	Loan taken	6000	Annual instalment due for term loan	12,100
	Repayment capacity	20,300	Repayment capacity	3,800

Source: Adapted from Reddy and Ram (2013).

From Table 1, short term loan must be added to the working expenses, and since the loan is a regular or standard operating loan, instalment payment as they fall due are incorporated in calculating the repayment capacity. The Table also shows that the repayment capacity for self-liquidating loans stood at N20,300, and N3800 for term loans. The particulars of term loans show that the borrower had taken an investment loan of N30,000 at 21% interest rate payable in 3 equated annual instalments of N12,100.

Table 1 as well shows that more cash was generated to pay the loan plus interest in self-liquidating case than in term loans. By implication, if the repayment capacity is negative, it means the farm was incapable of generating cash to cover payments as they were due.

In addition to Measuring Repayment capacity as given by Reddy and Ram (2013), this study equally used the Cash Flow Coverage ratio which measures gross farm receipts (income) over the sum of interest paid plus principal payments; and indicate the cash flow margin for meeting principal and interests payments (Barry *et al*, 1983). Accordingly, all other items are excluded except loans and interests in calculating the Cash Flow Coverage. For Table 1, self-liquidating loans will require a cash flow coverage ratio of 5.61 =(50,500/3000 + 6000) and term loans will require 1.306 (64,000/34000 + 3000 + 12,100). Thus, more than 17% and 76% of the cash flow is required to meet debt service commitments under self-liquidating and term loans arrangements.

Multiple regression analysis was then used to analyze factors affecting repayment capacity using the four functional forms thus:

$$Q=\alpha_0+ \alpha_1X_1 +\alpha_2X_2+ \alpha_3X_3+ \alpha_4X_4+ \alpha_5X_5+ \alpha_6X_6 +e \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 1$$

Linear function

$$Q =\alpha_0 +\alpha_1 I_n X_1 + \alpha_2 I_n X_2+\alpha_3I_nX_3 + \alpha_4I_nX_4 + \alpha_5I_nX_5 + \alpha_6I_n X_6 + e \dots\dots\dots\dots 2$$

Semi-log function

$$InQ = \alpha_0 + \alpha_1I_nX_1 + \alpha_2 I_nX_2+\alpha_3I_nX_3 + \alpha_4I_nX_4 + \alpha_5I_nX_5 + \alpha_6I_nX_6 + e \dots\dots\dots\dots 3$$

Double- log function

$$InQ = \alpha_0 +\alpha_1X_1 + \alpha_2X_2+\alpha_3X_3 + \alpha_4X_4 + \alpha_5X_5 + \alpha_6X_6+ e \dots\dots\dots\dots\dots\dots\dots 4$$

Exponential function.

Where;

Q= Repayment capacity (In Naira)

$X_1(+)$ = Gross returns from Cassava production in a year(In Naira)

$X_2(-)$ = Working expenses (In Naira)

$X_3(-)$ = Family consumption expenditure (In Naira)

$X_4(+)$ = Literacy level or educational level (In Years)

$X_5(+)$ = Farming experience (In Years)

$X_6(+)$ = Farm size (In Hectares)

The signs in parentheses are *a priori* expected signs; where Q is the dependent variable, X_1-X_6 are independent variables, e is the error term.

4.   Results

Demographic characteristics of respondents

The demographics of the respondents as shown in Table 2, shows that there are more male (72.5%) small-scale cassava farmers in Cross River State, Nigeria than female (27.5%). The mean age of the farmers is 35, showing clearly that there are younger farmers in cassava production. Akapeti, Agom and Effiong (2021) obtained a mean age of 43 in their study on loan repayment risk analysis among cassava cooperative beneficiaries in south-south Nigeria; and were of the view that the prevalence of younger persons in cassava production could be attributed to the rigors involved in the operations of cassava production. Olukunle (2016) and Ogunleye*et al* (2017) however attributed the attraction to the business from profit involve. Akpaeti*et al* (2021) equally revealed that they were more married persons in cassava farming, and this study just confirmed that. Out of 80 respondents, 71.3% were married and 53.8% had only secondary educational qualifications (WASC/NECO). 31 farmers had a household size of 1-5, 48 had 4-6 and 1 had 7; with a mean size of 4. Experience in farming is a key variable in loan repayment (Rahji and Fakayode, 2011). It is believed that borrowers with more experience in farming are more likely to

make judicious use of the loans than less experienced ones. With an average farming experience of 6.4, these farmers may not be well versed in the art of borrowing and repayment. An average farming experience ofatleast 10 years would be more appropriate.

Furthermore, the size of a farm is also a key determinant in loan acquisition since the repayment is very much affected by the produce and income from the farm (Asuquo, 2019). Many studies equally confirmed that the size of a farm can affect the default or repayment capacity (Awotodunbo, 2008; Okpukpara, 2010; Kuye, 2015). Akpaeti*et al* (2021) had a mean farm size of 1ha in their study and this study again confirms the average farm size to be 1.2ha. Obviously, these farmers may be having issues repaying their loans since size affect repayment as recorded in literature. All banks except Bank of Agriculture (BOA) offer term or standard loans to farmers irrespective of the scale of production. In standard loans, repayment date is usually set and repayment does not follow the proceeds from a particular enterprise; while self-liquidating loans are programmed according to the planning period of the asset being financed. From Table 2, 20% of the farmers got loans from cooperative societies (the highest), while 17.5% obtained from commercial banks and friends, respectively. The rests were serviced by microfinance banks (13.8%), family (11.3%), age grades (7.5%), BOA (6.3%) and money lenders (6.3%), respectively. Few actually got from BOA even though the bank provides loans that are self-liquidating because, unlike commercial banks, the bank's presence is not widespread and in most cases, just one and in such circumstance, will naturally be tilted to serving large scale farmers.

Table 2: Demographic characteristics of smallholder cassava farmers in Cross River State, Nigeria

S/N	Demographic	Frequency	Percentage	Mean
1	Gender			
	Male	58	72.5	
	Female	22	27.5	
2	Age			
	21-25	17	21.3	
	26-30	10	12.5	
	31-35	22	27.5	35
	36-40	22	27.5	
	41-45	1	1.3	
	46 and above	8	10.0	
3	Marital status			
	Widowed	5	6.25	
	Divorced	4	5	
	Single	14	17.5	
	Married	57	71.3	
4	Educational Index			
	FSLC	18	22.5	
	WASC/NECO	43	53.8	
	OND	7	8.8	
	HND/B.Sc/M.Sc	12	15.0	
5	Household size			
	1-3	31	38.9	
	4-6	48	60.1	4
	7 and above	1	1.3	
6	Farming experience			
	1-5	52	65.1	
	6-10	15	18.8	6.4
	11-15	12	15.1	
	16 and above	1	1.3	
7	Farm size			

	0.1-1.0	44	55.0		
	1.1 – 2.0	26	32.5	1.2	
	2.1 – 3.0	7	8.75		
	3.1 and above	3	3.75		
8	Loan sources				
	Microfinance bank	11	13.8		
	Commercial bank	14	17.5		
	BOA	5	6.3		
	Cooperative society	16	20.0		
	Age grade	6	7.5		
	Family	9	11.3		
	Friends	14	17.5		
	Money lenders	5	6.3		

Source: Field data (2023)

Repayment capacity of small-holder cassava farmers

In Table 3, the repayment performance of the farmers shows that a total of N18, 898,000 loan was granted to the farmers and a total repayment of N11, 020,262 was made. This gives a repayment performance of 58.31%. The Table equally shows a gross receipt of N18, 168,500. The cash flow coverage which measures the financial risk of an enterprise is 1.65 (N18, 168,500/11,020,262), and thus imply that 60.60% of the cash flow of small holder cassava farmers is required for debt service commitments. Clearly, this relatively low measure of cash flow coverage, indicates a weaker financial position and a troubling repayment capacity. As revealed in Table 4, repayment capacity is boosted by the size of the farm and the gross returns; obviously, with a mean farm size of 1.2ha, cassava farmers must explore measures to strengthen their repayment capacity.

Table 3: Smallholder cassava farmers' cash flow coverage and repayment capacity

S/N	(N) Loan granted	Number	Mean amount granted (N)	Total repayments (interest + principal)	Gross receipts (N)	Number	Mean gross receipt
1	20,000 – 100,000	22		1,620,160	100,000 – 200,000	43	
2	101,000 – 180,000	16		1,842,320	201,000 – 300,000	21	227,106.25
3	181,000 – 261,000	11	236,225	1,481,242	301,000- 400,000	11	
4	262,000 – 342,000	10		2,111,201	401,000 – 500,000	3	
5	342,000 – 423,000	12		2,022,329	500,000 and above	2	
6	423,000 and above	9		1,943,010	-		
Total	18,898,000	80		11,020,262	18,168,500	80	

Source: Field Data analysis (2023)

Determinants of repayment capacity

Four functional forms of linear, semi-log, double-log and exponential were used to test the variables' influence on repayment capacity of smallholder cassava farmers in Cross River State, Nigeria. The lead function was the Linear as shown in Table 4; it has the best fit in terms of the coefficient of determination (R^2), the F-statistic; in addition to two significant variables just like other functional forms. The coefficient of determination (R^2 = 0.66) indicates that 66% of the total variation in repayment capacity is explained by the regression model. Furthermore, the F-statistic for the regression is 23.40, which is larger than the critical F-value ($F_{6,73}$ = 3.12 at the 1% significance level), indicating that the regression equation provides a statistically significant explanation of variation in repayment capacity. The hypothesis of statistical

relationship between the repayment capacity and the independent variables is also tested using the F-statistic. Since the F-statistic for the regression exceeds the critical F-value, we reject the hypothesis of independence between the repayment capacity and the set of independent variables in the regression and conclude that, the regression equation as a whole does significantly explain the variation in repayment capacity and at least some of the variables in the regression model are significant factors in explaining the variation in repayment capacity.

The gross returns from production and the farm size are the only significant variables and are in agreement with *a priori* expectations. The coefficients of these significant variables indicate the marginal relationship between each of the variable and the repayment capacity while holding all others constant. For gross returns, the coefficient of 1.102 indicates that 1Naira increase in gross returns will cause or bring about an increased repayment capacity by 1.102. It also suggests that as gross returns becomes larger, the capacity to repay is equally boosted. Similarly, the coefficient of farm size indicates that for every 1ha increase in farm size, a farmer repayment capacity will expand by N92,643.726. The gross returns and farm size coefficients are twice their standard errors and further confirms their significance level; however, the standard error of gross returns is small in relation to its coefficient and implies that the estimate has a true relationship with repayment capacity and can therefore be used with great deal of confidence in decision making purposes.

Table 4: Determinants of repayment capacity of smallholder cassava farmers in Cross River State, Nigeria

Functional form	Variables	Coefficient	t-values	R^2	Adjusted R^2	f-statistic
Linear +	Constant	-91667.056	-2.801	0.66	0.63	23.40
	X_1	1.102	5.656***			
	X_2	-0.255	-1.152			
	X_3	0.109	0.489			
	X_4	-7206.083	-0.582			
	X_5	97.10971	0.249			
	X_6	92643.726	3.439***			
Semi-long	Constant	-826495.719	-2.608	0.51	0.47	12.72
	X_1	84767.935	4.648***			
	X_2	1967.150	0.068			
	X_3	-1136.427	-0.118			
	X_4	-9374.046	-0.287			
	X_5	-14925.603	-0.539			
	X_6	142020.996	3.822***			
Double log	Constant	-18.369	-1.433	0.28	0.23	4.82
	X_1	2.361	3.200***			
	X_2	-0.190	-0.163			
	X_3	0.389	0.999			
	X_4	-2.512	-1.902*			
	X_5	-0.369	-0.330			
	X_6	2.321	1.544			
Exponential	Constant	6,846	4.191	0.24	0.18	3.87
	X_1	0.000028	2.868***			
	X_2	-0.000005	-0.487			
	X_3	-0.000001	-0.084			
	X_4	-1.219	-1.973*			
	X_5	0.044	0.226			
	X_6	1.273	0.947			

***, * significant at 1% and 10%

+ lead equation

Source: Field data analysis(2023).

Challenges in loan acquisition and repayment

While gross returns and farm size are key variables that affect farmers' ability to repay loans as revealed by the regression analysis, further analysis of the challenges in acquisition and repayment showed that, from interest rates charged to amount disbursed, were serious challenges farmers faced in acquiring and in meeting up with repayment obligations (Table 5). From the Likert used in ascertaining the degree of challenge, a mean score of ≥ 3 indicates a challenge and according to the Table, interest rate charged had the highest mean score of 4.90 and was therefore a major challenge in acquisition and repayment of loans, while delay in loan approval and disbursement was 3.49, and the least of the challenges. However, all the listed challenges were above the mean score of 3 and as such, were serious problems to the farmers.

According to Table 5, interest rate charged by many lenders are quite high, it affects many cassava farmers from borrowing. In many instances, these rates are increased without recourse to borrowers and are increased according to the inflation trend. This, negatively affects farmers' repayment capacity, as many are incapable of paying these loans as they fall due.

Corrupt tendencies by some loan officials is a challenge as well. Some kickbacks are requested before loans are approved. In other cases, such monies are deducted up front before disbursement. When farmers are treated like this, it affects their repayment capacity. This variable has a mean score of 4.09, and clearly shows how serious the problem is. On the farmers' side, instances are reported where loans are diverted for other uses or are poorly utilized. When this occurs, it's normally attributed to poor management from the lending institution. Farmers in this category do not often repay as at when due.

Acquisition is also affected by information asymmetry, distance to a financial institution and bureaucracy. With mean score of 4.30, 4.27 and 4.20, respectively; it shows that these problems are debilitating to farmers' financial growth. Table 2 shows that average farming experience gathered was 6.4 years and regression analysis equally brought to light that the variable had no impact on repayment capacity. Many literature (Kohansal and Mansoori, 2009; Oboh and Ekpebu, 2011; Henri-Ukoha et al., 2011, Asuquo and U. Uwah, 2021), however, reveal that experience was important in borrowing and repayment. Table 5 further concurs that farmers without experience have an uphill task of repaying loans. With a mean score of 3.85, it shows that lack of entrepreneurial skill/experience impinges on a farmer's capacity to repayment. Returns from investment is a significant variable in farmers' repayment capacity as shown in Table 4; the returns can, nonetheless, be affected to the extent that it becomes a problem. Low returns invariably is a challenge as revealed by the mean score of 4.53, the second highest in the log of challenging variables. The way and manner loan is disbursed can make or mar production. For instance, if the disbursements do not follow the cycle of production, arriving too late or too early, production activities will be hampered. In the same vein, if amount disbursed is barely enough to fund the activity, it scuttles smooth operation. Farmers are of the view that loan amounts that are too small will always affect operation and affect when such loans are to be repaid.

Table 5: Challenges in loan acquisition and repayment

S/no	Variable	SA	A	U	D	SD	Mean
1	High interest rate changed	72(90.0)	8 (10.0)	0(0)	0(0)	0(0)	4.90
2	Corrupt tendencies by loan officials	8(10.0)	71(88.8)	1(1.3)	0(0)	0(0)	4.09
3	Poor utilization of loans	6(7.5)	63(78.8)	2(2.5)	9(11.0)	0(0)	3.82
4	Tendency to divert the loans	45(56.3)	32(40.0)	3(3.8)	0(0)	0(0)	4.82
5	Untimely approval / disbursement	11(3.8)	18(22.5)	50(52.5)	1(1.3)	0(0)	3.49
6	Information asymmetry	39(48.8)	29(36.3)	20(12.5)	1(1.3)	1(1.3)	4.30

7	Short payback period	13(16.3)	46(57.5)	12(15.0)	9(11.3)	0(0)	3.79
8	Distance of financial inst.	25(31.3)	52(65.0)	3(3.8)	0(0)	0(0)	4.27
9	Protocols and bureaucracy	31(38.8)	36(45.0)	11(13.8)	2(2.5)	0(0)	4.20
10	Lack of entrepreneurship skill /experience	16(20.0)	46(57.5)	8(10.0)	10(12.5)	0(0)	3.85
11	Low investment returns	47(58.8)	30(37.5)	2(2.5)	1(1.3)	0(0)	4.53
12	Microcredit for farm activities	42(52.5)	37(46.3)	1(1.3)	0(0)	0(0)	4.51

Source: Field analysis(2023).

Conclusion

Smallholder cassava farmers, like other farmers need loan to boost production. However, their ability to pay back defines their repayment capacity and it's very key in acquisition of subsequent loans. Apart from giving them leverage to acquiring more, it also help other potential borrowers in the sector to easy access. Problem arises when the capacity to repay is in doubt, which shrinks the loan volume and consequently affects not just cassava farmers but other farmers too.

From the analyses, gross returns and size of farm are important variables in repayment capacity but the cash flow coverage shows that more than 60% of cash flow is committed to debt payment; which is clearly an unhealthy financial development. This is because, average farm size is just over 1 hectare. It implies, therefore, that increasing smallholder cassava farmers repayment capacity borders not just on expanding the size of land holding but in re-organizing the operations in the farm and in addressing resource imbalance. These, in addition to tinkering with the interest rate which is a major challenge in repayment will improve farmers' repayment capacity.

Recommendations

Based on the findings, repayment capacity is influenced by gross returns and farm size. Therefore, adopting potential technology where the farm size cannot be increased and reducing farm expenses, will increase production and gross returns. The cash flow coverage shows that more than 60% of the returns is used in debt payment. Rescheduling the loan repayment plans according to the flow of income instead of the term/standard repayment plan that is practiced by most financial institutions, will boost income. Alternatively, diversifying and adopting risk management strategies like crop insurance and hedging to control price variation will secure and grow farmers income.

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