FACTORS INFLUENCING SMALLHOLDERS' TRANSACTION COST OF BORROWING FROM THE NIGERIAN AGRICULTURAL AND COOPERATIVE BANK

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ABSTRACT

In Nigeria, small-scale farmers are reluctant to borrow from formal institutions because of high transaction costs. This paper examines the components and determinants of borrowing transaction costs and argues that unless the loan administrative strategies are simplified and channels of loan delivery diversified, farmers would continue to find it difficult to use formal loans. Borrowing transaction costs are defined as the administrative expenses and transportation cost incurred by borrowers as well as the opportunity costs of the time spent in negotiating, acquiring nd repaying thee loan. These costs are determined mainly by the loan size and borrowers' distance from the loan office. Group lending is suggested as a cost-reducing approach that will be beneficial to both lenders and borrowers.

I. INTRODUCTION

The need for agricultural credit in many developing countries has been recognised from time immemorial; and several programmes have been designed to extend credit to the small-scale farmers. Nonetheless, it has been difficult for these farmers to be properly integrated into the formal credit market (Adams 1971). Previous studies indicate that many small farmers do not use formal credit because (i) farmers have sufficient liquidity given their planned expenditures, (ii) they do not judge the expected returns high enough to warrant borrowing given their resource base and taking account of available technology and risk, and (iii) thev are discouraged from borrowing because of high transaction costs involved in obtaining information about a loan and or in taking out a loan (Baker 1973; Bhatt 1979; Lipton 1976; Miller and Ladman 1983). The latter reason has been the most plausible snd may explain why small farmers continue to borrow from informal market lenders whose simple and low-cost credit delivery systems more than offset higher interest costs (Donald 1976; Ladman 198 1). In point of fact, cost-reducing policy innovations have been advocated by some authors who viewed the transaction costs of using formal credit as serious deterrents to borrowing (Adams and Nehman 1979; Ladman 1981).

Similar disfunctional effect of transaction cost is not unlikely in Nigeria where several small farmers continue to deal with the informal credit markets despite the existence of formal credit institutions which are supposed to protect the farmers from the exploitative tendencies of informal lender. Farming in Nigeria is becoming increasingly commercialised and small farmers should be willing to borrow from formal sources if the transaction costs are moderate. As the Nigerian Agricultural and Cooperative Bank (NACB) is mobilizing funds to extend its direct smallholders' loan scheme to all parts of the country, efforts should be geared towards

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the minimization of the transaction costs associated with the scheme. If the transaction cost is high the volume of transactions (lending and borrowing) tends to fall; and this will have a deleterious effect on credit use and agricultural production in the country.

The objective of this paper is to provide empirical information regarding the magiutude, components and determinants of borrowing transaction costs with a view to prescribing policy measures for effective credit demand and administration in the country with respect to the NACB smallholder loan scheme.

Data and Study Base

The Nigerian Agricultural and Cooperative Bank (NACB) was established in 1973 by the Federal Government to grant loans for agricultural production, product marketing and distribution. The NACB has its headquarters in Kaduna and branches in each of the state capitals in the country. All the state branches adopt similar procedures in lending directly to small-scale farmers. The NACB branch in Akure, Ondo State is the focus of attention in this study. Data for this study were collected in 1987 in respect of borrowers who benefited from the smallholders direct loan scheme (SDLS). The list of borrowers was obtained from NACB and used as the sampling frame for the selection of those included in this study. A random sample of 200 was drawn out of the 326 borrowers on the list. The selected borrowers were traced to their locations using their individual specific addresses obtained from NACB. A total of 45 villages were visited to interview the farmer borrowers who were spread all over the local government areas of the state. By reason of death, relocation and falsification of contact addresses, however, 27 borrowers could not be found; thus data were collected from 173 respondents using structured questionnaires. The data obtained included the loan size, farm size, borrowing experience, loan disbursement lag, which is the time interval between the submission of loan application and collection of the loan, and transaction costs incurred in obtaining their loans.

II. COMPONENTS OF BORROWING TRANSACTION COSTS

Borrowing transaction costs are the costs incurred by a borrower in negotiating, acquiring and repaying his loan. They are made up of both explicit and implicit costs. The explicit cost consists of administrative expenses and transportation cost. Here, the administrative expenses include application fees and the cost of passport photograph. Data on these costs were obtained directly from each of the borrowers. The implicit cost refers to the opportunity cost of a borrower's time in negotiating, acquiring and repaying his loan. Data on implicit costs were obtained indirectly by imputing value on the time spent by the borrowers to visit the loan office at each stage of the loan transaction. The going farm wage rate in the study area was used to impute value on the borrowers' time.

To many lenders, the small-scale borrowers are not a particularly favored group of borrowers. There is, therefore, the tendency for lenders to ensure that small borrowers incur transaction costs which they would normally have absorbed in the case of preferred clients.

Such a re-allocation of transaction costs to borrowers are often used as substitute rationing mechanisms particularly when lenders' ability to ration borrowers is limited by interest rate ceilings (Cuevas and Graham 1986; Adams and Vogel 1986). As a way of discouraging small borrowers from asking for loans lenders usually adopt bureaucratic procedures which would make it mandatory for such non-preferred clients to visit the loan office several times to negotiate, obtain and repay the loan. By so doing, lenders tend to impose additional costs on such borrowers beyond the interest payment.

In Nigeria, small-scale borrowers are often conscious of these transaction costs and may well explain their reluctance to borrow from formal sources even when the interest rate is ostensibly lower than that of informal loans. With regards to the sample of borrowers included in this study the transaction costs incurred on the average, amount to N 84.77 per borrower (Table 1). The cost incurred on transportation (N 43.01) is the highest; being about 51 per cent of the total cost. This is followed by administrative cost (N 26.25) which is about 31 per cent and the implicit cost (N 15.51) which represents about 18 per cent of the total transaction cost.

The magnitude of the borrowing transaction cost can better be appreciated when viewed in relation to the loan amount and the nominal interest rate. Transportation cost which is the highest component of the transaction cost represents 1.64 per cent of the loan amount on the average, followed by administrative cost (one per cent) and implicit cost (0.59 per cent). The total borrowing transaction cost represents about three per cent of the average loan amount. The transaction cost as a percentage of loan amount is compared to the nominal interest rate and it is found that transportation cost is about 18 per cent, followed by administrative cost (11 per cent) and implicit cost (6.56 per cent). The total borrowing transaction costs represent about 36 per cent of the nominal interest rate.

Table 1. Borrowing Transaction Costs Under the NACB Smallholder Loan Scheme.

Components of Transaction Costs	Per Borrower (N)	% of Loan (C)	% of Nominal Interest Rate (C')	% of Total Transaction Cost
(a) Explicit Cost	69.26	2.64	29.33	81.17
(i) Administrative Cost	26.25	1.00	11.11	30.97
(ii) Transportation Cost	43.01	1.64	18.22	50.74
(b) Implicit Cost	15.51	0.59	6.56	18.29
(c) Total Cost (a+b)	84.77	3.23	35.89	100.00

Source: Survey Data, 1987

Note: The nominal interest rate (NIR) was 9% in 1985 when the borrowers obtained their loans.

N = Nigerian Currency

$C' = (\frac{C}{NIR}).100$

The observed transaction costs which amount to 3.2_3 per cent of the loan amount appears to be slightly higher than the result obtained by Nchman (1973) in his analysis of borrowing transaction costs among a sample of 150 farmers in the state of Sao Paulo, Brazil. The makeup of his estimated borrower's loan transaction costs covers loan registration fees, farm appraisal costs and the borrower's time and travel costs involved in negotiating, acquiring and repaying the loan. He found out that borrowers in the smallest farm-size group incurred average loan transaction costs equal to two per cent of the loan amount. For large scale borrowers, the transaction costs could even be lower. According to the author, for the largest borrowers a single telephone call from the borrower to the lender and one visit to the bank were sufficient to negotiate the loan. This fact tends to confirm the general tendency among lenders to ration small-scale borrowers through the imposition of transaction costs.

The observed level of transaction cost cannot be ignored because of its implication on the use of formal credit by small-scale farmers. When compared to the situation in the rural informal sector, the observed transaction cost is not likely to encourage the use of formal credit by small-scale farmers. In a recent study, it has been shown that borrowing transaction cost in the rural credit market is negligible because there is no delay in credit since borrowers and lenders live in the same village (Olomola 1992). Besides, with the current inclination towards financial liberalization in the country, the nominal interest rate for agricultural lending has increased considerably. This increase (about 50 per cent since 1987) amounts to a disincentive for the small-scale borrowers. Clearly, a transaction cost over and above the nominal interest payment will exacerbate the declining trend of formal credit use by this group of borrowers, because the expected returns on debt capital investment can hardly justify the payment of the resultant effective interest rate. The factors affecting borrowing transaction costs should therefore, be closely examined with a view to proffering suggestions to rectify the problem.

III. DETERMINANTS OF BORROWING TRANSACTION COSTS

The factors affecting the transaction costs of borrowing among the sample of borrowers could be examined *vis a vis* their characteristics as small-scale borrowers and their treatment as less-preferred clients by the lenders. The loan requirement of the borrowers depend on their scale of operation which can be aptly described by the land area under cultivation. Indeed, the lender often considers the farm size and the amount of loan required by the borrowers in estimating the risk involved in dealing with the borrowers and in executing the lending procedures. Since such procedures, including the number of times borrowers have to visit the loan office for negotiating, acquiring and repaying the loan, are likely to affect the level of transaction costs transferable to the borrowers, there is the tendency for the loan size and farm size to be important determinants of such costs; so long as the amount of loan obtained by each borrower is not fixed.

As shown in Table 2, there is considerable variation in loan size among the borrowers. The modal loan-size group is between N2000 and N2499 - a group occupied by about 25 per

cent of the borrowers. The 46 farmers (about 27 per cent) who obtained less than N2000 loan amount have less than three hectares of farm land on the average. The farmers obtaining loan amount of between N 2000 and N 4499 (about 69 per cent) have farm size ranging from 3.2 to 4.3 ha on the average. A few of them (about five per cent) whose loans fall within the N 4500 to N 4999 group have 5.2 ha of farm land on the average, which is the largest so far. In view of the apparent correlation between loan size and farm size, the two variables should have similar influence on the changes in borrowing transaction costs under the smallholder loan scheme.

Table 2. **Loan Size and Farm Size of Borrowers Under The NACB Smallholder Direct Loan Scheme.**

Loan Size (N)	Number of Borrowers	% of Total (n = 173)	Average Farm Size (ha)
500	1	0.57	2.0
500-999	2	1.15	2.0
1000-1499	17	9.82	2.7
1500-1999	26	15.03	2.5
2000-2499	43	24.85	3.3
2500-2999	23	13.29	3.2
3000-3499	27	15.61	4.3
3500-3999	13	7.51	3.8
4000-4499	13	7.51	3.9
4500-4999	8	4.62	5.2

Sources: Survey Data, 1987.

The low level of preference given by lenders to small-scale farmer borrowers is also reflected in the loan disbursement lag, that is, the time interval between the submission of loan applications and the collection of loans. The survey data reveal that the loan disbursement lag ranges from 31 to 330 days. Only about 43 per cent of the borrowers obtained their loans within three months of submitting their application (Table 3).

About 16 per cent of them got their loans more than six months after their applications have been submitted. Loan disbursement lag also gives an indication as to the timeliness of loan delivery. The implications of long delays are twofold. First, the loan might miss the intended use in view of the fact that farming activities have specific time when they should be carried out. There is therefore, the tendency for the loan to be diverted into other uses with impedimental effects on prompt recovery of the loan Second, and more importantly, is that long delays might imply an increase in the number of times the borrowers would have to visit the loan office; and this is affects both the implicit and explicit costs of the borrowing transaction. The costs will increase considerably in view of the great distances over which the

Table 3.   Loan Disbursement Lag of Borrowers Under The Smallholde
Direct Loan Scheme of NACB.

Loan Disbursement Lag (Days)	Number of Borrowers	% of Total (n = 173)
1-30	0	0
1-60	18	10
61-90	56	32
91-120	35	20
121-150	22	13
151-180	14	8
181-210	11	6
211-240	10	6
241-270	6	3
271-300	0	0
301-330	1	1

Source: Survey Data, 1987.

borrowers would have to travel. For instance, only about 49 per cent of them live within a
radius of 50 kilometers from the loan office. About 43 per cent of them would need to travel
between 51 and 100 kilometers while others (about eight per cent) have to cover more than
100 kilometres before they get to the loan office (Table 4).

Table 4.   Distance of Borrowers From Loan Office Under The NACB
Smallholders Loan Scheme.

Distance (Km)	Number of Borrowers	% of Total (n = 173)
1-10	40	23
11-20	3	2
21-30	3	2
31-40	6	3
41-50	34	20
51-60	38	22
61-70	15	9
71-80	6	3
81-90	4	2
91-100	11	6
101-110	5	3
111-120	4	2
121-130	4	2

Source: Survey Data, 1987.

The level of transaction costs can also be affected by the farmer's borrowing experience. A farmer with some borrowing experience is likely to have far less bureaucratic hurdles to surmount than someone who is a first-time borrower. The former is likely to be considered as a good credit risk (especially if he fulfilled his repayment obligations in the past quite on schedule) and will therefore, not be encumbered with frequent visits to the loan office while negotiating, acquiring and repaying the loan. Thus, an experienced farmer borrower is likely to incur less transaction cost than him inexperienced counterpart.

The relationship between the borrowing transaction costs and each of the variables specified above was examined by fitting a transaction-costs function; which can be expressed implicitly as follows:

	C	=	f(LOAN, FARMSIZE, DISLAG, DISTANCE, BOREX)

where,

	C	=	transaction costs (N) incurred by a borrower in negotiating, acquiring and repaying his loan.
LOAN		=	amount of loan (N) obtained by a borrower
FARMSIZE		=	land area cultivated by a borrower (ha).
DISLAG		=	loan disbursement lag, defined as the time interval between submission of loan application and collection of the loan (days).
DISTANCE		=	distance of borrower from loan office (km).
BOREX		=	borrowing experience, which is a dummy variable with a value of unity for experienced borrowers and zero for inexperienced (first-time) borrowers.

The borrowing transaction cost is expected to be positively related to distance, loan amount, farm size and disbursement lag; and inversely related to the borrowing experience. When measured as a percentage of the loan amount, however, C is expected to be inversely related to the loan amount.

To estimate the relationship, a Cobb-Douglas functional form was applied as follows:

$$\ln C = \ln a_0 + a_1 \ln LOAN + a_2 \ln FARMSIZE + a_3 \ln DISLAG + a_4 \ln DISTANCE + a_5 \ln BOREX + u$$

where a_0 is the constant term, u is the error term and the a_{is} (i = 1, 2 ....5) are parameters which when estimated can be interpreted directly as elasticities.

Estimated Borrowing Transaction-Costs Functions

The borrowing transaction costs function was estimated using the OLS regression technique and the specified Cobb-Douglas functional form. Two variants of the function were estimated. In the first estimation, the borrowing transaction cost per borrower was expressed as the dependent variable; while in the second the transaction cost was measured as a percentage of the loan amount and re-entered into the model as the dependent variable. The results of the estimated equations are presented is Table 5.

The results indicate that the explanatory variables in the model account for 63 per cent of the variations in borrowing transaction costs among the sample of borrowers.

Table 5. Coefficients of the Estimated Borrowing Transaction Costs Function.

Variables/ Parameters	Estimated Coefficients	
	Transaction Cost Per Loan as Regressand	Transaction Cost Per Cent of Loan as Regressand
Constant (a_0)	1.118	5.723
LOAN (a_1)	0.253**	-0.747**
	(0.059)	(0.059)
FARMSIZE (a_2)	-0.046	-0.046
	(0.055)	(0.055)
DISLAG (a_3)	0.035	0.034
	(0.049)	(0.049)
DISLAG (a_4)	0.284**	0.284**
	(0.020)	(0.020)
BOREX (a_5)	0.053	0.053
	(0.082)	(0.082)
R_2	0.63	0.62

Note: Parenthesised figures are standard errors
            ** significant at 1% level

However, the loan amount and borrowers' distance from loan office appear to be the most important determinants of borrowing transaction costs per loan. The coefficients of these variables have the expected positive signs and are statistically significant. The results show that a one-percent increase in loan amount and borrowers' distance from loan office holding other factors constant, is associated with an increase in borrowing transaction costs of 0.253 per cent and 0.284 per cent respectively. The fact that the elasticity co-efficient of the loan amount is positive and less than unity shows that transaction costs per loan are an increasing function of the loan amount, but such costs increase at a decreasing rate as loan size increases.

The result of the estimated function in which borrowing transaction costs were expressed as a percentage of the loan amount and used as dependent variable shows that transaction costs as a percentage of the loan amount, are a decreasing function of the loan amount. In the estimation, the coefficient of loan amount has the expected negative sign and it is statistically significant. The result indicates that a one per cent increase in the loan decrease of 0.747 per cent in the borrowing transaction costs.

From the foregoing analysis, two variables (borrowers distance from loan office and loan amount) stand out as significant determinants of the level of borrowing transaction costs. These variables should therefore be the focus of policy attention in an attempt to enhance small-scale farmers' access to formal credit through a reduction in transaction costs.

IV. POLICY IMPLICATIONS AND RECOMMENDATIONS

Through the direct smallholder loan scheme the NACB seeks to make credit available to the small-scale farmers and thus upgrade the level of capitalization of agricultural enterprises. This is not a misplaced priority since the small-scale farmers account for about 95 per cent of the nation's fanning population and 90 per cent of the agricultural output. However, these farmers would use formal credit only if it is available to them at the right time, at suitable locations and at affordable prices.

The prices paid by borrowers are not limited to the nominal interest rate. They are inclusive of both implicit and explicit transction costs. Thus the delays in loan transactions and great distances existing between borrowers and the loan office constitute price disincentives to potential loan beneficiaries. Unfortunately, there is the tendency for the transaction costs to rise more rapidly than the nominal interest rate. For instance, available data indicate that the nominal interest rate rose from nine per cent in 1985 to 21 per cent in 1991, representing an increase of about 133 per cent. However, farm wages rose from an average of 7 per day in 1985 to 20 per day in 1991; an increase of about 186 per cent. Transprotation cost has also increased substantially; arising from petroleum subsidy withdrawal which led to an increase of about 250 per cent in the price of fuel from 20 kobo per litre in 1985 to 70 kobo per litre in 1991. It is therefore, imperative to re-design the current smallholder loan scheme in order to reduce the transaction costs of borrowing and encourage small-scale farmers to increase their use of formal credit. Policy actions arc required in two areas.

Firstly, the NACB should adopt the group approach in granting loans to small-scale farmers. This approach is apt to lower the transaction costs to the lender and borrower. The farmers should be encouraged to form groups of at most twenty people; and the groups should be as homogeneous as possible in terms of soci-economic status, resource endowment, gender and possibly kinship affiliation. One or two representatives from each group would take up the responsibility to negotiate, acquire and repay the loan on behalf of the group; there by minimising the transaction costs per borrower. Existing farmer groups in the rural areas such as cooperatives, savings societies and other informal traditional groups are possible candidates for group lending. Such groups would, however, have to be strengthened administratively for proper record keeping and accountability.

Secondly, there should be a reduction in the cost of transporation which the borrowers are likely to incur irrespective of whether they participate in the loan scheme as individuals or groups. In this regard, the NACB would have to establish credit centres in each of the thirty states of the federation which should be responsible for loan processing, disbursement, monitoring and recovery. Initially, each credit centre can deal with borrowers in at most three local government areas (LGAs). This means that majority of states will have four credit centres each in addition to the NACB branch offices in the state capitals. In the long run, there should be a credit centre in each LGA to enhance the accessibility of rural farmers to formal

credit. Each centre should be manned by competent staff with capability and authority to approve loans without frequent recourse the main office at the state capital.

The approach of supply-leading finance inherent in the operations of NACB in which lending transaction costs are not considered to be impedimental to the use of credit by small-scale farmers has to be reconsidered. Such costs are often regarded as part of the development cost which must be borne by the government in the course of developing such a vital sector of the economy as agriculture. Although borrowing transaction costs appear to be the more serious impediment, it should be realized that unmitigated increase in lending transaction costs has a tendency of depleting the lending portfolio. It is in this connection that the foregoing suggestions are likely to be beneficial (in the long-run) to both the borrowers and lenders. The lender's cost of loan processing, monitoring and recovery is apt to reduce while the borrowers' access to credit will be increased.

V. CONCLUDING COMMENTS

To date, a large number of farmers rely on the informal sector for their credit needs. The provision of credit by informal lenders entails simple procedures which are carried out without delay. Usually there is no need for collateral or third-party guarantee and the associated transaction costs are negligible. The formal credit institutions lending to agriculture in Nigeria have not been able to entrench these characteristics in the design of smallholder loan schemes with the result that small-scale farmers are finding it increasingly difficult to cope with the cost of borrowing from formal credit institutions.

The observed level of transaction costs could have impedimental effects on the use of formal credit by small-scale farmers and on the attainment of food self-sufficiency in this country. The need for credit has become more important in recent times than ever before in view of the rising cost of farm inputs and the decline in the trend of real farm income and equity capital. Unless, credit is made available to the small-scale farmers with minimal transaction costs, in a timely fashion and without cumbersome administrative procedures, they cannot be expected to remain in business and to contribute significantly to the desired level of food production under the precarious economic situation in the country in recent times. This indicates the advisability of smallholder loan schemes currently in operation to place emphasis on low-cost loan delivery channels such as group lending through credit centres at the grassroot level.

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